CPED STAFF REPORT

Prepared for the City Planning Commission

CPC Agenda Item #5
May 19, 2014
BZZ-6518

LAND USE APPLICATION SUMMARY

Property Location: 252 Upton Ave S
Project Name: Bassett's Creek Cell Tower
Prepared By: Joseph.Giant@minneapolismn.gov, City Planner, (612) 673-3489
Applicant: Steve Stulz
Project Contact: Steve Stulz
Request: To construct a 75-foot monopole telecommunications tower.
Required Applications:

Conditional Use Permit	To allow a telecommunications tower in the R1 Single-Family District.
Conditional Use Permit	To increase the maximum height of a structure from 35 feet to 75 feet in the SH Shoreland Overlay District.

SITE DATA

Existing Zoning	R1 Single-Family District SH Shoreland Overlay District
Lot Area	1,253,900 square feet / 28.786 acres
Ward(s)	7
Neighborhood(s)	Bryn Mawr
Designated Future Land Use	Urban Neighborhood
Land Use Features	NA
Small Area Plan(s)	NA

Date Application Deemed Complete	April 11, 2014	**Date Extension Letter Sent**	NA
End of 60-Day Decision Period	July 11, 2014	**End of 120-Day Decision Period**	NA

BACKGROUND

SITE DESCRIPTION AND PRESENT USE. The proposed telecommunications tower will occupy a small portion of a 28-acre lot located at 252 Upton Ave S in R1 Single-Family Zoning District and SH Shoreland Overlay Zoning District. The rectangular-shaped lot is approximately 1,485 feet by 870 feet, totaling 1,253,900 square feet of lot area. The principal use on the site is Anwatin Middle School, which is made up of several buildings ranging in height from one to two stories. The remainder of the parcel is occupied by surface parking areas, green space around the perimeter, and courtyards amongst the school buildings. The topography is mostly flat, and the northwestern portion contains a wetlands area and a small pond. Because the subject site is within 1,000 feet of this protected body of water it is included in the SH Shoreland Overlay District.

The proposed location of the tower is in a small parking lot on the west side of the school. An 8-foot chain link fence with a retractable gate currently surrounds this parking lot.

SURROUNDING PROPERTIES AND NEIGHBORHOOD. The subject site is located on the west side of Minneapolis in the Bryn Mawr neighborhood. The subject site is bordered on the east and on the north by single-family homes, to the south by a 2-story office building, and to the west by Theodore Wirth Park. The portion of the park that is adjacent to the subject property is hilly and heavily forested.

The portion of the subject site intended to accommodate the tower is approximately 220 feet from the property line adjacent to the park and approximately 646 feet from the nearest residential structure. The proposed tower would be separated from the residences by a school building, a parking lot, and row of mature trees.

The nearest existing cell tower is located approximately 3,500 feet from the proposed location.

PROJECT DESCRIPTION. Freestanding communication towers and antennas are allowed as a conditional use in residential districts provided that the towers and antennas are located on institutional use sites of not less than 20,000 square feet. The primary zoning designation of the subject site is R1 Single-Family. Therefore, the tower must be located on a site containing an institutional use that is greater than 20,000 square feet in area. The subject site is over 1 million square feet in area and the principal use on the site is a middle school.

The applicant has submitted an application to construct a 75-foot "stealth" telecommunication tower and a 12-foot by 20-foot equipment shelter at 252 Upton Ave S. According to the applicant, the purpose of the tower is "to add 4G LTE coverage, more reliable coverage, and additional bandwidth capacity."

The "stealth" element comes from the fact that all antennas and wiring will be housed within the tower rather than project outward from the exterior of the tower. If approved, the tower would be located in a parking lot on the west side of the school in place of an existing light pole. The tower will have a diameter of approximately 31 inches and will be designed to accommodate two additional antenna arrays within the tower.

No other changes to the property are proposed.

PUBLIC COMMENTS. As of writing this report, Staff has not received any correspondence from the Bryn Mawr Neighborhood Association. Staff has received a letter from the Minneapolis Park Board

stating their concern about the height of the tower in the SH Shoreland Overlay District. A copy of this letter and is included in the Additional Materials. Any additional correspondence received prior to the public meeting will be forwarded on to the Planning Commission for consideration.

ANALYSIS

CONDITIONAL USE PERMIT

The Department of Community Planning and Economic Development has analyzed the application to construct a 75-foot telecommunications tower based on the following findings:

1. *The establishment, maintenance or operation of the conditional use will not be detrimental to or endanger the public health, safety, comfort or general welfare.*

   The proposal to establish a new 75-foot telecommunication tower at the subject site will not be detrimental to or endanger the public health, safety, comfort or general welfare provided the development complies with all applicable development standards, building codes and life safety ordinances. The tower would be located on a 29-acre parcel in an existing surface parking lot surrounded by a fence and automatic gate. The equipment shelter will be located outside the fence but will be locked at all times.

2. *The conditional use will not be injurious to the use and enjoyment of other property in the vicinity and will not impede the normal and orderly development and improvement of surrounding property for uses permitted in the district.*

   Staff finds that constructing a telecommunications tower on the property would not impede development or be injurious to the use and enjoyment of other property in the area.

   The nearest residence is approximately 646 feet from the tower and is screened from the tower by the school building and a row of mature trees. The tower should have no negative impact on any residential properties in the vicinity.

   The tower is approximately 220 feet from the eastern boundary of Theodore Wirth Park. Due to the thick vegetation and hills on the eastern side of the park, the tower should be minimally visible from trails and other significant public spaces within the park. In order to minimize its visual impact, the antenna will be painted a dark color to match the other light pole in the parking lot. Further, all antennas will be located within the tower

3. *Adequate utilities, access roads, drainage, necessary facilities or other measures, have been or will be provided.*

   Roads and utilities are existing and adequate. No changes are proposed as part of the project.

4. *Adequate measures have been or will be taken to minimize traffic congestion in the public streets.*

   This use should not have any impact on the amount of traffic coming to and from the site. This is an unstaffed facility and once the tower has been constructed there will only be occasional visits for purposes of routine maintenance.

5. *The conditional use is consistent with the applicable policies of the comprehensive plan.*

   The proposed development would be consistent with the following general land use policies of *The Minneapolis Plan for Sustainable Growth*. According to the principles and polices outlined in the comprehensive plan, the following apply to this proposal:

   - Develop technological and information infrastructure in order to offer high quality working environments to businesses (Policy 2.4).
   - Expand the city's understanding of the role of the telecommunications industry, its needs and necessary public and private sectors, and be prepared to respond proactively (Implementation Step for Policy 2.4).
   - Promote the use of "best available technology" in upgrading communication linkages to the region and the world (Implementation Step for Policy 2.4).
   - Facilitate the development of communications and transportation infrastructure to support the continued growth of the city's economic base (Policy 8.12).
   - Encourage the sharing of communications infrastructure (fiber optic, cellular phone antennae locations) among multiple users (Implementation Step for Policy 8.12).

   Wireless communication is an integral part of everyday life, so it is important for the City to facilitate the implementation of infrastructure that responds to growing technological demands. However, the pursuit of this goal must not conflict with the preservation of parklands and neighborhoods. The functional aspects of the proposed tower promote the City's technological and communication-based goals while the tower's context-sensitive design helps to ensure that its effect on the natural environment will be minimal.

6. *The conditional use shall, in all other respects, conform to the applicable regulations of the district in which it is located.*

   The maximum height for a telecommunications tower in residential districts is 75 feet. However, the maximum height for any structure in the SH Shoreland Overlay District is 35 feet. Therefore, the proposed tower also seeks a conditional use permit to exceed height in the SH Shoreland Overlay District. Besides this land use application, the proposed tower will comply with all provisions of the R1 Single-Family District and the SH Shoreland Overlay District.

535.530. Specific standards for conditional uses. All communication towers and antennas requiring a conditional use permit shall be subject to the provisions of Chapter 525, Administration and Enforcement, and the submittal requirements of section 535.510(b). In addition, the applicant shall comply with the following standards and submit written documentation indicating such compliance:

1. *Tower type. Communication towers shall be of a monopole design. The city planning commission may consider the substitution of alternative tower types in cases where structural, radio frequency, and design considerations, location or the number of co-locators suggests a tower other than a monopole.*

   The applicant is proposing to construct a 75-foot monopole telecommunications tower. Seventy-five feet is the maximum height for a telecommunications tower in residential zoning districts. Due to the proximity of residences and parklands, the applicant has proposed a "stealth" design. The

proposed tower will house all antennas and related mechanical equipment completely within the tower. In order for this type of tower to function, tiny holes are drilled into the upper portions of the tower allowing radio signals to reach the antennas.

2. *Co-location of communication antennas. Shared use of existing communication towers shall be preferred to the construction of a new tower.*

   According to a map supplied by the applicant, the nearest collocation opportunity is approximately two-thirds of a mile from the proposed location. The applicant has indicated that collocation would not be an effective solution due to the distance between existing towers in the vicinity.

   Several of the attachments contained in the Additional Materials were submitted by the applicant in order to illustrate how the proposed tower will improve coverage in the area.

3. *Height of freestanding towers and antennas.*

   a. *Residence, office residence and commercial districts. The height of freestanding communication towers and antennas located in the residence, office residence and commercial districts shall not exceed seventy-five (75) feet.*

   b. *Industrial districts. The height of freestanding communication towers and antennas located in the industrial districts shall not exceed one hundred (100) feet.*

   c. *Excess height. The city planning commission may increase the height of freestanding towers and antennas, provided that in the residence, office residence and commercial districts such increase shall not exceed the maximum height by more than fifty (50) percent. The applicant shall submit an inventory of existing and approved communication towers within a one (1) mile radius of the proposed site outlining opportunities for shared use as an alternative to the construction of a new tower, and shall demonstrate to the satisfaction of the city planning commission the following:*
      i. *The proposed antenna cannot be accommodated on an existing or approved tower due to one or more of the following reasons:*
         1. *The unwillingness of the owner of the existing or approved tower to co-locate an additional antenna.*
         2. *The planned antenna would exceed the structural capacity of existing or approved tower.*
         3. *The planned antenna would cause radio frequency interference with other existing or planned equipment, which cannot reasonably be prevented.*
         4. *Other reasons affecting technical performance, system coverage and system capacity make it impractical to place the proposed equipment on existing or approved towers.*
         5. *The proposed co-location on an existing or approved tower would not conform to the requirements of the zoning ordinance.*
      ii. *The surrounding topography, structures, vegetation and other factors make a tower that complies with the district height regulations impractical.*
      iii. *The proposed tower is designed to structurally accommodate both the applicant's antenna and at least one (1) additional user. The applicant shall submit a letter indicating the proposed tower is available for co-location with a phone number for interested parties to call.*

The proposed tower is 75 feet tall. Although this tower meets the height restrictions of residential districts, because the tower is located in the SH Shoreland Overlay District the height of the tower cannot exceed 35' without a conditional use permit.

The applicant has submitted a letter indicating that the tower is being designed to accommodate two additional antenna arrays completely within the tower. However, additional wireless carriers would have to provide their own equipment shelter. There is ample space near the base of the tower that could accommodate additional equipment sheds.

4. *Height of all other towers and antennas allowed by conditional use. The maximum height of all other towers and antennas shall be as approved by conditional use permit.*

   Not applicable.

535.540. Development standards for all permitted and conditional communication towers, antennas and base units. *In addition to the standards of sections 535.490, 535.500 and 535.530 above, all communication towers, antennas and base units shall be subject to the following standards:*

1. ***Encroachments and setbacks.***

   a. *The tower site and setback shall be of adequate size to contain guyed wires, debris and the tower in the event of a collapse.*

      The site is of an adequate size to contain the telecommunications tower and the related base equipment without posing a threat to adjacent properties. The site is approximately 29 acres in size and the nearest property line is approximately 220 feet west of the tower site.

   b. *Communication towers shall maintain a minimum distance from the nearest residential structure equal to twice the height of the tower. For the purposes of this article, residential structures shall also include any parking structure attached to a principal residential structure.*

      A 75-foot high tower must be at least 150 feet from any residential structure. The closest residential structure is located approximately 646 feet away from the tower.

   c. *No part of any communication tower, antenna, base unit, equipment, guyed wires or braces shall extend across or over any part of a public right-of-way.*

      No part of the telecommunications tower or base equipment extends across or over any public right-of-way.

   d. *Communication towers, antennas and base units shall comply with applicable regulations as established by the Federal Aviation Administration.*

      The applicant had indicated that the project will be in compliance with the regulations established by the Federal Aviation Administration (FAA) and that FAA approval would be obtained prior to construction of the proposed tower and associated equipment.

   e. *Communication towers, antennas and base units shall comply with the minimum yard requirements of the district in which they are located.*

The proposed tower and base station are not in a required yard. The required rear yard in the R1 district is 6 feet. The proposed tower and base unit are approximately 220 feet and 210 feet from the rear property line, respectively.

2. ***Compatibility with nearby properties.*** *Communication towers, antennas and base units shall utilize building materials, colors and textures that are compatible with the existing principal structure and that effectively blend the tower facilities into the surrounding setting and environment to the greatest extent possible. Metal towers shall be constructed of, or treated with, corrosive resistant material. Outside of the industrial districts, unpainted, galvanized metal, or similar towers shall be prohibited, unless a self-weathering tower is determined to be more compatible with the surrounding area.*

   As a condition of approval, the tower will be painted to match the other light poles in the parking lot. In addition, all antennas and related mechanical equipment will be located completely within the tower. The stealth design of the tower is intended to more effectively blend into the surrounding area than a traditional telecommunications tower.

3. ***Screening and landscaping.*** *A screening and landscaping plan designed to screen the base of the tower and the base unit shall be submitted. The plan shall show location, size, quantity and type of landscape materials. Landscape materials shall be capable of screening the site all year. One row of evergreen shrubs or trees capable of forming a continuous hedge at least six (6) feet in height within two (2) years of planting shall be provided to effectively screen the base of the tower and the base unit, except for towers and antennas designed for private reception of television and radio signals and used for amateur or recreational purposes. A maintenance plan for the landscape materials shall also be submitted. The city planning commission may consider the substitution of other architectural screening plans such as a decorative fence or masonry wall in lieu of planted materials.*

   Because the proposed tower will replace a light pole in an existing surface parking lot, staff has determined that complying with landscaping requirements is not practical. Further, staff has determined that screening is not necessary around the base of the tower and equipment shelter. The existing school building will screen the lower half of the tower from nearby residential districts.

   The equipment shelter will be located next to an existing shed of comparable size on a narrow strip of grass between a surface parking lot and a bus turnaround. The plans for the base unit indicate that it will be prefabricated and painted to match the color and pattern of the existing school. In accordance with the requirements of Chapter 535.540(c) pertaining to screening and landscaping of towers and base units, as a condition of approval staff recommends that the applicant submit a screening and landscaping plan that meets the provisions of the ordinance. In particular, the plan shall show the location, size, quantity and type of landscape materials. Landscape materials shall be capable of screening the site all year. One (1) row of evergreen shrubs or trees capable of forming a continuous hedge at least six (6) feet in height within two (2) years of planting shall be provided to effectively screen the base unit. Because the tower is located in an existing parking lot, staff does not recommend screening. The base of the tower.

4. ***Rooftop mounted towers and antennas.*** *Rooftop mounted communication towers and antennas shall not be located on residential structures less than fifty (50) feet in height, except for towers and antennas designed for private reception of television and radio signals and used for amateur or recreational purposes.*

   Not applicable.

5. ***Facade mounted antennas.***

   a. Mounted on freestanding towers and poles. *A façade-mounted antenna shall not extend above the facade of the tower or pole on which it is mounted, but otherwise may project outward beyond such facade.*

   The proposed antenna will be located entirely within the tower. It will not project above the tower. Space for two additional wireless carriers is available within the tower as well. As a conditional of approval, no additional antennas may be placed on the exterior of the tower in the future.

   b. Mounted on all other structures. *A facade mounted antenna shall be mounted flush against the structure on which it is mounted and shall not extend beyond the facade of such structure, except that antennas designed for private reception of television and radio signals, used for amateur or recreational purposes, may extend above the facade of the structure.*

   Not applicable

6. ***Base units.*** *Base units shall not exceed five hundred (500) square feet of gross floor area. The city may require as a condition of approval that base units be located underground.*

   The proposed equipment shelter has a gross floor area of approximately 220 feet (11 feet x 20 feet). The height of the unit is 10 feet.

7. ***Security.*** *All sites shall be reasonably protected against unauthorized climbing. The bottom of the tower, measured from ground level to twelve (12) feet above ground level, shall be designed in a manner to discourage unauthorized climbing.*

   The tower would be located in a parking lot which is currently surrounded by an 8-foot chain link fence with an automatic gate. Climbing pegs will not be installed on the tower.

8. ***Signage.*** *Advertising or identification of any kind on towers, antennas and base units shall be prohibited, except for applicable warning and equipment information signage required by the manufacturer or by federal, state or local regulations.*

   The applicant has indicated that only required and/or regulatory signage will be placed on the tower and equipment shelter.

9. ***Lighting.*** *Communication towers and antennas shall not be illuminated by artificial means, except when mounted on an existing light pole or where the illumination is specifically required by the Federal Aviation Administration or other federal, state or local regulations.*

   Lighting of the tower is neither required nor proposed. However, the tower will be constructed in place of a light pole in an existing surface parking lot. Staff recommends as a condition of approval that a replacement light that is similar in height, brightness, appearance, and color be attached to the tower in place of the light that is being removed.

10. ***Heritage Preservation Ordinance compliance.*** *Communication towers and antennas proposed for any locally designated historic structures or locally designated historic districts shall be subject to all requirements of the city's Heritage Preservation Ordinance.*

The Minnesota State Historic Preservation Office has determined that there are two historic properties within the Visual Area of Potential Effects for this project: a Lustron House and the Grand Rounds Historic District. The organization has determined that the proposed stealth tower and equipment will have **no adverse effect** on these historic properties. This determination is documented in an October 28, 2013 letter from Deputy State Historic Preservation Officer Barbara Howard. A copy of the letter is included in the Additional Materials.

11. ***Radio frequency emissions and noninterference.*** *The applicant shall comply with all applicable Federal Communication Commission standards.*

    The applicant has stated that they will meet all regulations established by the Federal Communications Commission.

12. ***Public safety communication system.*** *The location of the proposed antenna, if located on publicly owned property, shall not be needed for use by the public safety communication system, or if needed, it shall be determined by the director of public works that co-location of the proposed antenna with a public safety antenna is agreeable.*

    The proposed tower and antennas are not located on publicly owned property and are therefore exempt from this provision.

ADDITIONAL FINDINGS FOR THE C.U.P. TO INCREASE HEIGHT:

1. *Access to light and air of surrounding properties.*

   The proposed tower will not affect access to light and air for surrounding properties.

2. *Shadowing of residential properties or significant public spaces.*

   The diameter of the tower is approximately 36 inches and it is located approximately 220 feet from the nearest property line and approximately 646 feet from the nearest residential structure. Thus, the shadow created by the proposed tower will be negligible.

3. *The scale and character of surrounding uses.*

   At 75 feet, the tower will be the tallest structure in the vicinity. The subject site contains several school buildings ranging in height from one to two stories. In the R1 zoning district, communication towers must be located on institutional sites at least 20,000 square feet in area. The purpose of this regulation is to provide service coverage in residential areas while limiting potential adverse off-site impacts. In the present case, the subject site is over 1 million square feet in area - many times larger than the requisite 20,000 square feet - and the tower is located more than 200 feet from the nearest property line.

4. *Preservation of views of landmark buildings, significant open spaces or water bodies.*

   The tower will not block any views of landmark buildings, open spaces, or bodies of water. However, the tower may be visible from certain locations on the eastern side of Theodore Wirth

Park. Several photos are included in the Additional Materials that were taken from the vantage point of the eastern boundary of the park.

ADDITIONAL FINDINGS FOR THE CONDITIONAL USE PERMIT PER THE SHORELAND OVERLAY DISTRICT:

1. *The prevention of soil erosion or other possible pollution of public waters, both during and after construction.*

   The limited footprint of the project and the small amount of soil disturbance will not lead to soil erosion during and after construction. The foundation of the equipment shelter will be concrete slab-on-grade and the tower will be located in an existing paved parking lot. The development will not involve the excavation of more than 10 cubic yards of soil so an erosion control plan is not necessary (per 551.510 of the Code of Ordinances). Further, the project is not located near a steep slope and it does not require the removal of any vegetation except for a 12-foot by 20-foot patch of grass that will accommodate the equipment shelter.

7. *Limiting the visibility of structures and other development from the protected waters.*

   The tower may be visible from a wetlands pond that is located in the northwest corner of the subject property. The pond is approximately 750 feet from the tower site and is surrounded by thick vegetation.

8. *The suitability of the protected water to safely accommodate the types, uses and numbers of watercraft that the development may generate.*

   The proposed telecommunications tower will not contribute towards watercraft usage on the protected bodies of water.

RECOMMENDATIONS

Recommendation of the Department of Community Planning and Economic Development for the Conditional Use Permit:

The Department of Community Planning and Economic Development recommends that the City Planning Commission adopt the findings above and **approve** the conditional use permit for the construction and maintenance of a 75-foot telecommunications tower for the property located at 252 Upton Avenue South.

1. The conditional use permit shall be recorded with Hennepin County as required by Minn. Stat. 462.3595, subdivision. 4 before building permits may be issued or before the use or activity requiring a conditional use permit may commence. Unless extended by the zoning administrator, the conditional use permit shall expire if it is not recorded within two years of approval.
2. CPED Planning staff review and approval of the final site and landscaping plans.
3. The light that is being replaced, to the greatest extent possible, must match the height, luminescence, and intensity as the light that is being lost.
4. No additional antennas may be mounted on the exterior of the tower in the future.

5. The equipment shelter will be painted to match the school.
6. The tower will be painted to match the color of the existing light pole in the parking lot.
7. The applicant shall screen the equipment shelter. The applicant shall submit a screening and landscaping plan that shows the location, size, quantity, and type of landscape materials used to screen the equipment shelter. Landscape materials shall be capable of screening the shelter all year. One (1) row of evergreen shrubs or trees capable of forming a continuous hedge at least six (6) feet in height within two (2) years of planting shall be provided to effectively screen the shelter.

Recommendation of the Department of Community Planning and Economic Development for the Conditional Use Permit:

The Department of Community Planning and Economic Development recommends that the City Planning Commission adopt the findings above and **approve** the conditional use permit at 252 Upton Avenue South to increase the maximum height in the Shoreland Overlay District from 35 feet to 75 feet, subject to the following condition:

These approvals are subject to the following conditions:

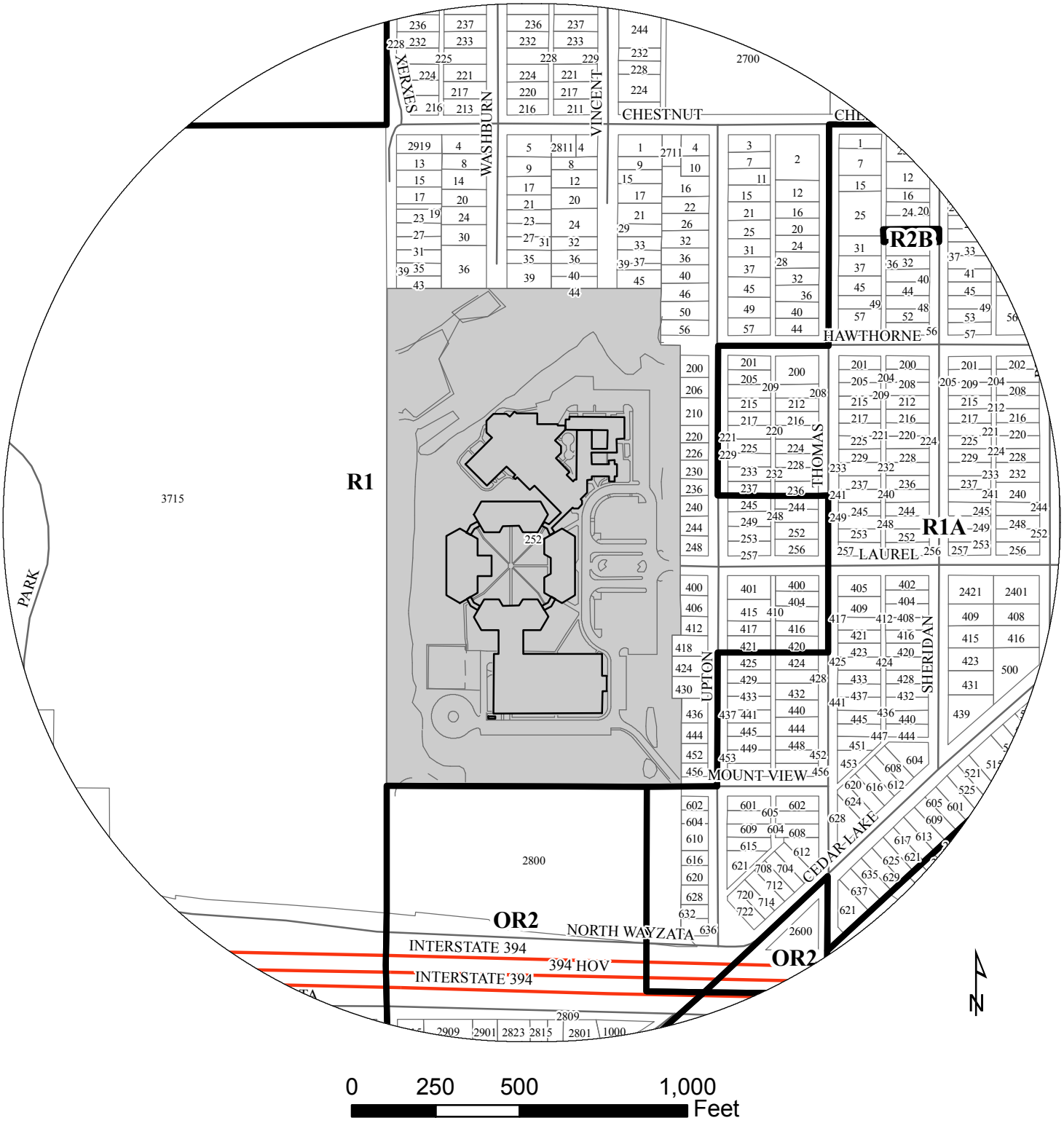
1. The conditional use permit shall be recorded with Hennepin County as required by Minn. Stat. 462.3595, subdivision. 4 before building permits may be issued or before the use or activity requiring a conditional use permit may commence. Unless extended by the zoning administrator, the conditional use permit shall expire if it is not recorded within two years of approval.

ATTACHMENTS

1. Zoning Map
2. Applicant's Proposed Use and Description of Project
3. Conditional Use Findings
4. Property Owner Authorization Letter
5. Legal Description of Property
6. Letter to Bryn Mawr Neighborhood Association
7. Letter to Ward 7 Council Office
8. Land Survey
9. Plans
10. Additional Maps
11. Photos of Existing Conditions
12. Photographic Simulation
13. Proof of FCC License
14. Letter from the State Historic Preservation Office
15. Correspondence and Public Comments

Steve Stulz, on behalf of AT&T — **7th**

NAME OF APPLICANT — WARD



PROPERTY ADDRESS

252 Upton Ave S

FILE NUMBER

BZZ-6518

March 31, 2014

Mr. Joe Giant
Senior Planner

City of Minneapolis
250 South 4th Street
Room 300
Minneapolis, MN 55412

Dear Mr. Giant:

Per our previous conversations, AT&T/ New Cingular Wireless (AT&T) is proposing to add cell sites supporting the Minneapolis area. This is necessary to add 4G LTE coverage upgrade to accomplish next generation improved more reliable coverage and additional bandwidth capacity for wifi and increasing smart phone usage and the related services that accompany this increased 4G subscriber needs. This upgrade will help to insure improved coverage to meet the ongoing demand for cell phone traffic as well as web and smart phone type services.

Enclosed please find the application and information for a proposed light pole replacement located at Anwatin Middle School 256 Upton Ave S, Minneapolis Minnesota 55405. This site is currently a light pole, AT&T is proposing removal of the existing pole and replacing it with a 75' monopole designed tower and 12'x 20' equipment shelter.

AT&T will comply with all applicable FCC and FAA requirements associated with the construction and maintenance of the proposed project. Furthermore, AT&T is required to comply with all applicable FCC regulations, which ensures that there is no interference with emergency and/or public safety telecommunications signals or signals from other licensed carriers. This tower will not cause any physical or RF interference with other telecommunication facilities

AT&T agrees to provide lease space for other carriers are reasonable market rates and that there is space and structural capacity for at least (2) additional carriers.

AT&T is the landowner will abide by all conditions and stipulations by the City of Minneapolis CUP and will operate incompliance with all safety standards, codes, laws rules and regulations.

AT&T understands that we will need to apply for and obtain approval of a building permit issued by the City of Minneapolis to complete this work. This upgrade is legally permissible and AT&T is licensed to do business in the state of Minnesota.

There are no other structures in the area that would accomplish AT&T's height and location requirements to maintain AT&T current coverage that this existing site

provides. The closest existing tower is approximately 3550' to the East and AT&T currently has antennas on this location. We are unable to accomplish the necessary coverage in the proposed area by modifying or adding equipment to this existing current location There are no other existing towers or collocation opportunities at this height within 1 mile of this proposed site.

Enclosed you will find our application package. If you should have any questions regarding this application, please feel free to contact me at 612-414-5013.

Sincerely,

Steve Stulz
Agent for AT&T
Phone (612) 414-5013
Fax (612) 225-1832
Email ARESMidwest@aol.com

P.O. Box 119
Lake Elmo, MN 55042

Enclosures

Statements required for every CUP:

(1) The establishment, maintenance or operation of the conditional use will not be detrimental to or endanger the public health, safety, comfort or general welfare. – Increased cell coverage and the cell sites required to accomplish that coverage, is a benefit to the general public and is not detrimental to public health, safety, comfort or general welfare

(2) The conditional use will not be injurious to the use and enjoyment of other property in the vicinity and will not impede the normal and orderly development and improvement of surrounding property for uses permitted in the district. – The proposed cell tower is replacing and existing light pole and due to the small footprint will have little impact on the area and no impact on the surrounding property uses.

(3) Adequate utilities, access roads, drainage, necessary facilities or other measures, have been or will be provided. – There will no change to the existing access or parking and there is currently adequate access.

(4) Adequate measures have been or will be taken to minimize traffic congestion in the public streets.

-There will be no change to the existing traffic patterns at this location

(5) The conditional use is consistent with the applicable policies of the comprehensive plan. – Public Utilities such as adequate cell coverage are consistent with the City's comprehensive plan

(6) The conditional use shall, in all other respects, conform to the applicable regulations of the district in which it is located. – The proposed cell tower conforms to the applicable regulations in this district

CUPs for height all require responses to the following 4 statements:

(1) Access to light and air of surrounding properties. – The proposed cell tower footprint is relatively small (like a large tree trunk) therefore it will have no impact on light or air in the area

(2) Shadowing of residential properties or significant public spaces. - The proposed cell tower footprint is relatively small and at the height of 75' will not cast a shadow on any residential properties in the area.

(3) The scale and character of surrounding uses. – The proposed tower is replacing an existing light pole in a parking lot with other light poles and will have no impact on the scale or character of the sounding uses

(4) Preservation of views of landmark buildings, significant open spaces or water bodies. - The proposed tower is replacing an existing light pole in a parking lot with other light poles and will have no impact on the scale or character of the sounding uses

In the Shoreland Overlay District you will also need to respond to the following 3 statements:

(1) The prevention of soil erosion or other possible pollution of public waters, both during and after construction. – The proposed site is over 3000' from the Lake and will have no impact on the soil erosion or pollution in the area

(2) Limiting the visibility of structures and other development from protected waters. - The proposed site is over 3000' from the Lake and there is a row of trees between the tower and the lake, it will have no impact on the surrounding area

(3) The suitability of the protected water to safely accommodate the types, uses and numbers of watercraft that the development may generate. - The proposed tower will have no impact on water use.

535.530

1 –The proposed tower is of monopole design

2 – There are no co-location opportunities that will allow AT&T to accomplish their coverage goals in this general area

3 – The proposed tower meets the City's height requirement

4 – There are no co-location opportunities in this general area. AT&T currently has equipment in place on the only existing cell tower in the area. We are unable to accomplish our proposed coverage needs by adding or changing our existing equipment on this existing site.

5 – The proposed tower is designed to structurally accommodate additional users

535.540

1 – The proposed tower exceeds all encroachments and setback as required

2 – The proposed tower is replacing and existing light pole and will have no effect on the nearby properties

3 – The proposed tower is in the middle of an existing parking lot so no additional screening is landscaping is proposed.

4 - Not applicable

5 - Not applicable

6 – The proposed base unit is under 500 square feet

7 - The first 12' of the tower will be free of any climbing assistance pegs in order to discourage climbing

8 – We agree to place only required regulatory signage on this site

9 – The only lighting will be those lights used to illuminate the existing parking area, no tower specific lighting we be proposed or required

10 – This area is not designated a historic area therefore this is not applicable

11 – We agree to comply with all applicable FCC standards

12 – The proposed site is a privately owned property area therefore this is not applicable

MINNEAPOLIS PUBLIC SCHOOLS
Urban Education. Global Citizens.

October 17, 2013

Re: Proposed AT&T Antenna Site at:
Anwatin Middle School
256 Upton Ave S
Minneapolis, MN 55405

To whom it may concern,

Please let this letter act as support for the AT&T's proposed monopole antenna and equipment installation at the Anwatin Middle School. The School District is currently in lease negotiation with AT&T to prove the necessary space to the light pole replacement as well as the equipment shelter.

Ken Karr
Director of Facilities
Minneapolis Public Schools

PROPOSED LEASE AREA “A” DESCRIPTION:

That part of the Northeast Quarter of Section 29, Township 29 North, Range 24 West of the Fourth Principal Meridian, described as follows:

> Commencing at the northwest corner of said Northeast Quarter; thence North 89 degrees 54 minutes 16 seconds East along the North line of said Northeast Quarter, a distance of 210.86 feet; thence South 0 degrees 05 minutes 44 seconds East, a distance of 1684.31 feet to the Point of Beginning of the lease area to be described; thence South 0 degrees 00 minutes 00 seconds East, a distance of 20.00 feet; thence South 90 degrees 00 minutes 00 seconds East, a distance of 30.00 feet; thence North 0 degrees 00 minutes 00 seconds West, a distance of 20.00 feet; thence North 90 degrees 00 minutes 00 seconds West, a distance of 30.00 feet to the Point of Beginning.

PROPOSED LEASE AREA “B” DESCRIPTION:

That part of the Northeast Quarter of Section 29, Township 29 North, Range 24 West of the Fourth Principal Meridian, described as follows:

> Commencing at the northwest corner of said Northeast Quarter; thence North 89 degrees 54 minutes 16 seconds East along the North line of said Northeast Quarter, a distance of 225.37 feet; thence South 0 degrees 05 minutes 44 seconds East, a distance of 1612.66 feet to the Point of Beginning of the lease area to be described; thence South 0 degrees 00 minutes 00 seconds East, a distance of 10.00 feet; thence South 90 degrees 00 minutes 00 seconds East, a distance of 10.00 feet; thence North 0 degrees 00 minutes 00 seconds West, a distance of 10.00 feet; thence North 90 degrees 00 minutes 00 seconds West, a distance of 10.00 feet to the Point of Beginning.

PROPOSED ACCESS & UTILITY EASEMENT DESCRIPTION:

A 12.00 foot wide easement for ingress, egress and utility purposes over, under and across the Northeast Quarter of Section 29, Township 29 North, Range 24 West of the Fourth Principal Meridian, the centerline of said easement is described as follows:

> Commencing at the northwest corner of said Northeast Quarter; thence North 89 degrees 54 minutes 16 seconds East along the North line of said Northeast Quarter, a distance of 210.86 feet; thence South 0 degrees 05 minutes 44 seconds East, a distance of 1684.31 feet; thence South 0 degrees 00 minutes 00 seconds East, a distance of 20.00 feet; thence South 90 degrees 00 minutes 00 seconds East, a distance of 6.00 feet to the Point of Beginning of the centerline to be described; thence South 0 degrees 00 minutes 00 seconds East, a distance of 24.14 feet; thence South 29 degrees 14 minutes 37 seconds East, a distance of 65.42 feet and said centerline there terminating.

PROPOSED ACCESS EASEMENT DESCRIPTION:

A 12.00 foot wide easement for ingress, egress purposes over, under and across the Northeast Quarter of Section 29, Township 29 North, Range 24 West of the Fourth Principal Meridian, the centerline of said easement is described as follows:

> Commencing at the northwest corner of said Northeast Quarter; thence North 89 degrees 54 minutes 16 seconds East along the North line of said Northeast Quarter, a distance of 210.86 feet; thence South 0 degrees 05 minutes 44 seconds East, a distance of 1684.31 feet; thence South 0 degrees 00 minutes 00 seconds East, a distance of 20.00 feet; thence South 90 degrees 00 minutes 00 seconds East, a distance of 6.00 feet; thence South 0 degrees 00 minutes 00 seconds East, a distance of 24.14 feet; thence South 29 degrees 14 minutes 37 seconds East, a distance of 58.55 feet to the Point of Beginning of the centerline to be described; thence North 89 degrees 56 minutes 32 seconds East, a distance of 421.19 feet; thence southeasterly, a distance of 100.03 feet along a tangential curve concave to the southwest, having a radius of 114.00 feet and a central angle of 50 degrees 16 minutes 19 seconds; thence South 39 degrees 47 minutes 09 seconds East tangent to the last described curve, a distance of 186.00 feet; thence South 89 degrees 07 minutes 22 seconds East, a distance of 1.44 feet to the West right of way line of Mount View Avenue and said centerline there terminating.

The sidelines of said easement shall be shortened or lengthened to terminate a said West right of way line of Mount View Avenue.

PROPOSED UTILITY EASEMENT DESCRIPTION:

A 10.00 foot wide easement for utility purposes over, under and across the Northeast Quarter of Section 29, Township 29 North, Range 24 West of the Fourth Principal Meridian, the centerline of said easement is described as follows:

> Commencing at the northwest corner of said Northeast Quarter; thence North 89 degrees 54 minutes 16 seconds East along the North line of said Northeast Quarter, a distance of 210.86 feet; thence South 0 degrees 05 minutes 44 seconds East, a distance of 1684.31 feet; thence South 0 degrees 00 minutes 00 seconds East, a distance of 20.00 feet; thence South 90 degrees 00 minutes 00 seconds East, a distance of 6.00 feet; thence South 0 degrees 00 minutes 00 seconds East, a distance of 24.14 feet; thence South 29 degrees 14 minutes 37 seconds East, a distance of 65.42 feet to the Point of Beginning of the centerline to be described; thence continue South 29 degrees 14 minutes 37 seconds East, a distance of 46.29 feet; thence North 89 degrees 39 minutes 07 seconds East, a distance of 452.54 feet; thence South 39 degrees 53 minutes 17 seconds East, a distance of 221.30 feet; thence South 89 degrees 39 minutes 36 seconds East, a distance of 8.84 feet to the West right of way line of Mount View Avenue and said centerline there terminating.

The centerline of said easement shall be shortened or lengthened to terminate at said West right of way line of Mount View Avenue.

AND

An 8.00 foot wide easement for utility purposes over, under and across the Northeast Quarter of Section 29, Township 29 North, Range 24 West of the Fourth Principal Meridian, the centerline of said easement is described as follows:

> Commencing at the northwest corner of said Northeast Quarter; thence North 89 degrees 54 minutes 16 seconds East along the North line of said Northeast Quarter, a distance of 210.86 feet; thence South 0 degrees 05 minutes 44 seconds East, a distance of 1684.31 feet; thence South 0 degrees 00 minutes 00 seconds East, a distance of 20.00 feet; thence South 90 degrees 00 minutes 00 seconds East, a distance of 30.00 feet; thence North 0 degrees 00 minutes 00 seconds West, a distance of 20.00 feet; thence North 90 degrees 00 minutes 00 seconds West, a distance of 10.61 feet to the Point of Beginning of the centerline to be described; thence North 0 degrees 00 minutes 00 seconds West, a distance of 61.68 feet to the following described Line "A" and said centerline there terminating.

Line "A" is described as follows:

> Commencing at the northwest corner of said Northeast Quarter; thence North 89 degrees 54 minutes 16 seconds East along the North line of said Northeast Quarter, a distance of 225.37 feet; thence South 0 degrees 05 minutes 44 seconds East, a distance of 1612.66 feet; thence South 0 degrees 00 minutes 00 seconds East, a distance of 10.00 feet to the Point of Beginning of the line to be described; thence South 90 degrees 00 minutes 00 seconds East, a distance of 10.00 feet and said line there terminating.

March 31, 2014

Bryn Mawr Neighborhood Association
Mr. Scott McLaughlin
P.O. Box 16437
Minneapolis, MN55416

RE: Notification for Proposed AT&T Wireless Cellular Site
Site Location – Anwatin Middle School–256 Upton Ave S

Dear Scott McLaughlin:

Per the requirements of the City of Minneapolis Conditional Use Permit (CUP), AT&T Wireless is hereby notifying you of the proposed telecommunication tower at the above referenced location in Ward 7.

AT&T will be replacing an existing parking lot light pole and replacing it with a 75' monopole telecommunications pole, and also adding a 12' x 20' prefabricated equipment shelter near the pole. This new cell site is required in order for AT&T to accomplish their coverage and capacity goals due to the increase in converge and bandwidth requirements.

Due to the location of this pole AT&T is required to obtain a CUP for the location as well the 75' height needed. So we will be requesting approval of (2) conditional uses on this site, but replacing one existing light pole.

Also, we are aware that a building permit application is needed for this project.

If you should have any questions, or need additional information, feel free to contact me:

Sincerely,

Steve Stulz, Agent for AT&T
Phone: 612-414-5013
aresmidwest@aol.com
P.O. Box 119
Lake Elmo, MN 55042

March 31, 2014

City of Minneapolis
Ms. Lisa Goodman
350 South Fifth Street
City Hall, Room 307
Minneapolis, MN55415

RE: Notification for Proposed AT&T Wireless Cellular Site
Site Location – Anwatin Middle School–256 Upton Ave S

Dear Ms. Goodman:

Per the requirements of the City of Minneapolis Conditional Use Permit (CUP), AT&T Wireless is hereby notifying you of the proposed telecommunication tower at the above referenced location in Ward 7.

AT&T will be replacing an existing parking lot light pole and replacing it with a 75' monopole telecommunications pole, and also adding a 12' x 20' prefabricated equipment shelter near the pole. This new cell site is required in order for AT&T to accomplish their coverage and capacity goals due to the increase in converge and bandwidth requirements.

We had previously notified you regarding this application, but due to the length of time that has passed the City has requested we notify you again of this proposal. Due to the location of this pole AT&T is required to obtain a CUP for the location as well the 75' height needed. So we will be requesting approval of (2) conditional uses on this site, but replacing one existing light pole.

Also, we are aware that a building permit application is needed for this project.

If you should have any questions, or need additional information, feel free to contact me:

Sincerely,

Steve Stulz, Agent for AT&T
Phone: 612-414-5013
aresmidwest@aol.com
P.O. Box 119
Lake Elmo, MN 55042

SITE SURVEY

PARENT PARCEL DESCRIPTION: (per U.S. Title Solutions File No. 44548–MN1307–5030, dated July 5, 2013.)

That part of the Northeast 1/4 of Section 29, Township 29, North Range 24, West of the 4th Principal Meridian, described as follows: Beginning at a point in the West line of the Northeast 1/4 of said Section 29, distant 30 rods South of the Northwest corner thereof, said point being the Southwest corner of Inglewood Addition to Minneapolis; thence East parallel with the North line of said Northeast 1/4 along the South line of said Addition to the Southwest corner of Lot 12, Block 1, said Inglewood Addition to Minneapolis (the Southeast corner of Lot 13, Block 1, Inglewood Addition to Minneapolis); thence South along the extension of the West line of said Lot 12 (the extension of the East line of said Lot 13) a distance of 133.3 feet; thence East 54.3 feet to the West line of Block 6, Gilbert and Anderson's Addition to Minneapolis extended North; thence South along said extended line and along the West line of said Block 6, to the Southwest corner of said Block 6; thence East along the South line of said Block 6, a distance of 73/100 feet; thence South parallel with the West line of Upton Avenue South as now laid out to the North line of Laurel Avenue as now laid out; thence West along the North line of Laurel Avenue to a point 81 feet West of the West line of said Upton Avenue South; thence South 60 feet to a point in the South line of said Laurel Avenue, distant 81 feet West of West line of said Upton Avenue South; thence East along the South line of Laurel Avenue 1 foot; thence South parallel with the West line of Upton Avenue South, 180 feet; thence West parallel with the extension of the South line of Laurel Avenue 70 feet; thence South parallel with the West line of Upton Avenue South 184.32 feet; thence East parallel with said South line of Laurel Avenue extended a distance of 69.8 feet to a point 80.2 feet West of the West line of Upton Avenue South; thence South parallel with the West line of South Upton Avenue and along the West line of Thorpe Bros. Glenwood Heights, to the Southwest corner of the alley as platted in Block 4 of said Addition; thence Southeasterly along the Southwesterly line of said Block 4 to its intersection with the North line of the right of way of Wayzata Boulevard as now established and widened; thence West along said North right of way line of Wayzata Boulevard to the West line of the Northeast 1/4 of said Section 29; thence North along said West line to the point of beginning, Hennepin County, Minnesota. EXCEPTING all that part described as follows: Commencing at the intersection of the center line of Erie Avenue (now known as Mount View Avenue) as it may be extended West, and the West line of Thorpe Bros. Glenwood Heights Addition; thence South along the West line of said Addition 435.63 feet more or less, to the Southwest corner of the alley as platted in Block 4 of said Addition; thence Southeasterly along the Southwesterly line of said Block 4 to its intersection with the North line of the right of way of State Trunk Highway as now established and widened; thence West along the North line of said right of way to the West line of the Northeast 1/4) of said Section 29; thence North along said West line of said Northeast 1/4 to the intersection of said center line of Erie Avenue (now known as Mount View Avenue) as it may be extended West; thence East along said center line of Erie Avenue (now known as Mount View Avenue) to the point of beginning EXCEPTING therefrom the West 30 feet of said property.

SCHEDULE "B" EXCEPTIONS: (per U.S. Title Solutions File No. 44548–MN1307–5030, dated July 5, 2013.)

7.) Property is subject to Easement as described in Warranty Deed and

Easement made by Sisters of St. Joseph of Carondelet, St. Paul Province, a corporation under the laws of Minnesota to Standard Oil Company, an Indiana Corporation dated 6/24/1955 recorded on 6/28/1955 in Book 2048 Page 516 Instrument No. 2949997.

This document describes a 30' wide easement and is as shown on the survey.

8.) Easement by St. Margaret's Academy, a religious corporation under the laws of the State of Minnesota to City of Minneapolis, a municipal corporation, dated 11/12/1965 recorded 12/22/1965 in Book 2527 Page 385 in Instrument No: 3582523.

This document describes a 30' wide storm and sewer easement in the northeast corner of the parent parcel, which does not affect the proposed site; therefore it is not shown on the survey.

PROPOSED LEASE AREA "A" DESCRIPTION:

That part of the Northeast Quarter of Section 29, Township 29 North, Range 24 West of the Fourth Principal Meridian, described as follows:

Commencing at the northwest corner of said Northeast Quarter; thence North 89 degrees 54 minutes 16 seconds East along the North line of said Northeast Quarter, a distance of 210.86 feet; thence South 0 degrees 05 minutes 44 seconds East, a distance of 1684.31 feet to the Point of Beginning of the lease area to be described; thence South 0 degrees 00 minutes 00 seconds East, a distance of 20.00 feet; thence South 90 degrees 00 minutes 00 seconds East, a distance of 30.00 feet; thence North 0 degrees 00 minutes 00 seconds West, a distance of 20.00 feet; thence North 90 degrees 00 minutes 00 seconds West, a distance of 30.00 feet to the Point of Beginning.

PROPOSED LEASE AREA "B" DESCRIPTION:

That part of the Northeast Quarter of Section 29, Township 29 North, Range 24 West of the Fourth Principal Meridian, described as follows:

Commencing at the northwest corner of said Northeast Quarter; thence North 89 degrees 54 minutes 16 seconds East along the North line of said Northeast Quarter, a distance of 225.37 feet; thence South 0 degrees 05 minutes 44 seconds East, a distance of 1612.66 feet to the Point of Beginning of the lease area to be described; thence South 0 degrees 00 minutes 00 seconds East, a distance of 10.00 feet; thence South 90 degrees 00 minutes 00 seconds East, a distance of 10.00 feet; thence North 0 degrees 00 minutes 00 seconds West, a distance of 10.00 feet; thence North 90 degrees 00 minutes 00 seconds West, a distance of 10.00 feet to the Point of Beginning.

PROPOSED UTILITY EASEMENT DESCRIPTION:

A 10.00 foot wide easement for utility purposes over, under and across the Northeast Quarter of Section 29, Township 29 North, Range 24 West of the Fourth Principal Meridian, the centerline of said easement is described as follows:

Commencing at the northwest corner of said Northeast Quarter; thence North 89 degrees 54 minutes 16 seconds East along the North line of said Northeast Quarter, a distance of 210.86 feet; thence South 0 degrees 05 minutes 44 seconds East, a distance of 1684.31 feet; thence South 0 degrees 00 minutes 00 seconds East, a distance of 20.00 feet; thence South 90 degrees 00 minutes 00 seconds East, a distance of 6.00 feet; thence South 0 degrees 00 minutes 00 seconds East, a distance of 24.14 feet; thence South 29 degrees 14 minutes 37 seconds East, a distance of 65.42 feet to the Point of Beginning of the centerline to be described; thence continue South 29 degrees 14 minutes 37 seconds East, a distance of 46.29 feet; thence North 89 degrees 39 minutes 07 seconds East, a distance of 452.54 feet; thence South 39 degrees 53 minutes 17 seconds East, a distance of 221.30 feet; thence South 89 degrees 39 minutes 36 seconds East, a distance of 8.84 feet to the West right of way line of Mount View Avenue and said centerline there terminating.

The centerline of said easement shall be shortened or lengthened to terminate at said West right of way line of Mount View Avenue.

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Line "A" is described as follows:

Commencing at the northwest corner of said Northeast Quarter; thence North 89 degrees 54 minutes 16 seconds East along the North line of said Northeast Quarter, a distance of 225.37 feet; thence South 0 degrees 05 minutes 44 seconds East, a distance of 1612.66 feet; thence South 0 degrees 00 minutes 00 seconds East, a distance of 10.00 feet to the Point of Beginning of the line to be described; thence South 90 degrees 00 minutes 00 seconds East, a distance of 10.00 feet and said line there terminating.

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The sidelines of said easement shall be shortened or lengthened to terminate a said West right of way line of Mount View Avenue.

SHEET 1 OF 2 SHEETS

at&t
4300 MARKET POINTE DRIVE, SUITE 350
BLOOMINGTON, MINNESOTA 55435

SITE ID NUMBER: MPLSMNU1049

SITE NAME:

BASSETTS CREEK PARK

256 Upton Ave. S
Minneapolis, MN 55405

No.	Date	REVISIONS	By	CHK	APP'D

FIELD WORK: 7/31/13 | CHECKED BY: BTB | DRAWN BY: JMB/SMK/THD

I HEREBY CERTIFY THAT THIS DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MINNESOTA.

SIGNATURE: Bryan T. Balcome
BRYAN T. BALCOME, L.S.

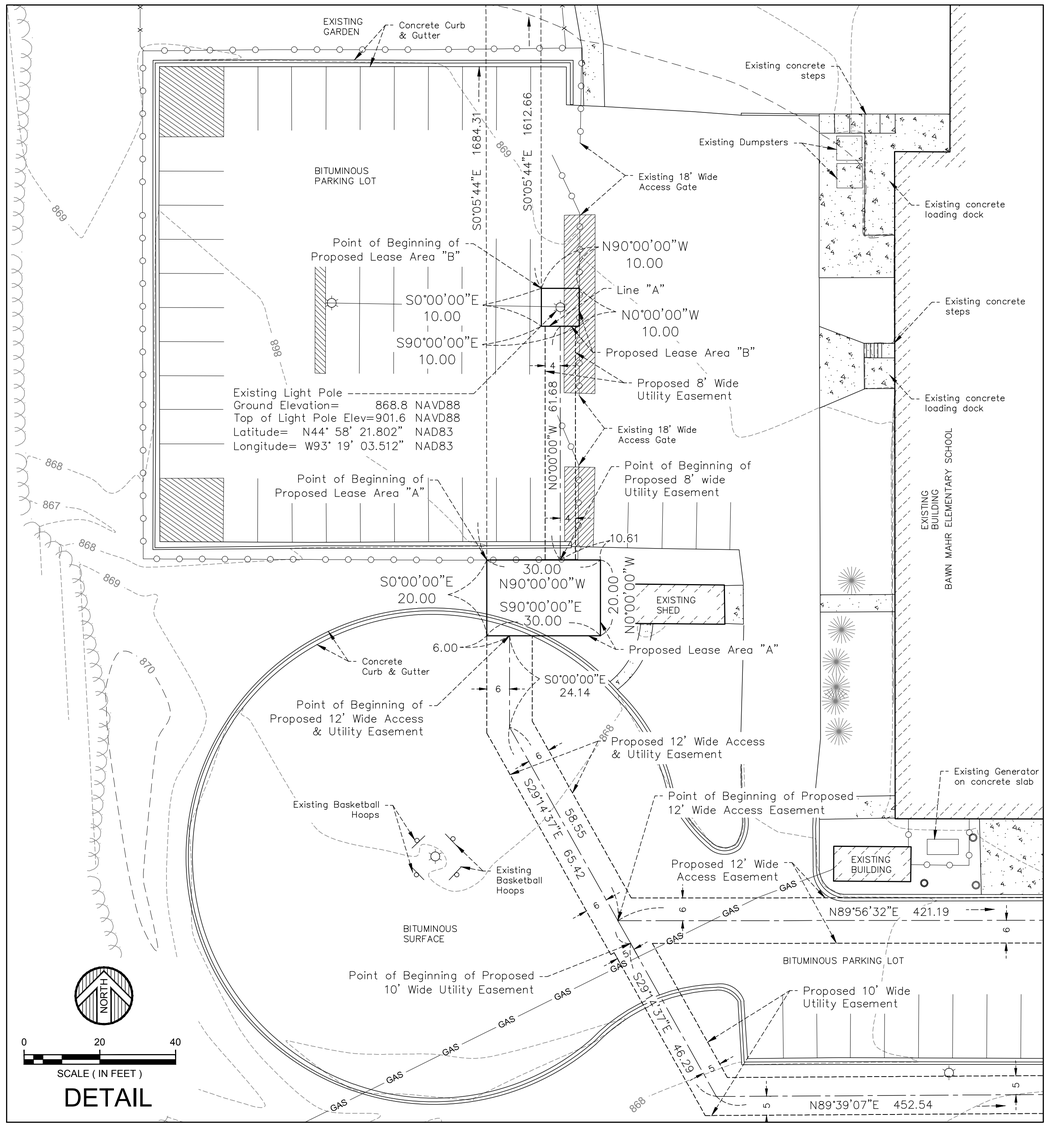
DATE: 3/27/14 LICENSE # 42594

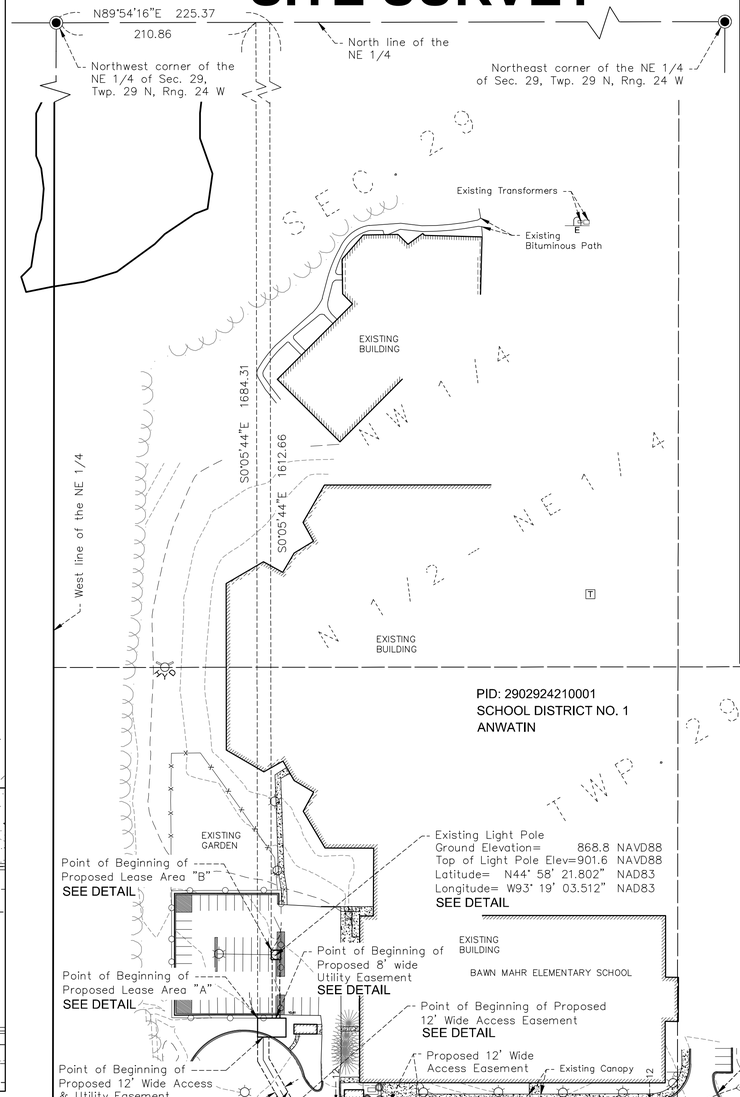
FULL SCALE ON 22"x34"
HALF SCALE ON 11"x17"

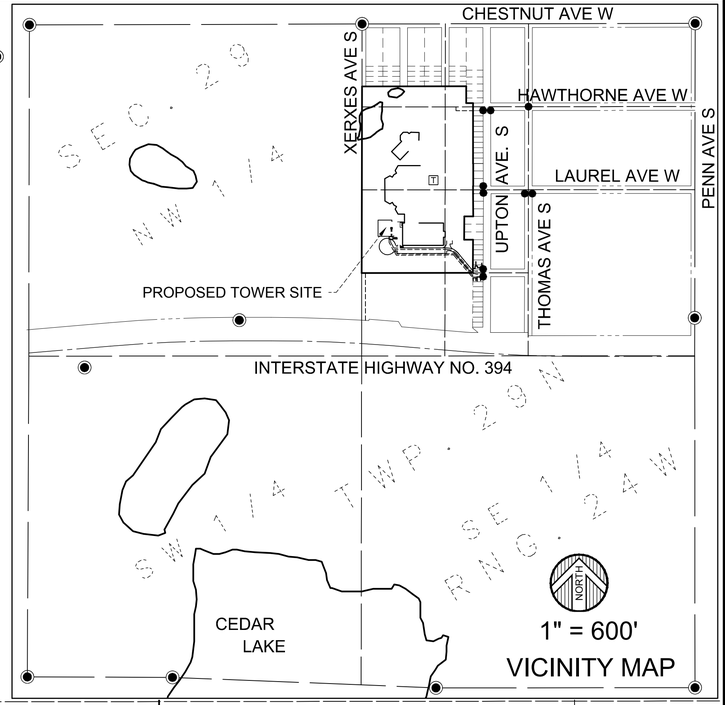
0494A790.001

WIDSETH SMITH NOLTING
Engineering
Architecture
Surveying
Environmental

SITE SURVEY







LEGEND

GUARD POST		WIRE FENCE	
TELE PEDESTAL		FENCE CHAIN LINK	
ELEC POLE		OVERHEAD ELECTRIC	
WATER HYDRANT		EDGE OF WOODS	
ELEC LIGHT POLE		BOUNDARY LINE	
SHRUB		RIGHT OF WAY LINE	
SIGN SINGLE POST		EASEMENT LINE	
ELEC METER		LOT LINE	
TREE CONIFER		SECTION LINE	
CONCRETE SURFACE		QUARTER LINE	
		SIXTEENTH LINE	

SURVEYOR NOTE:

Utilities are per observed evidence and from markings per GOPHER STATE ONE CALL Locate Request Ticket No. 132054076, dated July 24, 2013.

SHEET 2 OF 2 SHEETS

at&t
4300 MARKET POINTE DRIVE, SUITE 350
BLOOMINGTON, MINNESOTA 55435

SITE ID NUMBER: MPLSMNU1049

SITE NAME:

BASSETTS CREEK PARK

256 Upton Ave. S
Minneapolis, MN 55405

No.	Date	REVISIONS	By	CHK	APP'D

FIELD WORK: 7/31/13 | CHECKED BY: BTB | DRAWN BY: JMB/SMK/THD

I HEREBY CERTIFY THAT THIS DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MINNESOTA.

SIGNATURE: Bryan T. Balcome
BRYAN T. BALCOME, L.S.
DATE: 3/27/14 LICENSE # 42594

FULL SCALE ON 22"x34"
HALF SCALE ON 11"x17"

0494A790.001

WIDSETH SMITH NOLTING
Engineering
Architecture
Surveying
Environmental

AT&T MOBILITY

PROJECT: NSB - RAW LAND, STEALTH
AT&T SITE ID: MPLSMNU1049
AT&T FA#: 11661095

BASSETTS CREEK PARK
MINNEAPOLIS, MN 55404

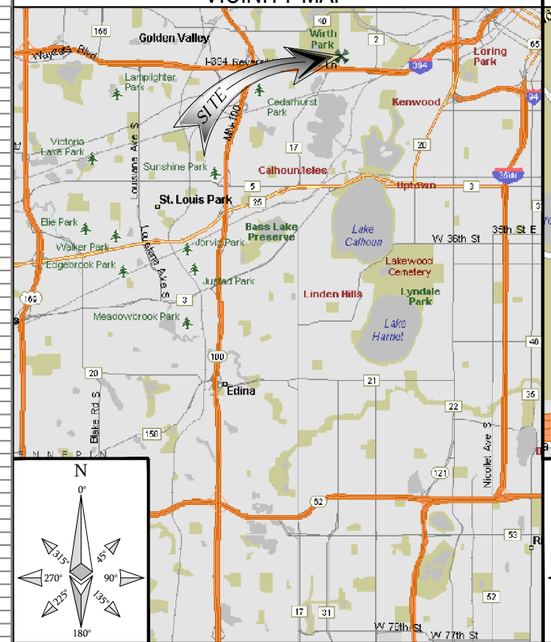
SITE PHOTO

PROJECT INFORMATION

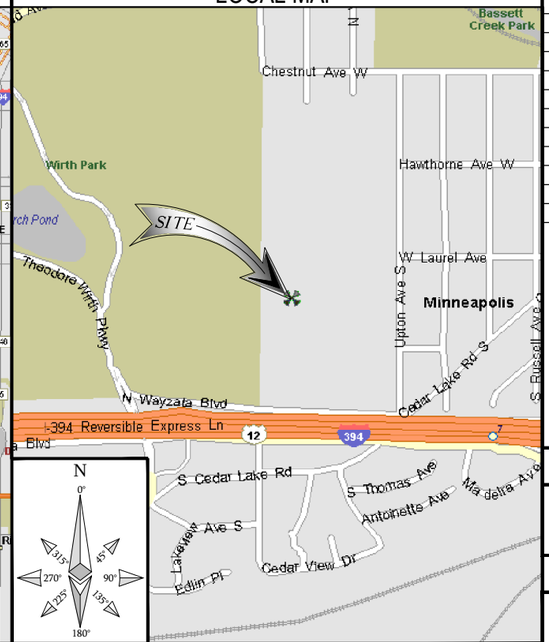
SITE ADDRESS:	252 UPTON AVE SOUTH MINNEAPOLIS, MN 55404
COUNTY	HENNEPIN
SITE NAME:	BASSETTS CREEK PARK
SITE NUMBER	MPLSMNU1049
FA NUMBER:	11661095
USID NUMBER:	143346
LATITUDE (NAD 83):	44° 58' 21.81" N
LONGITUDE (NAD 83):	93° 19' 3.518" W
GROUND ELEVATION:	869' ASL
ZONING DISTRICT:	RESIDENTIAL, R-1
TOWER OWNER:	TBD – –
GROUND OWNER:	MINNEAPOLIS PUBLIC SCHOOLS 1250 W. BROADWAY MINNEAPOLIS, MN 55411
LANDLORD CONTACT:	CHAD.CARR@MPLS.K12.MN.US
POWER COMPANY:	XCEL ENERGY
TELEPHONE COMPANY:	CENTURYLINK
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	V-B
SITE ACQUISITION MANAGER:	MATT NICKEL: SAC WIRELESS 847-466-3488 MATTHEW.NICKEL@SACW.COM
CONSTRUCTION MANAGER:	JOSEPH FISHER: SAC WIRELESS 605-366-8738 JOSEPH.FISHER@SACW.COM
ARCHITECT:	NESTOR POPOWYCH: SAC WIRELESS NESTOR.POPOWYCH@SACW.COM 847-944-1651
PROJECT MANAGER:	DOUGLAS BROWN db099p@att.com 309-531-2278 cell 952-656-9224 ofc
APPLICANT:	AT&T MOBILITY
CONTACT:	DOUGLAS BROWN

AREA MAP

VICINITY MAP



LOCAL MAP



NO SCALE

DRIVING DIRECTIONS

DIRECTIONS FROM AT&T OFFICE:
GO SOUTH ON JOHNSON AVENUE S, NORTH EAST 77TH ST, TURN RIGHT ONTO MN -100 N, TAKE RAMP ONTO I-394 E, TAKE EXIT 7 FOR PENN AVE, TURN LEFT ONTO PENN AVE, TURN LEFT ONTO CEDAR LAKE RD S, TURN RIGHT ONTO W. LAUREL AVE, TURN RIGHT ONTO UPTON AVE S, SITE IS ON THE LEFT. PROPSOED LIGHT POLE REPLACEMENT IN ON SW SIDE OF SCHOOL, IN TEACHER PARKING LOT

ENGINEERING

2006 INTERNATIONAL BUILDING CODE
2008 NATIONAL ELECTRIC CODE
TIA/EIA-222-F

DRAWING INDEX

SHEET NO:	SHEET TITLE
COVER	TITLE PAGE
A-1	OVERALL SITE PLAN
A-2	COMPOUND PLAN
A-3	SHELTER PLAN
A-4	SHELTER DETAILS
A-5	SHELTER FOUNDATION
A-6	DETAILS
T-1	TOWER ELEVATIONS
T-2	TOWER ELEVATIONS
T-3	ANTENNA CONFIGURATION
T-4	ANTENNA MOUNTING & RRH REQUIREMENTS
T-5	COAX COLOR CODING
T-6	TOWER EQUIPMENT DETAILS
E-1	ELECTRICAL PLAN
E-2	ELECTRICAL SHELTER PLAN
E-3	ELECTRICAL DETAILS
E-4	DC CIRCUIT DIAGRAM
E-5	TELCO INTERFACE
E-6	ELECTRICAL AC ONE-LINE DIAGRAM
E-7	GROUNDING PLAN
E-8	ANTENNA GROUNDING PLAN
E-9	GROUNDING DETAILS
E-10	GROUNDING DETAILS
E-11	GROUNDING DETAILS
E-12	ELECTRICAL SECTION NOTES
N-1	GENERAL NOTES
N-2	SITE SECTION NOTES
N-3	SITE SECTION NOTES
N-4	TOWER SECTION NOTES
N-5	SIGNAGE DETAILS
RF1	RFDS PLUMBING DIAGRAM

RFDS (RADIO FREQUENCY DATA SHEET) DATED

DATE:03/20/2014 RAD CENTER:71'&63'

11"x17" PLOT WILL BE HALF SCALE UNLESS OTHERWISE NOTED

TO OBTAIN LOCATION OF PARTICIPANTS UNDERGROUND FACILITIES BEFORE YOU DIG IN MINNESOTA, CALL GOPHER STATE ONE CALL

TOLL FREE: 1-800-252-1166 OR
FAX A LOCATE: 1-800-236-4967

MIN STATUTE REQUIRES MIN OF 48 HOURS NOTICE BEFORE YOU EXCAVATE

-THESE PLANS ADHERE TO ALL OF THE REQUIREMENTS CALLED OUT IN THE JURISDICTION PLANNING AND ZONING FOR ANTENNAS AND SUPPORT STRUCTURES WHERE SITE IS LOCATED.
-SUBCONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING CONDITIONS ON SITE. IMMEDIATELY NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO PERFORMING ANY WORK OR BE RESPONSIBLE FOR THE SAME

at&t
2630 LIBERTY AVENUE
PITTSBURGH, PA 15222

A E
SAC WIRELESS
ENGINEERING GROUP
1501 E. WOODFIELD ROAD, SUITE 300E
SCHAUMBURG, IL 60173
847.944.1600

SITE ID:	MPLSMNU1049
DRAWN BY:	KMR
CHECKED BY:	GP

REV	DATE	DESCRIPTION
0	03/25/14	ISSUED FOR CONSTRUCTION
B	02/27/14	90 % ISSUED FOR CONSTRUCTION
A	01/31/14	ISSUED FOR REVIEW

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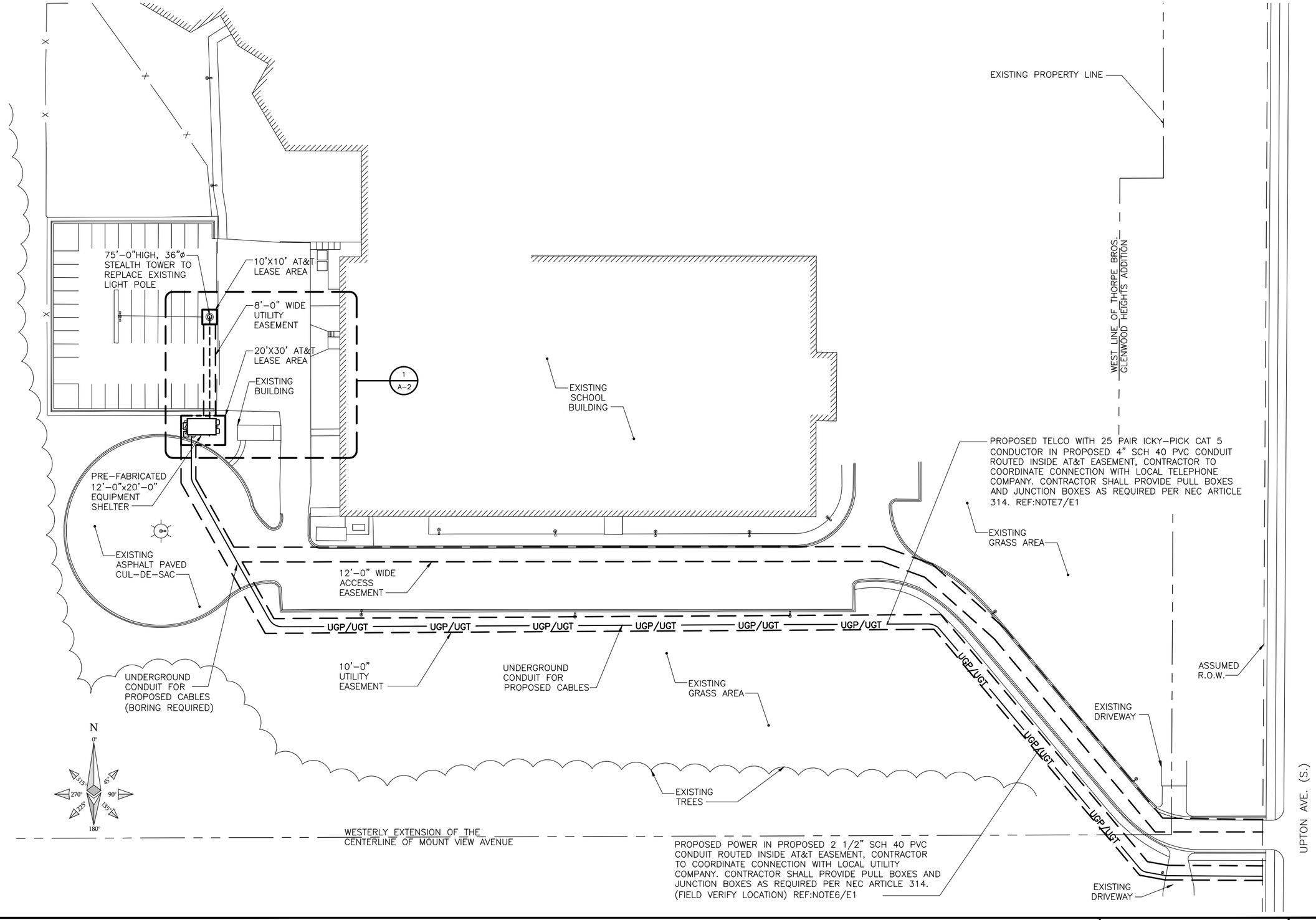
PRINT NAME: NESTOR POPOWYCH
SIGNATURE:
DATE: 02/05/2014 LICENSE # 47725

MPLSMNU1049_143346
BASSETTS CREEK PARK
252 UPTON AVENUE SOUTH
MINNEAPOLIS, MN 55405
NSB - RAWLAND

SHEET TITLE
TITLE SHEET

SHEET NUMBER
COVER



OVERALL SITE PLAN

32' 24' 16' 8' 0 32' 64'

1/32"=1'-0"

1

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PITTSBURGH, PA 15222

A□E

WIRELESS ENGINEERING GROUP

1501 E. WOODFIELD ROAD, SUITE □300E
SCHAUMBURG, IL 60173
□□□□sa□□,□o□
847□944□1600

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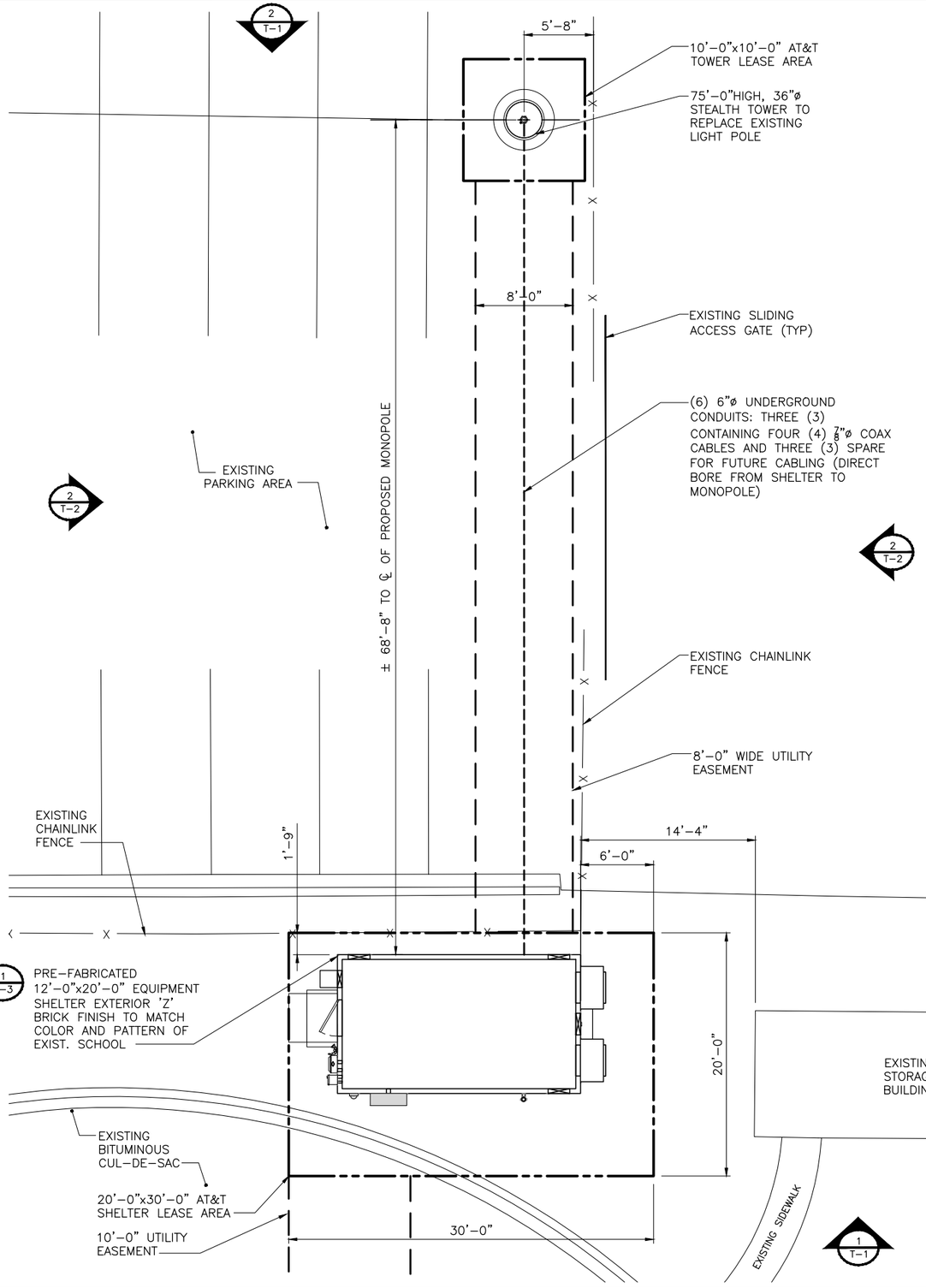
NSB – RAWLAND

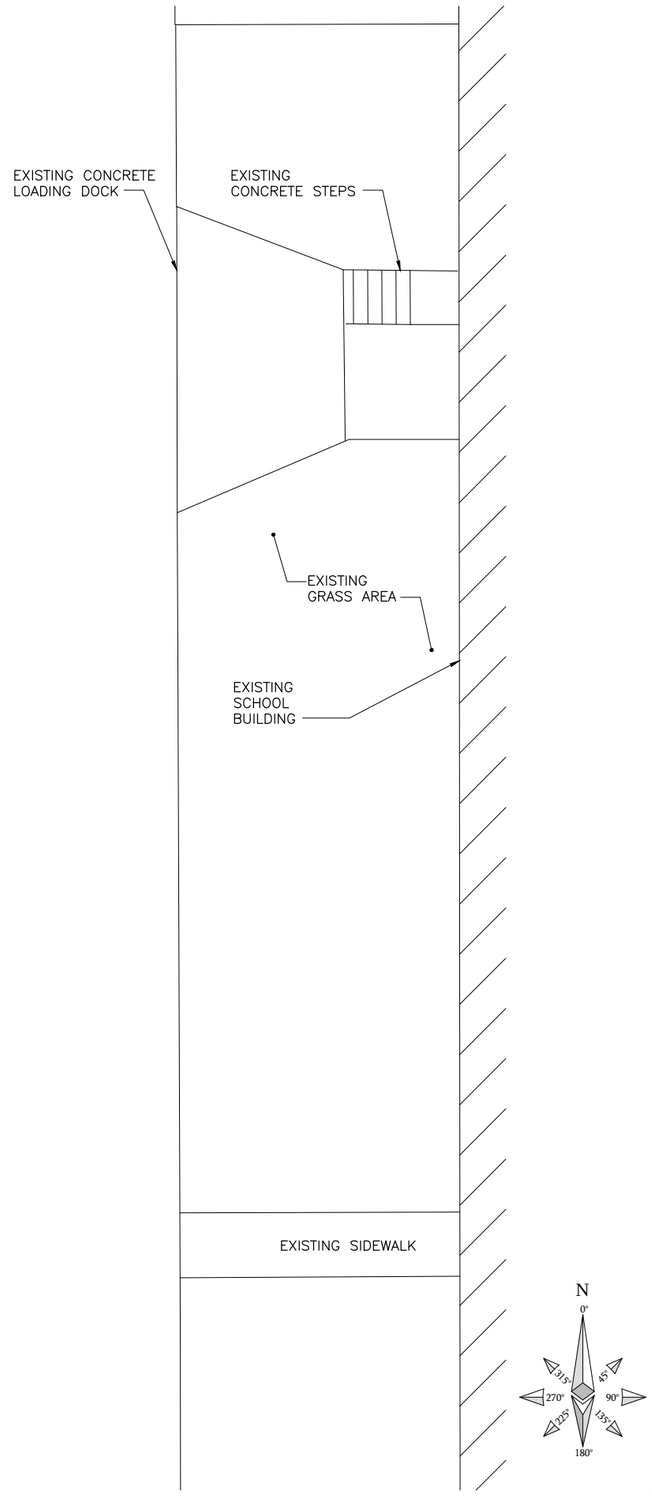
SHEET TITLE

OVERALL SITE PLAN

SHEET NUMBER

A-1





COMPOUND PLAN

6' 4' 2' 0 5' 10'

3/16"=1'-0"

1

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A□E

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ENGINEERING GROUP

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SCHAUMBURG, IL 60173
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252 UPTON AVENUE SOUTH
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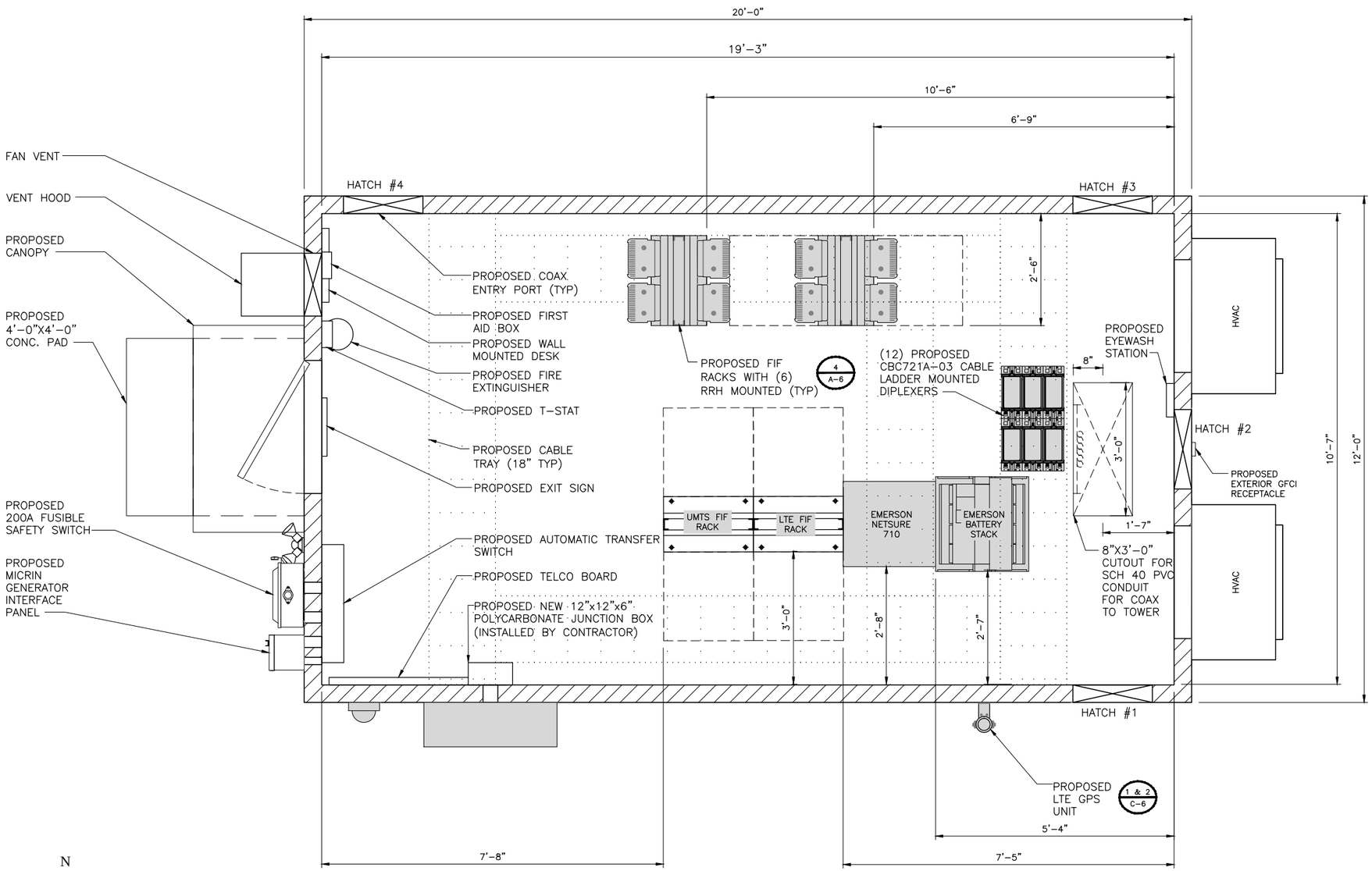
NSB – RAWLAND

SHEET TITLE

COMPOUND PLAN

SHEET NUMBER

A-2



1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. CONTRACTOR SHALL MAINTAIN A 10'-0" MINIMUM SEPARATION BETWEEN THE PROPOSED GPS ANTENNAS AND TRANSMITTING ANTENNAS.
3. AT&T TO VERIFY REQUIRED SHELTER EQUIPMENT.

SHELTER PLAN

12" 6" 0 1' 2' 3'
3/4"=1'-0"

1

NOTES

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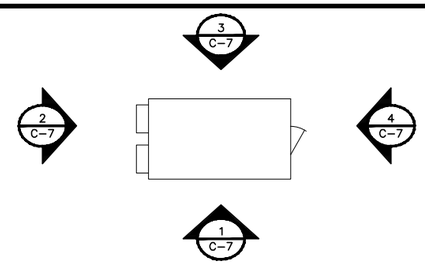
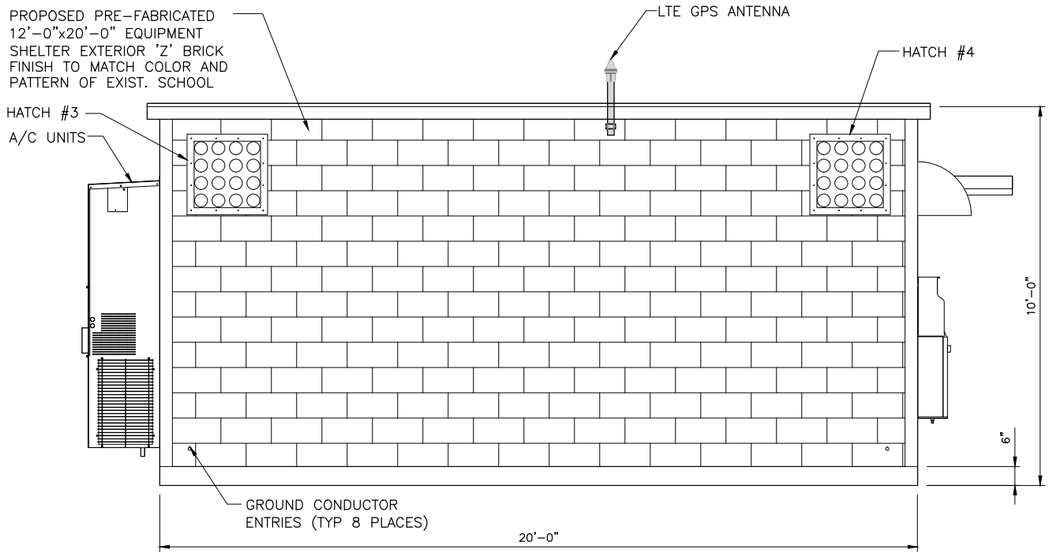
SHEET TITLE
SHELTER PLAN

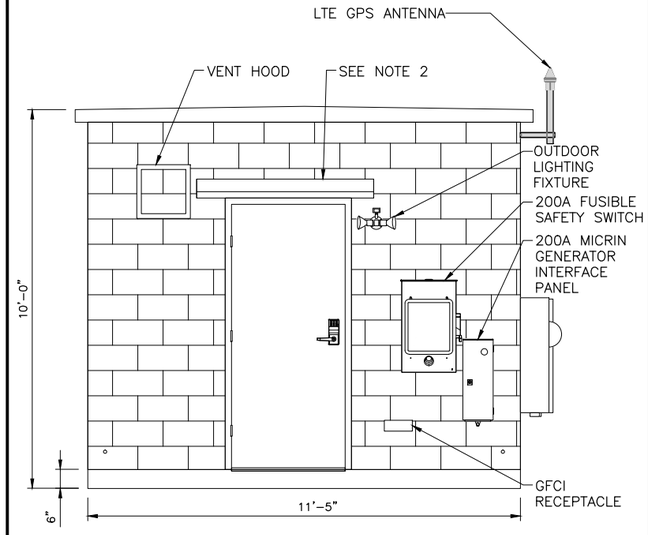
SHEET NUMBER
A-3



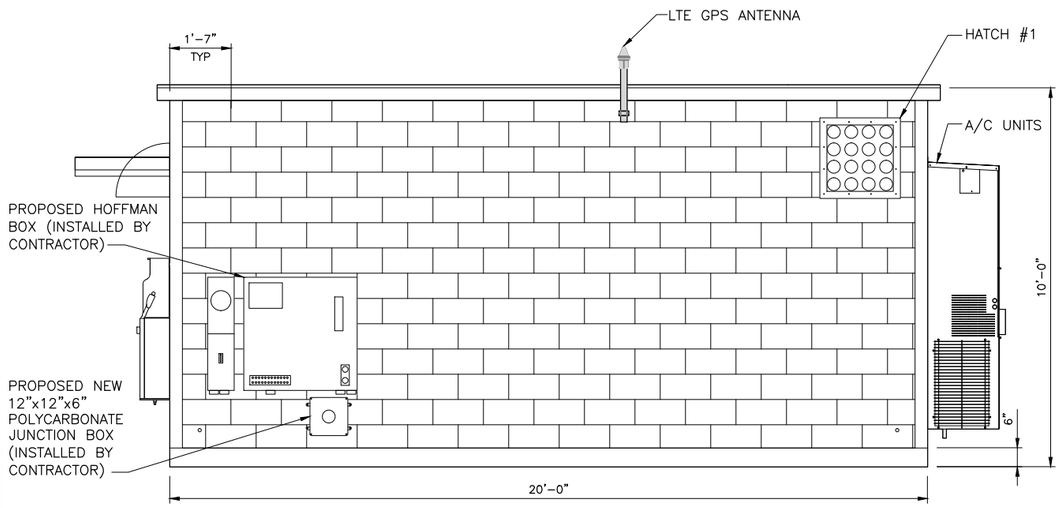
SHELTER ELEVATION KEY



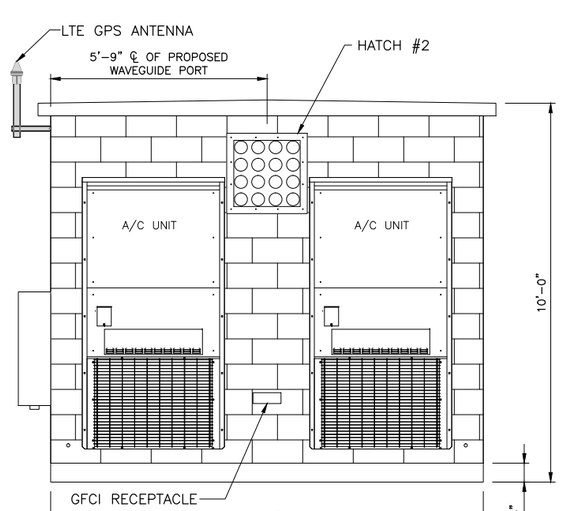
ELEVATION FRONT — 12" 6" 0 1' 2' 3' 4' 5" — 1/2"=1'0" — 1



ELEVATION LEFT — 12" 6" 0 1' 2' 3' 4' 5" — 1/2"=1'0" — 2



ELEVATION BACK — 12" 6" 0 1' 2' 3' 4' 5" — 1/2"=1'0" — 3



ELEVATION RIGHT — 12" 6" 0 1' 2' 3' 4' 5" — 1/2"=1'0" — 4

NOTES

1. ALL HATCH PORTS ARE SHIPPED WITH BLANK COVER PLATES. COAX HATCH PLATE IS SHIPPED LOOSE WITH SHELTER AND INSTALLED BY GENERAL CONTRACTOR.
2. GROUND BAR AND CANOPY ARE SHIPPED LOOSE WITH SHELTER AND INSTALLED BY GENERAL CONTRACTOR.
3. SHELTER WILL HAVE STANDARD BROWN AGGREGATE EXTERIOR.
4. NO FISH PAPER REQUIRED UNDER COAX (FEEDLINES, JUMPERS, WAVEGUIDE), RET CABLE.
5. NO FISH PAPER REQUIRED UNDER TELCO WIRES, COPPER, FIBER, ETHERNET, ALARM WIRING.
6. DC CABLING, JUMPERS AND TELCO MUST WATERFALL OVER THE SIDE OF LADDER RACKING, NOT THROUGH THE LADDER RUNGS.
7. VERTICAL DC CABLING SHALL BE SECURED TO LADDER RACKING USING (2) CROSSING ZIP TIES PER TIE JOINT.
8. ALL CABLING SHALL USE (2) CROSSING ZIP TIES AT LAST TIE POINT BEFORE WATERFALLING OVER SIDE OF RACKING.
9. IF UNDERSIDE OF LADDER RACKING NEEDS TO BE USED, CONTRACTOR SHALL INSTALL L-BRACKETS TO SUPPORT NEW CABLING, SECURED AS NOTED ABOVE.
10. JUMPERS CAN DIVE THROUGH LADDER RACKING AT DIPLEXER'S ONLY.

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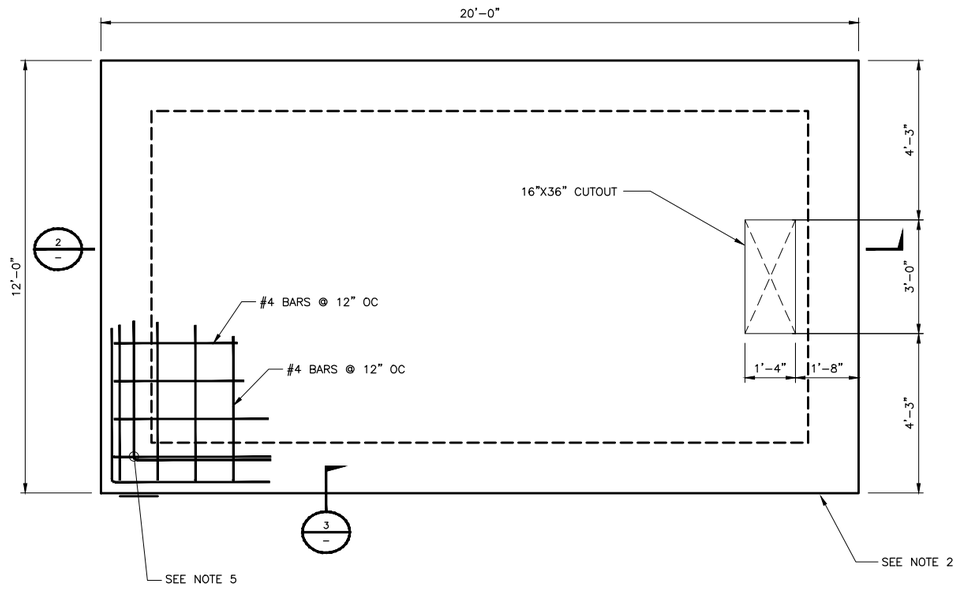
BASSETTS CREEK PARK
252 UPTON AVENUE SOUTH
MINNEAPOLIS, MN 55405
NSB - RAWLAND

SHEET TITLE

SHELTER DETAILS

SHEET NUMBER

A-4



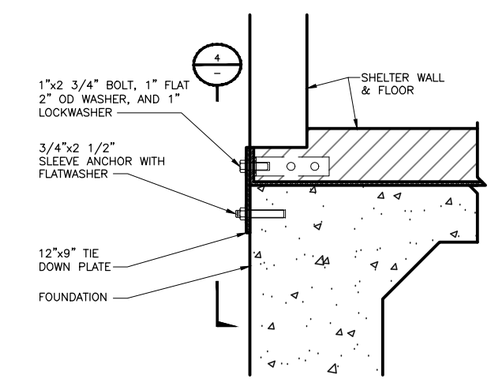
SHELTER FOUNDATION PLAN

12" 6" 0 1' 2' 3' 4' 5"
1/2"=1'-0"

1

1. THIS EXISTING FOUNDATION DETAIL HAS BEEN DESIGNED FOR SOILS HAVING A BEARING CAPACITY OF 2,000 PSF OR GREATER. THE CONTRACTOR SHALL REVIEW THE GEOTECHNICAL REPORT AND VERIFY SOIL BEARING CAPACITY PRIOR TO BEGINNING CONSTRUCTION. ANY ISSUES OR CONCERNS SHOULD BE BROUGHT TO THE ENGINEER'S ATTENTION BEFORE PROCEEDING WITH WORK.
2. ALL TIE-DOWN MATERIALS PROVIDED BY SHELTER MANUFACTURER AND INSTALLED BY CONTRACTOR. FOLLOW MANUFACTURER'S REQUIREMENTS AND RECOMMENDATIONS FOR INSTALLATION.
3. ALL CONCRETE ON THIS DRAWING SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI.
4. BOTTOM OF FOUNDATION SHALL BE 3'-6" OR 6" BELOW FROST LINE, WHICHEVER IS GREATER, AND BEAR ON UNDISTURBED SOIL.
5. GROUNDING REINFORCEMENT: EXTEND TWO (2) #2 AWG CONDUCTORS FROM REINFORCING BARS IN CONCRETE SLAB OR FOOTINGS, ROUTE CONDUCTORS TO GROUNDING RING AND TERMINATE USING EXOTHERMIC WELDS NEC 250.52(A)(3).OR HYDRAULIC COMPRESSION CONNECTIONS SUCH AS "BURNDY HYGROUND" MAY BE USED IN AN EXTERIOR APPLICATION FOR CONDUCTOR TO CONDUCTOR CONNECTIONS BELOW GRADE WHERE EXOTHERMIC WELDS ARE NOT PRACTICAL AND ON ROOFTOP SITES WHERE EXOTHERMIC WELDS MAY BE A FIRE HAZARD.
6. INSTALL 2" THICK EXTERIOR GRADE INSULATION MIN. R-10 AROUND THE PERIMETER OF THE FOUNDATION TO A 3'-6" OR 6" BELOW FROST LINE, WHICHEVER IS GREATER, IN ACCORDANCE WITH THE MINNESOTA CHAPTER 1323 COMMERCIAL ENERGY CODE. SUPPLY AND INSTALLATION OF THE INSULATION IS THE RESPONSIBILITY OF THE SITE CONTRACTOR.

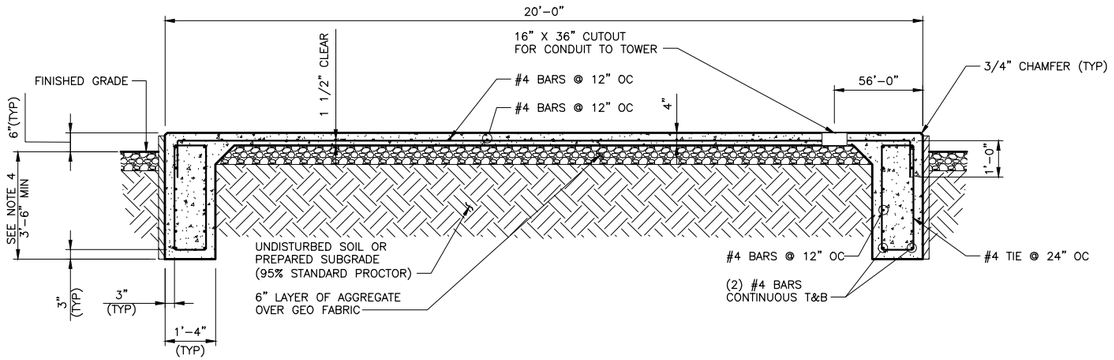
NOTES



SECTION 2 TIE DOWN DETAIL

12" 9" 6" 3" 0 1'
1 1/2"=1'-0"

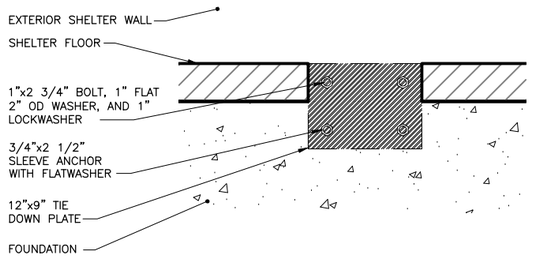
3



SECTION 1

12" 6" 0 1' 2' 3' 4' 5"
1/2"=1'-0"

2



SECTION 2 TIE DOWN DETAIL

12" 9" 6" 3" 0 1'
1 1/2"=1'-0"

4

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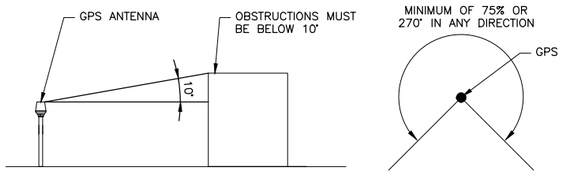
MINNEAPOLIS, MN 55405
NSB - RAWLAND

SHEET TITLE
SHELTER FOUNDATION

SHEET NUMBER
A-5

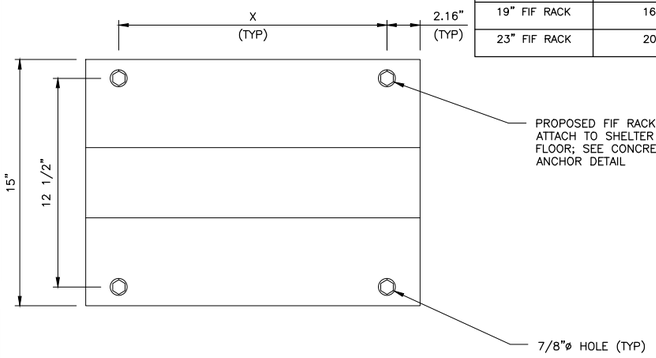
NOTES

1. IT IS CRITICAL THAT THE GPS ANTENNA IS MOUNTED SUCH THAT IT IS WITHIN 2 DEGREES OF VERTICAL AND THE BASE OF THE ANTENNA IS WITHIN 2 DEGREES OF LEVEL.
2. DO NOT SWEEP TEST GPS ANTENNA.
3. PLACE PROPOSED GPS ANTENNA A MIN. OF 10' (3 METER) HORIZONTALLY FROM ALL EXISTING TRANSMITTING ANTENNAS.
4. THE GPS ANTENNA MOUNT IS DESIGNED TO FASTEN TO A STANDARD 3/4" DIAMETER, SCHEDULE 40, GALVANIZED STEEL OR STAINLESS STEEL PIPE. THE PIPE MUST NOT BE THREADED AT THE ANTENNA MOUNT END. THE PIPE SHALL BE CUT TO THE REQUIRED LENGTH (MINIMUM OF 18") USING A HAND OR ROTARY PIPE CUTTER TO ASSURE A SMOOTH AND PERPENDICULAR CUT. A HACK SAW SHALL NOT BE USED. THE CUT PIPE END SHALL BE DEBURRED AND SMOOTH EDGES IN ORDER TO SEAL AGAINST THE NEOPRENE GASKET ATTACHED TO THE ANTENNA MOUNT.

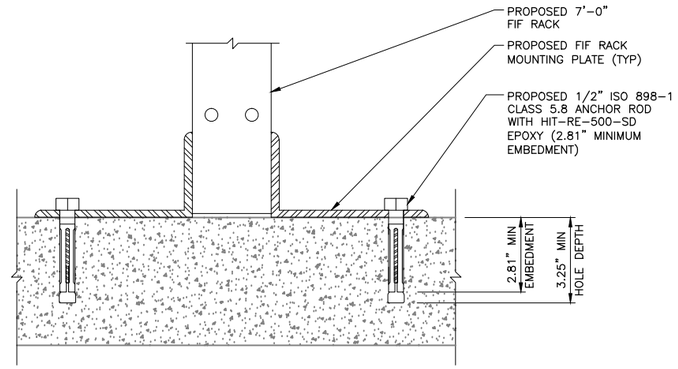


GPS SPECIFICATIONS | NO SCALE | 1

FIF RACK BOLT SPACING	
FIF RACK SIZE	X
19" FIF RACK	16"
23" FIF RACK	20"



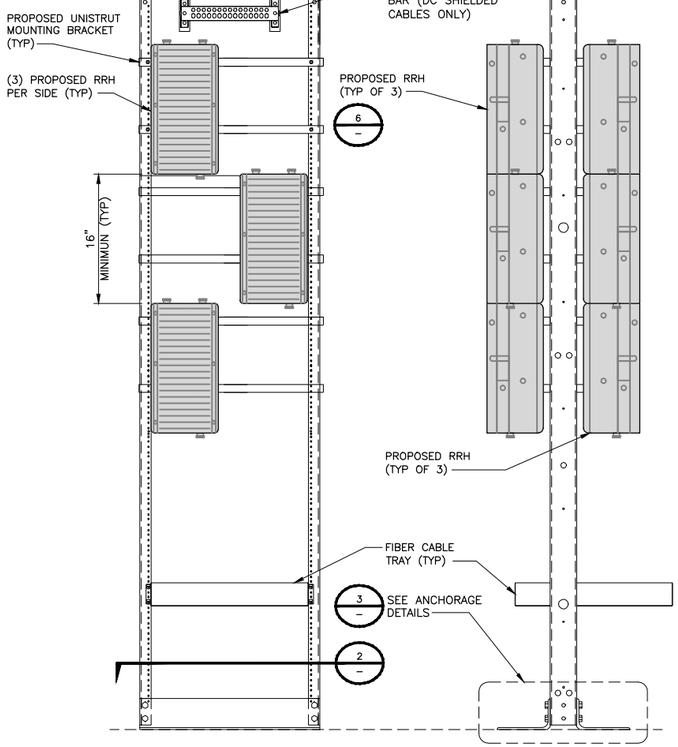
FIF RACK ANCHORAGE DETAIL | NO SCALE | 2



CONCRETE ANCHORAGE DETAIL | NO SCALE | 3

NOTE

1. MINIMUM SPACING BETWEEN EQUIPMENT WITHIN THE RACK SHALL BE ONE RACK UNIT (OR APPROXIMATELY 3").



*MAXIMUM WEIGHT CAPACITY: 1200 lbs

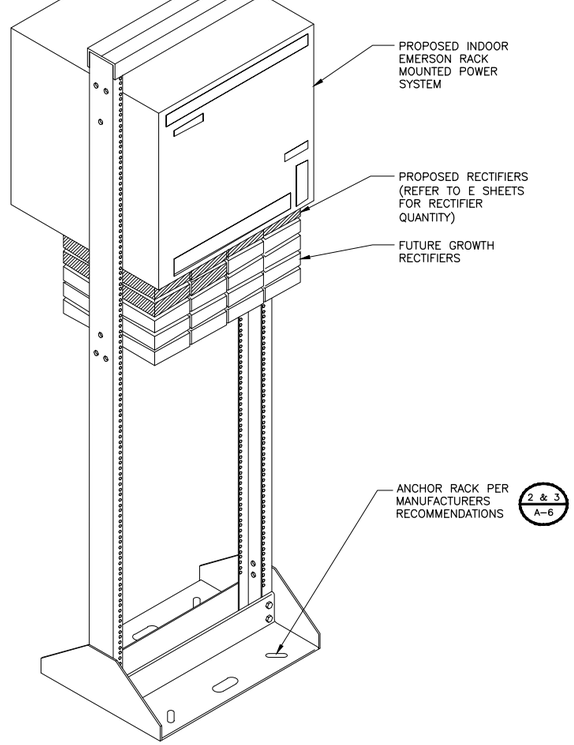
23" FIF RACK DETAIL W/ RRH | NO SCALE | 4

MINIMUM BENDING RADIUS				
SIZE	VENDOR	MODEL	MINIMUM SINGLE BEND (IN)	MINIMUM REPEAT BEND (IN)
7/8"	ANDREW	AVA5-50	5	10
	ANDREW	VLX5-50	3.5	5
	COMMSCOPE	CR 1070	8	N/A
	COMMSCOPE	FXL 1070-1	5	N/A
	RFS	LCF78-50JA	5	10
1 1/4"	ANDREW	LDF6-50	6	15
	ANDREW	VXL6-50	5	8
	COMMSCOPE	CR 1480	11	N/A
	COMMSCOPE	FXL 1480-1	8	N/A
	RFS	LCF114-50JA		
1 5/8"	ANDREW	AVA7-50	8	1
	ANDREW	VXL7-50	7.5	15
	COMMSCOPE	CR 1873	15	N/A
	COMMSCOPE	FXL 1873	11	N/A
	RFS	LCF158-50JA	8	20
2 1/4"	ANDREW	LDF12-50	9.5	22
	RFS	LCF214-50JA	11	22
AWG #6			8	8

BENDING RADIUS | NO SCALE | 5

EMERSON POWER BAY NOTE

CONTRACTOR TO ADD ALARM WIRING FROM EMERSON POWER BAY TO ALARM BLOCK ON TELCO BOARD.



*MAXIMUM WEIGHT CAPACITY: 1200 lbs

PROPOSED INDOOR EMERSON POWER BAY | NO SCALE | 6

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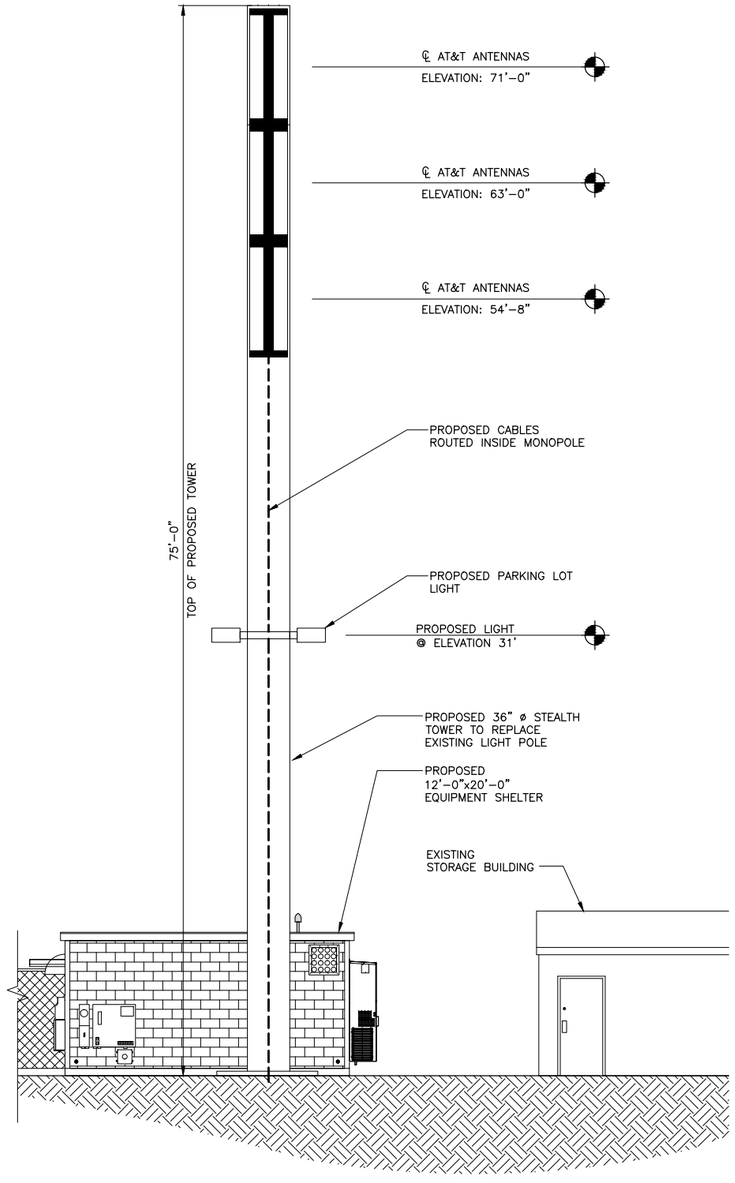
SHEET TITLE

DETAILS

SHEET NUMBER

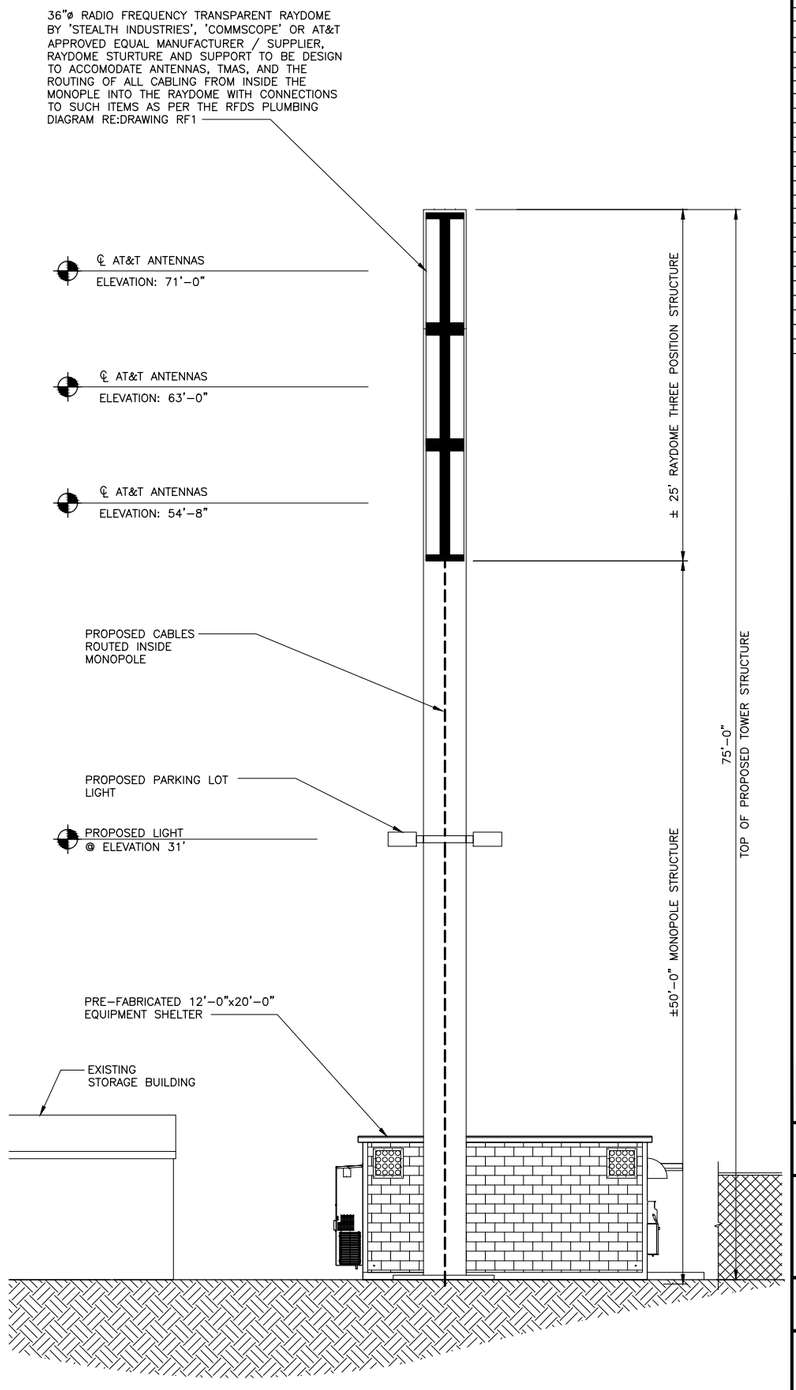
A-6



PROPOSED SOUTH TOWER ELEVATION

6' 4' 2' 0 5' 10'
3/16"=1'-0"

1



PROPOSED NORTH TOWER ELEVATION

6' 4' 2' 0 5' 10'
3/16"=1'-0"

2

THIS IS NOT AN ALL INCLUSIVE LIST. CONTRACTOR SHALL UTILIZE SPECIFIED EQUIPMENT PART OR ENGINEER APPROVED EQUIVALENT. CONTRACTOR SHALL VERIFY ALL NEEDED EQUIPMENT TO PROVIDE A FUNCTIONAL SITE.

THE PROJECT GENERALLY CONSISTS OF THE FOLLOWING:

PROPOSED-SITE
INSTALL (1) 12'-0"X20'-0" FIBERBOND EQUIPMENT SHELTER
INSTALL (1) 75' STEALTH POLE (DESIGNED BY OTHERS)
INSTALL (1) METER PANEL & (1) HOFFMAN BOX
PROPOSED-TOWER
INSTALL (1) STEALTH RAYDOMES
INSTALL (6) QUINTEL QS6658-3 ANTENNAS, 2 PER SECTOR
INSTALL (3) ANDREW E15Z09P94 DTMA'S, 1 PER SECTOR
INSTALL (3) ANDREW E15S09P78 DTMA'S, 1 PER SECTOR
INSTALL (1) QUINTEL P/N AS0093 TRI-SECTOR ANTENNA MOUNTING KIT
INSTALL (8) 7/8" COAX CABLES 1 PER SECTOR
INSTALL (1) RET HR CABLE
PROPOSED-SHELTER
INSTALL (1) EMERSON POWER BAY
INSTALL (1) PROPOSED EMERSON BATTERY STACK
INSTALL (4) 23" FIF RACK(S)
INSTALL (6) RRH LTE 700L P2, 2 PER SECTOR
INSTALL (6) RRH LTE AWS, 2 PER SECTOR
INSTALL (3) RRH UMTS 850, 1 PER SECTOR
INSTALL (3) RRH UMTS 1900, 1 PER SECTOR
INSTALL (12) ANDREW CBC721A-03 DIPLEXERS, 4 PER SECTOR
INSTALL (1) LTE GPS UNIT

GENERAL NOTE

IF PROPOSED ALU-LTE ANTENNA NOT AVAILABLE DURING INITIAL INSTALLATION, UMTS ANTENNA TO BE INSTALLED ON ALU-LTE MOUNT PIPE IN INTERIM AND MOVED TO POSITION SHOWN UPON ALU-LTE ANTENNA INSTALLATION. RRU'S TO REMAIN AS SHOWN.

PROJECT DESCRIPTION

THE EXISTING TOWER SHALL BE ANALYZED TO DETERMINE ITS STRUCTURAL CAPACITY TO CARRY THE PROPOSED COAX AND ANTENNAS. THESE DRAWINGS HAVE BEEN CREATED BASED ON THE ASSUMPTION THAT THE TOWER HAS SUFFICIENT CAPACITY TO SUPPORT THE PROPOSED LOADS. THE STRUCTURAL ANALYSIS IS TO BE COMPLETED BY THE TOWER OWNER, AMERICAN TOWER CORPORATION.

at&t
2630 LIBERTY AVENUE
PITTSBURGH, PA 15222

A□E
WIRELESS
ENGINEERING GROUP
1501 E. WOODFIELD ROAD, SUITE □300E
SCHAUMBURG, IL 60173
□□□□sa□□.□o□
847□944□1600

SITE ID:	MPLSMNU1049
DRAWN BY:	KMR
CHECKED BY:	GP

REV	DATE	DESCRIPTION
O	03/25/14	ISSUED FOR CONSTRUCTION
B	02/27/14	90 % ISSUED FOR CONSTRUCTION
A	01/31/14	ISSUED FOR REVIEW

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PRINT NAME: NESTOR POPOWYCH

SIGNATURE:

DATE: 02/05/2014 LICENSE # 47725

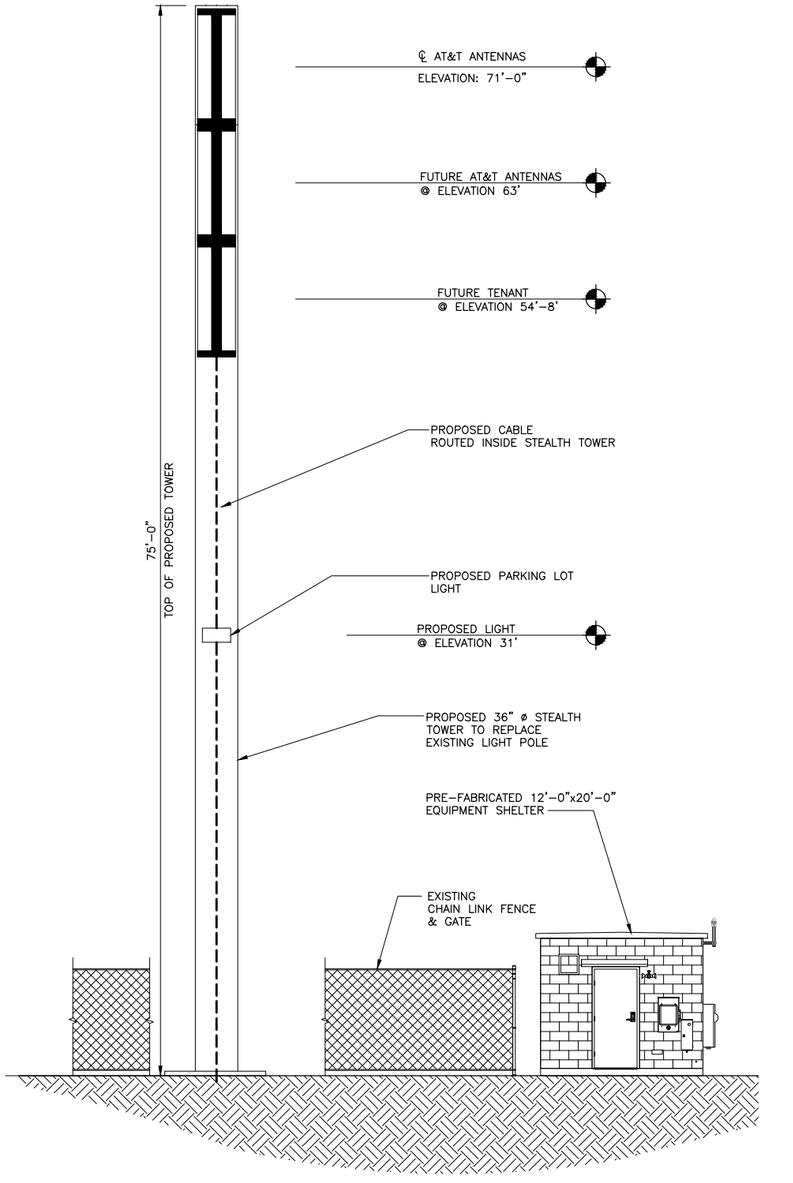
MPLSMNU1049_143346
BASSETTS CREEK PARK
252 UPTON AVENUE SOUTH
MINNEAPOLIS, MN 55405
NSB - RAWLAND

SHEET TITLE

TOWER ELEVATION

SHEET NUMBER

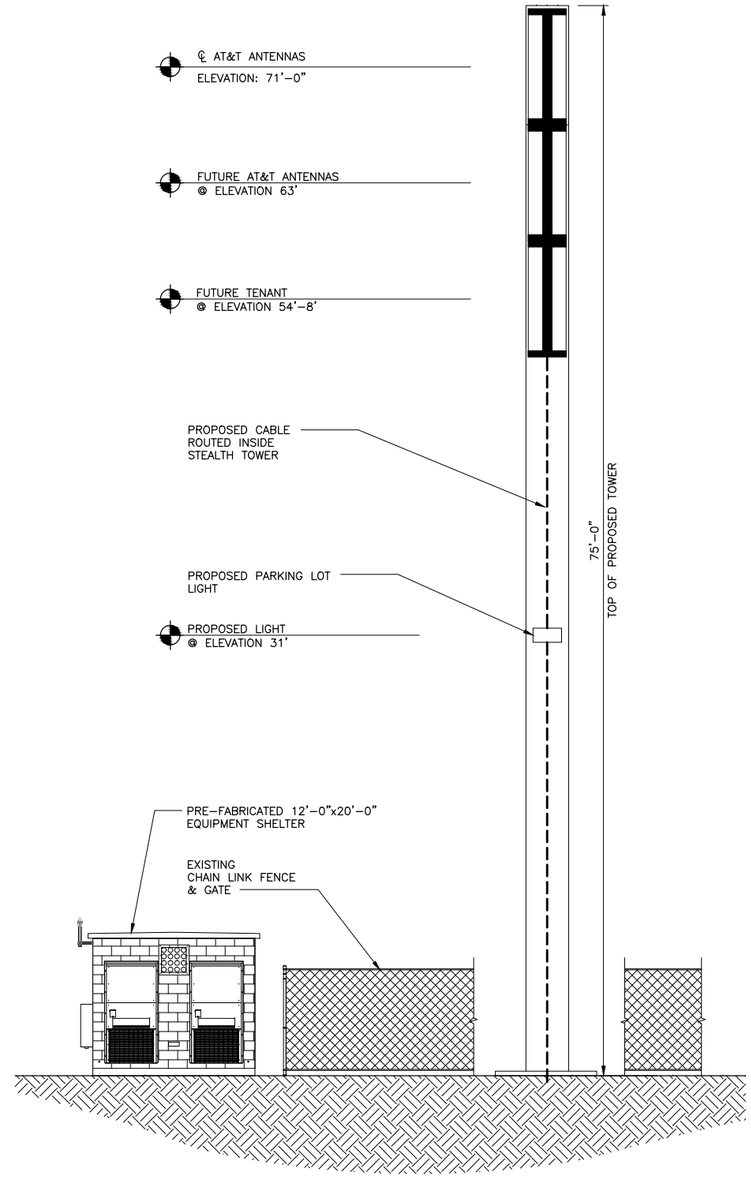
T-1



PROPOSED EAST TOWER ELEVATION

6' 4' 2' 0 5' 10'
3/16"=1'-0"

1



PROPOSED WEST TOWER ELEVATION

6' 4' 2' 0 5' 10'
3/16"=1'-0"

2

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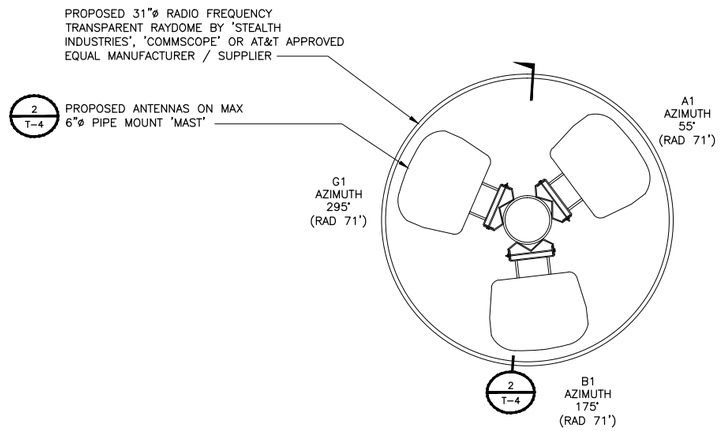
NSB – RAWLAND

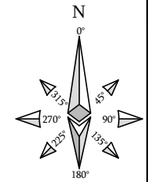
SHEET TITLE

TOWER ELEVATION

SHEET NUMBER

T-2

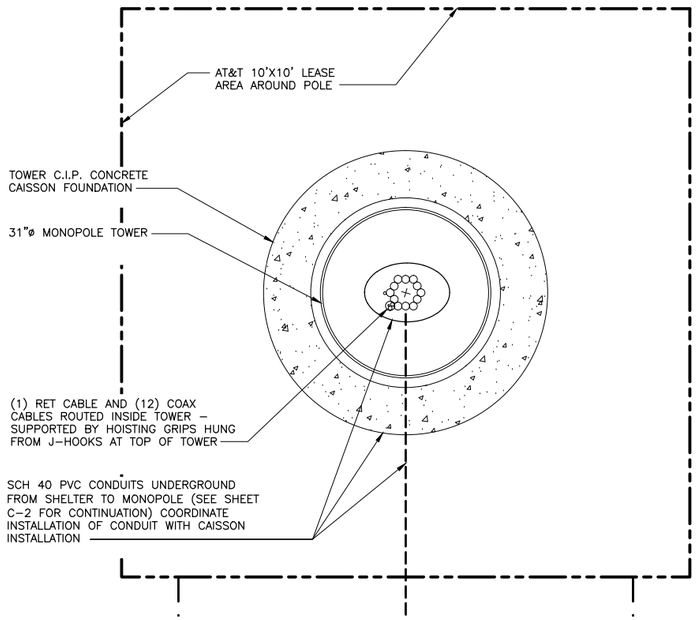


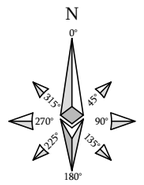


ANTENNA LAYOUT PLAN

NO SCALE

1





COAX ROUTING DIAGRAM

12" 6" 0 1' 2' 3'
3/4"=1'-0"

2

PROJECT DESCRIPTION

THE PROPOSED TOWER IS BEING DESIGNED BY OTHERS TO CARRY THE PROPOSED AND FUTURE COAX AND ANTENNAS. THESE DRAWINGS HAVE BEEN CREATED BASED ON THE ASSUMPTION THAT THE TOWER HAS SUFFICIENT CAPACITY TO SUPPORT THE PROPOSED AND FUTURE LOADS.

STRUCTURAL NOTE

2630 LIBERTY AVENUE
PITTSBURGH, PA 15222

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BASSETTS CREEK PARK
252 UPTON AVENUE SOUTH
MINNEAPOLIS, MN 55405
NSB - RAWLAND

SHEET TITLE

ANTENNA CONFIGURATION

SHEET NUMBER

T-3

ANTENNA AND TRANSMISSION CABLE REQUIREMENTS

SECTOR	ANTENNA TYPE	ANTENNA AZIMUTH	TILT			CENTERLINE ELEVATION	COAXIAL CABLE			FIBER TRUNK	FIBER JUMP
			MECH.	ELEC.			QTY.	LENGTH	DIA.		
A1	QS6658-3	55°	–	–	–	71'	4	160'	7/8"		
A2	QS6658-3	55°	–	–	–	63'	–	150'	7/8"	FB-L98B-034-XXXX	FB-L98B-035-5000
B1	QS6658-3	175°	–	–	–	71'	4	160'	7/8"		
B2	QS6658-3	175°	–	–	–	63'	–	150'	7/8"	FB-L98B-034-XXXX	FB-L98B-035-5000
G1	QS6658-3	295°	–	–	–	71'	4	160'	7/8"		
G2	QS6658-3	295°	–	–	–	63'	–	150'	7/8"	FB-L98B-034-XXXX	FB-L98B-035-5000

SURGE SUPPRESSION SYSTEM

MANUFACTURER	PART NUMBER	QTY	LOCATION
RAYCAP	DC12-48-60-RM	2	MOUNTED INSIDE PROPOSED FIF RACK

REMOTE RADIO HEADS

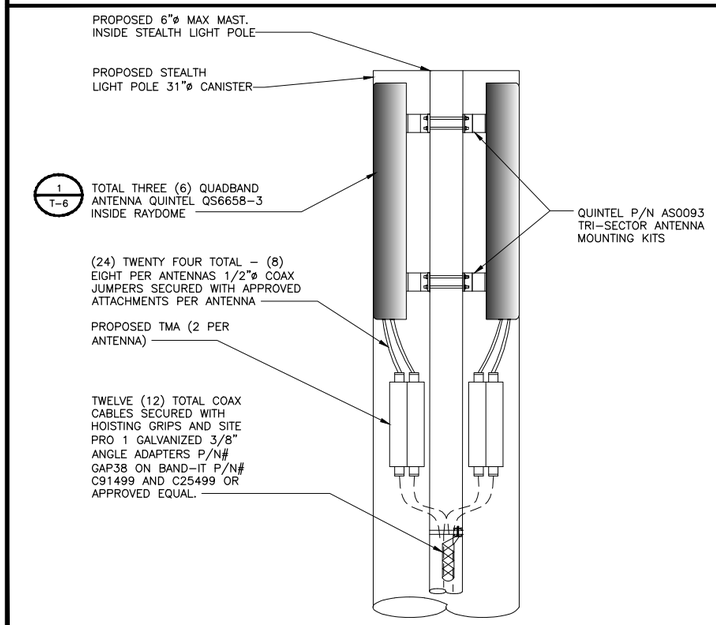
	SECTOR	RRH TYPE	RRH LOCATION (MAX. DISTANCE FROM SURGE SUPPRESSOR)	MINIMUM CLEARANCES			DC JUMPER CABLE	
				ABOVE	BELOW	SIDES	QTY	AWG
ALPHA SECTOR	A1	ALCATEL – LUCENT (700 MHz)	16.4'	16"	8"	0"	2	12
		ALCATEL – LUCENT (AWS)	16.4'	16"	8"	0"	2	12
		ALCATEL – LUCENT (850 MHz)	16.4'	16"	8"	0"	2	12
		ALCATEL – LUCENT (1900 MHz)	16.4'	16"	8"	0"	2	12
	A2	ALCATEL – LUCENT (700 MHZ)	16.4'	16"	8"	0"	2	12
		ALCATEL – LUCENT (AWS)	16.4'	16"	8"	0"	2	12
BETA SECTOR	B1	ALCATEL – LUCENT (700 MHZ)	16.4'	16"	8"	0"	2	12
		ALCATEL – LUCENT (AWS)	16.4'	16"	8"	0"	2	12
		ALCATEL – LUCENT (850 MHz)	16.4'	16"	8"	0"	2	12
		ALCATEL – LUCENT (1900 MHz)	16.4'	16"	8"	0"	2	12
	B2	ALCATEL – LUCENT (700 MHZ)	16.4'	16"	8"	0"	2	12
		ALCATEL – LUCENT (AWS)	16.4'	16"	8"	0"	2	12
GAMMA SECTOR	G1	ALCATEL – LUCENT (700 MHZ)	16.4'	16"	8"	0"	2	12
		ALCATEL – LUCENT (AWS)	16.4'	16"	8"	0"	2	12
		ALCATEL – LUCENT (850 MHz)	16.4'	16"	8"	0"	2	12
		ALCATEL – LUCENT (1900 MHz)	16.4'	16"	8"	0"	2	12
	G2	ALCATEL – LUCENT (700 MHZ)	16.4'	16"	8"	0"	2	12
		ALCATEL – LUCENT (AWS)	16.4'	16"	8"	0"	2	12

1. CONTRACTOR IS TO REFER TO AT&T'S MOST CURRENT RADIO FREQUENCY DATA SHEET (RFDS) PRIOR TO CONSTRUCTION.
2. CABLE LENGTHS WERE DETERMINED BASED ON A VISUAL INSPECTION DURING SITE WALK. CONTRACTOR TO VERIFY ACTUAL LENGTH DURING PRE-CONSTRUCTION WALK.
3. CONTRACTOR TO USE ROSENBERGER FIBER LINE HANGER COMPONENTS (OR ENGINEER APPROVED EQUAL).

PROPOSED ANTENNA AND EQUIPMENT REQUIREMENTS

NO SCALE

1



QUINTEL ANTENNA MOUNTING DETAIL @ ELEVATION 71'

2

NOT USED

3

NOT USED

4

NOTES

1

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MINNEAPOLIS, MN 55405
NSB – RAWLAND

SHEET TITLE
ANTENNA MOUNTING & RRH REQUIREMENTS

SHEET NUMBER
T-4

AT&T Cable Color Code Chart for MNP

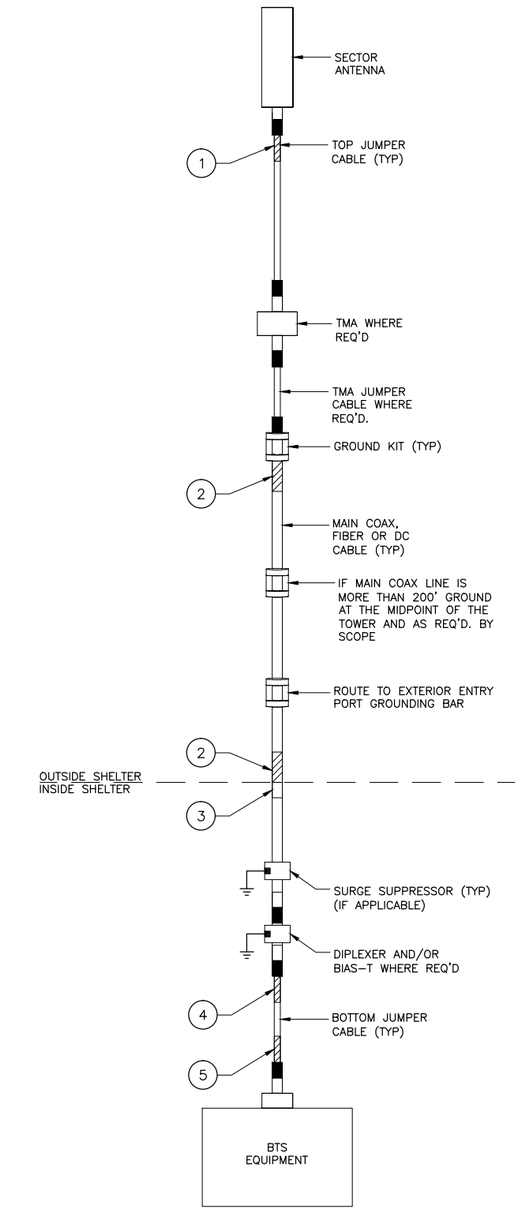
Sector	Technology	Frequency	TX / RX	1st Color	2nd Color
Alpha (X)	GSM	850	TXM / RXM	1 Red	1 Blue
Alpha (X)	GSM	850	TXD / RXD	1 Red	2 Blue
Alpha (X)	GSM	1900	TXM / RXM	1 Red	1 Brown
Alpha (X)	GSM	1900	TXD / RXD	1 Red	2 Brown
Alpha (X)	UMTS	850	TXM / RXM	1 Red	1 Green
Alpha (X)	UMTS	850	TXD / RXD	1 Red	2 Green
Alpha (X)	UMTS	1900	TXM / RXM	1 Red	1 Violet
Alpha (X)	UMTS	1900	TXD / RXD	1 Red	2 Violet
Alpha (X)	LTE	700	TXM / RXM	1 Red	1 Gray
Alpha (X)	LTE	700	TXD / RXD	1 Red	2 Gray
Beta (Y)	GSM	850	TXM / RXM	1 Orange	1 Blue
Beta (Y)	GSM	850	TXD / RXD	1 Orange	2 Blue
Beta (Y)	GSM	1900	TXM / RXM	1 Orange	1 Brown
Beta (Y)	GSM	1900	TXD / RXD	1 Orange	2 Brown
Beta (Y)	UMTS	850	TXM / RXM	1 Orange	1 Green
Beta (Y)	UMTS	850	TXD / RXD	1 Orange	2 Green
Beta (Y)	UMTS	1900	TXM / RXM	1 Orange	1 Violet
Beta (Y)	UMTS	1900	TXD / RXD	1 Orange	2 Violet
Beta (Y)	LTE	700	TXM / RXM	1 Orange	1 Gray
Beta (Y)	LTE	700	TXD / RXD	1 Orange	2 Gray
Gamma (Z)	GSM	850	TXM / RXM	1 Yellow	1 Blue
Gamma (Z)	GSM	850	TXD / RXD	1 Yellow	2 Blue
Gamma (Z)	GSM	1900	TXM / RXM	1 Yellow	1 Brown
Gamma (Z)	GSM	1900	TXD / RXD	1 Yellow	2 Brown
Gamma (Z)	UMTS	850	TXM / RXM	1 Yellow	1 Green
Gamma (Z)	UMTS	850	TXD / RXD	1 Yellow	2 Green
Gamma (Z)	UMTS	1900	TXM / RXM	1 Yellow	1 Violet
Gamma (Z)	UMTS	1900	TXD / RXD	1 Yellow	2 Violet
Gamma (Z)	LTE	700	TXM / RXM	1 Yellow	1 Gray
Gamma (Z)	LTE	700	TXD / RXD	1 Yellow	2 Gray

For Single Band Antennas with Single or Dual Feed. For Jumpers to Diplexers on Dual Band Systems

Sector & Diplexor Port	Color Code for Main Coax Lines between Diplexer: Antenna 1	Antenna 2	Antenna 3	Antenna 4
Alpha Port 1	1 Red	2 Red	3 Red	4 Red
Alpha Port 2	1 Red	2 Red	3 Red	4 Red
	1 White	1 White	1 White	1 White
Antenna 1 is on the left as you stand **behind** the antennas.				
Beta Port 1	1 Orange	2 Orange	3 Orange	4 Orange
Beta Port 2	1 Orange	2 Orange	3 Orange	4 Orange
	1 White	1 White	1 White	1 White
Antenna 1 is on the left as you stand **behind** the antennas.				
Gamma	1 Yellow	2 Yellow	3 Yellow	4 Yellow
Gamma	1 Yellow	2 Yellow	3 Yellow	4 Yellow
	1 White	1 White	1 White	1 White
Antenna 1 is on the left as you stand **behind** the antennas.				

Fiber Trunk	LTE	700		1 White	1 Gray	1 White			
DC Trunk 1	LTE	700		1 White	1 Gray	1 White	1 Gray		
DC Trunk 2	LTE	700		1 White	1 Gray	1 White	1 Gray	1 White	1 Gray

CABLE COLOR CHART | NO SCALE | 1



CABLE MARKING LOCATIONS DIAGRAM | NO SCALE | 2

1. THE ANTENNA SYSTEM COAX SHALL BE LABELED WITH VINYL TAPE.
2. THE STANDARD IS BASED ON EIGHT COLORED TAPES–RED, BLUE, GREEN, YELLOW, ORANGE, BROWN, WHITE, AND VIOLET. THESE TAPES MUST BE 3/4" WIDE & UV RESISTANT SUCH AS SCOTCH 35 VINYL ELECTRICAL COLOR CODING TAPE AND SHOULD BE READILY AVAILABLE TO THE ELECTRICIAN OR CONTRACTOR ON SITE.
3. USING COLOR BANDS ON THE CABLES, MARK ALL RF CABLE BY SECTOR AND CABLE NUMBER AS SHOWN ON "CABLE COLOR CHART".
4. WHEN AN EXISTING COAXIAL LINE THAT IS INTENDED TO BE A SHARED LINE BETWEEN TECHNOLOGIES IS ENCOUNTERED, THE CONTRACTOR SHALL REMOVE THE EXISTING COLOR CODING SCHEME AND REPLACE IT WITH THE COLOR CODING STANDARD. IN THE ABSENCE OF AN EXISTING COLOR CODING AND TAGGING SCHEME, OR WHEN INSTALLING PROPOSED COAXIAL CABLES, THIS GUIDELINE SHALL BE IMPLEMENTED AT THAT SITE REGARDLESS OF TECHNOLOGY.
5. ALL COLOR CODE TAPE SHALL BE 3M–35 AND SHALL BE INSTALLED USING A MINIMUM OF (3) THREE WRAPS OF TAPE AND SHALL BE NEATLY TRIMMED AND SMOOTHED OUT SO AS TO AVOID UNRAVELING.
6. ALL COLOR BANDS INSTALLED AT THE TOP OF THE TOWER SHALL BE A MINIMUM OF 3" WIDE, AND SHALL HAVE A MINIMUM OF 3/4" OF SPACE BETWEEN EACH COLOR.
7. ALL COLOR CODES SHALL BE INSTALLED SO AS TO ALIGN NEATLY WITH ONE ANOTHER FROM SIDE–TO–SIDE.
8. IF EXISTING CABLES AT THE SITE ALREADY HAVE A COLOR CODING SCHEME AND THEY ARE NOT INTENDED TO BE REUSED OR SHARED WITH THE NEW TECHNOLOGY, THE EXISTING COLOR CODING SCHEME SHALL REMAIN UNTOUCHED.

CABLE COLOR CODING & IDENTIFICATION NOTES | 3

ALL RF AND DC CABLE SHALL BE MARKED AS PER CABLE MARKING LOCATIONS TABLE BELOW:

NO	LOCATIONS
1	EACH TOP–JUMPER SHALL BE COLOR CODED WITH (1) SET OF 3" WIDE BANDS.
2	EACH MAIN COAX SHALL BE COLOR CODED WITH (1) SET OF 3" WIDE BANDS NEAR THE TOP–JUMPER CONNECTION AND WITH (1) SET OF 3/4" WIDE COLOR BANDS JUST PRIOR TO ENTERING THE BTS OR TRANSMITTER BUILDING.
3	CABLE ENTRY PORT ON THE INTERIOR OF THE SHELTER.
4	ALL BOTTOM JUMPERS SHALL BE COLOR CODED WITH (1) SET OF 3/4" WIDE BANDS ON EACH END OF THE BOTTOM JUMPER.
5	ALL BOTTOM JUMPERS SHALL BE COLOR CODED WITH (1) SET OF 3/4" WIDE BANDS ON EACH END OF THE BOTTOM JUMPER.

CABLE MARKING LOCATIONS TABLE | 4

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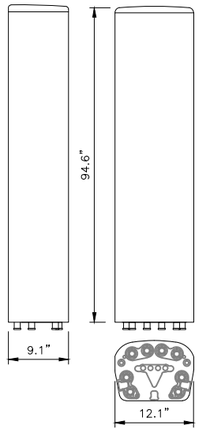
NSB – RAWLAND

SHEET TITLE
ANTENNA MOUNTING & RRH REQUIREMENTS

SHEET NUMBER
T-4

QUINTEL ANTENNA QS8658-2

RADOME MATERIAL:	FIBERGLASS, UV RESISTANT
RADOME COLOR:	LIGHT GRAY
DIMENSIONS, HxWxD:	2403x315x231mm (94.6"x12.4"x9.1")
WEIGHT:	115 lbs (MOUNTING KIT EXCLUDED)
WIND LOADING:	F: 2068 N @ 150 m/h S: 1112 N @ 150 m/h
CONNECTOR:	7/16 DIN FEMALE

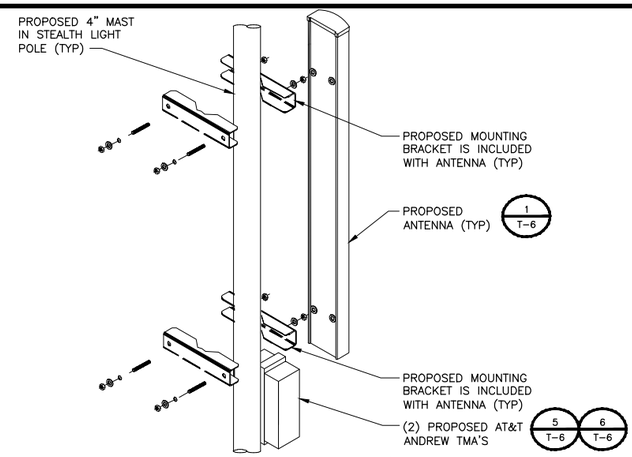


PROPOSED QUINTEL ANTENNA SPECIFICATION | NO SCALE | 1

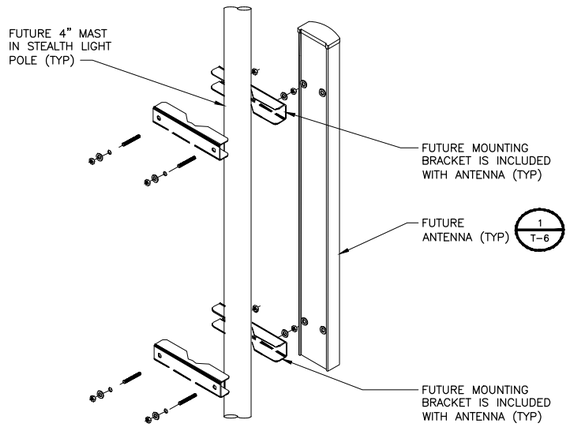
ALU ANTENNA 3JR52701AAAA

DIMENSIONS, HxWxD:	55.4"x11.9"x12.3"
WEIGHT:	145.6 LBS
MAX WIND SPEED:	N/A
CONNECTOR:	N/A

PROPOSED ANTENNA SPECIFICATIONS | NO SCALE | 2



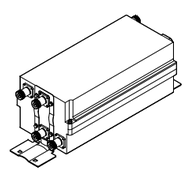
ANTENNA & TMA MOUNTING DETAIL | NO SCALE | 3



ANTENNA MOUNTING DETAIL (FUTURE) | NO SCALE | 4

ANDREW DUAL TMA - E15Z09P94

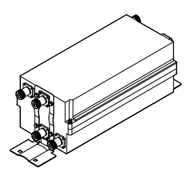
DIMENSIONS, HxWxD:	8.7"x6.1"x4.3"
WEIGHT:	11.9 lbs
RF CONNECTORS:	7-16 DIN FEMALE, LONG NECK
MOUNTING:	POLE OR WALL MOUNTING



ANDREW DUAL TMA DETAIL | NO SCALE | 5

ANDREW DUAL TMA - E15S09P78

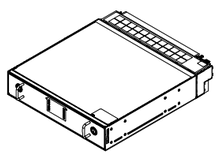
DIMENSIONS, HxWxD:	10.8"x8.3"x3.7"
WEIGHT:	17.4 lbs
RF CONNECTORS:	7-16 DIN FEMALE, LONG NECK
MOUNTING:	POLE OR WALL MOUNTING



ANDREW DUAL TMA DETAIL | NO SCALE | 6

RAYCAP DC12-48-60-RM

DIMENSIONS, WxDxH:	427x86x511mm (16.8"x3.4"x20.1")
NOMINAL OPERATING VOLTAGE:	48 VDC
NOMINAL DISCHARGE CURRENT:	20 kA 8/20μs
MAXIMUM DISCHARGE CURRENT:	60 kA 8/20μs
MAXIMUM CONTINUOUS OPERATING VOLTAGE:	75 VDC
VOLTAGE PROTECTION RATING:	400 V
TOTAL WEIGHT:	30 lbs



DC SURGE SUPPRESSOR DETAIL | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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PRINT NAME: NESTOR POPOWYCH

SIGNATURE:

DATE: 02/05/2014 LICENSE # 47725

MPLSMNU1049_143346
BASSETTS CREEK PARK
252 UPTON AVENUE SOUTH
MINNEAPOLIS, MN 55405
NSB - RAWLAND

SHEET TITLE

TOWER EQUIPMENT DETAILS

SHEET NUMBER

T-6

1. THE CONDUIT ROUTING IS DIAGRAMMATICALLY SHOWN ON THE PLANS AND ARE ONLY APPROXIMATIONS. THE EXACT LOCATION AND ROUTING SHALL BE FIELD VERIFIED.

2. ALL ELECTRICAL EQUIPMENT AND CONTROLLING DEVICES SHALL BE PROVIDED WITH ENGRAVED LAMICOID NAMEPLATES, INDICATING THE CIRCUITS ORIGINATION AND ALL EQUIPMENT TERMINATIONS.

3. CONTRACTOR SHALL PROVIDE STRAIN-RELIEF AND CABLE SUPPORTS FOR ALL CABLE ASSEMBLIES, COAX CABLES, AND RET CONTROL CABLES. CABLE STRAIN-RELIEFS, CABLE SUPPORTS SHALL BE APPROVED FOR THE PURPOSE. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.

4. CONTRACTOR SHALL PROVIDE ALL BREAKERS, CONDUITS, HAND HOLES AND CIRCUIT CONDUCTORS, AS REQUIRED FOR A COMPLETED SYSTEM AND SHALL BE IN COMPLIANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

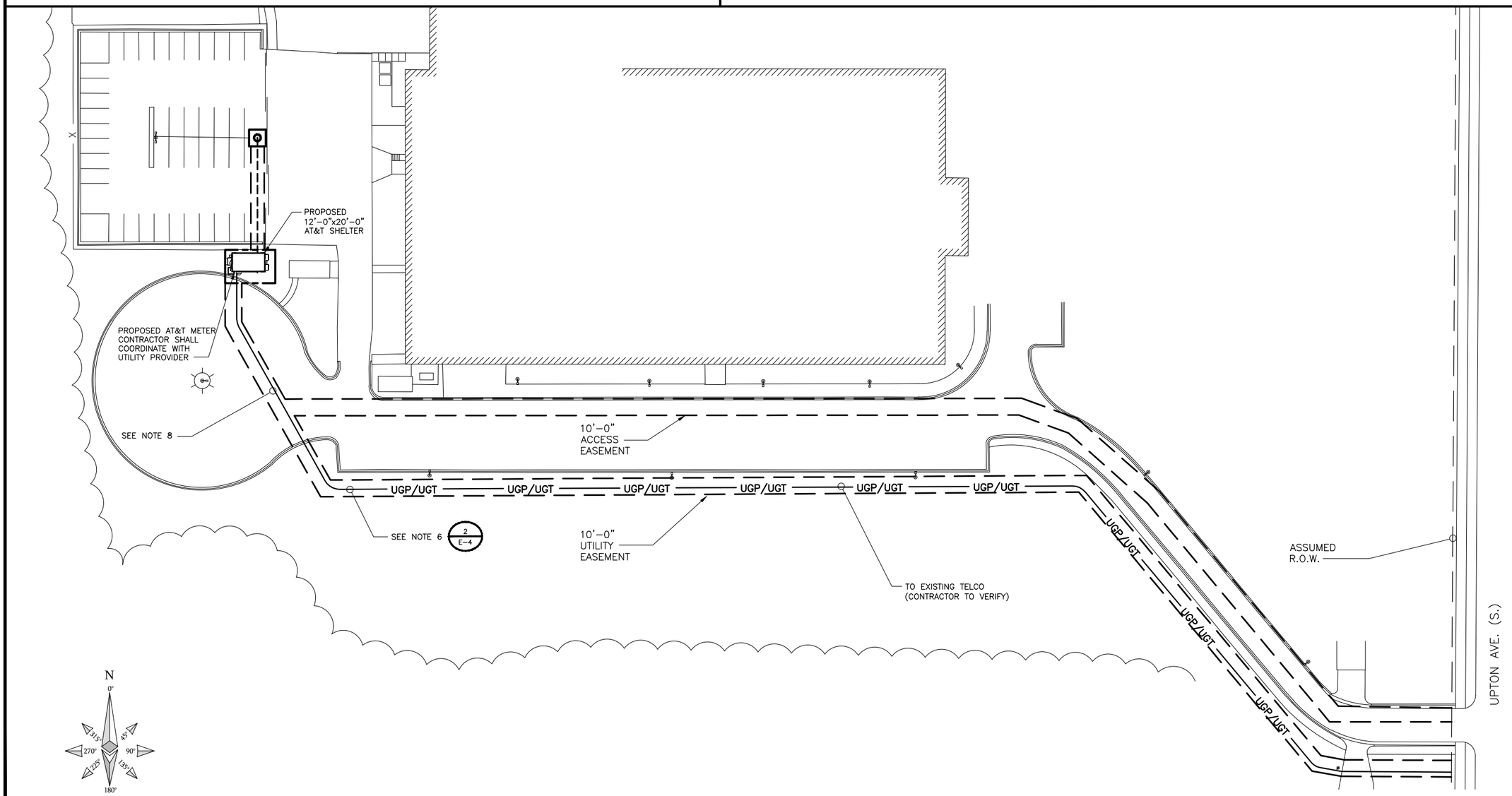
5. ALL CONDUITS SHALL BE INSTALLED IN COMPLIANCE WITH THE 2011 NATIONAL ELECTRIC CODE (NEC) OR AS REQUIRED BY THE LOCAL JURISDICTION, WHICHEVER IS THE MOST STRINGENT.

6. PROPOSED POWER IN PROPOSED 2 1/2" SCH 40 PVC CONDUIT, CONTRACTOR TO COORDINATE CONNECTION WITH LOCAL UTILITY COMPANY. CONTRACTOR SHALL PROVIDE PULL BOXES AND JUNCTION BOXES AS REQUIRED PER NEC ARTICLE 314. (FIELD VERIFY LOCATION)

7. PROPOSED TELCO WITH 25 PAIR ICKY-PICK CAT 5 CONDUCTOR IN PROPOSED 4" SCH 40 PVC CONDUIT, CONTRACTOR TO COORDINATE CONNECTION WITH LOCAL TELEPHONE COMPANY. CONTRACTOR SHALL PROVIDE PULL BOXES AND JUNCTION BOXES AS REQUIRED PER NEC ARTICLE 314.

8. PROPOSED TELCO IN PROPOSED 4" METALLIC CONDUIT A MINIMUM OF 10' BEFORE IT ENTERS SHELTER, CONTRACTOR TO COORDINATE WITH LOCAL UTILITY COMPANY. PROPOSED CONNECTION OF SLEEVE (WEATHER PROTECTED) AT CONNECTION OF 4" SCH 40 PVC CONDUIT. (FIELD VERIFY LOCATION)

NOTES



ELECTRICAL PLAN

32' 24' 16' 8' 0 32' 64'

1/32"=1'-0"

1

at&t

2630 LIBERTY AVENUE
PITTSBURGH, PA 15222

A□E

WIRELESS
ENGINEERING GROUP

1501 E. WOODFIELD ROAD, SUITE □300E
SCHAUMBURG, IL 60173
□□□□sa□□,□o□
847□944□1600

SITE ID:	MPLSMNU1049
DRAWN BY:	KMR
CHECKED BY:	GP

REV	DATE	DESCRIPTION
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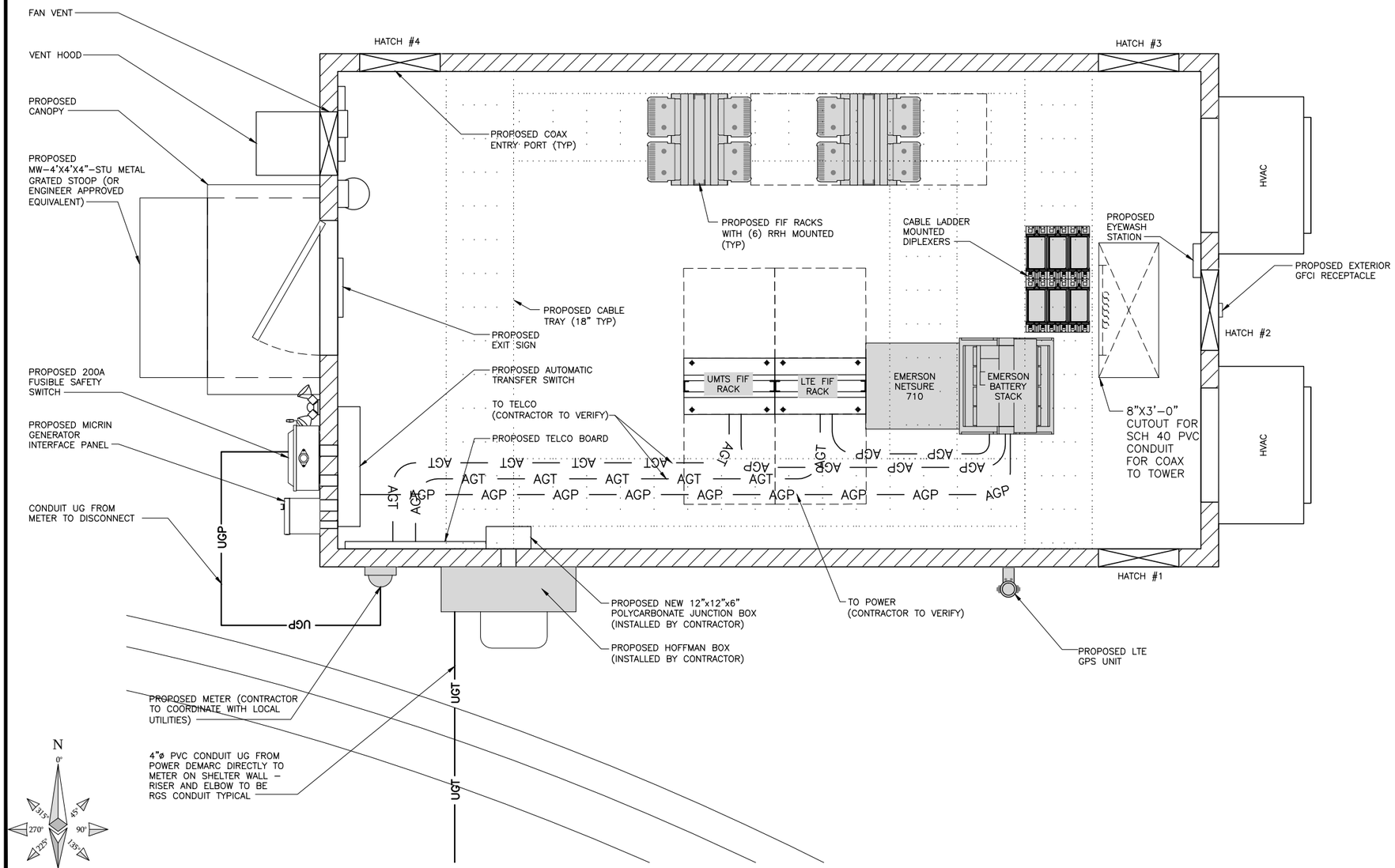
252 UPTON AVENUE SOUTH
MINNEAPOLIS, MN 55405
NSB - RAWLAND

SHEET TITLE

ELECTRICAL PLAN

SHEET NUMBER

E-1



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5. ALL CONDUITS SHALL BE INSTALLED IN COMPLIANCE WITH THE 2011 NATIONAL ELECTRIC CODE (NEC) OR AS REQUIRED BY THE LOCAL JURISDICTION, WHICHEVER IS THE MOST STRINGENT.

NOTES

OVERHEAD POWER	OHP
UNDERGROUND POWER	UGP
OVERHEAD UTILITIES	OHU
UNDERGROUND TELCO	UGT
UNDERGROUND POWER AND TELCO	UGP/UGT
ABOVE GROUND POWER (PROPOSED DC POWER CABLE)	AGP
ABOVE GROUND TELCO (PROPOSED FIBER OPTIC CABLE)	AGT

ELECTRICAL SHELTER PLAN

12" 6" 0 1' 2' 3' 4' 5'
1/2"=1'-0"

1

GRAPHICS LEGEND

at&t
2630 LIBERTY AVENUE
PITTSBURGH, PA 15222

A&E
SAC WIRELESS ENGINEERING GROUP
1501 E. WOODFIELD ROAD, SUITE 300E
SCHAUMBURG, IL 60173
847.944.1600

SITE ID:	MPLSMNU1049
DRAWN BY:	KMR
CHECKED BY:	GP

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252 UPTON AVENUE SOUTH
MINNEAPOLIS, MN 55405
NSB – RAWLAND

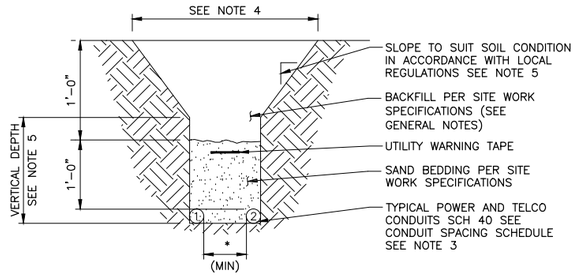
SHEET TITLE
ELECTRICAL SHELTER PLAN

SHEET NUMBER
E-2

NOT USED

NO SCALE

1



CONDUIT SPACING SCHEDULE		
CONDUIT #1	MINIMUM CONDUIT SEPARATION	CONDUIT #2
POWER	* = 6 INCHES	POWER
POWER	* = 12 INCHES	TELCO, COMMUNICATIONS & CONTROL CIRCUITS
TELCO, COMMUNICATIONS & CONTROL CIRCUITS	* = 6 INCHES	TELCO, COMMUNICATIONS & CONTROL CIRCUITS

TYPICAL UNDERGROUND TRENCH

NO SCALE

2

1. ALL UNDERGROUND CONDUITS SHALL BE SCH 40 PVC. EXCEPT THAT ELBOWS AND RISERS SHALL BE RMC ALL UNDERGROUND ELBOWS SHALL BE SWEEPING BENDS. 2'-0" MINIMUM SHALL BE REQUIRED.
2. THE TELEPHONE SERVICE CABLES SHOULD BE INSTALLED IN RIGID METAL CONDUIT, (10'-0") TEN FEET IN LENGTH BEFORE ENTERING A SHELTER OR BUILDING PER AT&T STANDARD ATT-TP 26416.
3. TWO CONDUITS ARE SHOWN IN DETAIL C, ALTHOUGH MULTIPLE CONDUITS CAN BE PLACED IN THE SAME TRENCH. A MINIMUM SEPARATION IS REQUIRED PER THE LOCAL JURISDICTIONS AND UTILITY COMPANIES. IN ALL OTHER CASES, USE THE CONDUIT SPACING SCHEDULE TO MAINTAINED MINIMUM SPACING BETWEEN THE EXTERIOR WALL TO EXTERIOR WALL SEPARATION OF CONDUITS.
4. CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.
5. TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT OSHA TRENCHING AND EXCAVATION SAFETY STANDARDS.
6. ALL CONDUITS SHALL BE INSTALLED IN COMPLIANCE WITH THE NATIONAL ELECTRIC CODE (NEC) OR AS REQUIRED BY THE LOCAL JURISDICTION.

TYPICAL UNDERGROUND TRENCH

NO SCALE

3

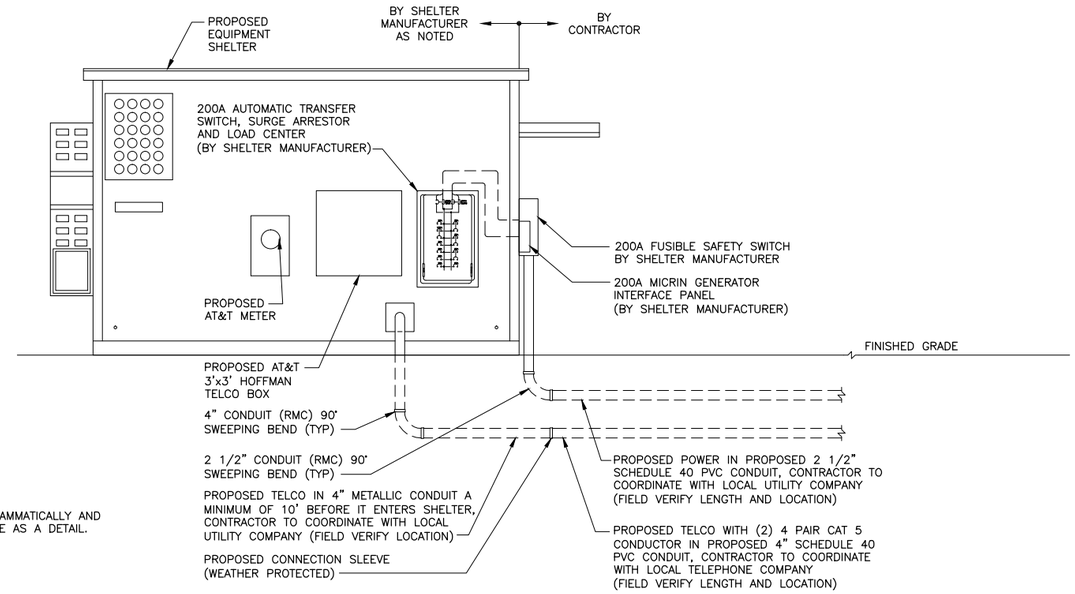
NOT USED

NO SCALE

4

NOTE

DRAWING IS SHOWN DIAGRAMMATICALLY AND IS NOT INTENDED FOR USE AS A DETAIL.



POWER RISER DIAGRAM

NO SCALE

5

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ENGINEERING GROUP

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847□944□1600

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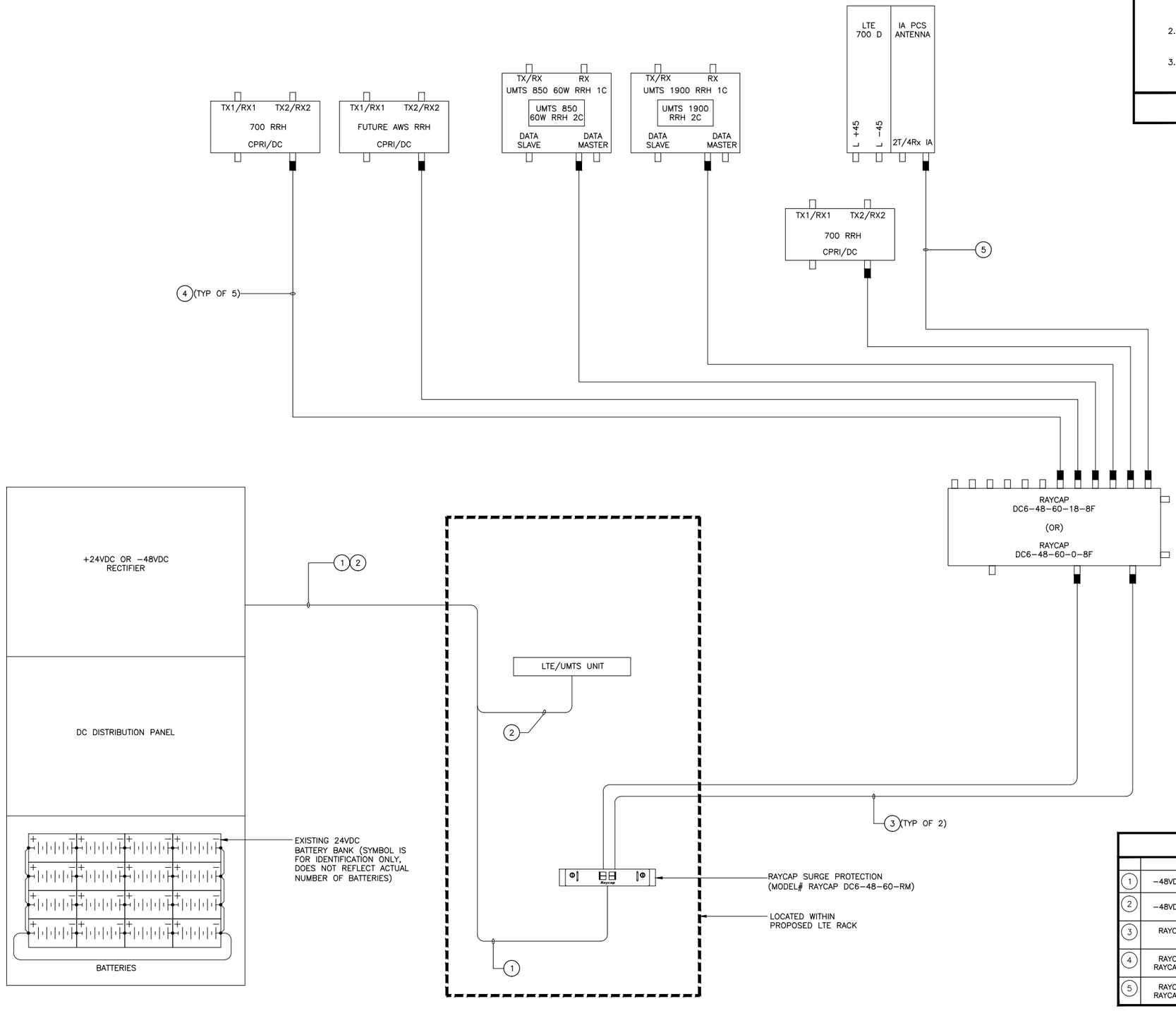
252 UPTON AVENUE SOUTH
MINNEAPOLIS, MN 55405
NSB – RAWLAND

SHEET TITLE

ELECTRICAL DETAILS

SHEET NUMBER

E-3



1. DC POWER WIRING SHALL BE COLOR CODED AT EACH END FOR IDENTIFYING +24V AND -48V CONDUCTORS. RED MARKINGS SHALL IDENTIFY +24V AND BLUE MARKINGS SHALL IDENTIFY -48V. REFER TO ATT-002-290-701.
2. NON-LTE DC POWER WIRING SIZE 14 AWG TO 10 AWG SHALL BE TELCOFLEX III. DC POWER WIRING 8 AWG AND LARGER SHALL BE TELCOFLEX IV.
3. LTE POWER WIRING SHALL BE IN ACCORDANCE WITH ATT-002-290-531.

NOTES

DC CIRCUIT SCHEDULE

	FROM	TO	CONFIGURATION
1	-48VDC DISTRIBUTION PANEL	LTE BASE BAND UNIT	(1) 2-#8 THHN/THWN/VW-1 TYPE TC-ER DC CABLE
2	-48VDC DISTRIBUTION PANEL	RAYCAP SURGE PROTECTION DC6-48-60-RM	(3) 2-#10 THHN/THWN/VW-1 TYPE TC-ER DC CABLE
3	RAYCAP SURGE PROTECTION DC6-48-60-RM	RAYCAP SURGE PROTECTION DC6-48-60-18-8F	(2) 6-#8 THHN/THWN/VW-1 TYPE TC-ER DC CABLE
4	RAYCAP SURGE PROTECTION RAYCAP DC6-48-60-18-8F	RRH REMOTE RADIO HEAD	(5) 2-#12 THHN/THWN/VW-1 TYPE TC-ER DC CABLE
5	RAYCAP SURGE PROTECTION RAYCAP DC6-48-60-18-8F	ALU ANTENNA	(1) 2-#12 THHN/THWN/VW-1 TYPE TC-ER DC CABLE

DC CIRCUIT DIAGRAM (PER SECTOR)

NO SCALE

1

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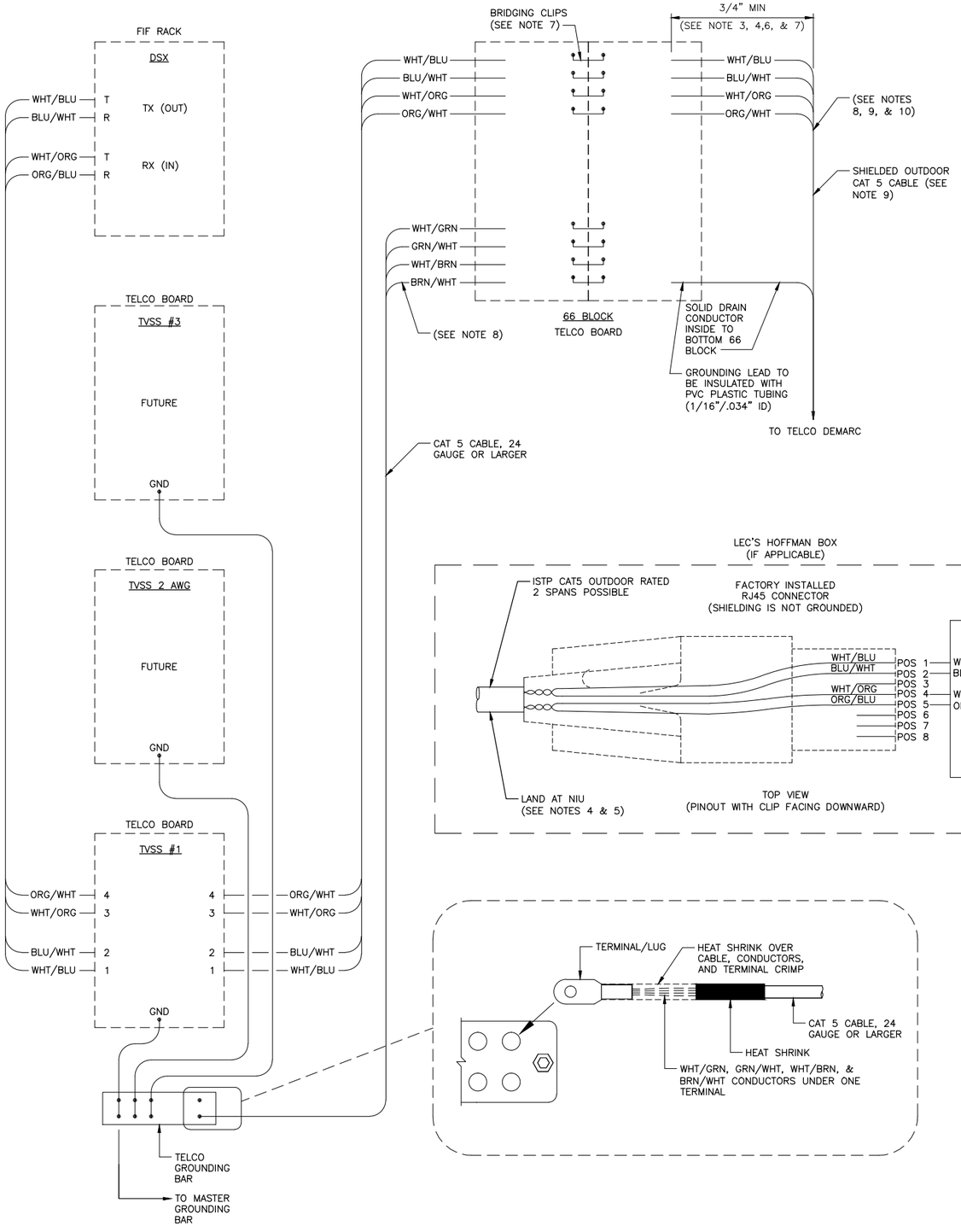
NSB - RAWLAND

SHEET TITLE

DC CIRCUIT DIAGRAM

SHEET NUMBER

E-4



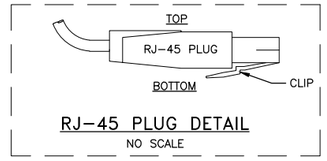
TELCO INTERFACE SCHEMATIC

1

1. TVSS WILL BE PRE-INSTALLED ON THE TELCO BOARD IN SHELTER. USE APPROPRIATE STAINLESS STEEL BOLTS WITH FLAT WASHERS AND A LOCK WASHER ON THE NUT SIDE.
2. ATTACH RING TERMINAL FROM SUPPLIED GROUNDING CONDUCTOR TO TVSS GROUNDING STUD SECURELY FASTEN WITH SUPPLIED WASHER AND NUT. REFER TO MANUFACTURER'S INSTRUCTIONS. FOR PROPER PERFORMANCE, THE GROUNDING CONDUCTOR LENGTH SHOULD BE LIMITED WITH NO SHARP BENDS ON COILS.
3. TELCO CABLE TO H-FRAME TO BE 25 PAIR ICKY-PICK CAT 5, 24 SOLID CONDUCTOR, RJ45 CONNECTOR ON ONE END (FACTORY ASSEMBLED).
4. CONTRACTOR TO LAND CONNECTION AT NIU (CAT 5 OUTDOOR RATED).
5. AC DATA SYSTEMS MODEL TJ1010B SURGE SUPPRESSOR.
6. KEEP TWIST IN PAIR 1/2" TO DIN CONNECTION.
7. INSTALL BRIDGING CLIPS ON 66 BLOCK.
8. 1 1/2" LENGTH HEAT SHRINK OVER BOTH ENDS OF CABLE.
9. CONDOMEX FTP 25 PAIR ICKY-PICK 24 AWG TYPE CMR (UL) C (UL) CMG E-107389 VERIFIED (UL) CAT 5 OR ETL VERIFIED TO TIA/EIA-568-8.2 CAT 5.
10. LEAVE 10" SERVICE LOOP AT BOTH ENDS OF CABLE.
11. SERVICE LOOP TO BE SECURED TO BACKBOARD OF HOFFMAN BOX USING PLASTIC "C CLIPS".

NOTES

2



RJ-45 PLUG DETAIL

NO SCALE

1 NC		BL/W 51 NC	TWR PHOTOCELL FAILURE
2 C	INTRUSION ALARM	W/BL 52 C	
3 NC		O/W 53 NC	HIGH HUMIDITY
4 C	HIGH TEMP ALARM	W/O 54 C	
5 NC		G/W 55 NC	DEHYDRATOR
6 C	HIGH HUMIDITY ALARM	W/G 56 C	
7 NC		BR/W 57 NC	PCU FAIL MAJOR
8 C	SURGE ARRESTER ALARM	W/BR 58 C	
9 NC		S/W 59 NC	PCU CONV FAIL MAJOR
10 C	SMOKE ALARM	W/S 60 C	
11 NC		BL/R 61 NC	HIGH VOLTAGE
12 C	COMMON POWER FAILURE	R/BL 62 C	
13 NC		R/O 63 NC	FIF FUSE ALARM
14 C	#1 HVAC FAILURE ALARM	O/R 64 C	
15 NC		G/R 65 NC	FIRE SYSTEM TROUBLE
16 C	#2 HVAC FAILURE ALARM	R/G 66 C	
W/B 17 NC		BR/R 67 NC	FIRE SUPPRESSION DISCHARGE
B/W 8C	LOW TEMPERATURE ALARM	R/BR 68C	
W/O 19 NC		S/R 69 NC	SIAD
O/W 20C	HYDROGEN GAS ALARM	R/S 70C	
W/G 21 NC		BL/BK 71 NC	M/W MAJOR 1
G/W 22 C	TECHNICIAN ON SITE	BK/BL 72 C	
W/BR 23 NC		O/BK 73 NC	M/W MINOR 1
BR/W 24 C	EMERGENCY CALL	BK/O 74 C	
W/S 25 NC		G/BK 75 NC	M/W MAJOR 2
S/W 26 C	POSITIVE REPORTING TL - ON	BK/G 76 C	
C/B 27 NC		BR/BK 77 NC	M/W MINOR 2
B/C 28 C	PP FUSE ALARM	BK/BR 78 C	
R/U 29 NC		S/BK 79 NC	M/W MAJOR 3
U/R 30 C	PP MAJOR	BK/S 80 C	
R/G 31 NC		BL/Y 81 NC	M/W MINOR 3
G/R 32 C	PP MINOR	Y/BL 82 C	
R/BR 33 NC		O/Y 83 NC	M/W MAJOR 4
BR/R 34 C	PP BATT DISCH (LOW VOLTAGE)	Y/O 84 C	
R/S 35 NC		G/Y 85 NC	M/W MINOR 4
S/R 36 C	48V RECT CRITICAL	Y/G 86 C	
BL/B 37 NC		BR/Y 87 NC	LOW TEMP
B/BL 38 C	48V RECT MAJOR	Y/BR 88 C	
W/B 39 NC		S/Y 89 NC	TRANSFER SWITCH
B/W 40 C	48V RECT MINOR	Y/S 90 C	
W/B 41 NC		BL/Y 91 NC	GENERATOR RUN
B/W 42 C	48V PDU ALARM	Y/BL 92 C	
43 NC		O/Y 93 NC	GENERATOR FAIL
44 C	TMA FAIL	Y/O 94 C	
45 NC		G/Y 95 NC	GEN BATT/CHG FAIL
46 C	TWR BEACON LIGHTS FAILURE	Y/G 96 C	
47 NC		BR/Y 97 NC	LOW HUMIDITY
48 C	TWR STROBE LIGHTS FAILURE	Y/BR 98 C	
49 NC		99 NC	TOWER 4
50 C	TWR SIDE LIGHTS FAILURE	100 C	

MARCONI-SIEMENS CONFIGURATION SHELTER PUNCHDOWN BLOCK

NO SCALE

3

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ENGINEERING GROUP
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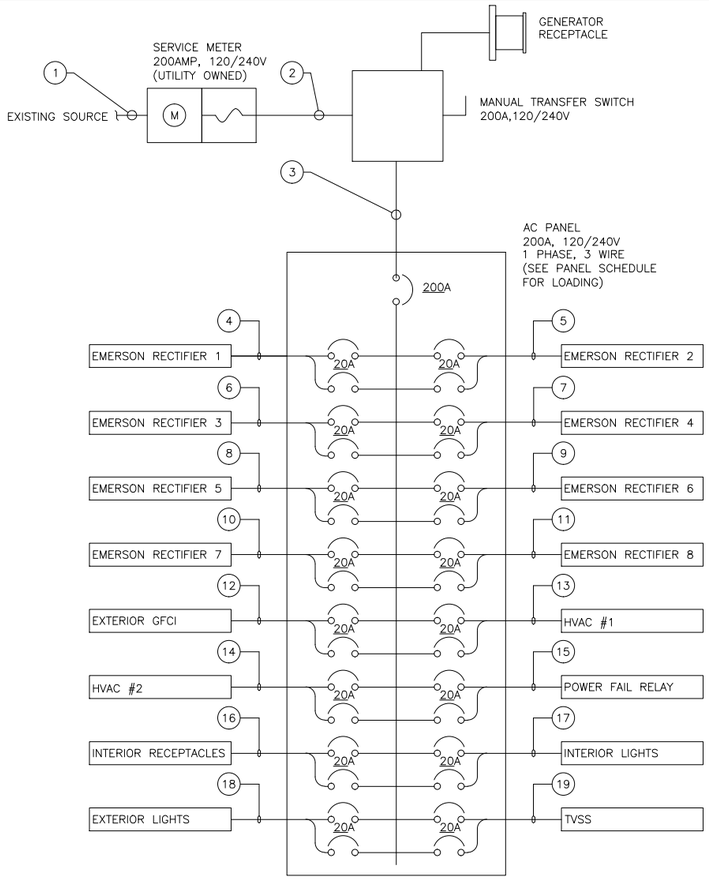
NSB - RAWLAND

SHEET TITLE

TELCO INTERFACE

SHEET NUMBER

E-5



AC ONE-LINE SCHEMATIC

NO SCALE | 1

1. CONTRACTOR SHALL INSPECT THE EXISTING CONDITIONS PRIOR TO SUBMITTING A BID. ANY QUESTIONS ARISING DURING THE BID PERIOD IN REGARDS TO THE CONTRACTOR'S FUNCTIONS, THE SCOPE OF WORK, OR ANY OTHER ISSUE RELATED TO THIS PROJECT SHALL BE BROUGHT UP DURING THE BID PERIOD WITH THE PROJECT MANAGER FOR CLARIFICATION, NOT AFTER THE CONTRACT HAS BEEN AWARDED.
2. ALL ELECTRICAL WORK SHALL BE DONE IN ACCORDANCE WITH CURRENT NATIONAL ELECTRICAL CODES AND ALL STATE AND LOCAL CODES, LAWS, AND ORDINANCES. PROVIDE ALL COMPONENTS AND WIRING SIZES AS REQUIRED TO MEET NEC STANDARDS.
3. LOCATION OF EQUIPMENT, CONDUIT AND DEVICES SHOWN ON THE DRAWINGS ARE APPROXIMATE AND SHALL BE COORDINATED WITH FIELD CONDITIONS PRIOR TO CONSTRUCTION.
4. CONDUIT ROUGH-IN SHALL BE COORDINATED WITH THE MECHANICAL EQUIPMENT TO AVOID LOCATION CONFLICTS. VERIFY WITH THE MECHANICAL EQUIPMENT CONTRACTOR AND COMPLY AS REQUIRED.
5. CONTRACTOR SHALL PROVIDE ALL BREAKERS, CONDUITS AND CIRCUITS AS REQUIRED FOR A COMPLETE SYSTEM.
6. CONTRACTOR SHALL PROVIDE PULL BOXES AND JUNCTION BOXES AS REQUIRED BY THE NEC ARTICLE 314.
7. CONTRACTOR SHALL PROVIDE ALL STRAIN RELIEF AND CABLE SUPPORTS FOR ALL CABLE ASSEMBLIES. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
8. ALL DISCONNECTS AND CONTROLLING DEVICES SHALL BE PROVIDED WITH ENGRAVED PHENOLIC NAMEPLATES INDICATION EQUIPMENT CONTROLLED, BRANCH CIRCUITS INSTALLED ON, AND PANEL FIELD LOCATIONS FED FROM.
9. INSTALL AN EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUITS PER THE SPECIFICATIONS AND NEC 250. THE EQUIPMENT GROUNDING CONDUCTORS SHALL BE BONDED AT ALL JUNCTION BOXES, PULL BOXES, AND ALL DISCONNECT SWITCHES, AND EQUIPMENT CABINETS.
10. ALL NEW MATERIAL SHALL HAVE A U.L. LABEL.
11. PANEL SCHEDULE LOADING AND CIRCUIT ARRANGEMENTS REFLECT POST-CONSTRUCTION EQUIPMENT.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR AS-BUILT PANEL SCHEDULE AND SITE DRAWINGS.
13. DC POWER WIRING SHALL BE COLOR CODED AT EACH END FOR IDENTIFYING +24V AND -48V CONDUCTOR WIRING. RED MARKINGS SHALL IDENTIFY +24V. BLUE MARKINGS SHALL IDENTIFY -48V. REFER TO ATT-002-290-701.
14. DC POWER WIRING SIZE 14 AWG TO 10 AWG SHALL BE TELCOFLEX III. DC POWER WIRING 8 AWG AND LARGER SHALL BE TELCOFLEX IV. REFER TO ATT-002-290-701.
15. LTE POWER WIRING SHALL BE ACCORDANCE WITH ATT-002-290-531.

NOTES:

Site Name:						MODEL NUMBER:	TBD								
SITE NUMBER:						PHASE:	1			WIRE:		3			
VOLTAGE:	240 /120	Volts AC				BUS RATING:	200	AMPS		AIC:					
MAIN BREAKER:	200 AMPS					NEUTRAL BAR:	YES								
MOUNT:	SURFACE					N to GROUND BOND:	TBD								
ENCLOSURE TYPE:	NEMA 3R					INTERNAL TVSS:	TBD								
PANEL STATUS:	NEW														

CKT	LOAD DESCRIPTION	BREAKER AMPS	BREAKER POLES	BREAKER STATUS	SERVICE LOAD VA	Demand Factor	USAGE FACTOR	PHASE A VA	PHASE B VA	USAGE FACTOR	Demand Factor	SERVICE LOAD VA	BREAKER STATUS	BREAKER POLES	BREAKER AMPS	LOAD DESCRIPTION	CKT
1	EMERSON RECTIFIER #1	30	2	NEW	1600	1.00	1.00	4240		0.50	1.00	5280	NEW	2	60	HVAC #1	2
3					1600	1.00	1.00		4240	0.50	1.00	5280					4
5	EMERSON RECTIFIER #2	30	2	NEW	1600	1.00	1.00	4240		0.50	1.00	5280	NEW	2	60	HVAC #2	6
7					1600	1.00	1.00		4240	0.50	1.00	5280					8
9	EMERSON RECTIFIER #3	30	2	NEW	1600	1.00	1.00	1610		1.00	1.00	10	NEW	2	20	POWER FAIL	10
11					1600	1.00	1.00		1610	1.00	1.00	10					12
13	EMERSON RECTIFIER #4	30	2	NEW	1600	1.00	1.00	2680		1.00	1.00	1080	NEW	1	20	INTERIOR RECEPTACLES	14
15					1600	1.00	1.00		2040	1.00	1.00	440	NEW	1	20	INTERIOR LIGHTS	16
17	EMERSON RECTIFIER #5	30	2	NEW	1600	1.00	1.00	1800		1.00	1.00	200	NEW	1	20	EXTERIOR LIGHTS	18
19					1600	1.00	1.00		1600	1.00	1.00	0			_	BLANK	20
21	EMERSON RECTIFIER #6	30	2	NEW	1600	1.00	1.00	1600		1.00	1.00	0			_	BLANK	22
23					1600	1.00	1.00		1600	1.00	1.00	0			_	BLANK	24
25	EMERSON RECTIFIER #7	30	2	NEW	1600	1.00	1.00	1600		1.00	1.00	0			_	BLANK	26
27					1600	1.00	1.00		1600	1.00	1.00	0			_	BLANK	28
29	EMERSON RECTIFIER #8	30	2	NEW	1600	1.00	1.00	1600		1.00	1.00	0			_	BLANK	30
31					1600	1.00	1.00		1600	1.00	1.00	0			_	BLANK	32
33	BLANK	_			0	1.00	1.00	0		1.00	1.00	0			_	BLANK	34
35	BLANK	_			0	1.00	1.00		0	1.00	1.00	0			_	BLANK	36
37	BLANK	_			0	1.00	1.00	0		1.00	1.00	0			_	BLANK	38
39	BLANK	_			0	1.00	1.00		0	1.00	1.00	0	NEW	2	60	TVSS	40
41	EXTERIOR GFCI	20	1	NEW	180	1.00	1.00	180		1.00	1.00	0					42
								PHASE A	PHASE B								
								19550	18530	VA							
								TOTAL		KVA	38.08						
										AMPS	158.67		≤80% OF MAIN BREAKER				

LOAD CENTER SCHEDULE

NO SCALE | 2

NO	FROM	TO	CONFIGURATION
1	TRANSFORMER	UTILITY METER	(3) 3/0, (1) #4 AWG GND
2	SERVICE DISCONNECT	TRANSFER SWITCH	(3) 3/0, (1) #4 AWG GND
3	TRANSFER SWITCH	AC LOAD CENTER	(3) 3/0, (1) #4 AWG GND
4	AC LOAD CENTER	EMERSON RECTIFIER #1	(2) #10, (1) #10 AWG GND
5	AC LOAD CENTER	EMERSON RECTIFIER #2	(2) #10, (1) #10 AWG GND
6	AC LOAD CENTER	EMERSON RECTIFIER #3	(2) #10, (1) #10 AWG GND
7	AC LOAD CENTER	EMERSON RECTIFIER #4	(2) #10, (1) #10 AWG GND
8	AC LOAD CENTER	EMERSON RECTIFIER #5	(2) #10, (1) #10 AWG GND
9	AC LOAD CENTER	EMERSON RECTIFIER #6	(2) #10, (1) #10 AWG GND
10	AC LOAD CENTER	EMERSON RECTIFIER #7	(2) #10, (1) #10 AWG GND
11	AC LOAD CENTER	EMERSON RECTIFIER #8	(2) #10, (1) #10 AWG GND
12	AC LOAD CENTER	EXTERIOR GFCI	(1) #12 BLK, (1) #12 WHT, (1) #12 GND
13	AC LOAD CENTER	HVAC #1	(1) #6 THHN/THWN, (1) #10 AWG GND

NO	FROM	TO	CONFIGURATION
14	AC LOAD CENTER	HVAC #2	(1) #6 THHN/THWN, (1) #10 AWG GND
15	AC LOAD CENTER	POWER FAIL RELAY	(2) #12 THHN/THWN, (1) #12 NUET, (1) #12 AWG GND
16	AC LOAD CENTER	INTERIOR RECEPTACLES	(1) #12 BLK, (1) #12 WHT, (1) #12 AWG GND
17	AC LOAD CENTER	INTERIOR LIGHTS	(1) #12 BLK, (1) #12 WHT, (1) #12 AWG GND
18	AC LOAD CENTER	EXTERIOR LIGHTS	(1) #12 BLK, (1) #12 WHT, (1) #12 AWG GND
19	AC LOAD CENTER	TVSS	(2) #6 BLK, (1) #6 WHT, (1) #10 AWG GND

AC CIRCUIT SCHEDULE

NO SCALE | 3

at&t

2630 LIBERTY AVENUE
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WIRELESS ENGINEERING GROUP
1501 E. WOODFIELD ROAD, SUITE □300E
SCHAUMBURG, IL 60173
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847.944.1600

SITE ID:	MPLSMNU1049
DRAWN BY:	KMR
CHECKED BY:	GP

REV	DATE	DESCRIPTION
O	03/25/14	ISSUED FOR CONSTRUCTION
B	02/27/14	90 % ISSUED FOR CONSTRUCTION
A	01/31/14	ISSUED FOR REVIEW

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

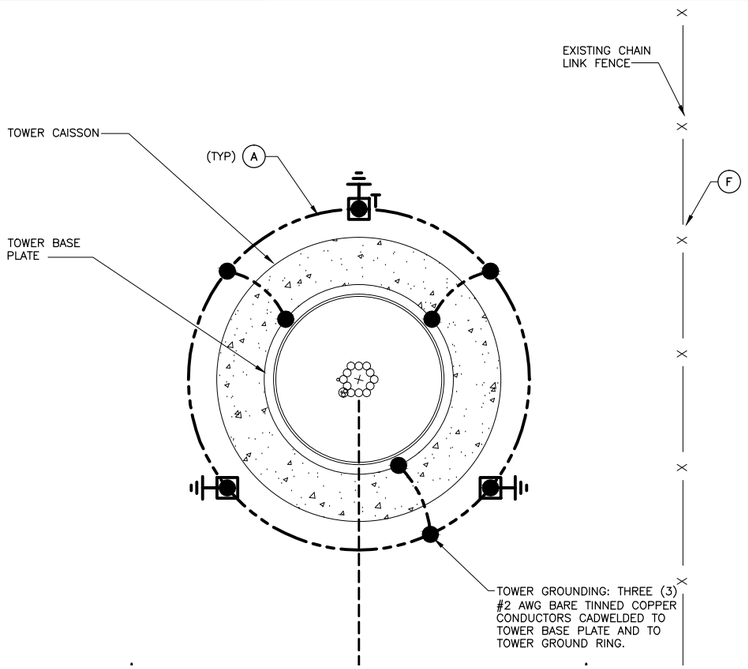
PRINT NAME: NESTOR POPOWYCH
SIGNATURE:
DATE: 02/05/2014 LICENSE # 47725

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

MPLSMNU1049_143346
BASSETTS CREEK PARK
252 UPTON AVENUE SOUTH
MINNEAPOLIS, MN 55405
NSB - RAWLAND

SHEET TITLE
ELECTRICAL AC ONE-LINE DIAGRAM

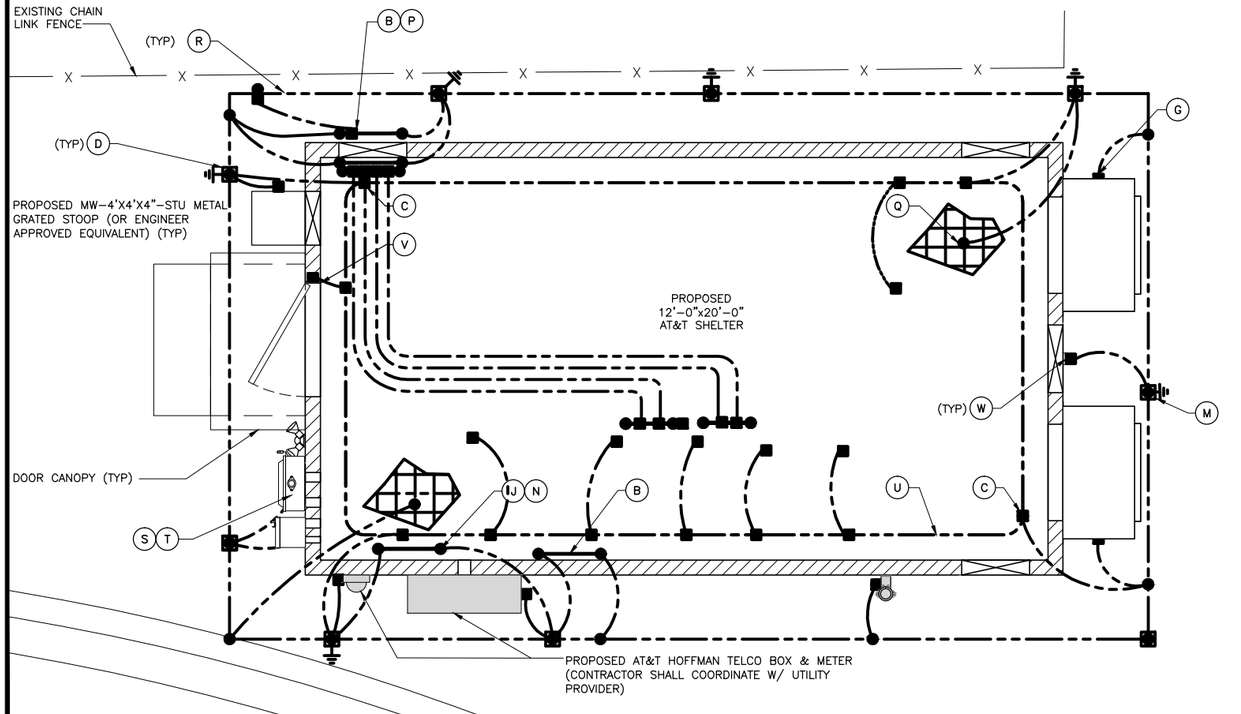
SHEET NUMBER
E-6



GROUNDING TOWER PLAN

12" 6" 0 1' 2' 3' 4' 5'
1/2"=1'-0"

1



GROUNDING SITE PLAN

12" 6" 0 1' 2' 3' 4' 5'
1/2"=1'-0"

2

- EXOTHERMIC TYPE CONNECTIONS
- COMPRESSION TYPE CONNECTIONS
- CHEMICAL ELECTROLYTIC GROUNDING SYSTEM
- GROUND ROD WITH INSPECTION SLEEVE
- TEST GROUND ROD WITH INSPECTION SLEEVE
- EXOTHERMIC WITH INSPECTION SLEEVE
- GROUNDING CONDUCTOR
- GROUNDING BAR

LEGEND

KEYNOTES

(A) TOWER GROUNDING RING: EXTEND TWO (2) #2 AWG TINNED CU CONDUCTOR FROM NEW BURIED GROUNDING RING TO EXISTING TOWER GROUNDING RING AND MAKE AN EXOTHERMIC CONNECTION.

(B) GROUNDING BAR: EXTEND TWO (2) #2 AWG TINNED CU CONDUCTOR FROM BURIED GROUNDING RING UP TO THE HATCHPLATE GROUNDING BAR AND MAKE A MECHANICAL CONNECTION.

(C) GROUNDING OF INTERNAL GROUNDING RING: EXTEND TWO (2) #2 AWG TINNED CU CONDUCTOR FROM BURIED GROUNDING RING THROUGH 1" PVC SLEEVE INTO EQUIPMENT SHELTER FOR CONNECTION TO INTERIOR HALO GROUNDING RING. (4) FOUR CONNECTIONS TYPICAL AT EACH SHELTER CORNERS.

(D) GROUND ROD: COPPER CLAD STEEL 5/8" (10) TEN FEET LONG. ALL GROUNDING RODS MAY BE INSTALLED WITH INSPECTION SLEEVES.

(E) ICE BRIDGE SUPPORT POST GROUNDING: EXTEND #2 AWG TINNED CU CONDUCTOR FROM BURIED GROUNDING RING TO ALL ICE BRIDGE SUPPORT POSTS AND EXOTHERMICALLY WELD.

(F) FENCE GROUNDING: IF FENCE IS WITHIN 6' OF GROUNDING RING, EXTEND #2 AWG TINNED CU CONDUCTOR FROM BURIED GROUNDING RING TO FENCE POSTS EXOTHERMICALLY WELDED. FENCING FABRIC SHALL BE GROUNDED AT ADJACENT CORNER POST. (2) REQ'D. GROUND INTERMEDIATE POST TO MAINTAIN 25'-0" MAX SPACING.

(G) HVAC GROUNDING: EXTEND #2 AWG TINNED CU CONDUCTOR FROM BURIED GROUNDING RING TO THE HVAC UNIT AND MAKE A MECHANICAL CONNECTION.

(H) PROPOSED TOWER GROUNDING: EXTEND TWO (2) #2 AWG TINNED CU CONDUCTOR FROM BURIED GROUNDING RING AND CONNECT TO THE PROPOSED TOWER. FOLLOW MANUFACTURERS RECOMMENDATIONS FOR GROUNDING CONNECTIONS TO THE TOWER. (APPLICABLE TO NEW TOWERS ONLY.)

(J) TELCO GROUNDING BAR: EXTEND TWO (2) #2 AWG TINNED CU CONDUCTORS TO MASTER GROUNDING BAR AND MAKE A MECHANICAL CONNECTION.

(K) ANTENNA GROUNDING BAR: EXTEND TWO (2) #2 AWG TINNED CU CONDUCTOR FROM BURIED GROUNDING RING AND CONNECT TO THE PROPOSED ANTENNA GROUNDING BAR. MOUNT GROUNDING BAR DIRECTLY TO TOWER. SECURE TO TOWER WITH STAINLESS STEEL MOUNTING MATERIAL.

(L) GATE GROUNDING: EXTEND #2 AWG TINNED CU CONDUCTOR FROM BURIED GROUNDING RING TO GATE POSTS AND EXOTHERMICALLY WELD. SEE DETAIL G-6.

(M) TEST GROUND ROD WITH INSPECTION SLEEVE: COPPER CLAD STEEL 5/8" DIA. TEN (10) FEET LONG WITH INSPECTION SLEEVE.

(N) MASTER GROUNDING BAR: EXTEND TWO (2) #2 AWG TINNED CU CONDUCTORS FROM BURIED GROUNDING RING UP TO MASTER GROUNDING BAR & MAKE A EXOTHERMIC CONNECTIONS.

(P) GROUNDING BAR LOCK BOX: TESSCO PART # 351546: INSTALL PER MANUFACTURER REQUIREMENTS.

(Q) GROUNDING REINFORCEMENT: EXTEND TWO (2) #2 AWG CONDUCTORS FROM REINFORCING BARS IN CONCRETE SLAB OR FOOTINGS, ROUTE CONDUCTORS TO GROUNDING RING AND TERMINATING USING EXOTHERMIC WELDS NEC 250.52(A)(3).OR HYDRAULIC COMPRESSION CONNECTIONS SUCH AS "BURNDY HYGROUND" MAY BE USED IN AN EXTERIOR APPLICATION FOR CONDUCTOR TO CONDUCTOR CONNECTIONS BELOW GRADE WHERE EXOTHERMIC WELDS ARE NOT PRACTICAL AND ON ROOFTOP SITES WHERE EXOTHERMIC WELDS MAY BE A FIRE HAZARD.

(R) TIE INTO EXISTING GROUNDING RING: (2) REQ'D

(S) MICRIN GENERATOR INTERFACE PANEL (BY SHELTER MANUFACTURER)

(T) 200A FUSIBLE SAFETY SWITCH

(U) INTERIOR GROUND RING HALO

(V) SHELTER DOOR FRAME GROUNDING

(VA) CANOPY GROUNDING

(W) SHELTER GFCI RECEPTACLE GROUNDING

NOTES

1. GROUNDING IS SHOWN DIAGRAMMATICALLY ONLY. FOR GROUNDING DETAILS SEE DRAWINGS G-3 THROUGH G-7
2. TESTING SHALL BE PERFORMED AT ALL SITES WHERE MODIFICATIONS OR ADDITIONS ARE MADE TO THE EXISTING GROUNDING SYSTEM AND SHALL BE IN ACCORDANCE WITH AT&T GROUNDING AND BONDING STANDARDS TP-76416. THE CONTRACTOR SHALL SUPPLY AT&T WITH RESULTS FROM PRE-CONSTRUCTION AND POST-CONSTRUCTION OHM TESTING (GROUNDING) RESULTS AND BE IN COMPLIANCE WITH AT&T GROUNDING AND BONDING STANDARDS TP-76416.
3. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE A "FALL OF POTENTIAL" TEST ON THE PROPOSED SUPPLEMENTAL GROUNDING FIELD PRIOR TO FINAL CONNECTION OF THE GROUNDING SYSTEM TO EQUIPMENT. THE TEST SHALL BE PERFORMED BY A QUALIFIED AND CERTIFIED TESTING AGENT. PROVIDE INDEPENDENT TEST RESULTS TO THE PROJECT MANAGER FOR REVIEW. THE GROUNDING SYSTEM RESISTANCE TO EARTH GROUNDING SHALL NOT EXCEED (5) OHMS. IF THE GROUNDING TEST EXCEEDS THE MAXIMUM OF (5) OHMS, THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ADDITIONAL GROUNDING RODS AND CONNECTIONS AS REQUIRED TO MEET THE (5) OHMS' MAXIMUM.
4. THE INSPECTOR HAVING JURISDICTION SHALL INSPECT ALL GROUNDING CONNECTIONS FOR TIGHTNESS. EXOTHERMIC WELDED CONNECTIONS SHALL BE APPROVED BEFORE BEING PERMANENTLY CONCEALED.
5. FOR ALL CONNECTIONS TO THE GROUNDING RING, SEE THE SHELTER MANUFACTURER'S DRAWINGS.
6. WHEN AN EXISTING METER RACK IS BEING UTILIZED AND A NEW METER IS INSTALLED IN THE EXISTING METER RACK, THE GROUNDING RODS, AND GROUNDING CONDUCTORS OF THE EXISTING GROUNDING RING, SHALL BE EXTENDED TO THE PROPOSED GROUNDING RING AND BECOME A COMPLETE GROUNDING SYSTEM.
7. CONTRACTOR SHALL GROUND ALL EQUIPMENT INCLUDING ANTENNAS, RET MOTORS, TMA'S, COAX CABLES AND RET CONTROL CABLES AS A COMPLETE SYSTEM. GROUNDING SHALL BE EXECUTED BY QUALIFIED WIREMEN IN COMPLIANCE WITH MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
8. WHEN A CANOPY IS INSTALLED, THE CANOPY SHALL BE EFFECTIVELY GROUNDED AS REQUIRED BY AT&T GROUNDING AND BONDING STANDARDS TP-76416.
9. FOR ROOFTOP INSTALLATIONS, ROUTE GROUNDING CONDUCTORS ON THE SHELTER'S EXTERIOR SUPPORTING STRUCTURE. WHEN A SUPPORT PLATFORM STRUCTURE IS EMPLOYED, ROUTE GROUNDING CONDUCTORS UNDERNEATH AND ON THE SUPPORTING MEMBERS, USING APPROVED STRAPS AS REQUIRED IN ARTICLE 6.4.1.7.
10. FOR GROUNDING INSTALLATIONS WHICH HAVE A LIMITED AREA AND IS BEING REQUIRED TO BE INSTALLED WITHIN THE LEASE AREA ONLY, THE GROUNDING RING CONDUCTORS CAN BE INSTALLED UNDER THE SHELTER'S FOOTINGS.
11. MAIN GROUNDING CONDUCTORS SHALL BE ROUTED AND BONDED TO ALL EFFECTIVE GROUNDING PATHS IN ACCORDANCE WITH AT&T GROUNDING AND BONDING SPECIFICATION 6.8.2 STATED IN TP-76416. THE NEW GROUNDING SYSTEM SHALL BE BONDED (2 PLACES) TO ALL EXISTING GROUNDING SYSTEMS, INCLUDING BUT NOT LIMITED TO BUILDING STEEL STRUCTURE, LIGHTNING PROTECTION SYSTEMS, BUILDING MAIN GROUNDING SYSTEM AND/OR MAIN WATER SUPPLY IF APPLICABLE.
12. BUILDINGS AND/OR NEW TOWERS GREATER THAN 75 FEET IN HEIGHT AND THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 AWG COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM. THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY). SEE AT&T GROUNDING AND BONDING STANDARDS TP-76416 SPECIFICATION 6.3.2.2.

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847.944.1600

SITE ID:	MPLSMNU1049
DRAWN BY:	KMR
CHECKED BY:	GP

REV	DATE	DESCRIPTION
O	03/25/14	ISSUED FOR CONSTRUCTION
B	02/27/14	90 % ISSUED FOR CONSTRUCTION
A	01/31/14	ISSUED FOR REVIEW

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PRINT NAME: NESTOR POPOWYCH
SIGNATURE:
DATE: 02/05/2014 LICENSE # 47725

MPLSMNU1049_143346
BASSETTS CREEK PARK
252 UPTON AVENUE SOUTH
MINNEAPOLIS, MN 55405
NSB - RAWLAND

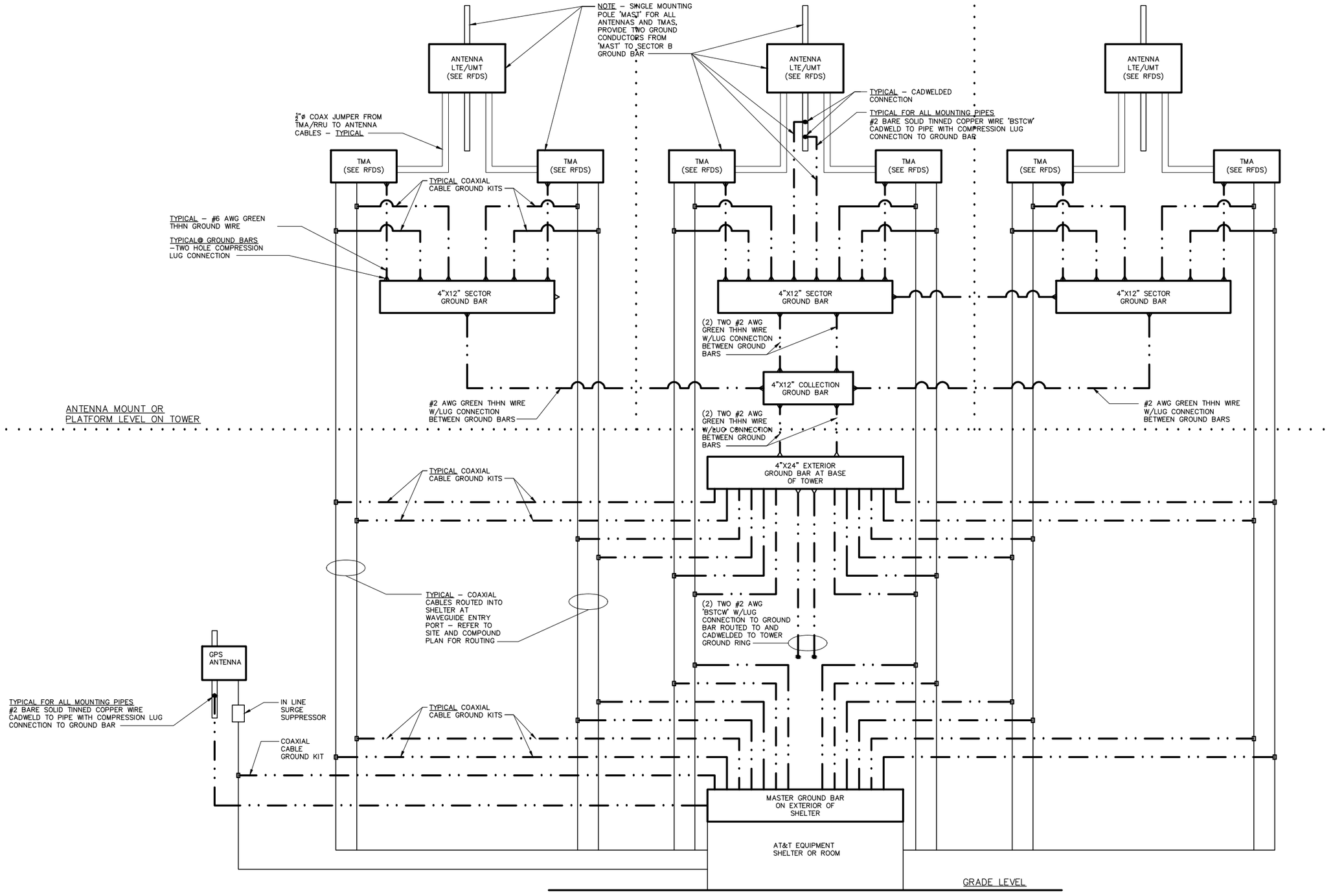
SHEET TITLE
GROUNDING PLAN

SHEET NUMBER
E-7

SECTOR A
REFER TO RFDS FOR SPECIFIC CONFIGURATION, EQUIPMENT, CABLING TYPES AND QUANTITIES

SECTOR B
REFER TO RFDS FOR SPECIFIC CONFIGURATION, EQUIPMENT, CABLING TYPES AND QUANTITIES

SECTOR C
REFER TO RFDS FOR SPECIFIC CONFIGURATION, EQUIPMENT, CABLING TYPES AND QUANTITIES



ANTENNA GROUNDING PLAN

NO SCALE

1

at&t
2630 LIBERTY AVENUE
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1501 E. WOODFIELD ROAD, SUITE □300E
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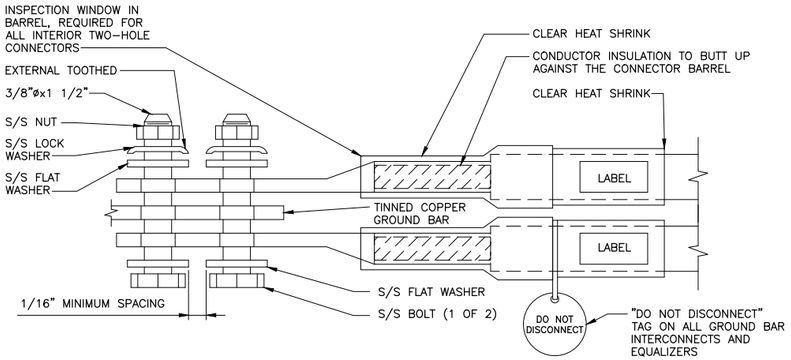
MPLSMNU1049_143346
BASSETTS CREEK PARK
252 UPTON AVENUE SOUTH
MINNEAPOLIS, MN 55405
NSB – RAWLAND

SHEET TITLE
ANTENNA GROUNDING PLAN

SHEET NUMBER
E-8



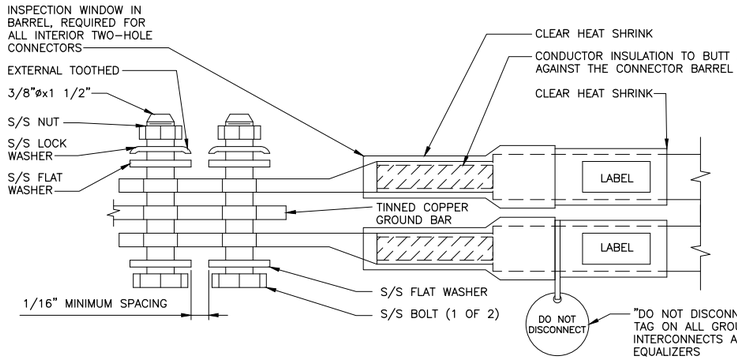
NOTES:

1. EXOTHERMIC WELD (2) TWO, #2 AWG BARE TINNED SOLID COPPER CONDUCTORS TO GROUND BAR. ROUTE CONDUCTORS TO BURIED GROUND RING AND PROVIDE PARALLEL EXOTHERMIC WELD.
2. ALL GROUND BARS SHALL BE STAMPED IN TO THE METAL "IF STOLEN DO NOT RECYCLE." THE CONTRACTOR SHALL USE PERMANENT MARKER TO DRAW THE LINES BETWEEN EACH SECTION AND LABEL EACH SECTION ("P", "A", "I") WITH 1" HIGH LETTERS.
3. ALL HARDWARE SHALL BE STAINLESS STEEL 3/8" DIAMETER OR LARGER. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING LOCK WASHERS, COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
4. FOR GROUND BOND TO STEEL ONLY: INSERT A CADMIUM FLAT WASHER BETWEEN LUG AND STEEL, COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
5. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND CONDUCTOR DOWN TO GROUND BUS.
6. NUT & WASHER SHALL BE PLACED ON THE FRONT SIDE OF THE GROUND BAR AND BOLTED ON THE BACK SIDE. INSTALL BLACK HEAT-SHRINKING TUBE, 600 VOLT INSULATION, ON ALL GROUND TERMINATIONS. THE INTENT IS TO WEATHERPROOF THE COMPRESSION CONNECTION.
7. SUPPLIED AND INSTALLED BY CONTRACTOR.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ADDITIONAL GROUND BAR AS REQUIRED, PROVIDING 50% SPARE CONNECTION POINTS.
9. ENSURE THE WIRE INSULATION TERMINATION IS WITHIN 1/8" OF THE BARREL (NO SHINERS).
10. BOLTS SHALL BE MADE "SNUG-TIGHT" PLUS 1/4 TURN.

INTERIOR TWO HOLE LUG DETAIL

NO SCALE

1



NOTES:

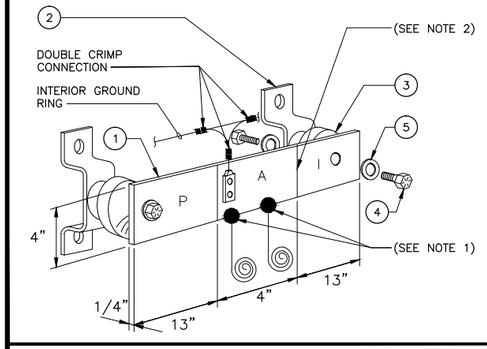
1. EXOTHERMIC WELD (2) TWO, #2 AWG BARE TINNED SOLID COPPER CONDUCTORS TO GROUND BAR. ROUTE CONDUCTORS TO BURIED GROUND RING AND PROVIDE PARALLEL EXOTHERMIC WELD.
2. ALL GROUND BARS SHALL BE STAMPED IN TO THE METAL "IF STOLEN DO NOT RECYCLE." THE CONTRACTOR SHALL USE PERMANENT MARKER TO DRAW THE LINES BETWEEN EACH SECTION AND LABEL EACH SECTION ("P", "A", "I") WITH 1" HIGH LETTERS.
3. ALL HARDWARE SHALL BE STAINLESS STEEL 3/8" DIAMETER OR LARGER. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING LOCK WASHERS, COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
4. FOR GROUND BOND TO STEEL ONLY: INSERT A CADMIUM FLAT WASHER BETWEEN LUG AND STEEL, COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
5. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND CONDUCTOR DOWN TO GROUND BUS.
6. NUT & WASHER SHALL BE PLACED ON THE FRONT SIDE OF THE GROUND BAR AND BOLTED ON THE BACK SIDE. INSTALL BLACK HEAT-SHRINKING TUBE, 600 VOLT INSULATION, ON ALL GROUND TERMINATIONS. THE INTENT IS TO WEATHERPROOF THE COMPRESSION CONNECTION.
7. SUPPLIED AND INSTALLED BY CONTRACTOR.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ADDITIONAL GROUND BAR AS REQUIRED, PROVIDING 50% SPARE CONNECTION POINTS.
9. ENSURE THE WIRE INSULATION TERMINATION IS WITHIN 1/8" OF THE BARREL (NO SHINERS).
10. BOLTS SHALL BE MADE "SNUG-TIGHT" PLUS 1/4 TURN.

EXTERIOR TWO HOLE LUG DETAIL

NO SCALE

2

NEWTON INSTRUMENT COMPANY, INC. BUTNER, N.C.			
NO	REQUIRED	PART NUMBER	DESCRIPTION
1	1	1/4"x4"x30"	SOLID GROUND BAR
2	2	A-6056	WALL MOUNTING BRACKET
3	2	3061-4	INSULATORS
4	4	3012-1	5/8"-11x1" H.H.C.S.
5	4	3015-8	5/8" LOCKWASHER



EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION

SECTION "P" – SURGE PROTECTORS

(EC) CELL REFERENCE GROUND BAR (IF COLLOCATED)
(EC) GENERATOR FRAMEWORK (IF AVAILABLE) (#2 AWG)
(EC) TELCO GROUND BAR (#2 AWG)
(EC) COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (3/0)
(EC) FIBER GROUND BAR (#2 AWG)
(EC) POWER ROOM REFERENCE GROUND BAR (#2 AWG)
(AT&T) RECTIFIER FRAMES

SECTION "A" – SURGE ABSORBERS

(EC) INTERIOR GROUND RING (#2 AWG)
(EC) EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2 AWG)
(EC) METALLIC COLD WATER PIPE (IF AVAILABLE) (1/0 AWG)
(EC) BUILDING STEEL (IF AVAILABLE) (1/0 AWG)

SECTION "I" – ISOLATED GROUND ZONE

(AT&T) ALL ISOLATED GROUND REFERENCE
(AT&T) GROUND WINDOW BAR

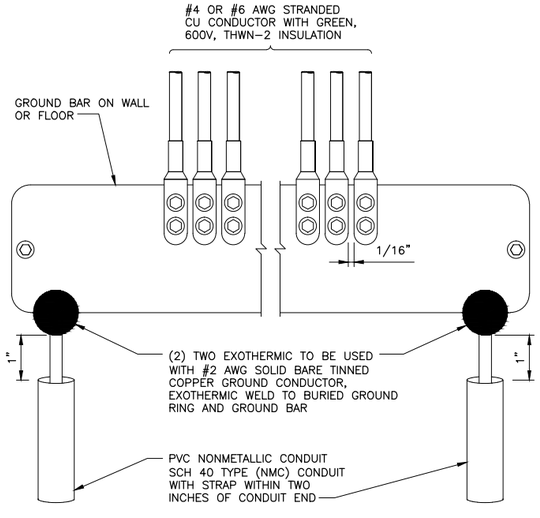
DETAIL NOTES:

1. EXOTHERMICALLY WELD #2 AWG BARE TINNED SOLID COPPER CONDUCTOR TO GROUND BAR. ROUTE CONDUCTOR TO BURIED GROUND RING AND PROVIDE PARALLEL EXOTHERMIC WELD.
2. THE INSTALLER SHALL USE PERMANENT MARKER TO DRAW THE LIKE BETWEEN SECTION AND LABEL EACH SECTION ("P", "A", "I" WITH 1" HIGH LETTERS

(MGB) REFERENCE GROUNDING BAR DETAIL

NO SCALE

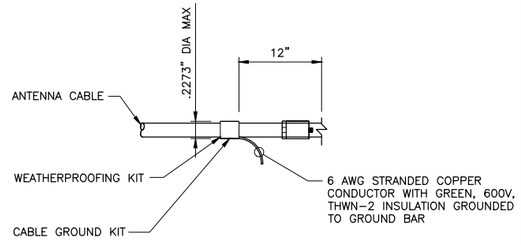
3



GROUNDING BAR DETAIL

NO SCALE

4



CONNECTION OF CABLE GROUNDING KIT TO ANTENNA CABLE

NO SCALE

5

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SAC WIRELESS ENGINEERING GROUP
1501 E. WOODFIELD ROAD, SUITE □300E
SCHAUMBURG, IL 60173
□□□□sa□□.□o□
847□944□1600

SITE ID:	MPLSMNU1049
DRAWN BY:	KMR
CHECKED BY:	GP

REV	DATE	DESCRIPTION
O	03/25/14	ISSUED FOR CONSTRUCTION
B	02/27/14	90 % ISSUED FOR CONSTRUCTION
A	01/31/14	ISSUED FOR REVIEW

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

PRINT NAME: NESTOR POPOWYCH

SIGNATURE:

DATE: 02/05/2014 LICENSE # 47725

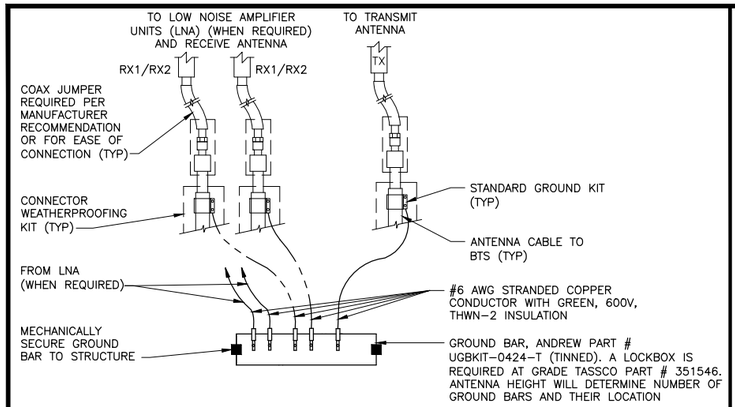
MPLSMNU1049_143346
BASSETTS CREEK PARK
252 UPTON AVENUE SOUTH
MINNEAPOLIS, MN 55405
NSB – RAWLAND

SHEET TITLE

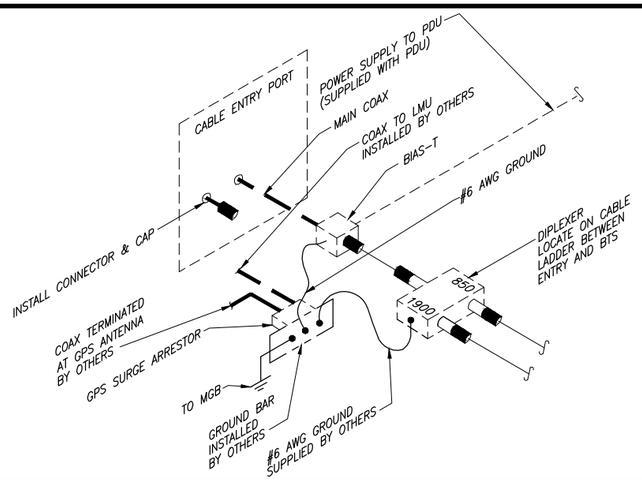
GROUNDING DETAILS

SHEET NUMBER

E-9



ANTENNA GROUNDING BAR DETAIL | NO SCALE | 1



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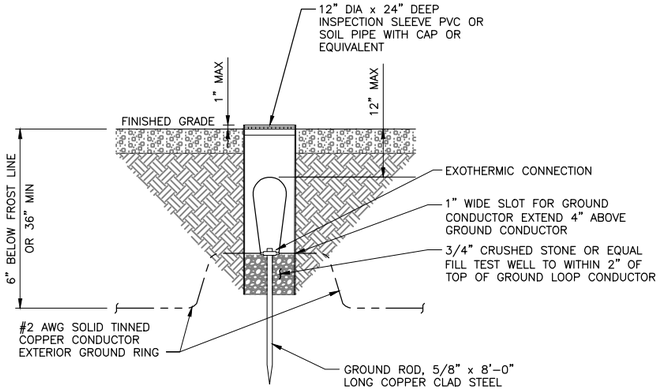
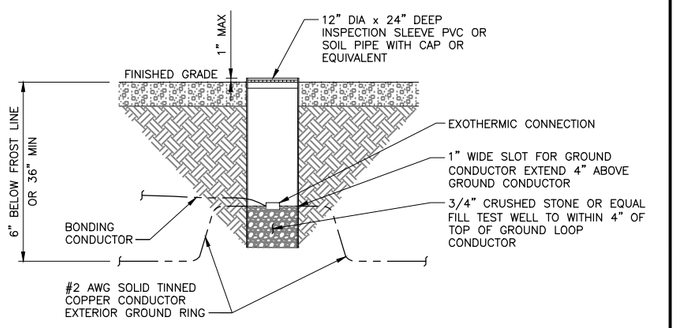


TEST GROUNDING ROD WITH INSPECTION SLEEVE DETAIL | NO SCALE | 3



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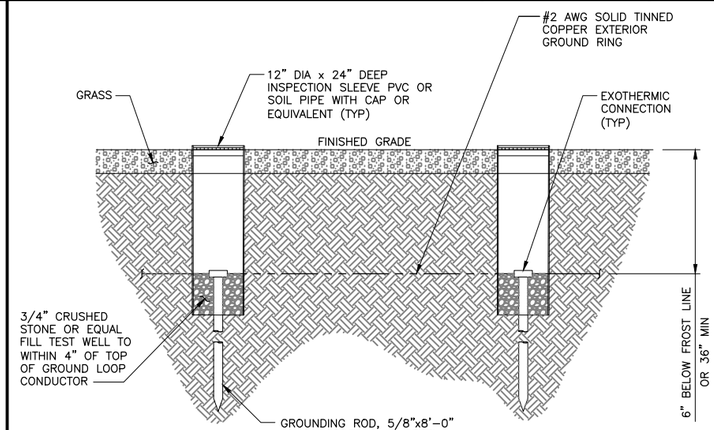
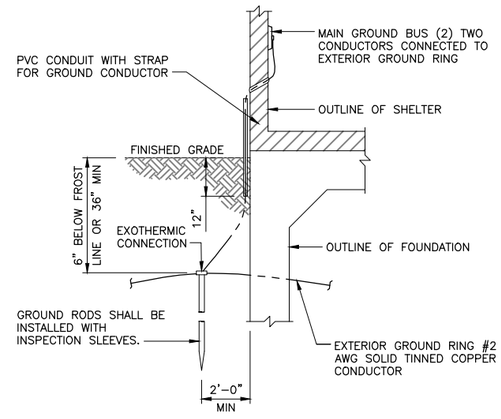
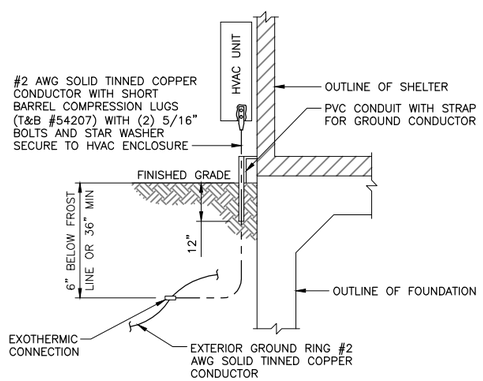


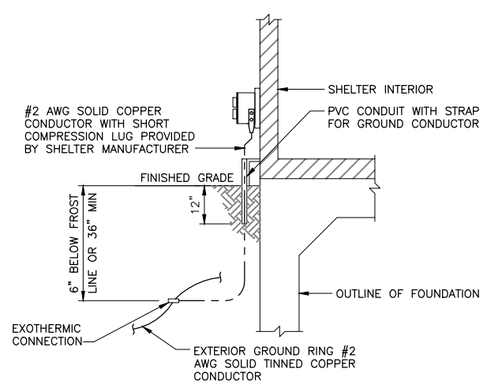
GROUNDING ROD WITH INSPECTION SLEEVE DETAIL | NO SCALE | 5



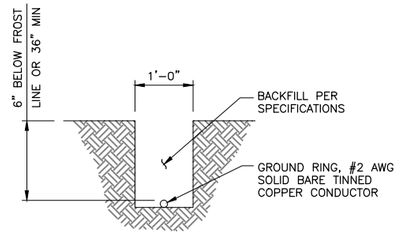
BUILDING GROUNDING DETAIL | NO SCALE | 6



HVAC GROUNDING DETAIL | NO SCALE | 7



EXTERIOR RECEPTACLE GROUNDING DETAIL | NO SCALE | 8



GROUNDING RING TRENCH DETAIL | NO SCALE | 9

at&t
2630 LIBERTY AVENUE
PITTSBURGH, PA 15222

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847.944.1600

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MINNEAPOLIS, MN 55405
NSB – RAWLAND

SHEET TITLE

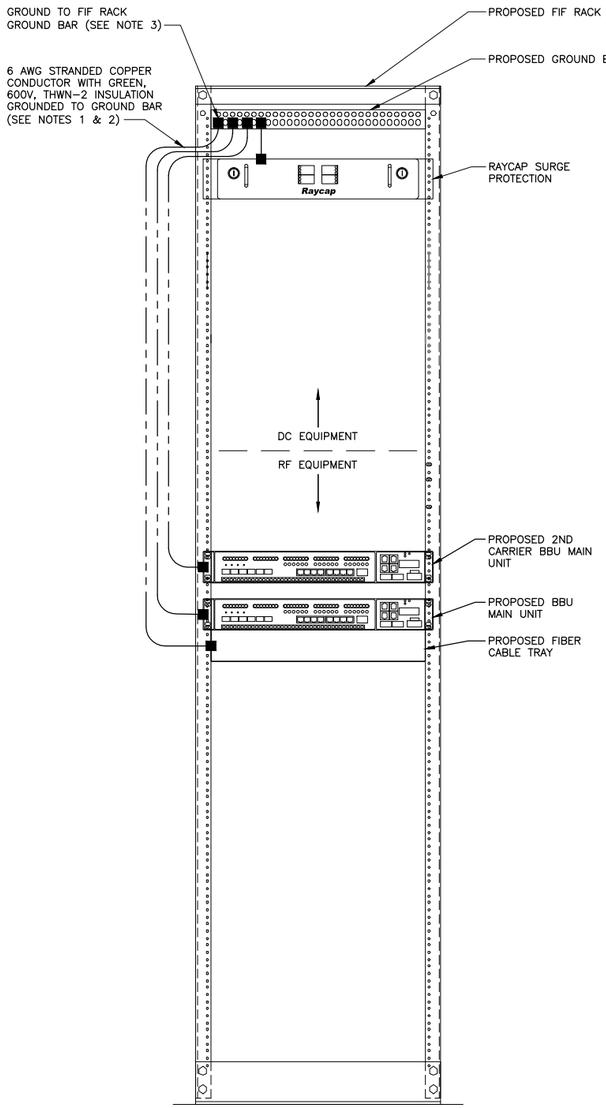
GROUNDING DETAILS

SHEET NUMBER

E-10

NOTES

1. COMPRESSION CONNECTIONS (2), 2 AWG BARE TINNED SOLID COPPER CONDUCTORS TO GROUND BAR. ROUTE CONDUCTORS TO BURIED GROUND RING AND PROVIDE PARALLEL EXOTHERMIC WELD.
2. ALL GROUND BARS SHALL BE STAMPED IN TO THE METAL "IF STOLEN DO NOT RECYCLE." THE CONTRACTOR SHALL USE PERMANENT MARKER TO DRAW THE LINES BETWEEN EACH SECTION AND LABEL EACH SECTION ("P", "A", "N", "I") WITH 1" TALL LETTERS.
3. THE BONDING POINT FOR TELECOM EQUIPMENT FRAMES SHALL BE THE GROUND BUS THAT IS NOT ISOLATED FROM THE EQUIPMENT'S METAL FRAMEWORK. BOND THE FRAME GROUND BUS TO THE "I" SECTION OF THE CELL REFERENCE GROUND BAR (ATT-TP-76416 7.8). IF THE FRAME GROUND BAR IS ISOLATED FROM THE FRAME, THEN THE FRAME SHOULD BE GROUNDED TO THE INTERIOR RING WITH A #6 AWG CONDUCTOR.



FIF RACK GROUNDING DETAIL | NO SCALE | 1

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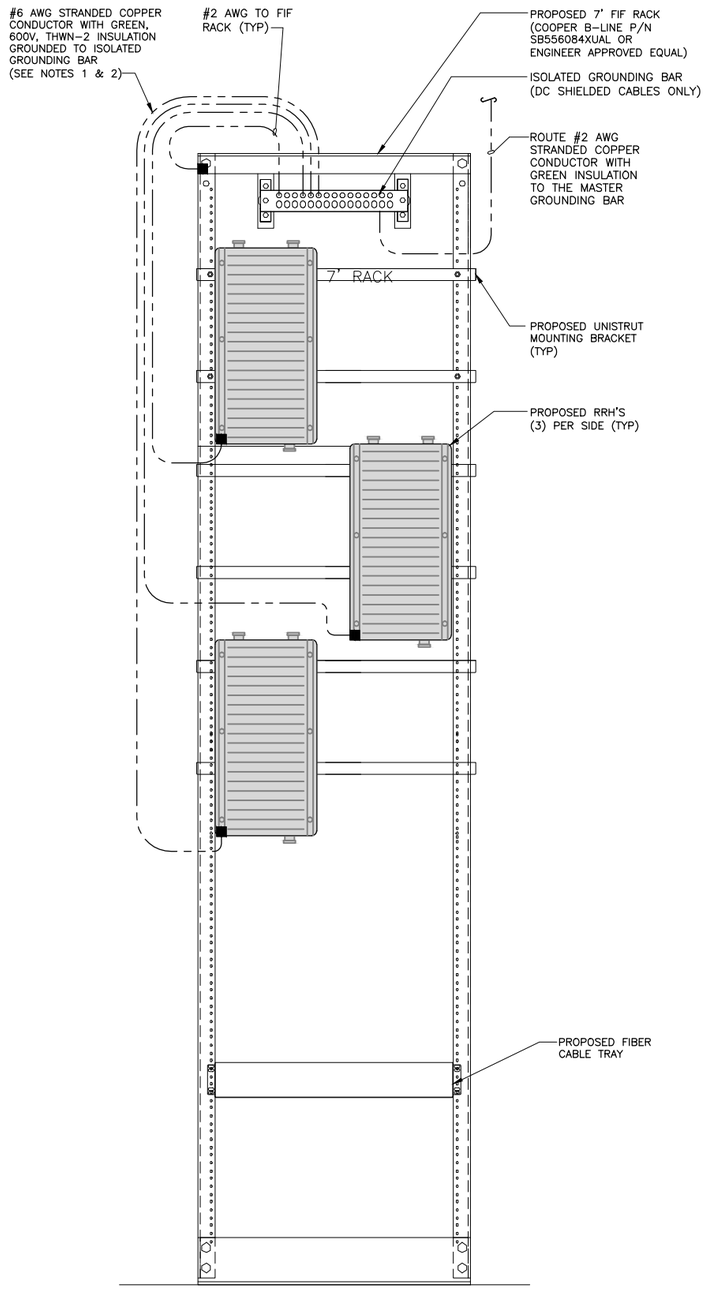
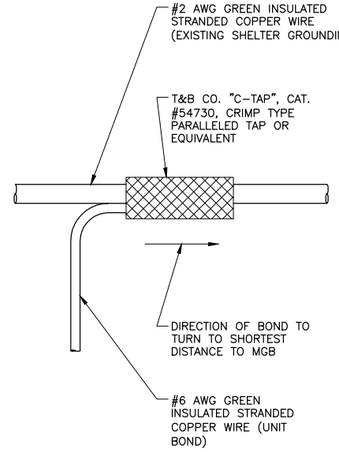
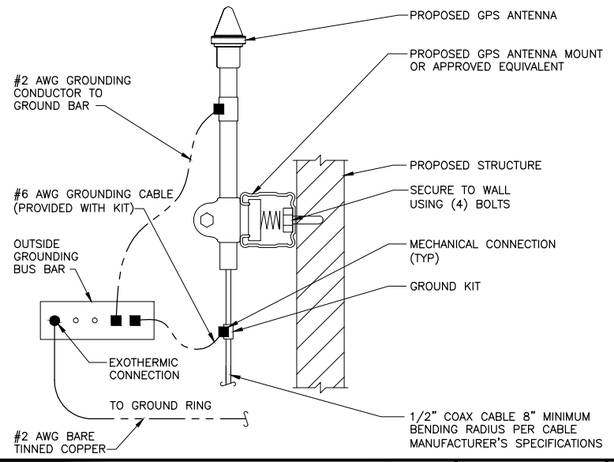


FIF RACK W/ RRH'S GROUNDING DETAIL | NO SCALE | 2



GROUNDING WIRE CONNECTION DETAIL | NO SCALE | 3



LTE GPS ANTENNA GROUNDING DETAIL | NO SCALE | 4

NOT USED | NO SCALE | 5

at&t
2630 LIBERTY AVENUE
PITTSBURGH, PA 15222

A□E
WIRELESS ENGINEERING GROUP
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SHEET TITLE
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E-11

PART 1 – GENERAL

1.1 GENERAL CONDITIONS:

A. CONTRACTOR SHALL INSPECT THE EXISTING SITE CONDITIONS PRIOR TO SUBMITTING BID. ANY QUESTIONS ARISING DURING THE BID PERIOD IN REGARDS TO THE CONTRACTORS FUNCTIONS, THE SCOPE OF WORK, OR ANY OTHER ISSUE RELATED TO THIS PROJECT SHALL BE BROUGHT UP DURING THE BID PERIOD WITH THE PROJECT MANAGER FOR CLARIFICATION, NOT AFTER THE CONTRACT HAS BEEN AWARDED.

B. THE CONTRACTOR SHALL OBTAIN PERMITS, LICENSES, MAKE ALL DEPOSITS, AND PAY ALL FEES REQUIRED FOR THE CONSTRUCTION PERFORMANCE FOR THE WORK UNDER THIS SECTION.

C. DRAWINGS SHOW THE GENERAL ARRANGEMENT OF ALL SYSTEMS AND COMPONENTS COVERED UNDER THIS SECTION. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS. DRAWING SHALL NOT BE SCALED TO DETERMINE DIMENSIONS.

1.2 LAWS, REGULATIONS, ORDINANCES, STATUTES AND CODES.

A. ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE, AND ALL APPLICABLE LOCAL LAWS, REGULATIONS, ORDINANCES, STATUTES AND CODES. CONDUIT BENDS SHALL BE THE RADIUS BEND FOR THE TRADE SIZE OF CONDUIT IN COMPLIANCE WITH THE LATEST EDITIONS OF NEC.

1.3 REFERENCES:

A. THE PUBLICATIONS LISTED BELOW ARE PART OF THIS SPECIFICATION. EACH PUBLICATION SHALL BE THE LATEST REVISION AND ADDENDUM IN EFFECT ON THE DATE. THIS SPECIFICATION IS ISSUED FOR CONSTRUCTION UNLESS OTHERWISE NOTED. EXCEPT AS MODIFIED BY THE REQUIREMENT SPECIFIED HEREIN OR THE DETAILS OF THE DRAWINGS, WORK INCLUDED IN THIS SPECIFICATION SHALL CONFORM TO THE APPLICABLE PROVISION OF THESE PUBLICATIONS.

1. ANSI/IEEE (AMERICAN NATIONAL STANDARDS INSTITUTE)
2. ASTM (AMERICAN SOCIETY FOR TESTING AND MATERIALS)
3. ICEA (INSULATED CABLE ENGINEERS ASSOCIATION)
4. NEMA (NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION)
5. NFPA (NATIONAL FIRE PROTECTION ASSOCIATION)
6. OSHA (OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION)
7. UL (UNDERWRITERS LABORATORIES INC.)
8. AT&T GROUNDING AND BONDING STANDARDS TP-76416

1.4 SCOPE OF WORK

A. WORK UNDER THIS SECTION SHALL CONSIST OF FURNISHING ALL LABOR, MATERIAL, AND ASSOCIATED SERVICES REQUIRED TO COMPLETE REQUIRED CONSTRUCTION AND BE OPERATIONAL.

B. ALL ELECTRICAL EQUIPMENT UNDER THIS CONTRACT SHALL BE PROPERLY TESTED, ADJUSTED, AND ALIGNED BY THE CONTRACTOR.

C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXCAVATING, DRAINING, TRENCHES, BACKFILLING, AND REMOVAL OF EXCESS DIRT.

D. THE CONTRACTOR SHALL FURNISH TO THE OWNER WITH CERTIFICATES OF A FINAL INSPECTION AND APPROVAL FROM THE INSPECTION AUTHORITIES HAVING JURISDICTION.

E. THE CONTRACTOR SHALL PREPARE A COMPLETE SET OF AS-BUILT DRAWINGS, DOCUMENT ALL WIRING EQUIPMENT CONDITIONS, AND CHANGES WHILE COMPLETING THIS CONTRACT. THE AS-BUILT DRAWINGS SHALL BE SUBMITTED AT COMPLETION OF THE PROJECT.

PART 2 – PRODUCTS

2.1 GENERAL:

A. ALL MATERIALS AND EQUIPMENT SHALL BE UL LISTED, NEW, AND FREE FROM DEFECTS.

B. ALL ITEMS OF MATERIALS AND EQUIPMENT SHALL BE ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION AS SUITABLE FOR THE USE INTENDED.

C. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.

D. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 10,000 AIC MINIMUM. VERIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PER THE GOVERNING JURISDICTION.

2.2 MATERIALS AND EQUIPMENT:

A. CONDUIT:

1. RIGID METAL CONDUIT (RMC) SHALL BE HOT-DIPPED GALVANIZED INSIDE AND OUTSIDE INCLUDING ENDS AND THREADS AND ENAMELED OR LACQUERED INSIDE IN ADDITION TO GALVANIZING.
2. LIQUIDTIGHT FLEXIBLE METAL CONDUIT SHALL BE UL LISTED.
3. CONDUIT CLAMPS, STRAPS AND SUPPORTS SHALL BE STEEL OR MALLEABLE IRON. ALL FITTINGS SHALL BE COMPRESSION AND CONCRETE TIGHT TYPE. GROUNDING BUSHINGS WITH INSULATED THROATS SHALL BE INSTALLED ON ALL CONDUIT TERMINATIONS.
4. NONMETALLIC CONDUIT AND FITTINGS SHALL BE SCHEDULE 40 PVC. INSTALL USING SOLVENT-CEMENT-TYPE JOINTS AS RECOMMENDED BY THE MANUFACTURER.

B. CONDUCTORS AND CABLE:

1. CONDUCTORS AND CABLE SHALL BE FLAME-RETARDANT, MOISTURE AND HEAT RESISTANT THERMOPLASTIC, SINGLE CONDUCTOR, COPPER, TYPE THHN/THWN-2, 600 VOLT, SIZE AS INDICATED, #12 AWG SHALL BE THE MINIMUM SIZE CONDUCTOR USED.
2. #10 AWG AND SMALLER CONDUCTOR SHALL BE SOLID OR STRANDED AND #8 AWG AND LARGER CONDUCTORS SHALL BE STRANDED.
3. SOLDERLESS, COMPRESSION-TYPE CONNECTORS SHALL BE USED FOR TERMINATION OF ALL STRANDED CONDUCTORS.
4. STRAIN-RELIEF SUPPORTS GRIPS SHALL BE HUBBELL KELLEMS OR APPROVED EQUAL. CABLES SHALL BE SUPPORTED IN ACCORDANCE WITH THE NEC AND CABLE MANUFACTURER'S RECOMMENDATIONS.
5. ALL CONDUCTORS SHALL BE TAGGED AT BOTH ENDS OF THE CONDUCTOR, AT ALL PULL BOXES, J-BOXES, EQUIPMENT AND CABINETS AND SHALL BE IDENTIFIED WITH APPROVED PLASTIC TAGS (ACTION CRAFT, BRADY, OR APPROVED EQUAL).

C. DISCONNECT SWITCHES:

1. DISCONNECT SWITCHES SHALL BE HEAVY DUTY, DEAD-FRONT, QUICK-MAKE, QUICK-BREAK, EXTERNALLY OPERABLE, HANDLE LOCKABLE AND INTERLOCK WITH COVER IN CLOSED POSITION, RATING AS INDICATED, UL LABELED FURNISHED IN NEMA 3R ENCLOSURE, SQUARE-D OR ENGINEER APPROVED EQUAL.

D. CHEMICAL ELECTROLYTIC GROUNDING SYSTEM:

1. INSTALL CHEMICAL GROUNDING AS REQUIRED. THE SYSTEM SHALL BE ELECTROLYTIC MAINTENANCE FREE ELECTRODE CONSISTING OF RODS WITH A MINIMUM #2 AWG CU EXOTHERMICALLY WELDED PIGTAIL, PROTECTIVE BOXES, AND BACKFILL MATERIAL. MANUFACTURER SHALL BE LYNCOLE XIT GROUNDING ROD TYPES K2-(*)CS OR K2L-(*)CS (*) LENGTH AS REQUIRED.
2. GROUND ACCESS BOX SHALL BE A POLYPLASTIC BOX FOR NON-TRAFFIC APPLICATIONS, INCLUDING BOLT DOWN FLUSH COVER WITH "BREATHER" HOLES, XIT MODEL #XB-22. ALL DISCONNECT SWITCHES AND CONTROLLING DEVICES SHALL BE PROVIDED WITH ENGRAVED LAMICOID NAMEPLATES INDICATING EQUIPMENT CONTROLLED, BRANCH CIRCUITS ID NUMBERING, AND THE ELECTRICAL POWER SOURCE.
3. BACKFILL MATERIAL SHALL BE LYNCONITE AND LYNCOLE GROUNDING GRAVEL.

E. SYSTEM GROUNDING:

1. ALL GROUNDING COMPONENTS SHALL BE TINNED AND GROUNDING CONDUCTOR SHALL BE #2 AWG BARE, SOLID, TINNED, COPPER. ABOVE GRADE GROUNDING CONDUCTORS SHALL BE INSULATED WHERE NOTED.
2. GROUNDING BUSES SHALL BE BARE, TINNED, ANNEALED COPPER BARS OF RECTANGULAR CROSS SECTION. STANDARD BUS BARS MGB, SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. THEY SHALL NOT BE FABRICATED OR MODIFIED IN THE FIELD. ALL GROUNDING BUSES SHALL BE IDENTIFIED WITH MINIMUM 3/4" LETTERS BY WAY OF STENCILING OR DESIGNATION PLATE.
3. CONNECTORS SHALL BE HIGH-CONDUCTIVITY, HEAVY DUTY, LISTED AND LABELED AS GROUNDING CONNECTORS FOR THE MATERIALS USED. USE TWO-HOLE COMPRESSION LUGS WITH HEAT SHRINK FOR MECHANICAL CONNECTIONS. INTERIOR CONNECTIONS USE TWO-HOLE COMPRESSION LUGS WITH INSPECTION WINDOW AND CLEAR HEAT SHRINK.
4. EXOTHERMIC WELDED CONNECTIONS SHALL BE PROVIDED IN KIT FORM AND SELECTED FOR THE SPECIFIC TYPES, SIZES, AND COMBINATIONS OF CONDUCTORS AND OTHER ITEMS TO BE CONNECTED.
5. GROUND RODS SHALL BE COPPER-CLAD STEEL WITH HIGH-STRENGTH STEEL CORE AND ELECTROLYTIC-GRADE COPPER OUTER SHEATH, MOLTEN WELDED TO CORE, 5/8"x10'-0". ALL GROUNDING RODS SHALL BE INSTALLED WITH INSPECTION SLEEVES.
6. INSTALL AN EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUITS IN COMPLIANCE WITH THE AT&T SPECIFICATIONS AND NEC. THE EQUIPMENT GROUNDING CONDUCTORS SHALL BE BONDED AT ALL JUNCTION BOXES, PULLBOXES, DISCONNECT SWITCHES, STARTERS, AND EQUIPMENT CABINETS.

F. OTHER MATERIALS:

6. THE CONTRACTOR SHALL PROVIDE OTHER MATERIALS, THOUGH NOT SPECIFICALLY DESCRIBED, WHICH ARE REQUIRED FOR A COMPLETELY OPERATIONAL SYSTEM AND PROPER INSTALLATION OF THE WORK.
7. PROVIDE PULL BOXES AND JUNCTION BOXES WHERE SHOWN OR REQUIRED BY NEC.

G. PANELS AND LOAD CENTERS:

1. ALL PANEL DIRECTORIES SHALL BE TYPEWRITTEN.

PART 3 – EXECUTION

3.1 GENERAL:

A. ALL MATERIAL AND EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

B. EQUIPMENT SHALL BE TIGHTLY COVERED AND PROTECTED AGAINST DIRT OR WATER, AND AGAINST CHEMICAL OR MECHANICAL INJURY DURING INSTALLATION AND CONSTRUCTION PERIODS.

3.2 LABOR AND WORKMANSHIP:

A. ALL LABOR FOR THE INSTALLATION OF MATERIALS AND EQUIPMENT FURNISHED FOR THE ELECTRICAL SYSTEM SHALL BE INSTALLED BY EXPERIENCED WIREMEN, IN A NEAT AND WORKMAN-LIKE MANNER.

B. ALL ELECTRICAL EQUIPMENT SHALL BE ADJUSTED, ALIGNED AND TESTED BY THE CONTRACTOR AS REQUIRED TO PRODUCE THE INTENDED PERFORMANCE.

C. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL THOROUGHLY CLEAN ALL EXPOSED EQUIPMENT, REMOVE ALL LABELS AND ANY DEBRIS, CRATING OR CARTONS AND LEAVE THE INSTALLATION FINISHED AND READY FOR OPERATION.

3.3 COORDINATION:

A. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ELECTRICAL ITEMS WITH THE OWNER-FURNISHED EQUIPMENT DELIVERY SCHEDULE TO PREVENT UNNECESSARY DELAYS IN THE TOTAL WORK.

3.4 INSTALLATION:

A. CONDUIT:

1. ALL ELECTRICAL WIRING SHALL BE INSTALLED IN CONDUIT AS SPECIFIED. NO CONDUIT OR TUBING OF LESS THAN 3/4 INCH TRADE SIZE.
2. PROVIDE RIGID PVC SCHEDULE 80 CONDUITS FOR ALL RISERS, RMC OTHERWISE NOTED. EMT MAY BE INSTALLED FOR EXTERIOR CONDUITS WHERE NOT SUBJECT TO PHYSICAL DAMAGE.
3. INSTALL SCHEDULE 40 PVC CONDUIT WITH A MINIMUM COVER OF 24" UNDER ROADWAYS, PARKING LOTS, STREETS, AND ALLEYS. CONDUIT SHALL HAVE A MINIMUM COVER OF 18" IN ALL OTHER NON-TRAFFIC APPLICATIONS (REFER TO 2008 NEC, TABLE 300.5).
4. USE GALVANIZED FLEXIBLE STEEL CONDUIT WHERE DIRECT CONNECTION TO EQUIPMENT WITH MOVEMENT, VIBRATION, OR FOR EASE OF MAINTENANCE. USE LIQUID TIGHT, FLEXIBLE METAL CONDUIT FOR OUTDOOR APPLICATIONS. INSTALL GALVANIZED FLEXIBLE STEEL CONDUIT AT ALL POINTS OF CONNECTION TO EQUIPMENT MOUNTED ON SUPPORT TO ALLOW FOR EXPANSION AND CONTRACTION.
5. A RUN OF CONDUIT BETWEEN BOXES OR EQUIPMENT SHALL NOT CONTAIN MORE THAN THE EQUIVALENT OF THREE QUARTER-BENDS. CONDUIT BEND SHALL BE MADE WITH THE UL LISTED BENDER OR FACTORY 90 DEGREE ELBOWS MAY BE USED.
6. FIELD FABRICATED CONDUITS SHALL BE CUT SQUARE WITH A CONDUIT CUTTING TOOL AND REAMED TO PROVIDE A SMOOTH INSIDE SURFACE.
7. PROVIDE INSULATED GROUNDING BUSHING FOR ALL CONDUITS.
8. CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL CONDUITS DURING CONSTRUCTION. TEMPORARY OPENINGS IN THE CONDUIT SYSTEM SHALL BE PLUGGED OR CAPPED TO PREVENT ENTRANCE OF MOISTURE OR FOREIGN MATTER. CONTRACTOR SHALL REPLACE ANY CONDUITS CONTAINING FOREIGN MATERIALS THAT CANNOT BE REMOVED.
9. ALL CONDUITS SHALL BE SWABBED CLEAN BY PULLING AN APPROPRIATE SIZE MANDREL THROUGH THE CONDUIT BEFORE INSTALLATION OF CONDUCTORS OR CABLES. CONDUIT SHALL BE FREE OF DIRT AND DEBRIS.
10. INSTALL PULL STRINGS IN ALL CLEAN EMPTY CONDUITS. IDENTIFY PULL STRINGS AT EACH END.
11. INSTALL 2" HIGHLY VISIBLE AND DETECTABLE TAPE 12" ABOVE ALL UNDERGROUND CONDUITS AND CONDUCTORS.
12. CONDUITS SHALL BE INSTALLED IN SUCH A MANNER AS TO INSURE AGAINST COLLECTION OF TRAPPED CONDENSATION.
13. PROVIDE CORE DRILLING AS NECESSARY FOR PENETRATIONS TO ALLOW FOR RACEWAYS AND CABLES TO BE ROUTED THROUGH THE BUILDING. DO NOT PENETRATE STRUCTURAL MEMBERS. SLEEVES AND/OR PENETRATIONS IN FIRE RATED CONSTRUCTION SHALL BE EFFECTIVELY SEALED WITH FIRE RATED MATERIAL WHICH SHALL MAINTAIN THE FIRE RATING OF THE WALL OR STRUCTURE. FIRE STOPS AT FLOOR PENETRATIONS SHALL PREVENT PASSAGE OF WATER, SMOKE, FIRE, AND FUMES. ALL MATERIAL SHALL BE UL APPROVED FOR THIS PURPOSE.

B. CONDUCTORS AND CABLE:

1. ALL POWER WIRING SHALL BE COLOR CODED AS FOLLOWS:

DESCRIPTION	208/240/120 VOLT SYSTEMS
PHASE A	BLACK
PHASE B	RED
PHASE C	BLUE
NEUTRAL	WHITE
GROUNDING	GREEN

2. SPLICES SHALL BE MADE ONLY AT OUTLETS, JUNCTION BOXES, OR ACCESSIBLE RACEWAY CONDUITS APPROVED FOR THIS PURPOSE.
3. PULLING LUBRICANTS SHALL BE UL APPROVED. CONTRACTOR SHALL USE NYLON OR HEMP ROPE FOR PULLING CONDUCTOR OR CABLES INTO THE CONDUIT.
4. CABLES SHALL BE NEATLY TRAINED, WITHOUT INTERLACING, AND BE OF SUFFICIENT LENGTH IN ALL BOXES & EQUIPMENT TO PERMIT MAKING A NEAT ARRANGEMENT. CABLES SHALL BE SECURED IN A MANNER TO AVOID TENSION ON CONDUCTORS OR TERMINALS. CONDUCTORS SHALL BE PROTECTED FROM MECHANICAL INJURY AND MOISTURE. SHARP BENDS OVER CONDUIT BUSHINGS IS PROHIBITED. DAMAGED CABLES SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.

C. DISCONNECT SWITCHES:

1. INSTALL DISCONNECT SWITCHES LEVEL AND PLUMB. CONNECT TO WIRING SYSTEM AND GROUNDING SYSTEM AS INDICATED.

D. GROUNDING:

1. ALL METALLIC PARTS OF ELECTRICAL EQUIPMENT WHICH DO NOT CARRY CURRENT SHALL BE GROUNDED IN ACCORDANCE WITH THE REQUIREMENTS OF THE BUILDING MANUFACTURER, AT&T GROUNDING AND BONDING STANDARDS TP-76416, ND-00135, AND THE NATIONAL ELECTRICAL CODE.
2. PROVIDE ELECTRICAL GROUNDING AND BONDING SYSTEM INDICATED WITH ASSEMBLY OF MATERIALS, INCLUDING GROUNDING ELECTRODES, BONDING JUMPERS AND ADDITIONAL ACCESSORIES AS REQUIRED FOR A COMPLETE INSTALLATION.
3. ALL GROUNDING CONDUCTORS SHALL PROVIDE A STRAIGHT DOWNWARD PATH TO GROUND WITH GRADUAL BEND AS REQUIRED. GROUNDING CONDUCTORS SHALL NOT BE LOOPED OR SHARPLY BENT. ROUTE GROUNDING CONNECTIONS AND CONDUCTORS TO GROUND IN THE SHORTEST AND STRAIGHTEST PATHS POSSIBLE TO MINIMIZE TRANSIENT VOLTAGE RISES.
4. BUILDINGS AND/OR NEW TOWERS GREATER THAN 75 FEET IN HEIGHT AND WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM, THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 AWG COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY). SEE STANDARD 6.3.2.2.
5. TIGHTEN GROUNDING AND BONDING CONNECTORS, INCLUDING SCREWS AND BOLTS, IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED TORQUE TIGHTENING VALUES FOR CONNECTORS AND BOLTS. WHERE MANUFACTURER'S TORQUING REQUIREMENTS ARE NOT AVAILABLE, TIGHTEN CONNECTIONS TO COMPLY WITH TIGHTENING TORQUE VALUES SPECIFIED IN UL TO ASSURE PERMANENT AND EFFECTIVE GROUNDING.
6. CONTRACTOR SHALL VERIFY THE LOCATIONS OF GROUNDING TIE-IN-POINTS TO THE EXISTING GROUNDING SYSTEM. ALL UNDERGROUND GROUNDING CONNECTIONS SHALL BE MADE BY THE EXOTHERMIC WELD PROCESS AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
7. ALL GROUNDING CONNECTIONS SHALL BE INSPECTED FOR TIGHTNESS. EXOTHERMIC WELDED CONNECTIONS SHALL BE APPROVED BY THE INSPECTOR HAVING JURISDICTION BEFORE BEING PERMANENTLY CONCEALED.
8. APPLY CORROSION-RESISTANT FINISH TO FIELD CONNECTIONS AND PLACES WHERE FACTORY APPLIED PROTECTIVE COATINGS HAVE BEEN DESTROYED. USE KOPR-SHIELD ANTI-OXIDATION COMPOUND ON ALL COMPRESSION GROUNDING CONNECTIONS.
9. A SEPARATE, CONTINUOUS, INSULATED EQUIPMENT GROUNDING CONDUCTOR SHALL BE INSTALLED IN ALL FEEDER AND BRANCH CIRCUITS.
10. BOND ALL INSULATED GROUNDING BUSHINGS WITH A BARE #6 AWG GROUNDING CONDUCTOR TO A GROUND BUS.
11. DIRECT BURIED GROUNDING CONDUCTORS SHALL BE INSTALLED AT A NOMINAL DEPTH OF 36" MINIMUM BELOW GRADE, OR 6" BELOW THE FROST LINE, USE THE GREATER OF THE TWO DISTANCES.
12. ALL GROUNDING CONDUCTORS EMBEDDED IN OR PENETRATING CONCRETE SHALL BE INSTALLED IN SCHEDULE 40 PVC CONDUIT.
13. THE INSTALLATION OF CHEMICAL ELECTROLYTIC GROUNDING SYSTEM IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. REMOVE SEALING TAPE FROM LEACHING AND BREATHER HOLES. INSTALL PROTECTIVE BOX FLUSH WITH GRADE.
14. DRIVE GROUND RODS UNTIL TOPS ARE A MINIMUM DISTANCE OF 36" DEPTH OR 6" BELOW FROST LINE, USING THE GREATER OF THE TWO DISTANCES.
15. IF COAX ON THE ICE BRIDGE IS MORE THAN 6 FT. FROM THE GROUNDING BAR AT THE BASE OF THE TOWER, A SECOND GROUNDING BAR WILL BE NEEDED AT THE END OF THE ICE BRIDGE, TO GROUND THE COAX CABLE GROUNDING KITS AND IN-LINE ARRESTORS.
16. CONTRACTOR SHALL REPAIR, AND/OR REPLACE, EXISTING GROUNDING SYSTEM COMPONENTS DAMAGED DURING CONSTRUCTION AT THE CONTRACTORS EXPENSE.

3.5 ACCEPTANCE TESTING:

A. CERTIFIED PERSONNEL USING CERTIFIED EQUIPMENT SHALL PERFORM REQUIRED TESTS AND SUBMIT WRITTEN TEST REPORTS UPON COMPLETION.

B. WHEN MATERIAL AND/OR WORKMANSHIP IS FOUND NOT TO COMPLY WITH THE SPECIFIED REQUIREMENTS, THE NON-COMPLYING ITEMS SHALL BE REMOVED FROM THE PROJECT SITE AND REPLACED WITH ITEMS COMPLYING WITH THE SPECIFIED REQUIREMENTS PROMPTLY AFTER RECEIPT OF NOTICE FOR NON-COMPLIANCE.

C. TEST PROCEDURES:

1. ALL FEEDERS SHALL HAVE INSULATION TESTED AFTER INSTALLATION, BEFORE CONNECTION TO DEVICES. THE CONDUCTORS SHALL TEST FREE FROM SHORT CIRCUITS AND GROUNDS. TESTING SHALL BE FOR ONE MINUTE USING 1000V DC. PROVIDE WRITTEN DOCUMENTATION FOR ALL TEST RESULTS.
2. PRIOR TO ENERGIZING CIRCUITRY, TEST WIRING DEVICES FOR ELECTRICAL CONTINUITY AND PROPER POLARITY CONNECTIONS.
3. MEASURE AND RECORD VOLTAGES BETWEEN PHASES AND BETWEEN PHASE CONDUCTORS AND NEUTRALS. SUBMIT A REPORT OF MAXIMUM AND MINIMUM VOLTAGES.
4. PERFORM GROUNDING TEST TO MEASURE GROUNDING RESISTANCE OF GROUNDING SYSTEM USING THE IEEE STANDARD 3-POINT "FALL-OF-POTENTIAL" METHOD. PROVIDE PLOTTED TEST VALUES AND LOCATION SKETCH. NOTIFY THE ENGINEER IMMEDIATELY IF MEASURED VALUE IS OVER 5 OHMS.

ELECTRICAL SECTION NOTES

at&t
2630 LIBERTY AVENUE
PITTSBURGH, PA 15222

A□E
WIRELESS
ENGINEERING GROUP
1501 E. WOODFIELD ROAD, SUITE □300E
SCHAUMBURG, IL 60173
□□□.sa□□.□o□
847.944.1600

SITE ID:	MPLSMNU1049
DRAWN BY:	KMR
CHECKED BY:	GP

REV	DATE	DESCRIPTION
O	03/25/14	ISSUED FOR CONSTRUCTION
B	02/27/14	90 % ISSUED FOR CONSTRUCTION
A	01/31/14	ISSUED FOR REVIEW

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

PRINT NAME: NESTOR POPOWYCH

SIGNATURE:

DATE: 02/05/2014 LICENSE # 47725

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

MPLSMNU1049_143346
BASSETTS CREEK PARK
252 UPTON AVENUE SOUTH
MINNEAPOLIS, MN 55405
NSB – RAWLAND

SHEET TITLE

ELECTRICAL SECTION NOTES

SHEET NUMBER

E-12

GENERAL CONSTRUCTION

1. FOR THE PURPOSE OF CONSTRUCTION DRAWINGS, THE FOLLOWING DEFINITIONS SHALL APPLY:
   GENERAL CONTRACTOR – OVERLAND CONTRACTING INC. (B&V)
   CONTRACTOR: (CONSTRUCTION)
   OWNER – AT&T

2. ALL SITE WORK SHALL BE COMPLETED AS INDICATED ON THE DRAWINGS AND AT&T PROJECT SPECIFICATIONS.

3. GENERAL CONTRACTOR SHALL VISIT THE SITE AND SHALL FAMILIARIZE HIMSELF WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND SHALL MAKE PROVISIONS. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS, DIMENSIONS, AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.

4. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. GENERAL CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF WORK.

5. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES, AND APPLICABLE REGULATIONS.

6. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

7. PLANS ARE NOT TO BE SCALED. THESE PLANS ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY UNLESS OTHERWISE NOTED. DIMENSIONS SHOWN ARE TO FINISH SURFACES UNLESS OTHERWISE NOTED. SPACING BETWEEN EQUIPMENT IS THE MINIMUM REQUIRED CLEARANCE. THEREFORE, IT IS CRITICAL TO FIELD VERIFY DIMENSIONS, SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK. DETAILS 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 WORK AND PREPARED BY THE ENGINEER PRIOR TO PROCEEDING WITH WORK.

8. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

9. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE ENGINEER PRIOR TO PROCEEDING.

10. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF WORK AREA, ADJACENT AREAS AND BUILDING OCCUPANTS THAT ARE LIKELY TO BE AFFECTED BY THE WORK UNDER THIS CONTRACT. WORK SHALL CONFIRM TO ALL OSHA REQUIREMENTS AND THE LOCAL JURISDICTION.

11. GENERAL CONTRACTOR SHALL COORDINATE WORK AND SCHEDULE WORK ACTIVITIES WITH OTHER DISCIPLINES.

12. ERECTION SHALL BE DONE IN A WORKMANLIKE MANNER BY COMPETENT EXPERIENCED WORKMAN IN ACCORDANCE WITH APPLICABLE CODES AND THE BEST ACCEPTED PRACTICE. ALL MEMBERS SHALL BE LAID PLUMB AND TRUE AS INDICATED ON THE DRAWINGS.

13. SEAL PENETRATIONS THROUGH FIRE RATED AREAS WITH UL LISTED MATERIALS APPROVED BY LOCAL JURISDICTION. CONTRACTOR SHALL KEEP AREA CLEAN, HAZARD FREE, AND DISPOSE OF ALL DEBRIS.

14. WORK PREVIOUSLY COMPLETED IS REPRESENTED BY LIGHT SHADED LINES AND NOTES. THE SCOPE OF WORK FOR THIS PROJECT IS REPRESENTED BY DARK SHADED LINES AND NOTES. CONTRACTOR SHALL NOTIFY THE GENERAL CONTRACTOR OF ANY EXISTING CONDITIONS THAT DEVIATE FROM THE DRAWINGS PRIOR TO BEGINNING CONSTRUCTION.

15. CONTRACTOR SHALL PROVIDE WRITTEN NOTICE TO THE CONSTRUCTION MANAGER 48 HOURS PRIOR TO COMMENCEMENT OF WORK.

16. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.

17. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.

18. GENERAL CONTRACTOR SHALL COORDINATE AND MAINTAIN ACCESS FOR ALL TRADES AND CONTRACTORS TO THE SITE AND/OR BUILDING.

19. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR SECURITY OF THE SITE FOR THE DURATION OF CONSTRUCTION UNTIL JOB COMPLETION.

20. THE GENERAL CONTRACTOR SHALL MAINTAIN IN GOOD CONDITION ONE COMPLETE SET OF PLANS WITH ALL REVISIONS, ADDENDA, AND CHANGE ORDERS ON THE PREMISES AT ALL TIMES.

21. THE GENERAL CONTRACTOR SHALL PROVIDE PORTABLE FIRE EXTINGUISHERS WITH A RATING OF NOT LESS THAN 2–A OT 2–A:10–B:C AND SHALL BE WITHIN 25 FEET OF TRAVEL DISTANCE TO ALL PORTIONS OF WHERE THE WORK IS BEING COMPLETED DURING CONSTRUCTION.

22. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY THE ENGINEER. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS SHALL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION, B) CONFINED SPACE, C) ELECTRICAL SAFETY, AND D) TRENCHING & EXCAVATION.

23. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED, CAPPED, PLUGGED OR OTHERWISE DISCONNECTED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, AS DIRECTED BY THE RESPONSIBLE ENGINEER, AND SUBJECT TO THE APPROVAL OF THE OWNER AND/OR LOCAL UTILITIES.

24. THE AREAS OF THE OWNER'S PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION.

25. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO THE EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE FEDERAL AND LOCAL JURISDICTION FOR EROSION AND SEDIMENT CONTROL.

26. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUNDING. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

27. THE SUBGRADE SHALL BE BROUGHT TO A SMOOTH UNIFORM GRADE AND COMPACTED TO 95 PERCENT STANDARD PROCTOR DENSITY UNDER PAVEMENT AND STRUCTURES AND 80 PERCENT STANDARD PROCTOR DENSITY IN OPEN SPACE. ALL TRENCHES IN PUBLIC RIGHT OF WAY SHALL BE BACKFILLED WITH FLOWABLE FILL OR OTHER MATERIAL PRE–APPROVED BY THE LOCAL JURISDICTION.

28. ALL NECESSARY RUBBISH, STUMPS, DEBRIS, STICKS, STONES, AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A LAWFUL MANNER.

29. ALL BROCHURES, OPERATING AND MAINTENANCE MANUALS, CATALOGS, SHOP DRAWINGS, AND OTHER DOCUMENTS SHALL BE TURNED OVER TO THE GENERAL CONTRACTOR AT COMPLETION OF CONSTRUCTION AND PRIOR TO PAYMENT.

30. CONTRACTOR SHALL SUBMIT A COMPLETE SET OF AS–BUILT REDLINES TO THE GENERAL CONTRACTOR UPON COMPLETION OF PROJECT AND PRIOR TO FINAL PAYMENT.

31. CONTRACTOR SHALL LEAVE PREMISES IN A CLEAN CONDITION.

32. THE PROPOSED FACILITY WILL BE UNMANNED AND DOES NOT REQUIRE POTABLE WATER OR SEWER SERVICE, AND IS NOT FOR HUMAN HABITAT (NO HANDICAP ACCESS REQUIRED).

33. OCCUPANCY IS LIMITED TO PERIODIC MAINTENANCE AND INSPECTION, APPROXIMATELY 2 TIMES PER MONTH, BY AT&T TECHNICIANS.

34. NO OUTDOOR STORAGE OR SOLID WASTE CONTAINERS ARE PROPOSED.

35. ALL MATERIAL SHALL BE FURNISHED AND WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST REVISION AT&T MOBILITY GROUNDING STANDARD "TECHNICAL SPECIFICATION FOR CONSTRUCTION OF GSM/GPRS WIRELESS SITES" AND "TECHNICAL SPECIFICATION FOR FACILITY GROUNDING". IN CASE OF A CONFLICT BETWEEN THE CONSTRUCTION SPECIFICATION AND THE DRAWINGS, THE DRAWINGS SHALL GOVERN.

36. CONTRACTORS SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS REQUIRED FOR CONSTRUCTION. IF CONTRACTOR CANNOT OBTAIN A PERMIT, THEY MUST NOTIFY THE GENERAL CONTRACTOR IMMEDIATELY.

37. CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS FROM THE SITE ON A DAILY BASIS.

38. INFORMATION SHOWN ON THESE DRAWINGS WAS OBTAINED FROM SITE VISITS AND/OR DRAWINGS PROVIDED BY THE SITE OWNER. CONTRACTORS SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.

39. NO WHITE STROBE LIGHTS ARE PERMITTED. LIGHTING IF REQUIRED, WILL MEET FAA STANDARDS AND REQUIREMENTS.

40. ALL COAXIAL CABLE INSTALLATIONS TO FOLLOW MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.

ANTENNA MOUNTING

41. DESIGN AND CONSTRUCTION OF ANTENNA SUPPORTS SHALL CONFORM TO CURRENT ANSI/TIA–222 OR APPLICABLE LOCAL CODES.

42. ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT–DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS NOTED OTHERWISE.

43. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC–COATING (HOT–DIP) ON IRON AND STEEL HARDWARE", UNLESS NOTED OTHERWISE.

44. DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED BY COLD GALVANIZING IN ACCORDANCE WITH ASTM A780.

45. ALL ANTENNA MOUNTS SHALL BE INSTALLED WITH LOCK NUTS, DOUBLE NUTS AND SHALL BE TORQUED TO MANUFACTURER'S RECOMMENDATIONS.

46. CONTRACTOR SHALL INSTALL ANTENNA PER MANUFACTURER'S RECOMMENDATION FOR INSTALLATION AND GROUNDING.

47. ALL UNUSED PORTS ON ANY ANTENNAS SHALL BE TERMINATED WITH A 50–OHM LOAD TO ENSURE ANTENNAS PERFORM AS DESIGNED.

48. PRIOR TO SETTING ANTENNA AZIMUTHS AND DOWNTILTS, ANTENNA CONTRACTOR SHALL CHECK THE ANTENNA MOUNT FOR TIGHTNESS AND ENSURE THAT THEY ARE PLUMB. ANTENNA AZIMUTHS SHALL BE SET FROM TRUE NORTH AND BE ORIENTED WITHIN +/– 5% AS DEFINED BY THE RFDS. ANTENNA DOWNTILTS SHALL BE WITHIN +/– 0.5% AS DEFINED BY THE RFDS. REFER TO ND–00246.

49. JUMPERS FROM THE TMA'S MUST TERMINATE TO OPPOSITE POLARIZATION'S IN EACH SECTOR.

50. CONTRACTOR SHALL RECORD THE SERIAL #, SECTOR, AND POSITION OF EACH ACTUATOR INSTALLED AT THE ANTENNAS AND PROVIDE THE INFORMATION TO AT&T.

51. TMA'S SHALL BE MOUNTED ON PIPE DIRECTLY BEHIND ANTENNAS AS CLOSE TO ANTENNA AS FEASIBLE IN A VERTICAL POSITION.

TORQUE REQUIREMENTS

52. ALL RF CONNECTIONS SHALL BE TIGHTENED BY A TORQUE WRENCH.

53. ALL RF CONNECTIONS, GROUNDING HARDWARE AND ANTENNA HARDWARE SHALL HAVE A TORQUE MARK INSTALLED IN A CONTINUOUS STRAIGHT LINE FROM BOTH SIDES OF THE CONNECTION.
   A. RF CONNECTION BOTH SIDES OF THE CONNECTOR.
   B. GROUNDING AND ANTENNA HARDWARE ON THE NUT SIDE STARTING FROM THE THREADS TO THE SOLID SURFACE. EXAMPLE OF SOLID SURFACE: GROUND BAR, ANTENNA BRACKET METAL.

54. ALL 8M ANTENNA HARDWARE SHALL BE TIGHTENED TO 9 LB–FT (12 NM).

55. ALL 12M ANTENNA HARDWARE SHALL BE TIGHTENED TO 43 LB–FT (58 NM).

56. ALL GROUNDING HARDWARE SHALL BE TIGHTENED UNTIL THE LOCK WASHER COLLAPSES AND THE GROUNDING HARDWARE IS NO LONGER LOOSE.

57. ALL DIN TYPE CONNECTIONS SHALL BE TIGHTENED TO 18–22 LB–FT (24.4 – 29.8 NM).

58. ALL N TYPE CONNECTIONS SHALL BE TIGHTENED TO 15–20 LB–IN (1.7 – 2.3 NM).

FIBER & POWER CABLE MOUNTING

59. THE FIBER OPTIC TRUNK CABLES SHALL BE INSTALLED INTO CONDUITS, CHANNEL CABLE TRAYS, OR CABLE TRAY. WHEN INSTALLING FIBER OPTIC TRUNK CABLES INTO A CABLE TRAY SYSTEM, THEY SHALL BE INSTALLED INTO AN INTER DUCT AND A PARTITION BARRIER SHALL BE INSTALLED BETWEEN THE 600 VOLT CABLES AND THE INTER DUCT IN ORDER TO SEGREGATE CABLE TYPES. OPTIC FIBER TRUNK CABLES SHALL HAVE APPROVED CABLE RESTRAINTS EVERY (60) SIXTY FEET AND SECURELY FASTENED TO THE CABLE TRAY SYSTEM. NFPA 70 (NEC) ARTICLE 770 RULES SHALL APPLY.

60. THE TYPE TC–ER CABLES SHALL BE INSTALLED INTO CONDUITS, CHANNEL CABLE TRAYS, OR CABLE TRAY AND SHALL BE SECURED AT INTERVALS NOT EXCEEDING (6) SIX FEET. AN EXCEPTION; WHERE TYPE TC–ER CABLES ARE NOT SUBJECT TO PHYSICAL DAMAGE, CABLES SHALL BE PERMITTED TO MAKE A TRANSITION BETWEEN CONDUITS, CHANNEL CABLE TRAYS, OR CABLE TRAY WHICH ARE SERVING UTILIZATION EQUIPMENT OR DEVICES, A DISTANCE (6) SIX FEET SHALL NOT BE EXCEEDED WITHOUT CONTINUOUS SUPPORTING. NFPA 70 (NEC) ARTICLES 336 AND 392 RULES SHALL APPLY.

61. WHEN INSTALLING OPTIC FIBER TRUNK CABLES OR TYPE TC–ER CABLES INTO CONDUITS, NFPA 70 (NEC) ARTICLE 300 RULES SHALL APPLY.

COAXIAL CABLE NOTES

62. TYPES AND SIZES OF THE ANTENNA CABLE ARE BASED ON ESTIMATED LENGTHS. PRIOR TO ORDERING CABLE, CONTRACTOR SHALL VERIFY ACTUAL LENGTH BASED ON CONSTRUCTION LAYOUT AND NOTIFY THE PROJECT MANAGER IF ACTUAL LENGTHS EXCEED ESTIMATED LENGTHS.

63. CONTRACTOR SHALL VERIFY THE DOWN–TILT OF EACH ANTENNA WITH A DIGITAL LEVEL.

64. CONTRACTOR SHALL CONFIRM COAX COLOR CODING PRIOR TO CONSTRUCTION. REFER TO "ANTENNA SYSTEM LABELING STANDARD" ND–00027 LATEST VERSION.

65. ALL JUMPERS TO THE ANTENNAS FROM THE MAIN TRANSMISSION LINE SHALL BE 1/2" DIA. LDF AND SHALL NOT EXCEED 6'–0".

66. ALL COAXIAL CABLE SHALL BE SECURED TO THE DESIGNED SUPPORT STRUCTURE, IN AN APPROVED MANNER, AT DISTANCES NOT TO EXCEED 4'–0" OC.

67. CONTRACTOR SHALL FOLLOW ALL MANUFACTURER'S RECOMMENDATIONS REGARDING BOTH THE INSTALLATION AND GROUNDING OF ALL COAXIAL CABLES, CONNECTORS, ANTENNAS, AND ALL OTHER EQUIPMENT.

68. CONTRACTOR SHALL WEATHERPROOF ALL ANTENNA CONNECTORS WITH SELF AMALGAMATING TAPE. WEATHERPROOFING SHALL BE COMPLETED IN STRICT ACCORDANCE WITH AT&T STANDARDS.

69. CONTRACTOR SHALL GROUND ALL EQUIPMENT. INCLUDING ANTENNAS, RET MOTORS, TMA'S, COAX CABLES, AND RET CONTROL CABLES AS A COMPLETE SYSTEM. GROUNDING SHALL BE EXECUTED BY QUALIFIED WIREMEN IN COMPLIANCE WITH MANUFACTURER'S SPECIFICATION AND RECOMMENDATION.

70. CONTRACTOR SHALL PROVIDE STRAIN–RELIEF AND CABLE SUPPORTS FOR ALL CABLE ASSEMBLIES, COAX CABLES, AND RET CONTROL CABLES. CABLE STRAIN–RELIEFS AND CABLE SUPPORTS SHALL BE APPROVED FOR THE PURPOSE. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.

71. CONTRACTOR TO VERIFY THAT EXISTING COAX HANGERS ARE STACKABLE SNAP IN HANGERS. IF EXISTING HANGERS ARE NOT STACKABLE SNAP IN HANGERS THE CONTRACTOR SHALL REPLACE EXISTING HANGERS WITH NEW SNAP IN HANGERS IF APPLICABLE.

GENERAL CABLE AND EQUIPMENT NOTES

72. CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY ANTENNA, TMAS, DIPLEXERS, AND COAX CONFIGURATION, MAKE AND MODELS PRIOR TO INSTALLATION.

73. ALL CONNECTIONS FOR HANGERS, SUPPORTS, BRACING, ETC. SHALL BE INSTALLED PER TOWER MANUFACTURER'S RECOMMENDATIONS.

74. CONTRACTOR SHALL REFERENCE THE TOWER STRUCTURAL ANALYSIS/DESIGN DRAWINGS FOR DIRECTIONS ON CABLE DISTRIBUTION/ROUTING.

75. ALL OUTDOOR RF CONNECTORS/CONNECTIONS SHALL BE WEATHERPROOFED, EXCEPT THE RET CONNECTORS, USING BUTYL TAPE AFTER INSTALLATION AND FINAL CONNECTIONS ARE MADE. BUTYL TAPE SHALL HAVE A MINIMUM OF ONE–HALF TAPE WIDTH OVERLAP ON EACH TURN AND EACH LAYER SHALL BE WRAPPED THREE TIMES. WEATHERPROOFING SHALL BE SMOOTH WITHOUT BUCKLING. BUTYL BLEEDING IS NOT ALLOWED.

76. IF REQUIRED TO PAINT ANTENNAS AND/OR COAX:
   A. TEMPERATURE SHALL BE ABOVE 50° F.
   B. PAINT COLOR MUST BE APPROVED BY BUILDING OWNER/LANDLORD.
   C. FOR REGULATED TOWERS, FAA/FCC APPROVED PAINT IS REQUIRED.
   D. DO NOT PAINT OVER COLOR CODING OR ON EQUIPMENT MODEL NUMBERS.

77. ALL CABLES SHALL BE GROUNDED WITH COAXIAL CABLE GROUND KITS. FOLLOW THE MANUFACTURER'S RECOMMENDATIONS.
   A. GROUNDING AT THE ANTENNA LEVEL.
   B. GROUNDING AT MID LEVEL, TOWERS WHICH ARE OVER 200'–0", ADDITIONAL CABLE GROUNDING REQUIRED.
   C. GROUNDING AT BASE OF TOWER PRIOR TO TURNING HORIZONTAL.
   D. GROUNDING OUTSIDE THE EQUIPMENT SHELTER AT ENTRY PORT.
   E. GROUNDING INSIDE THE EQUIPMENT SHELTER AT THE ENTRY PORT.

78. ALL PROPOSED GROUND BAR DOWNLEADS ARE TO BE TERMINATED TO THE EXISTING ADJACENT GROUND BAR DOWNLEADS A MINIMUM DISTANCE OF 4'–0" BELOW GROUND BAR. TERMINATIONS MAY BE EXOTHERMIC OR COMPRESSION.

79. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ANTENNA AND THE COAX CONFIGURATION IS THE CORRECT MAKE AND MODELS, PRIOR TO INSTALLATION.

80. ALL CONNECTIONS FOR HANGERS, SUPPORTS, BRACING, ETC. SHALL BE INSTALLED PER TOWER MANUFACTURER'S SPECIFICATION & RECOMMENDATIONS.

81. ANTENNA CONTRACTOR SHALL FURNISH AND INSTALL A 12'–0" T–BOOM SECTOR ANTENNA MOUNT, IF APPLICABLE, INCLUDING ALL HARDWARE.

GENERAL NOTES

at&t

2630 LIBERTY AVENUE
PITTSBURGH, PA 15222

A□E

WIRELESS
ENGINEERING GROUP
1501 E. WOODFIELD ROAD, SUITE □300E
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847□944□1600

SITE ID:	MPLSMNU1049
DRAWN BY:	KMR
CHECKED BY:	GP

REV	DATE	DESCRIPTION
O	03/25/14	ISSUED FOR CONSTRUCTION
B	02/27/14	90 % ISSUED FOR CONSTRUCTION
A	01/31/14	ISSUED FOR REVIEW

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

PRINT NAME: NESTOR POPOWYCH

SIGNATURE:

DATE: 02/05/2014 LICENSE # 47725

MPLSMNU1049_143346
BASSETTS CREEK PARK
252 UPTON AVENUE SOUTH
MINNEAPOLIS, MN 55405
NSB – RAWLAND

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

N-1

PART 1 – GENERAL

1.1 SCOPE:

A. FORM WORK, REINFORCING STEEL, ACCESSORIES, CAST–IN PLACE CONCRETE, FINISHING, CURING AND TESTING FOR STRUCTURAL CONCRETE FOUNDATIONS.

1.2 REFERENCES:

A. ACI (AMERICAN CONCRETE INSTITUTE)

1. ACI 301 SPECIFICATION FOR STRUCTURAL CONCRETE FOR BUILDINGS.
2. ACI 304 RECOMMENDED PRACTICE FOR MEASURING, MIXING, TRANSPORTING AND PLACING CONCRETE.
3. ACI 305 RECOMMENDED PRACTICE FOR HOT WEATHER CONCRETING.
4. ACI 306 RECOMMENDED PRACTICE FOR COLD WEATHER CONCRETING.
5. ACI 308 STANDARD PRACTICE FOR CURING CONCRETING.
6. ACI 309 STANDARD PRACTICE FOR CONSOLIDATION OF CONCRETE.
7. ACI 318 BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE.
8. ACI 347 RECOMMENDED PRACTICE FOR CONCRETE FORMWORK DRILL PIERS.

B. ASTM (AMERICAN SOCIETY FOR TESTING AND MATERIALS). THE APPLICABLE STANDARDS OF THE AMERICAN SOCIETY FOR TESTING AND MATERIALS ARE LISTED IN THE ACI STANDARDS AND ARE A PART OF THIS SPECIFICATION.

PART 2 – PRODUCTS

2.1 REINFORCING MATERIALS:

A. REINFORCING BARS: ASTM A615, GRADE 60, PROPOSED DEFORMED BILLET–STEEL BARS, PLAIN FINISH.

B. FURNISH CHAIRS, BOLSTERS, BAR SUPPORTS, SPACERS AS REQUIRED FOR SUPPORT OF REINFORCING STEEL AND WIRE FABRIC.

2.2 CONCRETE MATERIALS:

A. PORTLAND CEMENT SHALL BE TYPE II, CONFORMING TO ASTM C–150.

B. AGGREGATE SHALL CONFORM TO ASTM C–33.

1. FINE AGGREGATE SHALL BE UNIFORMLY GRADED, CLEAN SHARP, WASHED NATURAL, OR CRUSHED SAND, FREE FROM ORGANIC IMPURITIES.
2. COARSE AGGREGATE SHALL BE NATURAL WASHED GRAVEL OR WASHED CRUSHED ROCK HAVING HARD, STRONG, DURABLE PIECES, FREE FROM ADHERENT COATINGS.
3. MAXIMUM SIZE OF COARSE AGGREGATE SHALL BE 3/4 INCH IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM C–33 GRADATION SIZE NO. 67.

C. WATER USED IN CONCRETE MIX SHALL BE POTABLE, CLEAN, AND FREE FROM OILS, ACIDS, SALTS, CHLORIDES, ALKALI, SUGAR, VEGETABLE, OR OTHER INJURIOUS SUBSTANCES.

D. THE CONCRETE SHALL CONTAIN AN AIR–ENTRAINING ADMIXTURE COMPLYING WITH THE REQUIREMENTS OF ASTM C–260 AND ACI 212. 1R AND A WATER– REDUCING ADMIXTURE COMPLYING WITH THE REQUIREMENTS OF ASTM C–494 AND ACI 212. 1R. ADMIXTURES SHALL BE PURCHASED AND BATCHED IN LIQUID SOLUTION. THE USE OF CALCIUM CHLORIDE OR AN ADMIXTURE CONTAINING CALCIUM CHLORIDE IS PROHIBITED. ADMIXTURES SHALL BE OF THE SAME MANUFACTURER TO ASSURE COMPATIBILITY. ACCEPTABLE MANUFACTURERS ARE:

1. W.R. GRACE
2. SIKA CORP.
3. MASTER BUILDERS
4. EUCLID CHEMICAL CO.
5. APPROVED EQUAL

E. CURING COMPOUND SHALL CONFORM TO ASTM C309, TYPE I, ID, CLASS A AND B AND ASTM C171 AS APPLICABLE.

2.3 CONCRETE MIX:

A. PROPORTION CONCRETE MIX IN ACCORDANCE WITH REQUIREMENTS OF ACI 301. THE STRENGTH OF CONCRETE SHALL BE AS INDICATED ON THE DRAWINGS. WHERE STRENGTH IS NOT CLEARLY INDICATED, CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI.

B. THE CONCRETE MIX SHALL BE DESIGNED FOR A MAXIMUM SLUMP OF THREE INCHES (PLUS OR MINUS 1–INCH) AT THE POINT OF DISCHARGE. MIXES OF THE STIFFEST CONSISTENCY THAT CAN BE EFFICIENTLY PLACED SHALL BE USED.

C. ALL CONCRETE SHALL BE TO SIX PERCENT (6%) AIR ENTRAINED (PLUS OR MINUS 1%).

D. ALL STRUCTURAL CONCRETE SHALL CONTAIN A WATER–REDUCING AGENT.

PART 3 – EXECUTION

3.1 GENERAL:

A. CONSTRUCT AND ERECT THE FORM WORK IN ACCORDANCE WITH ACI 301 AND ACI 347.

B. COLD–WEATHER CONCRETING SHALL BE IN ACCORDANCE WITH ACI 306.

C. HOT–WEATHER CONCRETING SHALL BE IN ACCORDANCE WITH ACI 305.

3.2 INSERTS, EMBEDDED COMPONENTS AND OPENINGS:

A. CONTRACTOR SHALL CHECK ALL CIVIL, ARCHITECTURAL, STRUCTURAL AND ELECTRICAL DRAWINGS FOR OPENINGS, SLEEVES, ANCHOR BOLTS, INSERTS AND OTHER ITEMS TO BE BUILT INTO THE CONCRETE WORK.

B. COORDINATE THE WORK OF OTHER SECTION IN FORMING AND SETTING OPENINGS. RECESSES, SLOTS, CHASES, ANCHORS, INSERTS AND OTHER ITEMS TO BE EMBEDDED.

C. EMBEDDED ITEMS SHALL BE SET ACCURATELY IN LOCATION, ALIGNMENT, ELEVATION AND PLUMBNESS, LOCATE AND MEASURE FROM ESTABLISHED SURVEYED REFERENCE BENCHMARKS.

D. EMBEDDED ITEMS SHALL BE ANCHORED INTO PLACE IN A MANNER TO PREVENT MOVEMENT DURING CONCRETE PLACEMENT AND CONSOLIDATION. COMPONENTS FORMING A PART OF A COMPLETE ASSEMBLY SHALL BE ALIGNED BEFORE ANCHORING INTO PLACE. PROVIDE TEMPORARY BRACING, ANCHORAGE, AND TEMPLATES AS REQUIRED TO MAINTAIN THE SETTING AND ALIGNMENT.

3.3 REINFORCEMENT PLACEMENT:

A. PLACE REINFORCEMENT ACCORDING TO CHECKED AND RELEASED DRAWINGS AND IN ACCORDANCE WITH ACI 301 AND ACI 318.

B. ACCURATELY POSITION, SUPPORT AND SECURE REINFORCEMENT AGAINST DISPLACEMENT FROM FORM WORK CONSTRUCTION OR CONCRETE PLACEMENT AND CONSOLIDATION. SUPPORT REINFORCING ON METAL CHAIRS, RUNNERS, BOLSTERS, SPACERS AND HANGERS.

C. SPLICES OF REINFORCING BARS SHALL BE CLASS B UNLESS SHOWN OTHERWISE ON THE DRAWINGS. SPLICES SHALL BE STAGGERED. FULL DEVELOPMENT LENGTH SHALL BE PROVIDED ACROSS JOINTS.

D. LOCATE REINFORCING TO PROVIDE CONCRETE COVER AND SPACING SHOWN ON THE DRAWINGS. MINIMUM COVER SHALL BE AS REQUIRED BY ACI 318.

E. WELDING OF AND TO ANY REINFORCING MATERIALS INCLUDING TACK WELDING OF CROSSING BARS IS STRICTLY PROHIBITED.

3.4 CONCRETE PLACEMENT:

A. PRIOR TO PLACING CONCRETE, THE FORMS AND REINFORCEMENT SHALL BE THOROUGHLY INSPECTED; ALL TEMPORARY BRACING, TIES AND CLEATS REMOVED; ALL OPENINGS FOR UTILITIES PROPERLY BOXED; ALL FORMS PROPERLY SECURED IN THERE CORRECT POSITION AND MADE TIGHT. ALL REINFORCEMENT AND EMBEDDED ITEMS SHALL BE SECURED IN THEIR PROPER LOCATIONS. ALL OLD AND DRY CONCRETE AND DIRT SHALL BE CLEANED OFF AND ALL STANDING WATER AND OTHER FOREIGN MATERIAL REMOVED.

B. PLACING CONCRETE SHALL BE IN ACCORDANCE WITH ACI 301 AND ACI 304 AND SHALL BE CARRIED OUT AT SUCH A RATE THAT THE CONCRETE PREVIOUSLY PLACED IS STILL PLASTIC AND INTEGRATED WITH THE FRESHLY PLACED CONCRETE. CONCRETING ONCE STARTED, SHALL BE CARRIED ON AS A CONTINUOUS OPERATION UNTIL THE SECTION IS COMPLETED. NO COLD JOINTS SHALL BE ALLOWED.

C. ALL CONCRETE SHALL BE THOROUGHLY CONSOLIDATED AND COMPACTED BY VIBRATION SPACING, RODDING, OR FORKING DURING THE OPERATION OF PLACING AND DEPOSITING IN ACCORDANCE WITH ACI 309. THE CONCRETE SHALL BE THOROUGHLY WORKED AROUND REINFORCEMENT, EMBEDDED ITEMS, AND INTO THE CORNER OF THE FORMS SO AS TO ELIMINATE ALL AIR AND STONE POCKETS.

3.5 FINISHING:

A. FINISHING OF THE FLOOR SLABS SHALL BE IN ACCORDANCE WITH ACI 302.1 SECTION 7.2 WITH A MINIMUM OF THREE TROWELINGS. THE SLAB FINISH TOLERANCE AS MEASURED IN ACCORDANCE WITH ASTM E 1155 SHALL HAVE AN OVERALL TEST NUMBER FOR FLATNESS, FF= 20 AND FOR LEVEL, FL=15. THE MINIMUM LOCAL NUMBER FOR FLATNESS, FF= 15 AND FOR LEVEL, FL=10.

B. SURFACE OF FLOOR SLAB SHALL RECEIVE TWO COATS OF CLEAR SEALER/HARDENER.

C. ABOVE GRADE WALL SURFACES SHALL HAVE A SMOOTH FORM FINISH AS DEFINED IN CHAPTER 10 OF ACI 301.

3.6 CURING:

A. FRESHLY DEPOSITED CONCRETE SHALL BE PROTECTED FROM PREMATURE DRYING AND EXCESSIVELY HOT AND COLD TEMPERATURES AND SHALL BE MAINTAINED WITH MINIMUM MOISTURE LOSS AT A RELATIVELY CONSTANT TEMPERATURE FOR A PERIOD OF TIME NECESSARY FOR THE HYDRATION OF THE CEMENT AND PROPER HARDENING OF THE CONCRETE.

B. CONCRETE SHALL BE KEPT CONTINUOUSLY MOIST AT LEAST OVERNIGHT, IMMEDIATELY FOLLOWING THE INITIAL CURING. BEFORE THE CONCRETE HAS DRIED, ADDITIONAL CURING SHALL BE ACCOMPLISHED BY ONE OF THE FOLLOWING MATERIALS OR METHODS:

1. PONDING OR CONTINUOUS SPRINKLING.
2. ABSORPTIVE MAT OR FABRIC KEPT CONTINUOUSLY WET.
3. NON–ABSORPTIVE FILM (POLYETHYLENE) OVER PREVIOUSLY SPRINKLED SURFACE.
4. SAND OR OTHER COVERING KEPT CONTINUOUSLY WET.
5. CONTINUOUS STEAM (NOT EXCEEDING 150° F) OR VAPOR MIST BATH.
6. SPRAYED–ON CURING COMPOUND APPLIED IN TWO COATS, SPRAYED IN PERPENDICULAR DIRECTION.

C. THE FINAL CURING SHALL CONTINUE UNTIL THE CUMULATIVE NUMBER OF DAYS OR FRACTION THEREOF, NOT NECESSARILY CONSECUTIVE, DURING WHICH TEMPERATURE OF THE AIR IN CONTACT WITH CONCRETE IS ABOVE 50° F HAS TOTALED SEVEN (7) DAYS. CONCRETE SHALL NOT BE PERMITTED TO FREEZE DURING THE CURING PERIOD. RAPID DRYING AT THE END OF THE CURING PERIOD SHALL BE PREVENTED.

CONCRETE WORK NOTES

at&t

2630 LIBERTY AVENUE
PITTSBURGH, PA 15222

A□E

WIRELESS
ENGINEERING GROUP
1501 E. WOODFIELD ROAD, SUITE □300E
SCHAUMBURG, IL 60173
□□□.sa□□.□o□
847□944□1600

SITE ID:	MPLSMNU1049
DRAWN BY:	KMR
CHECKED BY:	GP

REV	DATE	DESCRIPTION
O	03/25/14	ISSUED FOR CONSTRUCTION
B	02/27/14	90 % ISSUED FOR CONSTRUCTION
A	01/31/14	ISSUED FOR REVIEW

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

PRINT NAME: NESTOR POPOWYCH

SIGNATURE:

DATE: 02/05/2014 LICENSE # 47725

MPLSMNU1049_143346
BASSETTS CREEK PARK
252 UPTON AVENUE SOUTH
MINNEAPOLIS, MN 55405
NSB – RAWLAND

SHEET TITLE

SITE SECTION NOTES

SHEET NUMBER

N-2

PART 1 – GENERAL

CLEARING, GRUBBING, STRIPPING, EROSION CONTROL, SURVEY, LAYOUT, SUBGRADE PREPARATION AND FINISH GRADING AS REQUIRED TO COMPLETE THE PROPOSED WORK SHOWN IN THESE PLANS.

1.1 REFERENCES:

A. DOT (STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION–CURRENT EDITION).

B. ASTM (AMERICAN SOCIETY FOR TESTING AND MATERIALS).

C. OSHA (OCCUPATION SAFETY AND HEALTH ADMINISTRATION).

1.2 INSPECTION AND TESTING:

A. FIELD TESTING OF EARTHWORK COMPACTION AND CONCRETE CYLINDERS SHALL BE PERFORMED BY CONTRACTORS INDEPENDENT TESTING LAB. THIS WORK TO BE COORDINATED BY THE CONTRACTOR.

B. ALL WORK SHALL BE INSPECTED AND RELEASED BY THE GENERAL CONTRACTOR WHO SHALL CARRY OUT THE GENERAL INSPECTION OF THE WORK WITH SPECIFIC CONCERN TO PROPER PERFORMANCE OF THE WORK AS SPECIFIED AND/OR CALLED FOR ON THE DRAWINGS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REQUEST TIMELY INSPECTIONS PRIOR TO PROCEEDING WITH FURTHER WORK THAT WOULD MAKE PARTS OF WORK INACCESSIBLE OR DIFFICULT TO INSPECT.

1.3 SITE MAINTENANCE AND PROTECTION:

A. PROVIDE ALL NECESSARY JOB SITE MAINTENANCE FROM COMMENCEMENT OF WORK UNTIL COMPLETION OF THE SUBCONTRACT.

B. AVOID DAMAGE TO THE SITE AND TO EXISTING FACILITIES, STRUCTURES, TREES, AND SHRUBS DESIGNATED TO REMAIN. TAKE PROTECTIVE MEASURES TO PREVENT EXISTING FACILITIES THAT ARE NOT DESIGNATED FOR REMOVAL FROM BEING DAMAGED BY THE WORK.

C. KEEP SITE FREE OF ALL PONDING WATER.

D. PROVIDE EROSION CONTROL MEASURES IN ACCORDANCE WITH STATE DOT AND EPA REQUIREMENTS.

E. PROVIDE AND MAINTAIN ALL TEMPORARY FENCING, BARRICADES, WARNING SIGNALS AND SIMILAR DEVICES NECESSARY TO PROTECT AGAINST THEFT FROM PROPERTY DURING THE ENTIRE PERIOD OF CONSTRUCTION. REMOVE ALL SUCH DEVICES UPON COMPLETION OF THE WORK.

F. EXISTING UTILITIES: DO NOT INTERRUPT EXISTING UTILITIES SERVING FACILITIES OCCUPIED BY THE OWNER OR OTHERS, EXCEPT WHEN PERMITTED IN WRITING BY THE ENGINEER AND THEN ONLY AFTER ACCEPTABLE TEMPORARY UTILITY SERVICES HAVE BEEN PROVIDED.

1. PROVIDE A MINIMUM 48–HOUR NOTICE TO THE ENGINEER AND RECEIVE WRITTEN NOTICE TO PROCEED BEFORE INTERRUPTING ANY UTILITY SERVICE.

PART 2 – PRODUCTS

2.1 SUITABLE BACKFILL: ASTM D2321 (CLASS I, II, III OR IV) FREE FROM FROZEN LUMPS, REFUSE, STONES OR ROCKS LARGER THAN 3 INCHES IN ANY DIMENSION OR OTHER MATERIAL THAT MAY MAKE THE INORGANIC MATERIAL UNSUITABLE FOR BACKFILL.

2.2 NON–POROUS GRANULAR EMBANKMENT AND BACKFILL: ASTM D2321 (CLASS III, IVA OR IVB) COARSE AGGREGATE. FREE FROM FROZEN LUMPS, REFUSE, STONES OR ROCKS LARGER THAN 3 INCHES IN ANY DIMENSION OR OTHER MATERIAL THAT MAY MAKE THE INORGANIC MATERIAL UNSUITABLE FOR BACKFILL.

2.3 POROUS GRANULAR EMBANKMENT AND BACKFILL: ASTM D2321 (CLASS IA, IB OR II) COARSE AGGREGATE FREE FROM FROZEN LUMPS, REFUSE, STONES OR ROCKS LARGER THAN 3 INCHES IN ANY DIMENSION OR OTHER MATERIAL THAT MAY MAKE THE INORGANIC MATERIAL UNSUITABLE FOR BACKFILL.

2.4 SELECT STRUCTURAL FILL: GRANULAR FILL MATERIAL MEETING THE REQUIREMENTS OF ASTM E850–95. FOR USE AROUND AND UNDER STRUCTURES WHERE STRUCTURAL FILL MATERIAL ARE REQUIRED.

2.5 GRANULAR BEDDING AND TRENCH BACKFILL: WELL–GRADED SAND MEETING THE GRADATION REQUIREMENTS OF ASTM D2487 (SE OR SW–SM).

2.6 COARSE AGGREGATE FOR ACCESS ROAD SUBBASE COURSE SHALL CONFORM TO ASTM D2940.

2.7 UNSUITABLE MATERIAL: HIGH AND MODERATELY PLASTIC SILTS AND CLAYS (LL>45). MATERIAL CONTAINING REFUSE, FROZEN LUMPS, DEMOLISHED BITUMINOUS MATERIAL, VEGETATIVE MATTER, WOOD, STONES IN EXCESS OF 3 INCHES IN ANY DIMENSION, AND DEBRIS AS DETERMINED BY THE CONSTRUCTION MANAGER. TYPICAL THESE WILL BE SOILS CLASSIFIED BY ASTM AS PT, MH, CH, OH, ML, AND OL.

2.8 GEOTEXTILE FABRIC: MIRAFI 500X OR ENGINEERED APPROVED EQUAL.

2.9 PLASTIC MARKING TAPE: SHALL BE ACID AND ALKALI RESISTANT POLYETHYLENE FILM SPECIFICALLY MANUFACTURED FOR MARKING AND LOCATING UNDERGROUND UTILITIES, 6 INCHES WIDE WITH A MINIMUM THICKNESS OF 0.004 INCH. TAPE SHALL HAVE MINIMUM STRENGTH OF 1500 PSI IN BOTH DIRECTIONS AND MANUFACTURED WITH INTEGRAL CONDUCTORS, FOIL BACKING OR OTHER MEANS TO ENABLE DETECTION BY A METAL DETECTOR WHEN BURIED UP TO 3 FEET DEEP. THE METALLIC CORE OF THE TAPE SHALL BE ENCASED IN A PROTECTIVE JACKET OR PROVIDED WITH OTHER MEANS TO PROTECT IT FROM CORROSION. TAPE COLOR SHALL BE RED FOR ELECTRIC UTILITIES AND ORANGE FOR TELECOMMUNICATION UTILITIES.

PART 3 – EXECUTION

3.1 GENERAL:

A. BEFORE STARTING GENERAL SITE PREPARATION ACTIVITIES, INSTALL EROSION AND SEDIMENT CONTROL MEASURES. THE WORK AREA SHALL BE CONSTRUCTED AND MAINTAINED IN SUCH CONDITION THAT IN THE EVENT OF RAIN THE SITE WILL BE DRAINED AT ANY TIME.

B. BEFORE ALL SURVEY, LAYOUT, STAKING, AND MARKING, ESTABLISH AND MAINTAIN ALL LINES, GRADES, ELEVATIONS AND BENCHMARKS NEEDED FOR EXECUTION OF THE WORK.

C. CLEAR AND GRUB THE AREA WITHIN THE LIMITS OF THE SITE. REMOVE TREES, BRUSH, STUMPS, RUBBISH AND OTHER DEBRIS AND VEGETATION RESTING ON OR PROTRUDING THROUGH THE SURFACE OF THE SITE AREA TO BE CLEARED.

1. REMOVE THE FOLLOWING MATERIALS TO A DEPTH OF NO LESS THAN 12 INCHES BELOW THE ORIGINAL GROUND SURFACE: ROOTS, STUMPS, AND OTHER DEBRIS, BRUSH, AND REFUSE EMBEDDED IN OR PROTRUDING THROUGH THE GROUND SURFACE, RAKE, DISK OR PLOW THE AREA TO A DEPTH OF NO LESS THAN 6 INCHES, AND REMOVE TO A DEPTH OF 12 INCHES ALL ROOTS AND OTHER DEBRIS THEREBY EXPOSED.

2. REMOVE TOPSOIL MATERIAL COMPLETELY FROM THE SURFACE UNTIL THE SOIL NO LONGER MEETS THE DEFINITION OF TOPSOIL. AVOID MIXING TOPSOIL WITH SUBSOIL OR OTHER UNDESIRABLE MATERIALS.

3. EXCEPT WHERE EXCAVATION TO GREATER DEPTH IS INDICATED, FILL DEPRESSIONS RESULTING FROM CLEARING, GRUBBING AND DEMOLITION WORK COMPLETELY WITH SUITABLE FILL.

A. REMOVE FROM THE SITE AND DISPOSE IN AN AUTHORIZED LANDFILL ALL DEBRIS RESULTING FROM CLEARING AND GRUBBING OPERATIONS. BURNING WILL NOT BE PERMITTED.

B. PRIOR TO EXCAVATING, THOROUGHLY EXAMINE THE AREA TO BE EXCAVATED AND/OR TRENCHED TO VERIFY THE LOCATIONS OF FEATURES INDICATED ON THE DRAWINGS AND TO ASCERTAIN THE EXISTENCE AND LOCATION OF ANY STRUCTURE, UNDERGROUND STRUCTURE, OR OTHER ITEM NOT SHOWN THAT MIGHT INTERFERE WITH THE PROPOSED CONSTRUCTION. NOTIFY THE CONSTRUCTION MANAGER OF ANY OBSTRUCTIONS THAT WILL PREVENT ACCOMPLISHMENT OF THE WORK AS INDICATED ON THE DRAWINGS.

C. SEPARATE AND STOCK PILE ALL EXCAVATED MATERIALS SUITABLE FOR BACKFILL. ALL EXCESS EXCAVATED AND UNSUITABLE MATERIALS SHALL BE DISPOSED OF OFF–SITE IN A LEGAL MANNER.

3.2 BACKFILL:

A. AS SOON AS PRACTICAL, AFTER COMPLETING CONSTRUCTION OF THE RELATED STRUCTURE, INCLUDING EXPIRATION OF THE SPECIFIED MINIMUM CURING PERIOD FOR CAST–IN–PLACE CONCRETE, BACKFILL THE EXCAVATION WITH APPROVED MATERIAL TO RESTORE THE REQUIRED FINISHED GRADE.

1. PRIOR TO PLACING BACKFILL AROUND STRUCTURES, ALL FORMS SHALL BE REMOVED AND THE EXCAVATION CLEANED OF ALL TRASH, DEBRIS, AND UNSUITABLE MATERIALS.

2. BACKFILL BY PLACING AND COMPACTING SUITABLE BACKFILL MATERIAL OR SELECT GRANULAR BACKFILL MATERIAL WHEN REQUIRED IN UNIFORM HORIZONTAL LAYERS OF NO GREATER THAN 8–INCHES LOOSE THICKNESS AND COMPACTED. WHERE HAND OPERATED COMPACTORS ARE USED, THE FILL MATERIAL SHALL BE PLACED IN LIFTS NOT TO EXCEED 4 INCHES IN LOOSE DEPTH AND COMPACTED.

3. WHENEVER THE DENSITY TESTING INDICATES THAT THE CONTRACTOR HAS NOT OBTAINED THE SPECIFIED DENSITY, THE SUCCEEDING LAYER SHALL NOT BE PLACED UNTIL THE SPECIFICATION REQUIREMENTS ARE MET UNLESS OTHERWISE AUTHORIZED BY THE GEOTECHNICAL ENGINEER. THE CONTRACTOR SHALL TAKE WHATEVER APPROPRIATE ACTION IS NECESSARY, SUCH AS DISKING AND DRYING, ADDING WATER, OR INCREASING THE COMPACTIVE EFFORT TO MEET THE MINIMUM COMPACTION REQUIREMENTS.

B. THOROUGHLY COMPACT EACH LAYER OF BACKFILL TO A MINIMUM OF 95 PERCENT OF THE MAXIMUM DRY DENSITY AS PROVIDED BY THE STANDARD PROCTOR TEST, ASTM D 698.

3.3 TRENCH EXCAVATION:

A. UTILITY TRENCHES SHALL BE EXCAVATED TO THE LINES AND GRADES SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE GENERAL CONTRACTOR. PROVIDE SHORING, SHEETING AND BRACING AS REQUIRED TO PREVENT CAVING OR SLOUGHING OF THE TRENCH WALLS.

B. EXTEND THE TRENCH WIDTH A MINIMUM OF 6 INCHES BEYOND THE OUTSIDE EDGE OF THE OUTERMOST CONDUIT.

C. WHEN SOFT YIELDING, OR OTHERWISE UNSTABLE SOIL CONDITIONS ARE ENCOUNTERED, BACKFILL AT THE REQUIRED TRENCH TO A DEPTH OF NO LESS THAN 12 INCHES BELOW THE REQUIRED ELEVATION AND BACKFILL WITH GRANULAR BEDDING MATERIAL.

3.4 TRENCH BACKFILL:

A. PROVIDE GRANULAR BEDDING MATERIAL IN ACCORDANCE WITH THE DRAWINGS AND THE UTILITY REQUIREMENTS.

B. NOTIFY THE GENERAL CONTRACTOR 24 HOURS IN ADVANCE OF BACKFILLING.

C. CONDUCT UTILITY CHECK TESTS BEFORE BACKFILLING. BACKFILL AND COMPACT TRENCH BEFORE ACCEPTANCE TESTING.

D. PLACE GRANULAR TRENCH BACKFILL UNIFORMLY ON BOTH SIDES OF THE CONDUITS IN 6–INCH UNCOMPACTED LIFTS UNTIL 12 INCHES OVER THE CONDUITS. SOLIDLY RAM AND TAMP BACKFILL INTO SPACE AROUND CONDUITS.

E. PROTECT CONDUIT FROM LATERAL MOVEMENT, IMPACT DAMAGE, OR UNBALANCED LOADING.

F. ABOVE THE CONDUIT EMBEDMENT ZONE, PLACE AND COMPACT SATISFACTORY BACKFILL MATERIAL IN 8–INCH MAXIMUM LOOSE THICKNESS LIFTS TO RESTORE THE REQUIRED FINISHED SURFACE GRADE.

G. COMPACT FINAL TRENCH BACKFILL TO A DENSITY EQUAL TO OR GREATER THAN THAT OF THE EXISTING UNDISTURBED MATERIAL IMMEDIATELY ADJACENT TO THE TRENCH BUT NO LESS THAN A MINIMUM OF 95 PERCENT OF THE MAXIMUM DRY DENSITY AS PROVIDED BY THE STANDARD PROCTOR TEST, ASTM D 698.

3.5 AGGREGATE ACCESS ROAD:

A. CLEAR, GRUB, STRIP AND EXCAVATE FOR THE ACCESS ROAD TO THE LINES AND GRADES INDICATED ON THE DRAWINGS. SCARIFY TO A DEPTH OF 6 INCHES AND PROOF–ROLL. ALL HOLES, RUTS, SOFT PLACES AND OTHER DEFECTS SHALL BE CORRECTED.

B. THE ENTIRE SUBGRADE SHALL BE COMPACTED TO NOT LESS THAN 95 PERCENT OF THE MAXIMUM DRY DENSITY AS PROVIDED BY THE MODIFIED PROCTOR TEST, ASTM D 1557.

C. AFTER PREPARATION OF THE SUBGRADE IS COMPLETE THE GEOTEXTILE FABRIC (MIRAFI 500Xi) SHALL BE INSTALLED TO THE LIMITS INDICATED ON THE DRAWINGS BY ROLLING THE FABRIC OUT LONGITUDINALLY ALONG THE ROADWAY. THE FABRIC SHALL NOT BE DRAGGED ACROSS THE SUBGRADE. PLACE THE ENTIRE ROLL IN A SINGLE OPERATION, ROLLING OUT AS SMOOTHLY AS POSSIBLE.

1. OVERLAPS PARALLEL TO THE ROADWAY WILL BE PERMITTED AT THE CENTERLINE AND AT LOCATIONS BEYOND THE ROADWAY SURFACE WIDTH (I.E. WITHIN THE SHOULDER WIDTH) ONLY. NO LONGITUDINAL OVERLAPS SHALL BE LOCATED BETWEEN THE CENTERLINE AND THE SHOULDER. PARALLEL OVERLAPS SHALL BE A MINIMUM OF 3 FEET WIDE.

2. TRANSVERSE (PERPENDICULAR TO THE ROADWAY) OVERLAPS AT THE END OF A ROLL SHALL OVERLAP IN THE DIRECTION OF THE AGGREGATE PLACEMENT (PREVIOUS ROLL ON TOP) AND SHALL HAVE A MINIMUM LENGTH OF 3 FEET.

3. ALL OVERLAPS SHALL BE PINNED WITH STAPLES OR NAILS A MINIMUM OF 10 INCHES LONG TO INSURE POSITIONING DURING PLACEMENT OF AGGREGATE. PIN LONGITUDINAL SEAMS AT 25 FOOT CENTERS AND TRANSVERSE SEAMS EVERY 5 FEET.

D. THE AGGREGATE BASE AND SURFACE COURSES SHALL BE CONSTRUCTED IN LAYERS NOT MORE THAN 4 INCH (COMPACTED) THICKNESS. AGGREGATE TO BE PLACED ON GEOTEXTILE FABRIC SHALL BE END–DUMPED ON THE FABRIC FROM THE FREE END OF THE FABRIC OR OVER PREVIOUSLY PLACED AGGREGATE. THE FIRST LIFT SHALL BE BLADED DOWN TO A THICKNESS OF 8 INCHES PRIOR TO COMPACTION. AT NO TIME SHALL EQUIPMENT, EITHER TRANSPORTING THE AGGREGATE OR GRADING THE AGGREGATE, BE PERMITTED ON THE ROADWAY WITH LESS THAN 4 INCHES OF MATERIAL COVERING THE FABRIC.

E. THE AGGREGATE SHALL BE IMMEDIATELY COMPACTED TO NOT LESS THAN 95 PERCENT OF THE MAXIMUM DRY DENSITY AS PROVIDED BY THE MODIFIED PROCTOR TEST, ASTM D 1557 WITH A TAMPING ROLLER, OR WITH A PNEUMATIC–TIRED ROLLER, OR WITH A VIBRATORY MACHINE OR ANY COMBINATION OF THE ABOVE. THE TOP LAYER SHALL BE GIVEN A FINAL ROLLING WITH A THREE–WHEEL OR TANDEM ROLLER.

3.6 FINISH GRADING:

A. PERFORM ALL GRADING TO PROVIDE POSITIVE DRAINAGE AWAY FROM STRUCTURES AND SMOOTH, EVEN SURFACE DRAINAGE OF THE ENTIRE AREA WITHIN THE LIMITS OF CONSTRUCTION. GRADING SHALL BE COMPATIBLE WITH ALL SURROUNDING TOPOGRAPHY AND STRUCTURES.

B. UTILIZE SATISFACTORY FILL MATERIAL RESULTING FROM THE EXCAVATION WORK IN THE CONSTRUCTION OF FILLS, EMBANKMENTS AND FOR REPLACEMENT OF REMOVED UNSUITABLE MATERIALS.

C. ACHIEVE FINISHED GRADE BY PLACING A MINIMUM OF 4 INCHES OF 1/2" – 3/4" CRUSHED STONE ON TOP SOIL STABILIZER FABRIC.

D. REPAIR ALL ACCESS ROADS AND SURROUNDING AREAS USED DURING THE COURSE OF THIS WORK TO THEIR ORIGINAL CONDITION.

3.7 ASPHALT PAVING ROAD:

KANSAS:
A. DIVISION 600 – KDOT FLEXIBLE PAVEMENT.

MISSOURI
A. SECTION 403 – MODOT ASPHALT CONCRETE PAVEMENT.

COLORADO
A. DIVISION 400 – CDOT PAVEMENT

MINNESOTA:
A. SECTION 2321 – MN/DOT ROAD–MIXED BITUMINOUS SURFACE.
B. SECTION 2360 – MN/DOT PLANT MIXED ASPHALT PAVEMENT.

IOWA:
A. IOWA DOT CHAPTER 8 – HOT MIX ASPHALT (HMA) PAVEMENT, BASES, AND SUBBASES.

NEBRASKA:
A. DIVISION 500 – BITUMINOUS PAVEMENT.

WISCONSIN:
A. SECTION 460 – WISDOT HOT MIX ASPHALT PAVEMENT.

ILLINOIS:
A. ILLINOIS DOT SECTION 403 – BITUMINOUS SURFACE TREATMENT.
B. ILLINOIS DOT SECTION 406 – BITUMINOUS CONCRETE BINDER AND SURFACE COURSE CLASS I.

SITE WORK & DRAINAGE NOTES

at&t
2630 LIBERTY AVENUE
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A□E
WIRELESS
ENGINEERING GROUP
1501 E. WOODFIELD ROAD, SUITE □300E
SCHAUMBURG, IL 60173
□□□.sa□□.c□
847.944.1600

SITE ID:	MPLSMNU1049
DRAWN BY:	KMR
CHECKED BY:	GP

REV	DATE	DESCRIPTION
0	03/25/14	ISSUED FOR CONSTRUCTION
B	02/27/14	90 % ISSUED FOR CONSTRUCTION
A	01/31/14	ISSUED FOR REVIEW

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

PRINT NAME: NESTOR POPOWYCH
SIGNATURE:
DATE: 02/05/2014 LICENSE # 47725

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

MPLSMNU1049_143346
BASSETTS CREEK PARK
252 UPTON AVENUE SOUTH
MINNEAPOLIS, MN 55405
NSB – RAWLAND

SHEET TITLE
SITE SECTION NOTES

SHEET NUMBER
N-3

PART 1 – GENERAL

1.1 SCOPE:

A. PROVIDE FABRICATION AND ERECTION OF STRUCTURAL STEEL AND OTHER ITEMS AS SHOWN ON THE DRAWINGS OR REQUIRED BY OTHER SECTIONS OF THESE SPECIFICATIONS.

1.2 REFERENCES:

A. AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC). MANUAL OF STEEL CONSTRUCTION (13TH EDITION), ALLOWABLE STRESS DESIGN (ASD).

B. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM).
ASTM A36: STRUCTURAL STEEL
ASTM A53: PIPE, STEEL BLACK AND HOT DIPPED, ZINC-COATED WELDED AND SEAMLESS.
ASTM A108: STEEL BARS, CARBON, COLD FINISHED, STANDARD QUALITY.
ASTM A123: ZINC (HOT-DIPPED GALVANIZED) COATING ON IRON AND STEEL PRODUCTS.
ASTM A307: CARBON STEEL BOLTS AND STUDS, 60,000 PSI TENSILE STRENGTH.
ASTM A325: HIGH-STRENGTH BOLT FOR STRUCTURAL STEEL JOINTS.
ASTM A490: HEAT-TREATED, STRUCTURAL STEEL BOLTS, 150 (KSI) (1035MPA) TENSILE STRENGTH.
ASTM A500: COLD-FORMED WELDED AND SEAMLESS CARBON STEEL STRUCTURAL TUBING IN ROUNDS AND SHAPES.
ASTM A563: ARCBON AND ALLOY STEEL NUTS.
ASTM B695: COATINGS OF ZINC MECHANICALLY DEPOSITED ON IRON AND STEEL.
ASTM F436: HARDENED STEEL WASHERS.
ASTM F959: COMPRESSIBLE-WASHER-TYPE DIRECT TENSION INDICATOR FOR USE WITH STRUCTURAL FASTENERS.

C. AMERICAN WELDING SOCIETY (AWS):
AWS A5.1: COVERED CARBON STEEL ARC WELDING ELECTRODES.
AWS A5.5: LOW ALLOY STEEL COVERED ARC WELDING ELECTRODES.
AWS D1.1: STRUCTURAL WELDING CODE – STEEL.

D. RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS (RCSC): "SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 BOLTS OR ASTM A490 BOLTS" AS ENDORSED BY AISC.

E. STEEL STRUCTURES PAINTING COUNCIL (SSPC):
SSPC-SP3: POWER TOOL CLEANING.
SSPC-PAINT 11: RED IRON OXIDE, ZINC CHROME, RAW LINSEED OIL OR ALKYD PAINT.

1.3 SUBMITTALS:

A. SUBMIT THE FOLLOWING FOR APPROVAL:

1. FABRICATION AND ERECTION DRAWINGS SHOWING ALL DETAILS, CONNECTIONS, MATERIAL DESIGNATIONS, AND ALL TOP STEEL ELEVATIONS.

B. WELDERS SHALL BE QUALIFIED AS PRESCRIBED IN AWS D1.1.

PART 2 – PRODUCTS

2.1 STRUCTURAL STEEL:

A. SHAPES, PLATES AND BARS SHALL CONFORM TO ASTM A36 AND ASTM A992.

B. STRUCTURAL TUBING SHALL CONFORM TO ASTM A500, GRADE B. STEEL PIPE SHALL CONFORM TO ASTM A53, TYPE E OR S, GRADE B.

2.2 ANCHOR BOLTS:

A. ANCHOR BOLTS SHALL CONFORM TO ASTM A307 WITH HEAVY HEXAGONAL NUTS.

2.3 BOLTS:

A. COMMON (MACHINE) BOLTS SHALL CONFORM TO ASTM A307 GRADE A AND NUTS TO ASTM A563. ONE COMMON BOLT ASSEMBLY SHALL CONSIST OF A BOLT, A HEAVY HEX NUT, AND A HARDENED WASHER.

B. HIGH STRENGTH BOLT SHALL CONFORM TO ASTM A325, ONE HIGH STRENGTH BOLT ASSEMBLY SHALL CONSIST OF A HEAVY HEX STRUCTURAL BOLT, A HEAVY HEX NUT, A HARDENED WASHER CONFIRMING WITH ASTM F436 AND A DIRECT TENSION INDICATOR CONFORMING WITH STM F959. THE HARDENED WASHER SHALL BE INSTALLED AGAINST THE ELEMENT TURNED IN TIGHTENING.UNLESS NOTED OTHERWISE ON THE DRAWINGS, ALL CONNECTIONS SHALL BE BEARING TYPE CONNECTIONS.

2.4 WELDING ELECTRODES:

A. WELDING ELECTRODES SHALL COMPLY WITH AWS D1.1 USING A5.1 OR A5.5 E70XX AND SHALL BE COMPATIBLE WITH THE WELDING PROCESS SELECTED.

2.5 PRIMER:

A. PRIMER SHALL BE RED OXIDE-CHROMATE PRIMER COMPLYING WITH SSPC PAINT SPECIFICATION NO. 11.

PART 3 – EXECUTION

3.1 FABRICATION:

A. SHOP FABRICATE AND ASSEMBLY MATERIALS AS SPECIFIED HEREIN.

1. FABRICATE ITEMS OF STRUCTURAL STEEL IN ACCORDANCE WITH THE AISC-ASD SPECIFICATION, AND AS INDICATED ON THE APPROVED SHOP DRAWINGS.
2. ALL EXPOSED STRUCTURAL STEEL SHALL BE HOT DIP GALVANIZED PER ASTM.
3. PROPERLY MARK AND MATCH-MARK MATERIALS FOR FIELD ASSEMBLY AND FOR IDENTIFICATION AS TO LOCATION FOR WHICH INTENDED.
4. FABRICATE AND DELIVER IN A SEQUENCE WHICH WILL EXPEDITE ERECTION AND MINIMIZE FIELD HANDLING OF MATERIALS.
5. WHERE FINISHING IS REQUIRED, COMPLETE THE ASSEMBLY, INCLUDING THE WELDING OF UNITS, BEFORE START OF FINISHING OPERATIONS.
6. PROVIDE FINISH SURFACE OF MEMBERS EXPOSED IN THE FINAL STRUCTURE FREE FROM MARKINGS, BURNS, AND OTHER DEFECTS.

B. PROVIDE CONNECTIONS AS SPECIFIED HEREIN:

1. PROVIDE BOLTS AND WASHERS OF TYPES AND SIZE REQUIRED FOR COMPLETION OF FIELD ERECTION. USE 3/4 INCH DIAMETER A325 BOLTS UNLESS NOTED OTHERWISE.
2. INSTALL HIGH STRENGTH THREADED FASTENERS IN ACCORDANCE WITH RCSC "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR ASTM A490 BOLTS."
3. WELDED CONSTRUCTION SHALL COMPLY WITH AWS D1.1 FOR PROCEDURES, APPEARANCE, QUALITY OF WELD, AND METHODS USED IN CORRECTING WELDED WORK.
4. THE FABRICATOR SHALL FURNISH AND INSTALL ERECTION CLIPS FOR FIT-UP OF WELDED CONNECTIONS.
5. DOUBLE ANGLE MEMBERS SHALL HAVE WELDED FILLERS SPACED IN ACCORDANCE WITH CHAPTER E4 OF THE AISC-ASD SPECIFICATION.
6. GUSSET AND STIFFENER PLATES SHALL BE 3/8 INCH THICK MINIMUM.

3.2 PRIMING:

A. STRUCTURAL STEEL SHALL BE PRIMED AS SPECIFIED HEREIN, UNLESS SHOWN OTHERWISE ON THE DRAWINGS.

B. STRUCTURAL STEEL SURFACE PREPARATION SHALL CONFORM TO SSPC-SP3, "POWER TOOL CLEANING."

C. SURFACE PREPARATION AND PRIMER SHALL BE IN ACCORDANCE WITH AISC CODE OF STANDARD PRACTICE AS INCLUDED IN THE ASD MANUAL OF STEEL CONSTRUCTION.

D. MATERIALS SHALL REMAIN CLOSED UNTIL REQUIRED FOR USE, MANUFACTURER'S POT-LIFE REQUIREMENTS SHALL BE STRICTLY ADHERED TO.

E. PRIMER SHALL BE APPLIED TO DRY, CLEAN, PREPARED SURFACE AND UNDER FAVORABLE CONDITIONS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. UNLESS OTHERWISE RECOMMENDED BY THE MANUFACTURER PRIMING SHALL NOT BE DONE WHEN AMBIENT TEMPERATURE IS LESS THAN 50 DEGREE F. THE RELATIVE HUMIDITY IS MORE THAN 90 PERCENT, OR THE SURFACE TEMPERATURE IS LESS THAN 5 DEGREE F ABOVE THE DEW POINT.

F. GENERALLY ALL PRIMER SHALL BE SPRAY APPLIED. BRUSH OR ROLLER APPLICATION SHALL BE RESTRICTED TO TOUCHUP AND TO AREAS NOT ACCESSIBLE BY SPRAY GUN.

G. PRIMER SHALL BE UNIFORMLY APPLIED WITHOUT RUNS, SAGS, SOLVENT BLISTERS, DRY SPRAY OR OTHER BLEMISHES. ALL BLEMISHES AND OTHER IRREGULARITIES SHALL BE REPAIRED OR REMOVED AND THE AREA RE-COATED. SPECIAL ATTENTION SHALL BE PAID TO CREVICES, WELD LINES, BOLT HEADS, CORNERS, EDGES, ETC., TO OBTAIN THE REQUIRED NOMINAL FILM THICKNESS.

H. THE DRY FILM THICKNESS OF THE PRIMER SHALL BE 2.0 MILS.

I. IF THE PRIMER IS DAMAGED BY WELDING OR PHYSICAL ABUSE, THE AREA SHALL BE TOUCHED-UP AND REPAIRED. THE TOUCHUP PAINT SHALL BE COMPATIBLE WITH THE APPLIED PRIMER WITH MINIMUM DRY FILM THICKNESS OF 1.5 MILS.

3.3 INSTALLATION:

A. INSTALLATION OF STRUCTURAL STEEL SHALL COMPLY WITH AISC "CODE OF STANDARD PRACTICE."

B. STRUCTURAL FIELD WELDING SHALL BE DONE BY THE ELECTRIC SUBMERGED OR SHIELDED METAL ARC PROCESS. WELDED CONSTRUCTION SHALL COMPLY WITH AWS D1.1.

C. PROVIDE ANCHOR BOLTS AND OTHER CONNECTORS REQUIRED FOR SECURING STRUCTURAL STEEL TO ELEVATOR SHAFT WALLS AND OTHER IN-PLACE WORK. PROVIDE TEMPLATES AND OTHER DEVICES NECESSARY FOR PRESETTING BOLTS AND ANCHORS TO ACCURATE LOCATIONS.

D. SPLICE MEMBERS ONLY WHERE INDICATED ON THE DRAWINGS.

E. ANY GAS CUTTING TORCHES HAVE TO BE APPROVED IN WRITING BY THE PROJECT STRUCTURAL ENGINEER.

F. PROVIDE TEMPORARY SHORING BRACING WITH CONNECTIONS OF SUFFICIENT STRENGTH TO BEAR IMPOSED LOADS. REMOVE TEMPORARY CONNECTIONS AND MEMBERS WHEN PERMANENT MEMBERS ARE IN PLACE AND THE FINAL CONNECTIONS HAVE BEEN MADE.

G. ALIGN AND ADJUST MEMBERS, AND OTHER SURFACES WHICH WILL BE IN PERMANENT CONTACT, BEFORE ASSEMBLY.

H. HIGH-STRENGTH BOLTS AS A MINIMUM, SHALL BE TIGHTENED TO A "SNUG TIGHT" CONDITION AS DEFINED IN THE LATEST AISC SPECIFICATION. ALL HIGH-STRENGTH BOLTS SPECIFIED ON THE DESIGN DRAWINGS TO BE USED IN PRETENSIONED OR SLIP-CRITICAL JOINTS SHALL BE TIGHTENED TO A BOLT TENSION NOT LESS THAN THAT GIVEN IN AISC TABLE J3.1. INSTALLATION SHALL BE BY ANY OF THE FOLLOWING METHODS: TURN-OF NUT METHOD, A DIRECT-TENSION-INDICATOR, TWIST-OFF-TYPE TENSION-CONTROL BOLT, CALIBRATED WRENCH, OR ALTERNATIVE DESIGN BOLT.

TOWER SECTION NOTES

at&t
2630 LIBERTY AVENUE
PITTSBURGH, PA 15222

A□E
WIRELESS
ENGINEERING GROUP
1501 E. WOODFIELD ROAD, SUITE □300E
SCHAUMBURG, IL 60173
□□□□sa□□.□o□
847□944□1600

SITE ID:	MPLSMNU1049
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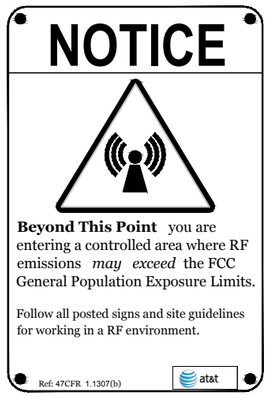
BASSETTS CREEK PARK
252 UPTON AVENUE SOUTH
MINNEAPOLIS, MN 55405
NSB – RAWLAND

SHEET TITLE

TOWER SECTION NOTES

SHEET NUMBER

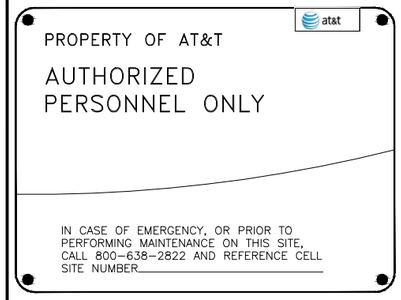
N-4



ALERTING SIGNS

ALERTING SIGN
NO SCALE

ALERTING SIGN



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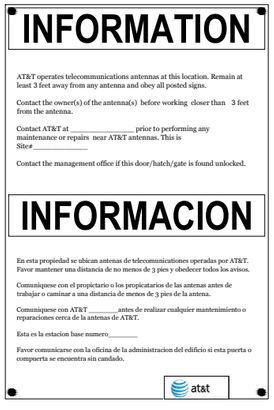

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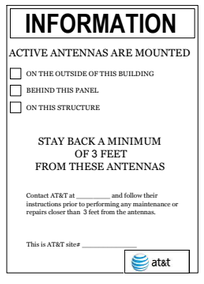

INFO SIGN #2

INFO SIGN #4

ALERTING SIGN (FOR CELL SITE BATTERIES)

ALERTING SIGN (FOR DIESEL FUEL)

ALERTING SIGN (FOR PROPANE)

GENERAL SIGNAGE GUIDELINES

Structure Type	INFO SIGN #1	INFO SIGN #2	INFO SIGN #3	INFO SIGN #4	Striping	NOTICE SIGN	CAUTION SIGN
Towers							
Monopole/Monopine/Monopalm	entrance gates, shelter doors **OR** on the outdoor cabinets	climbing side of the Tower	On backside of Antennas	On the side of Antennas			At the height of the first climbing step, min. 9ft above ground
SCE Towers/ Towers with high voltage	entrance gates, shelter doors **OR** on the outdoor cabinets	climbing side of the Tower	On backside of Antennas	On the side of Antennas			At the height of the first climbing step, min. 9ft above ground
Light Poles / Flag Poles	entrance gates, shelter doors **OR** on the outdoor cabinets	on the pole, no less than 3ft below the Antenna and no less than 9ft above ground	On backside of Antennas	On the side of Antennas			
Utility Wood Poles (JPA)	entrance gates, shelter doors **OR** on the outdoor cabinets	on the pole, no less than 3ft below the Antenna and no less than 9ft above ground	On backside of Antennas	On the side of Antennas		If GP max value of MPE at antenna level is: 0-99%: Notice sign; over 99%: Caution sign at no less than 3ft below antenna and 9ft above ground	
Microcells mounted on non-JPA poles	entrance gates, shelter doors **OR** on the outdoor cabinets	on the pole, no less than 3ft below the Antenna and no less than 9ft above ground	On backside of Antennas	On the side of Antennas		Notice or Caution sign at no less than 9ft above ground: only if the exposure exceeds 90% of the General Public exposure at 6ft above ground or at outside surface of adjacent buildings	
Roof Tops							
At all access points to the roof	X						
On Antennas	X		X	X			
Concealed Antennas	X	X					
antennas mounted facing outside the building	X	X					
antennas on support structure	X	X					
Roofview Graph:							
Radiation area is within 3ft from antenna	X	adjacent to each antenna				either Notice or Caution sign (based on Roofview results) at antennas/barrier	
Radiation area is beyond 3ft from antenna	X	adjacent to each antenna			diagonal, yellow striping as to Roofview graph		
Church Steeples	Access to steeple	adjacent to antennas if antennas are concealed	On backside of Antennas	On the side of Antennas			Caution sign at the antennas
Water Stations	Access to ladder	adjacent to antennas if antennas are concealed	On backside of Antennas	On the side of Antennas			Caution sign beside Info sign #1, min. 9ft above ground

Notes for Rooftop sites:
1. Either NOTICE or CAUTION signs need to be posted at each sector as close as possible to: the outer edge of the striped off area or the outer antennas of the sector.
2. If Roofview shows: only blue = Notice Sign, blue and yellow = Caution Sign, only yellow = Caution Sign to be installed.
3. Should the required striping area interfere with any structures or equipment (A/C, vents, roof hatch, doors, other antennas, dishes, etc.), please notify AT&T to modify the striping area, prior to starting the work

SIGNAGE GUIDELINES CHART

at&t
2630 LIBERTY AVENUE
PITTSBURGH, PA 15222

A□E
SAC WIRELESS ENGINEERING GROUP
1501 E. WOODFIELD ROAD, SUITE □300E
SCHAUMBURG, IL 60173
□□□.sa□□.c□
847.944.1600

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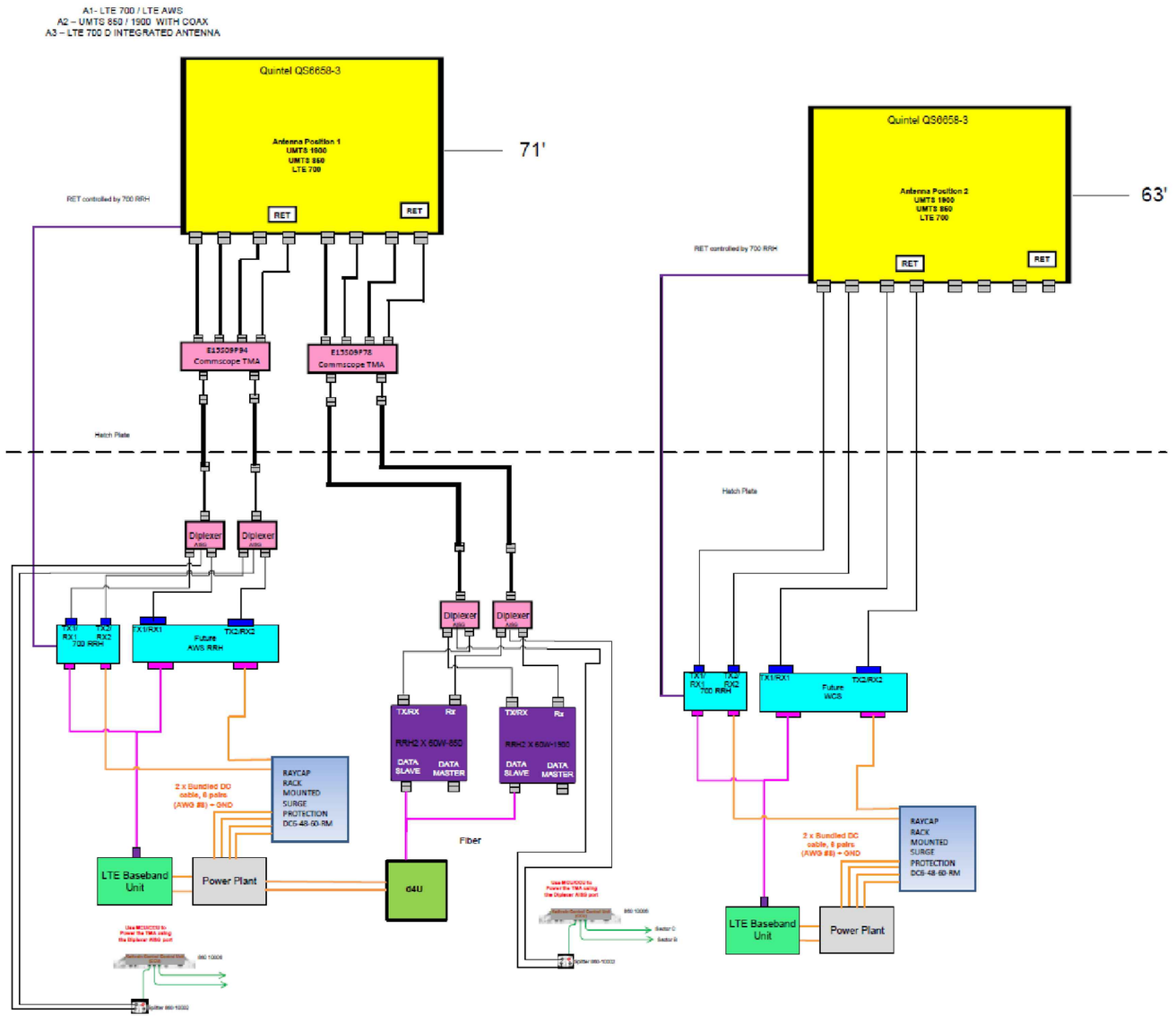
PRINT NAME: NESTOR POPOWYCH
SIGNATURE:
DATE: 02/05/2014 LICENSE # 47725

MPLSMNU1049_143346
BASSETTS CREEK PARK
252 UPTON AVENUE SOUTH
MINNEAPOLIS, MN 55405
NSB – RAWLAND

SHEET TITLE
SIGNAGE DETAILS

SHEET NUMBER
N-5



RFDS PLUMBING DIAGRAM – TYPICAL FOR ALL SECTORS

at&t

2630 LIBERTY AVENUE
PITTSBURGH, PA 15222

A□E

WIRELESS
ENGINEERING GROUP
1501 E. WOODFIELD ROAD, SUITE □300E
SCHAUMBURG, IL 60173
□□□□sa□□,□□
847□944□1600

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BASSETTS CREEK PARK
252 UPTON AVENUE SOUTH
MINNEAPOLIS, MN 55405
NSB – RAWLAND

SHEET TITLE

RFDS PLUMBING DIAGRAM

SHEET NUMBER

RF1

Section 1 - RFDS GENERAL INFORMATION

RFDS NAME:	MNL01049	**DATE:**	08/06/2013	**RF DESIGN ENG:**	Cory Thomas	**RF PERF ENG:**	
ISSUE:	Preliminary	**Approved? (Y/N):**	Yes	**RF DESIGN PHONE:**		**RF PERF PHONE:**	
REVISION:	3	**RF MANAGER:**	Raghu Parigi	**RF DESIGN EMAIL:**	ct9839@att.com	**RF PERF EMAIL:**	
INITIATIVE /PROJECT:	BASSETTS CREEK- School light pole replacement. **Updated RFDS to show 2nd antenna at 63'. 03/13/2014**Updated coax feeder to 7/8". 03/13/2014					**TRIDENT:**	
						GSM FREQUENCY:	
						UMTS FREQUENCY:	850/1900
						LTE FREQUENCY:	2130/700

RFDS PROGRAM TYPE:	2013 New Site		
RFDS TECHNOLOGY:	GSM/UMTS 1C/2C/3C		
State:	As Built		
Status:	In Progress		
RFDS ID:	137745		
RFDS Version:	1.00		
Created By:	gs670c		
Date Created:	8/6/2013 10:48:24 AM		
Date Updated:	3/20/2014 3:05:19 PM		
Updated By:	ct9839		
I-PLAN JOB # 1:	NCR-RUMW-12-00456	**IPLAN PRD GRP || SUB GRP #1:**	New Site || UMTS Only 1C
I-PLAN JOB # 2:	NCR-RUMW-12-03319	**IPLAN PRD GRP || SUB GRP #2:**	eNode B || eNode B
I-PLAN JOB # 3:		**IPLAN PRD GRP || SUB GRP #3:**	
I-PLAN JOB # 4:		**IPLAN PRD GRP || SUB GRP #4:**	

Section 2 - LOCATION INFORMATION

USID:	143346	**FA LOCATION CODE:**	11661095	**LOCATION NAME:**	BASSETTS CREEK PARK
REGION:	MIDWEST	**MARKET CLUSTER:**	ND/SD/NE/MN/IA	**MARKET:**	MINNESOTA
ADDRESS:	256 UPTON AVENUE SOUTH	**CITY:**	MINNEAPOLIS	**STATE:**	MN
ZIP CODE:	55405	**COUNTY:**	HENNEPIN	**MSA / RSA:**	
LATITUDE (D-M-S):	44d 58m 21.81s	**LONGITUDE (D-M-S):**	-93d -19m -3.5184s	**LAT (DEC. DEG.):**	44.9727250
DIRECTIONS, ACCESS AND EQUIPMENT LOCATION:	FROM 4300 MARKET POINTE DRIVE IN BLOOMINGTON, MN HEAD EAST IN MARKET DR TOWARD JOHNSON AVE S, TURN LEFT AT JOHNSON AVE S, CONTINUE ONTO 77TH ST, TURN RIGHT ONTO MN -100 N, TAKE RAMP ONTO I-394 E, TAKE EXIT 7 FOR PENN AVE, TURN LEFT ONTO PENN AVE, TURN LEFT ONTO CEDAR LAKE RD S, TURN RIGHT ONTO W. LAUREL AVE, TURN RIGHT ONTO UPTON AVE S, SITE IS ON THE LEFT. PROPSOED LIGHT POLE REPLACEMENT IN ON SW SIDE OF SCHOOL, IN TEACHER PARKING LOT24/7CRANE ACCESS IS PAVED STREET TO PARKING LOTEXISTING PARKING ON SITELOCKED GATE ON SITE. COMBO CODE: TBDEXISTING POWER ON SITE, PROVIDER: XCEL ENERGYEXISTING TELCO ON SITE, PROVIDER: CENTURYLINK				

ORACLE PTN # 1:	3511607093	**PACE JOB # 1:**	
ORACLE PTN # 2:	3511607093-LTE	**PACE JOB # 2:**	
ORACLE PTN # 3:		**PACE JOB # 3:**	
ORACLE PTN # 4:		**PACE JOB # 4:**	
SEARCH RING NAME:			
SEARCH RING ID:		**CASPR INITIATIVE # 1:**	
BTA:		**CASPR INITIATIVE # 2:**	
LONG (DEC. DEG.):	-93.3176440	**CASPR INITIATIVE # 3:**	
BORDER CELL WITH CONTOUR COORD:		**CASPR INITIATIVE # 4:**	
AM STUDY REQ'D (Y/N):	No		
FREQ COORD:			

Section 3 - LICENSE COVERAGE/FILING INFORMATION

CGSA - NO FILING TRIGGERED (Yes/No):	Yes	**CGSA LOSS:**		**PCS REDUCED - UPS ZIP:**	
CGSA - MINOR FILING NEEDED (Yes/No)::	No	**CGSA EXT AGMT NEEDED:**		**PCS POPS REDUCED:**	
CGSA - MAJOR FILING NEEDED (Yes/No):	No	**CGSA SCORECARD UPDATED:**			

CGSA CALL SIGNS:	

Section 4 - TOWER/REGULATORY INFORMATION

STRUCTURE AT&T OWNED?:	Yes	**GROUND ELEVATION (ft):**	-1	**STRUCTURE TYPE:**	STEALTH STRUCTURE
ADDITIONAL REGULATORY?:	Yes	**HEIGHT OVERALL (ft):**		**FCC ASR NUMBER:**	
SUB-LEASE RIGHTS?:	Yes	**STRUCTURE HEIGHT (ft):**	75.00		
LIGHTING TYPE:					

MARKET LOCATION 700 MHz Band:	
MARKET LOCATION 850 MHz Band:	
MARKET LOCATION 1900 MHz Band:	
MARKET LOCATION AWS Band:	

Section 5 - E-911 INFORMATION - existing

		PSAP NAME:	PSAP ID:	E911 PHASE:	MPC SVC PROVIDER:	LMU REQUIRED:	ESRN:	DATE LIVE PH1:	DATE LIVE PH2:
SECTOR A	**E-911**	MN-HENNEPIN COUNTY MEDICAL CENTER-EMS	3635		INTRADO		0		
SECTOR B		MN-HENNEPIN COUNTY MEDICAL CENTER-EMS	3635		INTRADO		0		
SECTOR C		MN-HENNEPIN COUNTY MEDICAL CENTER-EMS	3635		INTRADO		0		
SECTOR D									
SECTOR E									
SECTOR F									
OMNI									

Section 5 - E-911 INFORMATION - final

		PSAP NAME:	PSAP ID:	E911 PHASE:	MPC SVC PROVIDER:	LMU REQUIRED:	ESRN:	DATE LIVE PH1:	DATE LIVE PH2:
SECTOR A	**E-911**	MN-HENNEPIN COUNTY MEDICAL CENTER-EMS	3635		INTRADO		0		
SECTOR B		MN-HENNEPIN COUNTY MEDICAL CENTER-EMS	3635		INTRADO		0		
SECTOR C		MN-HENNEPIN COUNTY MEDICAL CENTER-EMS	3635		INTRADO		0		
SECTOR D									
SECTOR E									
SECTOR F									
OMNI									

Section 6 - RBS GENERAL INFORMATION - existing

	GSM 1ST RBS	GSM 2ND RBS	UMTS 1ST RBS	UMTS 2ND RBS	UMTS 3RD RBS	UMTS 4TH RBS	UMTS 5TH RBS	UMTS 6TH RBS	LTE 1ST RBS	LTE 2ND RBS
RBS ID:			427004						427009	
CTS COMMON ID:			MPLSMNU1049						MNL01049	
BTA/TID:			298W						298L	
4-DIGIT SITE ID:			1049						1049	
COW OR TOY?:			No						No	
CELL SITE TYPE:			SECTORIZED						SECTORIZED	
SITE TYPE:			BTS-CONVENTIONAL						EDNB-LTE	
BTS LOCATION ID:			GROUND						GROUND	
ORIGINATING CO:			CINGULAR						CINGULAR	
CELLULAR NETWORK:			GOLD						GOLD	
OPS DISTRICT:			Minnesota North						Minnesota North	
RF DISTRICT:			Minnesota						Minnesota	
OPS ZONE:			CE_MN_MINNEAPOLIS_CS						CE_MN_MINNEAPOLIS_CS	
RF ZONE:			Zone 1						Zone 1	
BASE STATION TYPE:			BASE						BASE	
EQUIPMENT NAME:			BASSETTS CREEK						BASSETTS CREEK	
DISASTER PRIORITY:			0						0	

Section 6 - RBS GENERAL INFORMATION - final

	GSM 1ST RBS	GSM 2ND RBS	UMTS 1ST RBS	UMTS 2ND RBS	UMTS 3RD RBS	UMTS 4TH RBS	UMTS 5TH RBS	UMTS 6TH RBS	LTE 1ST RBS	LTE 2ND RBS
RBS ID:			427004						427009	
CTS COMMON ID:			MPLSMNU1049						MNL01049	
BTA/TID:			298W						298L	
4-DIGIT SITE ID:			1049						1049	
COW OR TOY?:			No						No	
CELL SITE TYPE:			SECTORIZED						SECTORIZED	
SITE TYPE:			BTS-CONVENTIONAL						EDNB-LTE	
BTS LOCATION ID:			GROUND						GROUND	
ORIGINATING CO:			CINGULAR						CINGULAR	
CELLULAR NETWORK:			GOLD						GOLD	
OPS DISTRICT:			Minnesota North						Minnesota North	
RF DISTRICT:			Minnesota						Minnesota	
OPS ZONE:			CE_MN_MINNEAPOLIS_CS						CE_MN_MINNEAPOLIS_CS	
RF ZONE:			Zone 1						Zone 1	
BASE STATION TYPE:			BASE						BASE	
EQUIPMENT NAME:			BASSETTS CREEK						BASSETTS CREEK	
DISASTER PRIORITY:			0						0	

Section 7 - RBS SPECIFIC INFORMATION - existing

	GSM 1ST RBS	GSM 2ND RBS	UMTS 1ST RBS	UMTS 2ND RBS	UMTS 3RD RBS	UMTS 4TH RBS	UMTS 5TH RBS	UMTS 6TH RBS	LTE 1ST RBS	LTE 2ND RBS
MSC										
BSC/RNC/MME POOL ID			MPLSMNGTCRAR14						FF28	
LAC			32514							
RAC										
EQUIPMENT VENDOR			ALU						ALU	
EQUIPMENT TYPE			9396 D4U INDOOR						9926 BASEBAND UNIT	
LOCATION										
CABINET LOCATION										
MARKET STATE CODE									MN	
AGPS			Yes						Yes	
NODE B NUMBER									1049	
PARENT NAME			MINNEAPOLIS ALCATEL RNC 14						FF28	

Section 7 - RBS SPECIFIC INFORMATION - final

	GSM 1ST RBS	GSM 2ND RBS	UMTS 1ST RBS	UMTS 2ND RBS	UMTS 3RD RBS	UMTS 4TH RBS	UMTS 5TH RBS	UMTS 6TH RBS	LTE 1ST RBS	LTE 2ND RBS
MSC										
BSC/RNC/MME POOL ID			MPLSMNGTCRAR14						FF28	
LAC			32514							
RAC										
EQUIPMENT VENDOR			ALU						ALU	
EQUIPMENT TYPE			9396 D4U INDOOR						9926 BBU ECCM-U	
LOCATION										
CABINET LOCATION										
MARKET STATE CODE									MN	
AGPS			Yes						Yes	
NODE B NUMBER									1049	
PARENT NAME			MINNEAPOLIS ALCATEL RNC 14							

Section 8 - RBS INDIVIDUAL INFORMATION - existing

	GSM 1ST 850	GSM 1ST 1900	GSM 2ND 850	GSM 2ND 1900	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	UMTS 2ND 1900	UMTS 3RD 850	UMTS 3RD 1900	UMTS 4TH 850	UMTS 4TH 1900	UMTS 5TH 850	UMTS 5TH 1900	UMTS 6TH 850	UMTS 6TH 1900	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST AWS	LTE 2ND 700	LTE 2ND 850	LTE 2ND 1900	LTE 2ND AWS
RBS ID:					427004	427004	427004										427009			427009				
CELL ID/BCF:					MPLSMNU1049	MPLSMNU1049	MPLSMNU1049										MNL01049			MNL01049				
CTS COMMON ID:					MPLSMNU1049	MPLSMNU1049	MPLSMNU1049										MNL01049			MNL01049				

Section 8 - RBS INDIVIDUAL INFORMATION - final

	GSM 1ST 850	GSM 1ST 1900	GSM 2ND 850	GSM 2ND 1900	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	UMTS 2ND 1900	UMTS 3RD 850	UMTS 3RD 1900	UMTS 4TH 850	UMTS 4TH 1900	UMTS 5TH 850	UMTS 5TH 1900	UMTS 6TH 850	UMTS 6TH 1900	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST AWS	LTE 2ND 700	LTE 2ND 850	LTE 2ND 1900	LTE 2ND AWS
RBS ID:					427004	427004	427004										427009			427009				
CELL ID/BCF:					MPLSMNU1049	MPLSMNU1049	MPLSMNU1049										MNL01049			MNL01049				
CTS COMMON ID:					MPLSMNU1049	MPLSMNU1049	MPLSMNU1049										MNL01049			MNL01049				

Section 9 - SOFT SECTOR ID - existing

	GSM 1ST 850	GSM 1ST 1900	GSM 2ND 850	GSM 2ND 1900	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	UMTS 2ND 1900	UMTS 3RD 850	UMTS 3RD 1900	UMTS 4TH 850	UMTS 4TH 1900	UMTS 5TH 850	UMTS 5TH 1900	UMTS 6TH 850	UMTS 6TH 1900	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST AWS	LTE 2ND 700	LTE 2ND 850	LTE 2ND 1900	LTE 2ND AWS
USEID (excluding Hard Sector)					143346.850.3G.1	143346.1900.3G.3	143346.850.3G.2										143346.700.4G.1			143346.AWS.4G.1				
SECTOR A SOFT SECTOR ID					MPLSMNU10495	MPLSMNU10491	MPLSMNU1049X										MNL01049_7A_1			MNL01049_2A_1				
SECTOR B					MPLSMNU10496	MPLSMNU10492	MPLSMNU1049Y										MNL01049_7B_1			MNL01049_2B_1				
SECTOR C					MPLSMNU10497	MPLSMNU10493	MPLSMNU1049Z										MNL01049_7C_1			MNL01049_2C_1				
SECTOR D																								
SECTOR E																								
SECTOR F																								
OMNI																								
SECTOR A IS MULTI CARRIER					Yes	Yes	Yes										Yes			No				
SECTOR B					Yes	Yes	Yes										Yes			No				
SECTOR C					Yes	Yes	Yes										Yes			No				
SECTOR D																								
SECTOR E																								
SECTOR F																								
OMNI																								
SECTOR A CELL NUMBER																	15			22				
SECTOR B																	16			23				
SECTOR C																	17			24				
SECTOR D																								
SECTOR E																								
SECTOR F																								
OMNI																								

Section 9 - SOFT SECTOR ID - final

	GSM 1ST 850	GSM 1ST 1900	GSM 2ND 850	GSM 2ND 1900	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	UMTS 2ND 1900	UMTS 3RD 850	UMTS 3RD 1900	UMTS 4TH 850	UMTS 4TH 1900	UMTS 5TH 850	UMTS 5TH 1900	UMTS 6TH 850	UMTS 6TH 1900	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST AWS	LTE 2ND 700	LTE 2ND 850	LTE 2ND 1900	LTE 2ND AWS
USEID (excluding Hard Sector)					143346.850.3G.1	143346.1900.3G.3	143346.850.3G.2										143346.700.4G.1			143346.AWS.4G.1				
SECTOR A SOFT SECTOR ID					MPLSMNU10495	MPLSMNU10491	MPLSMNU1049X										MNL01049_7A_1			MNL01049_2A_1				
SECTOR B					MPLSMNU10496	MPLSMNU10492	MPLSMNU1049Y										MNL01049_7B_1			MNL01049_2B_1				
SECTOR C					MPLSMNU10497	MPLSMNU10493	MPLSMNU1049Z										MNL01049_7C_1			MNL01049_2C_1				
SECTOR D																								
SECTOR E																								
SECTOR F																								
OMNI																								
SECTOR A IS MULTI CARRIER					Yes	Yes	Yes										Yes			No				
SECTOR B					Yes	Yes	Yes										Yes			No				
SECTOR C					Yes	Yes	Yes										Yes			No				
SECTOR D																								
SECTOR E																								
SECTOR F																								
OMNI																								
SECTOR A CELL NUMBER																	15			22				
SECTOR B																	16			23				
SECTOR C																	17			24				
SECTOR D																								
SECTOR E																								
SECTOR F																								
OMNI																								

Section 10 - CID/SAC - existing

	GSM 1ST 850	GSM 1ST 1900	GSM 2ND 850	GSM 2ND 1900	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	UMTS 2ND 1900	UMTS 3RD 850	UMTS 3RD 1900	UMTS 4TH 850	UMTS 4TH 1900	UMTS 5TH 850	UMTS 5TH 1900	UMTS 6TH 850	UMTS 6TH 1900	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST AWS	LTE 2ND 700	LTE 2ND 850	LTE 2ND 1900	LTE 2ND AWS
SECTOR A CID/SAC					10495	10491	00495																	
SECTOR B					10496	10492	00496																	
SECTOR C					10497	10493	00497																	
SECTOR D																								
SECTOR E																								
SECTOR F																								
OMNI																								

Section 10 - CID/SAC - final

	GSM 1ST 850	GSM 1ST 1900	GSM 2ND 850	GSM 2ND 1900	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	UMTS 2ND 1900	UMTS 3RD 850	UMTS 3RD 1900	UMTS 4TH 850	UMTS 4TH 1900	UMTS 5TH 850	UMTS 5TH 1900	UMTS 6TH 850	UMTS 6TH 1900	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST AWS	LTE 2ND 700	LTE 2ND 850	LTE 2ND 1900	LTE 2ND AWS
SECTOR A CID/SAC					10495	10491	00495																	
SECTOR B					10496	10492	00496																	
SECTOR C					10497	10493	00497																	
SECTOR D																								
SECTOR E																								
SECTOR F																								
OMNI																								

Section 11 - CURRENT RADIO COUNTS existing

	GSM 1ST 850	GSM 1ST 1900	GSM 2ND 850	GSM 2ND 1900	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	UMTS 2ND 1900	UMTS 3RD 850	UMTS 3RD 1900	UMTS 4TH 850	UMTS 4TH 1900	UMTS 5TH 850	UMTS 5TH 1900	UMTS 6TH 850	UMTS 6TH 1900	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST AWS	LTE 2ND 700	LTE 2ND 850	LTE 2ND 1900	LTE 2ND AWS
SECTOR A RADIO COUNTS																								
SECTOR B																								
SECTOR C																								
SECTOR D																								
SECTOR E																								
SECTOR F																								
OMNI																								

Section 12 - CURRENT T1 COUNTS existing

	GSM 1st Cabinet	GSM 2nd Cabinet	UMTS 1st Cabinet	UMTS 2nd Cabinet	UMTS 3rd Cabinet	UMTS 4th Cabinet	UMTS 5th Cabinet	UMTS 6th Cabinet	LTE 1st Cabinet	LTE 2nd Cabinet
# T1s										
LINK PROFILE										
RF COMBINING										
FIBER or ETHERNET?										
Tx Board Model										
Tx Board QTY										
RAX/ECU Board Model										
RAX/ECU Board QTY										
BBU Board Model										
BBU Board QTY										
RRU - location										
FIBER JUMPER										
DC CABLE										
DC/Fiber Dem. Box										
Bundled Fiber Cable										
Bundled DC Cable										

Section 13 - NEW/PROPOSED RADIO COUNTS

	GSM 1ST 850	GSM 1ST 1900	GSM 2ND 850	GSM 2ND 1900	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	UMTS 2ND 1900	UMTS 3RD 850	UMTS 3RD 1900	UMTS 4TH 850	UMTS 4TH 1900	UMTS 5TH 850	UMTS 5TH 1900	UMTS 6TH 850	UMTS 6TH 1900	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST AWS	LTE 2ND 700	LTE 2ND 850	LTE 2ND 1900	LTE 2ND AWS
SECTOR A RADIO COUNTS					1	1	1																	
SECTOR B					1	1	1																	
SECTOR C					1	1	1																	
SECTOR D																								
SECTOR E																								
SECTOR F																								
OMNI																								

Section 14 - NEW/PROPOSED T1 COUNTS

	GSM 1st Cabinet	GSM 2nd Cabinet	UMTS 1st Cabinet	UMTS 2nd Cabinet	UMTS 3rd Cabinet	UMTS 4th Cabinet	UMTS 5th Cabinet	UMTS 6th Cabinet	LTE 1st Cabinet	LTE 2nd Cabinet
# T1s										
LINK PROFILE										
RF COMBINING										
FIBER or ETHERNET?										
Tx Board Model										
Tx Board QTY										
RAX/ECU Board Model										
RAX/ECU Board QTY										
BBU Board Model										
BBU Board QTY										
RRU - location										
FIBER JUMPER										
DC CABLE										
DC/Fiber Dem. Box										
Bundled Fiber Cable										
Bundled DC Cable										

Section 16A - NEW/PROPOSED SECTOR/CELL INFORMATION - SECTOR A (OR OMNI)

ANTENNA COMMON FIELDS	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	QS6658-3		QS6658-3											
ANTENNA VENDOR	Quintel		Quintel											
ANTENNA SIZE (H x W x D)														
ANTENNA WEIGHT														
AZIMUTH	55		55											
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	71		63											
ANTENNA TIP HEIGHT														
MECHANICAL DOWNTILT														
FEEDER AMOUNT														
Antenna RET Motor (QTY/MODEL)														
SURGE ARRESTOR (QTY/MODEL)														
DIPLEXER (QTY/MODEL)	4	CBC721A-03		NA										
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)														
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)	2	E15S09P78 & E15Z09P94		NA										
CURRENT INJECTORS FOR TMA (QTY/MODEL)														
PDU FOR TMAS (QTY/MODEL)	2	860 1006												
FILTER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)														
RRH - 850 band (QTY/MODEL)														
RRH - 1900 band (QTY/MODEL)														
RRH - AWS band (QTY/MODEL)														
RRH - WCS band (QTY/MODEL)														
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component1 (QTY/MODEL)	2	860 1002												
Additional Component2 (QTY/MODEL)														
Additional Component3 (QTY/MODEL)														
Local Market Note1														
Local Market Note2														
Local Market Note3														

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	TX/RX?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	Feeder Length (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Cable Number	Cable ID
ANTENNA POSITION 1	PORT 1	143346.A.700.4G.1				LTE 700	QS6658-3	11			BOTTOM	7/8"	90.00				NO	40	470		
	PORT 2	143346.A.AWS.4G.1				LTE AWS	QS6658-3	15.4			BOTTOM	7/8"	90.00				NO	40	695		
	PORT 3	143346.A.850.3G.1*****				UMTS 850	QS6658-3	11			BOTTOM	7/8"	90.00				NO	60	380		
	PORT 4	143346.A.1900.3G.3				UMTS 1900	QS6658-3	15.4			BOTTOM	7/8"	90.00				NO	60	995		
ANTENNA POSITION 2	PORT 1					LTE 700	QS6658-3	11			BOTTOM	7/8"	90.00				NO	40	470		
	PORT 2					LTE WCS	QS6658-3	15.4			Bottom	7/8"	90.00				NO	25	414		

Section 16B - NEW/PROPOSED SECTOR/CELL INFORMATION - SECTOR B

ANTENNA COMMON FIELDS	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	QS6658-3		QS6658-3											
ANTENNA VENDOR	Quintel		Quintel											
ANTENNA SIZE (H x W x D)														
ANTENNA WEIGHT														
AZIMUTH	175		175											
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	71		63											
ANTENNA TIP HEIGHT														
MECHANICAL DOWNTILT														
FEEDER AMOUNT														
Antenna RET Motor (QTY/MODEL)														
SURGE ARRESTOR (QTY/MODEL)														
DIPLEXER (QTY/MODEL)	4	CBC721A-03		NA										
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)														
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)	2	E15S09P78 & E15Z09P94		NA										
CURRENT INJECTORS FOR TMA (QTY/MODEL)														
PDU FOR TMAS (QTY/MODEL)	2	860 1006												
FILTER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)														
RRH - 850 band (QTY/MODEL)														
RRH - 1900 band (QTY/MODEL)														
RRH - AWS band (QTY/MODEL)														
RRH - WCS band (QTY/MODEL)														
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component1 (QTY/MODEL)	2	860 1002												
Additional Component2 (QTY/MODEL)														
Additional Component3 (QTY/MODEL)														
Local Market Note1														
Local Market Note2														
Local Market Note3														

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	TX/RX?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	Feeder Length (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Cable Number	Cable ID
ANTENNA POSITION 1	PORT 1	143346.B.700.4G.1				LTE 700	QS6658-3	11			BOTTOM	7/8"	90.00				NO	40	470		
	PORT 2	143346.B.AWS.4G.1				LTE AWS	QS6658-3	15.4			BOTTOM	7/8"	90.00				NO	40	695		
	PORT 3	143346.B.850.3G.1*****				UMTS 850	QS6658-3	11			BOTTOM	7/8"	90.00				NO	60	380		
	PORT 4	143346.B.1900.3G.3				UMTS 1900	QS6658-3	15.4			BOTTOM	7/8"	90.00				NO	60	995		
ANTENNA POSITION 2	PORT 1					LTE 700	QS6658-3	11			BOTTOM	7/8"	90.00				NO	40	470		
	PORT 2					LTE WCS	QS6658-3	15.4			Bottom	7/8"	90.00				NO	25	414		

Section 16C - NEW/PROPOSED SECTOR/CELL INFORMATION - SECTOR C

ANTENNA COMMON FIELDS	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	QS6658-3		QS6658-3											
ANTENNA VENDOR	Quintel		Quintel											
ANTENNA SIZE (H x W x D)														
ANTENNA WEIGHT														
AZIMUTH	295		295											
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	71		63											
ANTENNA TIP HEIGHT														
MECHANICAL DOWNTILT														
FEEDER AMOUNT														
Antenna RET Motor (QTY/MODEL)														
SURGE ARRESTOR (QTY/MODEL)														
DIPLEXER (QTY/MODEL)	4	CBC721A-03		NA										
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)														
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)	2	E15S09P78 & E15Z09P94		NA										
CURRENT INJECTORS FOR TMA (QTY/MODEL)														
PDU FOR TMAS (QTY/MODEL)	2	860 1006												
FILTER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)														
RRH - 850 band (QTY/MODEL)														
RRH - 1900 band (QTY/MODEL)														
RRH - AWS band (QTY/MODEL)														
RRH - WCS band (QTY/MODEL)														
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component1 (QTY/MODEL)	2	860 1002												
Additional Component2 (QTY/MODEL)														
Additional Component3 (QTY/MODEL)														
Local Market Note1														
Local Market Note2														
Local Market Note3														

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	TX/RX?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	Feeder Length (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Cable Number	Cable ID
ANTENNA POSITION 1	PORT 1	143346.C.700.4G.1				LTE 700	QS6658-3	11			BOTTOM	7/8"	90.00				NO	40	470		
	PORT 2	143346.C.AWS.4G.1				LTE AWS	QS6658-3	15.4			BOTTOM	7/8"	90.00				NO	40	695		
	PORT 3	143346.C.850.3G.1*****				UMTS 850	QS6658-3	11			BOTTOM	7/8"	90.00				NO	60	380		
	PORT 4	143346.C.1900.3G.3				UMTS 1900	QS6658-3	15.4			BOTTOM	7/8"	90.00				NO	60	995		
ANTENNA POSITION 2	PORT 1					LTE 700	QS6658-3	11			BOTTOM	7/8"	90.00				NO	40	470		
	PORT 2					LTE WCS	QS6658-3	15.4			Bottom	7/8"	90.00				NO	25	414		

Section 17A - FINAL SECTOR/CELL INFORMATION - SECTOR A (OR OMNI)

ANTENNA COMMON FIELDS	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	QS6658-3		QS6658-3											
ANTENNA VENDOR	Quintel		Quintel											
ANTENNA SIZE (H x W x D)														
ANTENNA WEIGHT														
AZIMUTH	55		55											
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	71		63											
ANTENNA TIP HEIGHT														
MECHANICAL DOWNTILT														
FEEDER AMOUNT														
Antenna RET Motor (QTY/MODEL)														
SURGE ARRESTOR (QTY/MODEL)														
DIPLEXER (QTY/MODEL)	4	CBC721A-03		NA										
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)														
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)	2	E15S09P78 & E15Z09P94		NA										
CURRENT INJECTORS FOR TMA (QTY/MODEL)														
PDU FOR TMAS (QTY/MODEL)	2	860 1006												
FILTER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)														
RRH - 850 band (QTY/MODEL)														
RRH - 1900 band (QTY/MODEL)														
RRH - AWS band (QTY/MODEL)														
RRH - WCS band (QTY/MODEL)														
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component1 (QTY/MODEL)	2	860 1002												
Additional Component2 (QTY/MODEL)														
Additional Component3 (QTY/MODEL)														
Local Market Note1														
Local Market Note2														
Local Market Note3														

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (AtoII)	ATOLL TXID	TX/RX?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	Feeder Length (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Cable Number	Cable ID
ANTENNA POSITION 1	PORT 1	143346.A.700.4G.1				LTE 700	QS6658-3	11			BOTTOM	7/8"	90.00				NO	40	470		
	PORT 2	143346.A.AWS.4G.1				LTE AWS	QS6658-3	15.4			BOTTOM	7/8"	90.00				NO	40	695		
	PORT 3	143346.A.850.3G.1*****				UMTS 850	QS6658-3	11			BOTTOM	7/8"	90.00				NO	60	380		
	PORT 4	143346.A.1900.3G.3				UMTS 1900	QS6658-3	15.4			BOTTOM	7/8"	90.00				NO	60	995		
ANTENNA POSITION 2	PORT 1					LTE 700	QS6658-3	11			BOTTOM	7/8"	90.00				NO	40	470		
	PORT 2					LTE WCS	QS6658-3	15.4			Bottom	7/8"	90.00				NO	25	414		

Section 17B - FINAL SECTOR/CELL INFORMATION - SECTOR B

ANTENNA COMMON FIELDS	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	QS6658-3		QS6658-3											
ANTENNA VENDOR	Quintel		Quintel											
ANTENNA SIZE (H x W x D)														
ANTENNA WEIGHT														
AZIMUTH	175		175											
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	71		63											
ANTENNA TIP HEIGHT														
MECHANICAL DOWNTILT														
FEEDER AMOUNT														
Antenna RET Motor (QTY/MODEL)														
SURGE ARRESTOR (QTY/MODEL)														
DIPLEXER (QTY/MODEL)	4	CBC721A-03		NA										
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)														
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)	2	E15S09P78 & E15Z09P94		NA										
CURRENT INJECTORS FOR TMA (QTY/MODEL)														
PDU FOR TMAS (QTY/MODEL)	2	860 1006												
FILTER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)														
RRH - 850 band (QTY/MODEL)														
RRH - 1900 band (QTY/MODEL)														
RRH - AWS band (QTY/MODEL)														
RRH - WCS band (QTY/MODEL)														
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component1 (QTY/MODEL)	2	860 1002												
Additional Component2 (QTY/MODEL)														
Additional Component3 (QTY/MODEL)														
Local Market Note1														
Local Market Note2														
Local Market Note3														

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	TX/RX?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	Feeder Length (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Cable Number	Cable ID
ANTENNA POSITION 1	PORT 1	143346.B.700.4G.1				LTE 700	QS6658-3	11			BOTTOM	7/8"	90.00				NO	40	470		
	PORT 2	143346.B.AWS.4G.1				LTE AWS	QS6658-3	15.4			BOTTOM	7/8"	90.00				NO	40	695		
	PORT 3	143346.B.850.3G.1*****				UMTS 850	QS6658-3	11			BOTTOM	7/8"	90.00				NO	60	380		
	PORT 4	143346.B.1900.3G.3				UMTS 1900	QS6658-3	15.4			BOTTOM	7/8"	90.00				NO	60	995		
ANTENNA POSITION 2	PORT 1					LTE 700	QS6658-3	11			BOTTOM	7/8"	90.00				NO	40	470		
	PORT 2					LTE WCS	QS6658-3	15.4			Bottom	7/8"	90.00				NO	25	414		

Section 17C - FINAL SECTOR/CELL INFORMATION - SECTOR C

ANTENNA COMMON FIELDS	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	QS6658-3		QS6658-3											
ANTENNA VENDOR	Quintel		Quintel											
ANTENNA SIZE (H x W x D)														
ANTENNA WEIGHT														
AZIMUTH	295		295											
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	71		63											
ANTENNA TIP HEIGHT														
MECHANICAL DOWNTILT														
FEEDER AMOUNT														
Antenna RET Motor (QTY/MODEL)														
SURGE ARRESTOR (QTY/MODEL)														
DIPLEXER (QTY/MODEL)	4	CBC721A-03		NA										
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)														
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)	2	E15S09P78 & E15Z09P94		NA										
CURRENT INJECTORS FOR TMA (QTY/MODEL)														
PDU FOR TMAS (QTY/MODEL)	2	860 1006												
FILTER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)														
RRH - 850 band (QTY/MODEL)														
RRH - 1900 band (QTY/MODEL)														
RRH - AWS band (QTY/MODEL)														
RRH - WCS band (QTY/MODEL)														
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component1 (QTY/MODEL)	2	860 1002												
Additional Component2 (QTY/MODEL)														
Additional Component3 (QTY/MODEL)														
Local Market Note1														
Local Market Note2														
Local Market Note3														

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	TX/RX?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	Feeder Length (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Cable Number	Cable ID
ANTENNA POSITION 1	PORT 1	143346.C.700.4G.1				LTE 700	QS6658-3	11			BOTTOM	7/8"	90.00				NO	40	470		
	PORT 2	143346.C.AWS.4G.1				LTE AWS	QS6658-3	15.4			BOTTOM	7/8"	90.00				NO	40	695		
	PORT 3	143346.C.850.3G.1*****				UMTS 850	QS6658-3	11			BOTTOM	7/8"	90.00				NO	60	380		
	PORT 4	143346.C.1900.3G.3				UMTS 1900	QS6658-3	15.4			BOTTOM	7/8"	90.00				NO	60	995		
ANTENNA POSITION 2	PORT 1					LTE 700	QS6658-3	11			BOTTOM	7/8"	90.00				NO	40	470		
	PORT 2					LTE WCS	QS6658-3	15.4			Bottom	7/8"	90.00				NO	25	414		

Diagram - Sector	A	Diagram File Name - Andrew DT Minneapolis Std Config for Stealth.vsd							
Atoll Site Name -	MNL01049	Location Name -	BASSETTS CREEK PARK	Market -	MINNESOTA	Market Cluster -	ND/SD/NE/MN/IA		
Comments:									

A1- LTE 700 / LTE AWS
A2 – UMTS 850 / 1900 WITH COAX
A3 – LTE 700 D INTEGRATED ANTENNA

Quintel QS6658-3

Antenna Position 1
UMTS 1900
UMTS 850
LTE 700

RET

RET

71'

RET controlled by 700 RRH

E15S09P94
Commscope TMA

E15S09P78
Commscope TMA

Hatch Plate

Diplexer
AISG

Diplexer
AISG

TX1/ RX1
700 RRH

TX2/ RX2

TX1/RX1

Future
AWS RRH

TX2/RX2

Diplexer
AISG

Diplexer
AISG

TX/RX

Rx

RRH2 X 60W-850

DATA SLAVE

DATA MASTER

TX/RX

Rx

RRH2 X 60W-1900

DATA SLAVE

DATA MASTER

RAYCAP
RACK
MOUNTED
SURGE
PROTECTION
DC6-48-60-RM

2 x Bundled DC
cable, 6 pairs
(AWG #8) + GND

LTE Baseband
Unit

Power Plant

d4U

Fiber

Use MCU/CCU to
Power the TMA using
the Diplexer AISG port

Kathrein Control Control Unit
(CCU)

860 10006

Sector C

Sector B

Splitter 860-10002

Use MCU/CCU to
Power the TMA using
the Diplexer AISG port

Kathrein Control Control Unit
(CCU)

860 10006

Splitter 860-10002

Quintel QS6658-3

Antenna Position 2
UMTS 1900
UMTS 850
LTE 700

RET

RET

63'

RET controlled by 700 RRH

Hatch Plate

TX1/ RX1
700 RRH

TX2/ RX2

TX1/RX1

Future
WCS

TX2/RX2

RAYCAP
RACK
MOUNTED
SURGE
PROTECTION
DC6-48-60-RM

2 x Bundled DC
cable, 6 pairs
(AWG #8) + GND

LTE Baseband
Unit

Power Plant

Diagram - Sector	B	Diagram File Name - Andrew DT Minneapolis Std Config for Stealth.vsd							
Atoll Site Name -	MNL01049	Location Name -	BASSETTS CREEK PARK		Market -	MINNESOTA		Market Cluster -	ND/SD/NE/MN/IA
Comments:									

A1- LTE 700 / LTE AWS
A2 – UMTS 850 / 1900 WITH COAX
A3 – LTE 700 D INTEGRATED ANTENNA

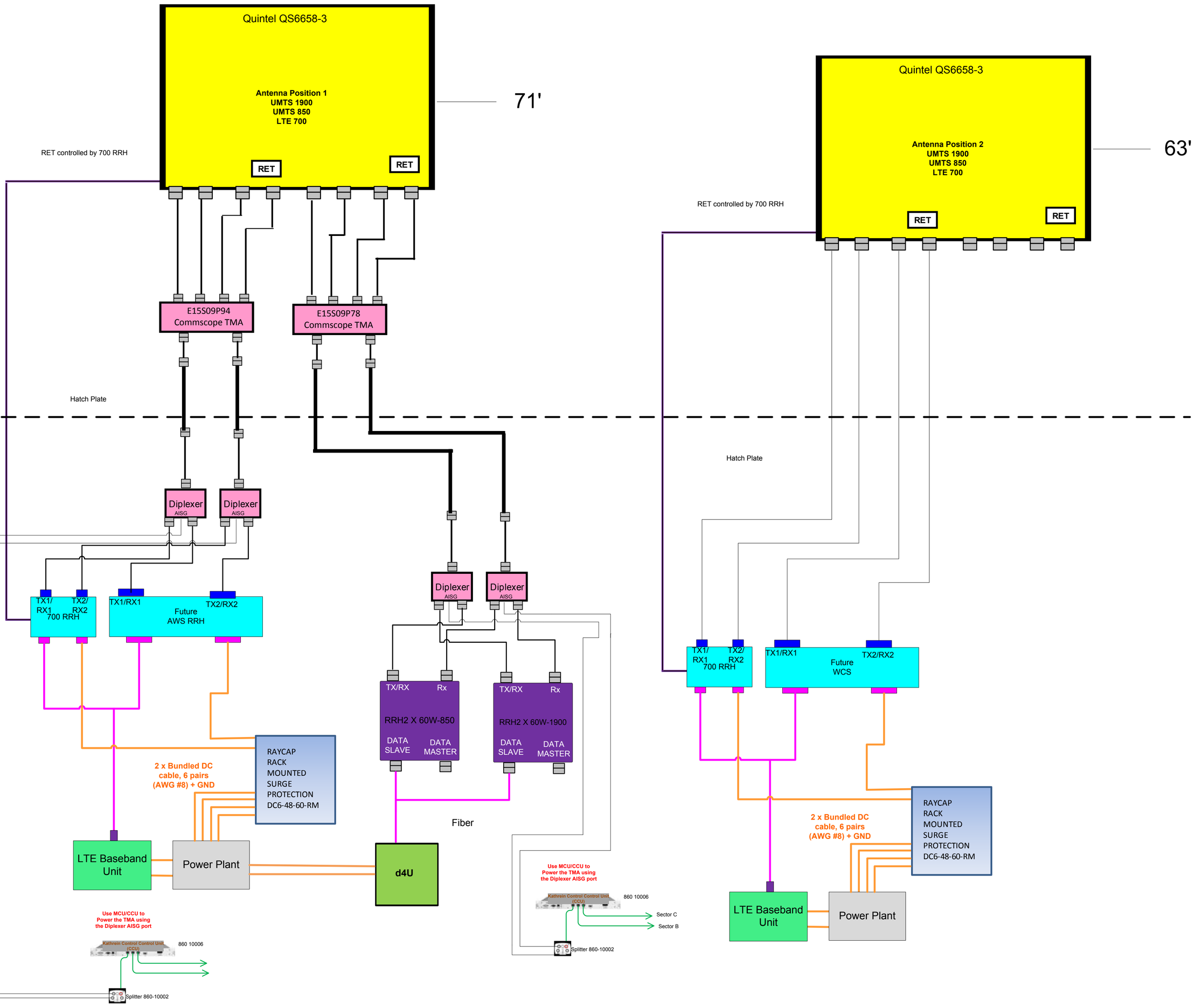
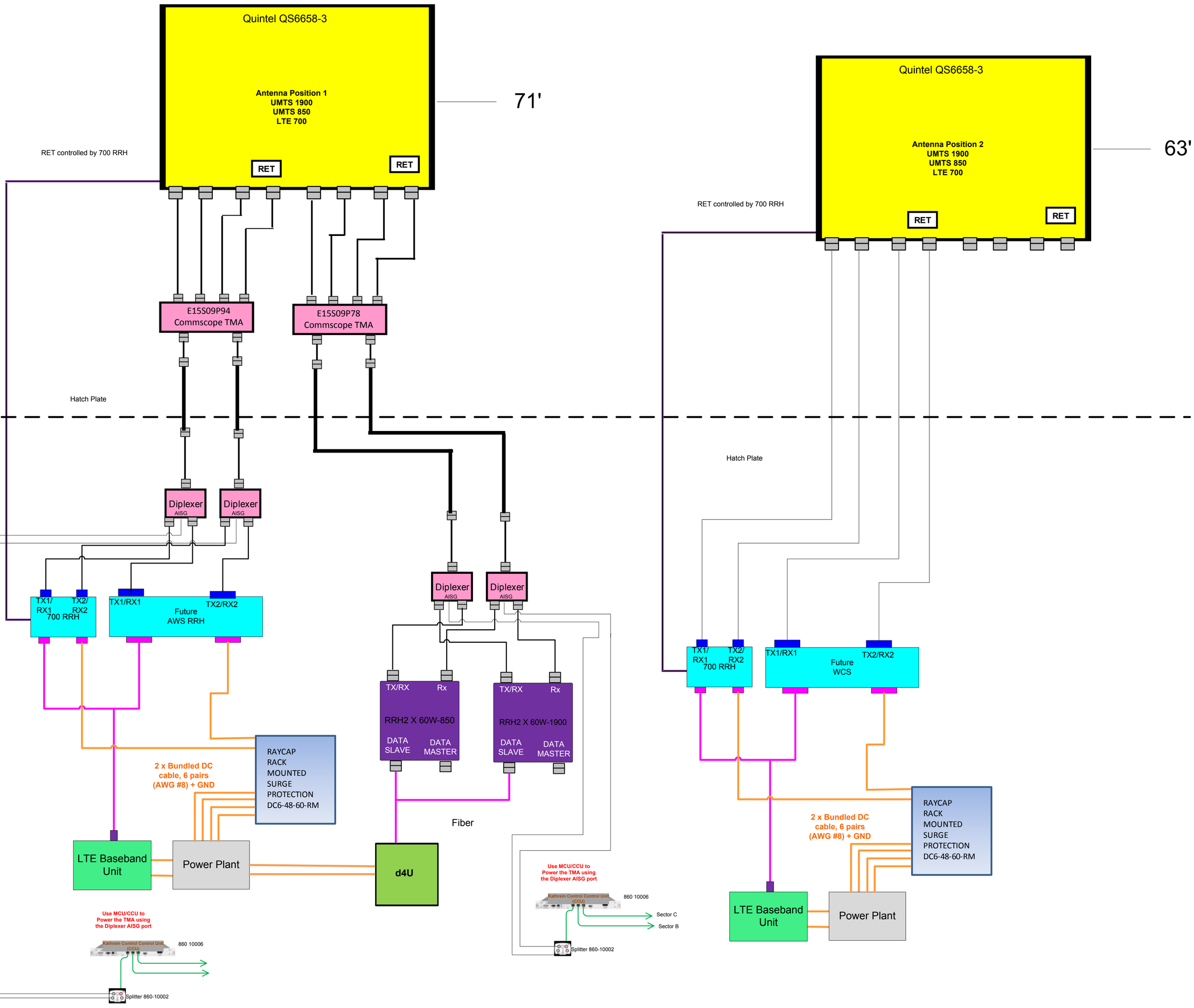
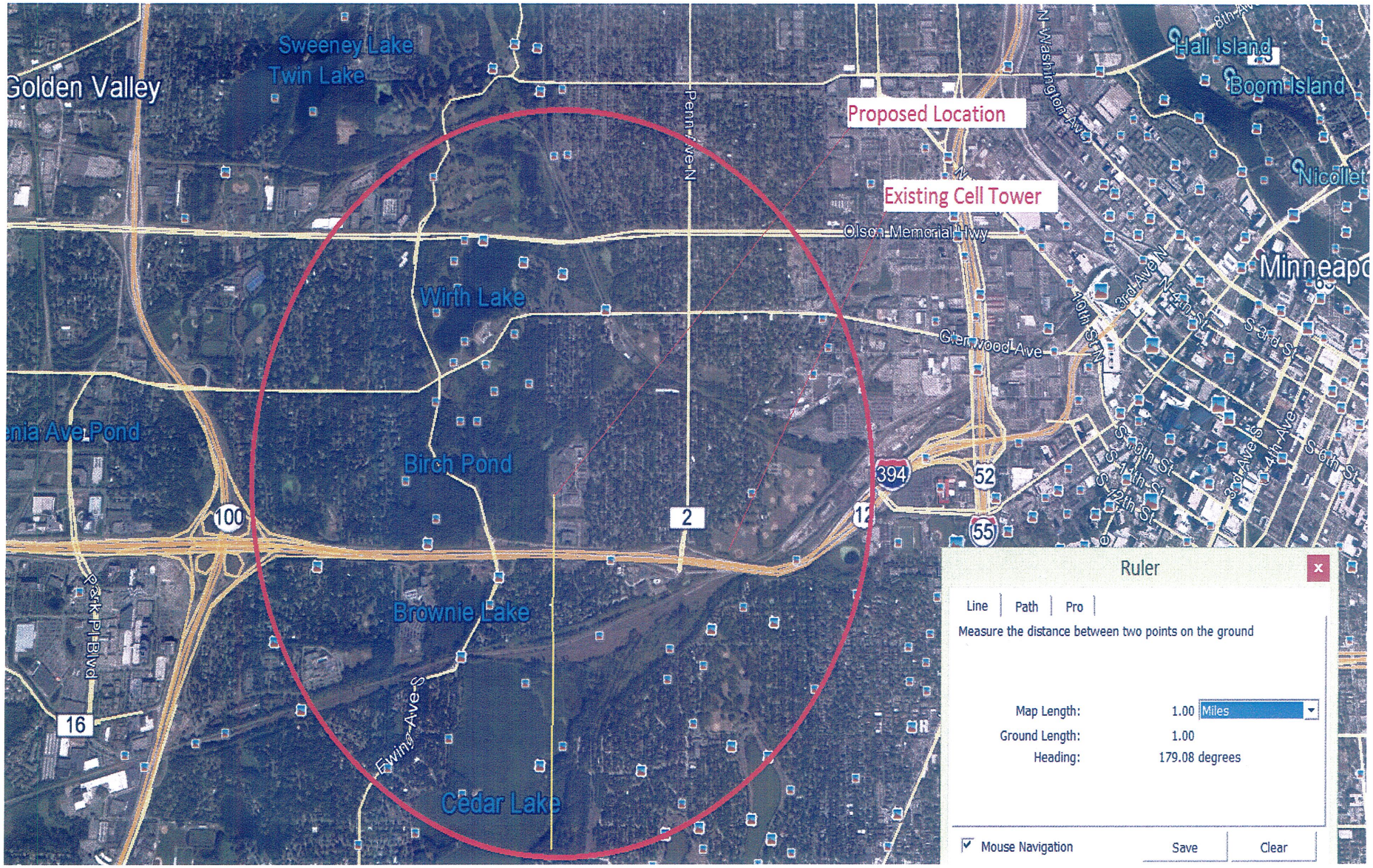


Diagram - Sector	C	Diagram File Name - Andrew DT Minneapolis Std Config for Stealth.vsd							
Atoll Site Name -	MNL01049	Location Name -	BASSETTS CREEK PARK		Market -	MINNESOTA		Market Cluster -	ND/SD/NE/MN/IA
Comments:									

A1- LTE 700 / LTE AWS
A2 – UMTS 850 / 1900 WITH COAX
A3 – LTE 700 D INTEGRATED ANTENNA



WORKFLOW SUMMARY						
Date	FROM State / Status	FROM ATTUID	TO State / Status	TO ATTUID	Operation	Comments
08/08/2013	Planned / In Progress	gs670c	Planned / In Progress	CT9839	Re-Assign	



Existing Towers w/in 1 mile

Nearest Residence

Nearest Existing Tower


KITCHEN
10


LEASH
AND
PICK UP.

PHOTOGRAPHIC SIMULATION

PROPOSED WIRELESS COMMUNICATIONS FACILITY

SITE LOCATION MAP

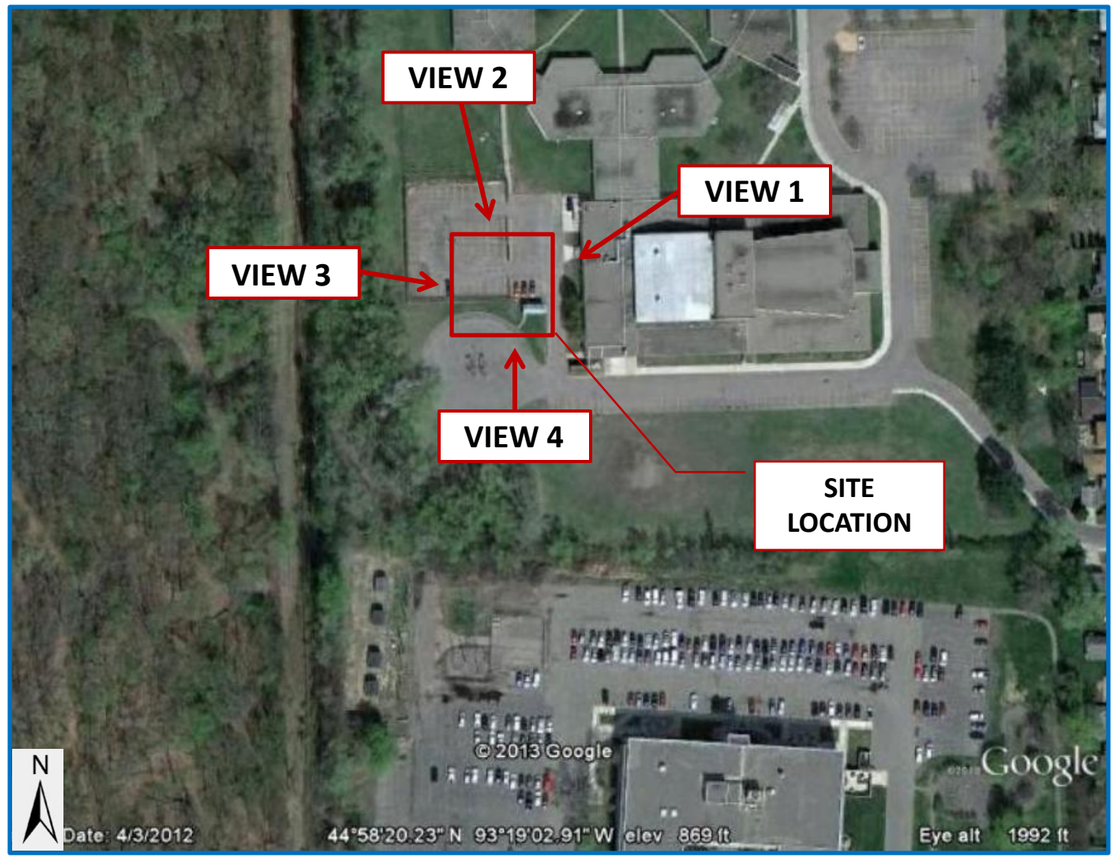


Image ©Google Maps 2012

The included Photographic Simulation(s) are intended as visual representations only and should not be used for construction purposes. The materials represented within the included Photographic Simulation(s) are subject to change.

SITE NUMBER:	MPLSMNU1049
SITE NAME:	BASSETTS CREEK PARK
SITE ADDRESS:	256 UPTON AVE SOUTH MINNEAPOLIS, MN 55405
DATE:	09/16/13
APPLICANT:	AT&T WIRELESS
CONTACT:	AHMED ISSAHAK BLACK & VEATCH (913) 458-2872

EXISTING SITE

EXISTING VIEW 1 –
LOOKING SOUTHWEST

PHOTOGRAPHIC SIMULATION –
VIEW 1 - LOOKING SOUTHWEST

PROPOSED AT&T
EQUIPMENT SHELTER

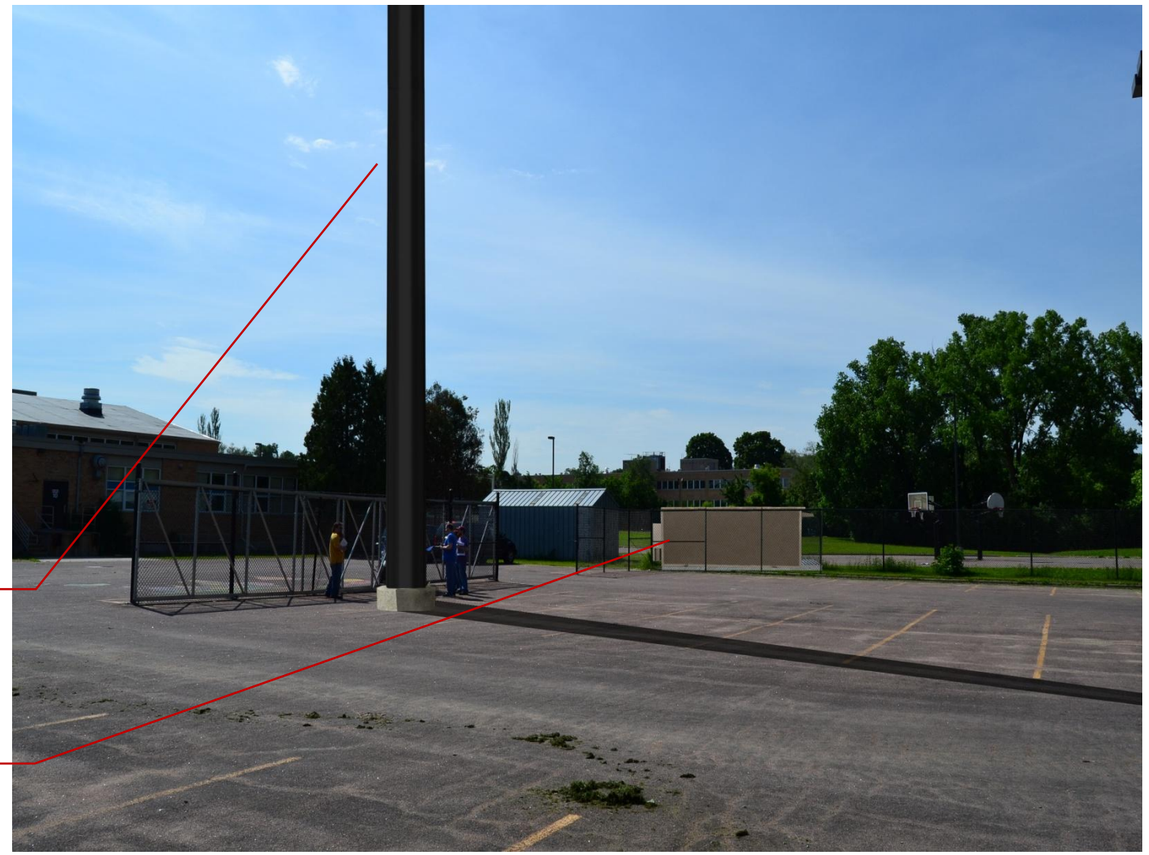
PROPOSED AT&T
STEALTH POLE

BLACK & VEATCH
Building a world of difference.®

EXISTING SITE

EXISTING VIEW 2 –
LOOKING SOUTHEAST

PHOTOGRAPHIC SIMULATION –
VIEW 2 - LOOKING SOUTHEAST



PROPOSED AT&T
STEALTH POLE

PROPOSED AT&T
EQUIPMENT SHELTER

EXISTING VIEW 3 –
LOOKING SOUTHEAST

PHOTOGRAPHIC SIMULATION –
VIEW 3 - LOOKING SOUTHEAST

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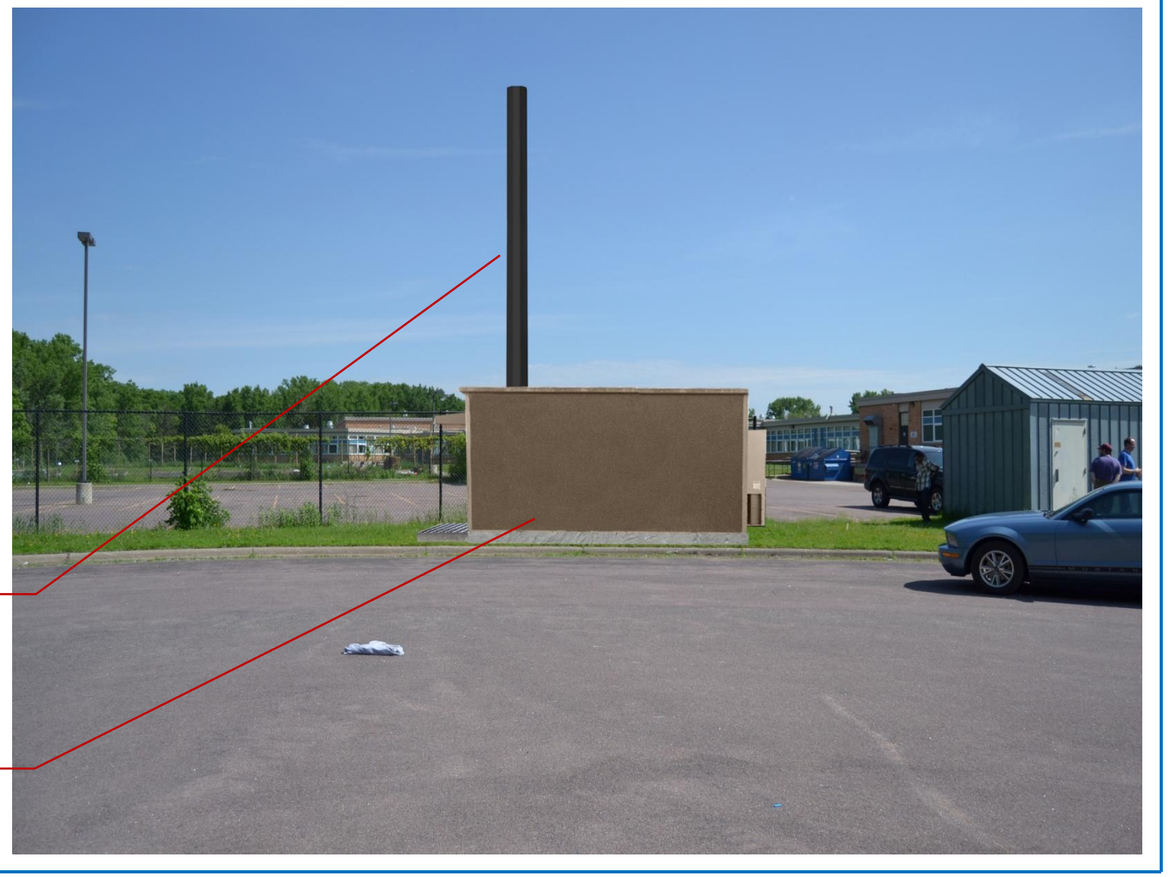
EXISTING SITE

EXISTING VIEW 4 –
LOOKING NORTH

PHOTOGRAPHIC SIMULATION –
VIEW 4 - LOOKING NORTH



PROPOSED AT&T
STEALTH POLE

PROPOSED AT&T
EQUIPMENT SHELTER

BLACK & VEATCH
Building a world of difference.®

ULS License

Cellular License - KNKQ418 - NEW CINGULAR WIRELESS PCS, LLC

Call Sign	KNKQ418	Radio Service	CL - Cellular
Status	Active	Auth Type	Regular

Market

Market	CMA487 - Minnesota 6 - Hubbard	Channel Block	A
Submarket	0	Phase	2

Dates

Grant	09/08/2004	Expiration	10/01/2014
Effective	02/08/2007	Cancellation	

Five Year Buildout Date

06/06/2000

Control Points

None

Licensee

FRN	0003291192	Type	Limited Liability Company

Licensee

NEW CINGULAR WIRELESS PCS, LLC
5601 LEGACY DRIVE, MS: A-3
PLANO, TX 75024
ATTN KELLYE E. ABERNATHY

P:(469)229-7422
F:(469)229-7297
E:KELLYE.E.ABERNATHY@CINGULAR.COM

Contact

AT&T MOBILITY LLC
DAVID C JATLOW
11760 US HIGHWAY 1
NORTH PALM BEACH, FL 33408

P:(202)255-1679
F:(561)279-2097
E:DAVID.JATLOW@CINGULAR.COM

Ownership and Qualifications

Radio Service Type	Mobile		
Regulatory Status	Common Carrier	Interconnected	Yes

Alien Ownership
The Applicant answered "No" to each of the Alien Ownership questions.

Basic Qualifications
The Applicant answered "No" to each of the Basic Qualification questions.

Demographics

Race

Ethnicity

Gender

Minnesota Historical Society
STATE HISTORIC PRESERVATION OFFICE

October 28, 2013

Mr. Jon Reis
Impact7G
6505 Merle Hay Rd, Suite B
Johnston, IA 50131

RE: Impact 7G Project No. 2012001 Phase 181
Construction of a 75 foot stealth telecommunications tower (will replace an existing light pole) & adjacent equipment shelter
256 Upton Ave. S, Minneapolis, Hennepin County
SHPO Number: 2014-0002

Dear Mr. Reis:

Thank you for the opportunity to comment on the above project. It has been reviewed pursuant to the responsibilities given the State Historic Preservation Officer by the National Historic Preservation Act of 1966 and implementing federal regulations at 36 CFR 800, and pursuant to the provisions of the nationwide programmatic agreement governing telecommunications facilities.

We have reviewed the submitted information and note that there are two historic properties within the Visual Area of Potential Effect for this project, a Lustron House and the Grand Rounds Historic District. However, due to distance and intervening structures, we concur with your determination that the proposed stealth tower and equipment shelter will have **no adverse effect** on these historic properties.

Please contact Kelly Gragg-Johnson at (651) 259-3455 if you have any questions regarding our review of this project.

Sincerely,

Barbara Howard

Barbara Howard, Deputy State Historic Preservation Officer
Minnesota State Historic Preservation Office