CITY OF CAMBRIDG
MASSACHUSETTS
BOARD OF ZONING APPEAL
831 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02139
617 349-6100

2017 JUN 27 PM 12:38

OFFICE OF THE CITY CLERK
CAMBRIDGE, MASSACHUSETTS

BZA APPLICATION FORM

Plan No: BZA-013173-2017

GENERAL INFORMATION

The undersigned hereby petitions the Board of Zoning Appeal for the following :

Special Permit : √ Variance : _____ Appeal : _____

PETITIONER : New Cingular Wireless PCS, LLC (AT&T Mobility) - C/O Dan Bilezikian / SAI Co

PETITIONER'S ADDRESS : 125 Tremont St. Rehoboth, MA 02769

LOCATION OF PROPERTY : 273 First St Cambridge, MA

TYPE OF OCCUPANCY : _____ ZONING DISTRICT : Office -3A/PUD-3 Zone

REASON FOR PETITION :

Other: Telecommunication Facility

DESCRIPTION OF PETITIONER'S PROPOSAL :

The petitioner proposes to collocate 12 wireless antennas and associated equipment on the existing building. In addition, the radio communications equipment cabinets and steel platform will be camouflaged behind a screen wall painted and textured to match the existing penthouse.

SECTIONS OF ZONING ORDINANCE CITED :

Article 4.000 Section 4.32.G.1 (Telecommunication Facility).

Article 4.000 Section 4.40 (Footnote 49) (Telecommunication Facility).

Article 10.000 Section 10.40-10.46 (Special Permit).

Original Signature(s) : _____
(Petitioner(s) / Owner)

Dan Bilezikian
(Print Name)

Address : 125 Tremont St.
Rehoboth, MA 02769

Tel. No. : 401-368-0006

E-Mail Address : dan.bilezikian@sai-comm.com

Date : 6/26/17

DAN BILEZIKIANdan.bilezikian@sai-comm.com401-368-0006508-252-5888

June 24, 2017

Donna P. Lopez, City Clerk City of Cambridge City Hall 795 Massachusetts Avenue Cambridge, MA 02139	Constantine Alexander, Chair Board of Zoning Appeal City Hall 795 Massachusetts Avenue Cambridge, MA 02139

Applicant:	New Cingular Wireless PCS, LLC ("AT&T")
Property Address:	273 First St. (formerly 265 First St.) Assessor's Map 13, Lot 21 (the "Property")
Re:	Application for (i) Special Permit under Cambridge Zoning Ordinance Section 4.32(g)(1) and M.G.L. c. 40A, Section 9; and (ii) Any other zoning relief required. (All relief if and to the extent necessary, all rights reserved)

Dear Ms. Lopez, Mr. Alexander and Members of the Board of Zoning Appeal:

By this letter and accompanying exhibits, New Cingular Wireless PCS, LLC ("AT&T") applies for a special permit from the City of Cambridge Board of Zoning Appeal (the "Board") under Section 432(g)(1) of the Cambridge Zoning Ordinance (the "Ordinance") to install a "Telephone Exchange including Transmission Facilities to serve a Mobile Communication System" (the "Facility") on the rooftop of the electric generation plant on the Property. The Property is located in a base zoning district, Office O-3A, and is in the PUD-3 Overlay District. As demonstrated in this application letter, the proposed Facility satisfies the requirements for the grant of a special permit pursuant to Section 10.43 of the Ordinance.

I. APPLICATION PACKAGE

Enclosed with this application is a check payable to the City of Cambridge in the amount of $500.00. In addition to the signed original of this letter are copies of the letter and the following materials:

1. The following completed and signed application forms:

   a. BZA Application Form – General Information;
   b. BZA Application Form – Ownership Information [Original Provided];
   c. BZA Application Form – Dimensional Requirements;
   d. BZA Application Form – Supporting Statement for a Special Permit; and
   e. BZA Application Form – Check List;

2. AT&T's relevant FCC License information;

3. The following Zoning Drawings by Dewberry Engineers, Inc.:

SHEET	TITLE	REV. DATE
T-1	Title Sheet	6/20/17
Z-1	Abutters Plan	6/20/17
Z-2	Proposed Roof Plan	6/20/17
Z-3	South Elevation	6/20/17
Z-4	East Elevation	6/20/17
Z-5	North Elevation	6/20/17
Z-6	West Elevation	6/20/17
Z-7	Equipment Roof Plan & Equipment Details,	6/20/17

4. Manufacturer's specification sheets for AT&T's proposed antennas and other featured equipment;[2]

5. Photographs of the existing building and simulations of the proposed Facility by Dewberry, dated June 8, 2017;

6. Radio Frequency Coverage Report, prepared by Radu Alecsandru, AT&T, dated April 24, 2017, demonstrating the public need for the Facility, radio frequency coverage maps showing (a) existing coverage; and (b) coverage with the proposed Facility;

7. Structural Analysis Report (revised) by Dewberry Engineers. Inc., dated June 9, 2017.

8. Maximum Permissible Exposure Study, Theoretical Report, by SAI Communications, dated March 11, 2017;

9. Letter of Authorization from Owner of Subject Property;

10. Deed to subject property; and

11. Noise Study, by Noise Control Engineering, LLC, dated May 5, 2017.

II. PROPOSED FACILITY DESIGN

AT&T seeks to locate the proposed Facility on the existing building at the Property. The Facility will consist of twelve (12) panel antennas (Alpha Sector: 4 antennas, Beta Sector: 4 antennas, and Gamma Sector: 4 antennas) that will be mounted in three (3) locations. The Alpha Sector antennas will be located on the north side of the building, facade mounted on the north facing parapet. The Beta Sector antennas will be façade mounted to the south facing wall of an existing stairwell

[2] AT&T reserves the right to change the manufacturer, make, model, type and operating characteristics of the antennas and any other equipment based on availability, price, performance and other considerations and in accordance with all applicable laws

penthouse at the southeast corner of the building. The Gamma Sector antennas will be attached to the lower building façade on the west wall at the southwest corner of the building. Remote radio heads and A2 modules (seven (7) and two (2) per sector respectively plus 4 surge arrestors) will be located on a small ballast frame on the roof directly behind Alpha Sector, behind an existing parapet wall on the roof of the stairwell penthouse for Beta Sector, and mounted to the existing lower building façade on the south wall around the corner from where the antennas are attached for Gamma Sector. AT&T's three proposed radio communications equipment cabinets, power cabinet, transformer, power panel, and telecommunications box, will be located on a raised steel equipment platform on a lower roof section south of the stairwell penthouse where the Beta Sector antennas are attached. A screen wall, painted and textured to match the adjacent wall, will surround the platform on the north, east and south sides and screen the proposed equipment platform and radio communications equipment cabinets from view.

There will be additional ancillary equipment such as associated cabling, cable trays, conduits and the like, located on the existing rooftop along with one (1) federally mandated GPS antenna mounted on the equipment platform. Visible sections of the cable tray, attached to the south and west facing walls, will be painted and textured to match adjacent wall colors. Cabling and conduits on the roof will run to the building's mechanical areas located in the basement. The Facility's design is shown in detail in the Zoning Drawings attached as Exhibit 3 to this application letter and featured equipment is described in the manufacturers' specification sheets attached as Exhibit 4. The photographs and photosimulations (Exhibit 5) show the building rooftop as currently existing from various locations around the Property and as simulated with the Facility. A structural analysis for the Facility concluded that the building is capable of supporting AT&T's proposed equipment at or near the locations shown on the Zoning Drawings

Once operational, the Facility will bring advanced wireless voice, text and data communications services to the surrounding areas. It will allow residents, professionals, government, businesses and students to communicate locally, nationally and internationally from virtually any location within the coverage area. In the event of an emergency, the Facility will allow immediate contact with fire, rescue and other emergency personnel. The Facility will thus enhance public health, safety and welfare both in ordinary daily living and in the event of fire, accident, medical emergency, natural disaster or other dangers.

III. BACKGROUND

AT&T is licensed by the Federal Communications Commission to construct and operate a wireless telecommunications network in various markets throughout the country, including the Commonwealth of Massachusetts and the City of Cambridge. A copy of the AT&T's FCC license that covers the area of the proposed Facility is included with this application (*See*, Exhibit 2). AT&T is in the process of designing and constructing additional wireless facilities to its existing telecommunications system to serve Massachusetts. One of the key design objectives of its systems is to provide adequate and reliable coverage. Such a system requires a grid of radio transmitting and receiving links located approximately .5 to 2 miles apart, depending on the location of existing and proposed installations in the surrounding area, the extent of use of AT&T's wireless services within the network, and the existing topography and obstructions. The radio transmitting and receiving facilities operate on a line-of-sight basis, requiring a clear path from the facility to the user on the

ground. In urban settings, this dynamic requires the antennas to be located on buildings at heights and in locations where the signal is not obstructed or degraded by other buildings or by topographical features such as hills.

The purpose of the proposed Facility is to replace an existing AT&T facility located on the rooftop at 215 First St., approximately 500' to the north. That facility was constructed in 1997 and has provided continuous reliable coverage to the surrounding area in East Cambridge for nearly 20 years. The building owner has chosen not to renew AT&T's lease which expires in April, 2017. Loss of the 215 First St. facility without a suitable replacement will result in a significant gap in AT&T's wireless network coverage in East Cambridge.

IV. RF COVERAGE DETERMINATION

AT&T has performed a study of radio frequency coverage for the City of Cambridge and from the Property, the results of which are described in the Radio Frequency Report submitted with this application (*see*, Exhibit 6). As mentioned above, the objective of the proposed Facility is to replace the coverage that will be lost when AT&T's existing facility at 215 First St. goes offline next year. Loss of existing coverage without a suitable replacement will result in a substantial coverage gap in the area of East Cambridge along Broadway, Main St, Memorial Drive and Edwin Land Blvd. Based on the results of the study it has been determined that a wireless communications facility located on the Property will provide needed coverage to the targeted sections of the City and the immediately surrounding area if AT&T's antennas are located on the building at the height and in the configuration requested. The importance of a facility at this location is underscored by AT&T's interest in continuing its ability to provide its most up-to-date wireless technology, known as long-term evolution technology ("LTE"), in the area north of Kendall Square to satisfy its customers' ever-increasing needs for high-speed data services. Radio frequency coverage maps included in the report are provided to pictorially and vividly show the differences in existing and proposed wireless coverage at the various bands authorized for AT&T's service. The maps show dramatic improvements to wireless coverage at all three (3) bands with the inclusion of the proposed Facility, namely, at 700, 1900, and 2100 MHz.

V. COMPLIANCE WITH THE CAMBRIDGE ZONING ORDINANCE

A. AT&T complies with the Wireless Communications provisions set forth in Section 4.32(g)(1), and Section 4.40, Footnote 49 of the Ordinance.

Section 4.32(g)(1): Section 4.32(g)(1) of the Ordinance allows for the use of a "*[t]elephone exchange (including switching, relay, and transmission facilities serving mobile communications systems) and any towers or antennas accessory thereto."* Under the Table of Use Regulations beginning at Section 4.30, AT&T's proposed use of the Facility as a transmission facility serving a mobile communications system is permitted by special permit in the O-3A zoning district *(see* the table at Section 4.32(g)(1)).

Section 4.40, Footnote 49: Section 4.32(g)(1) includes a reference to Section 4.40, Footnote 49 which sets out the standards for granting the special permit. AT&T's proposed Facility complies with Footnote 49's standards as noted below:

1. **The Board of Zoning Appeal shall consider "[t]he scope of or limitations imposed by any license secured from any state or federal agency having jurisdiction over such matters."**

AT&T's Response: AT&T's FCC license is included with this application and the license information included shows that AT&T is authorized to provide wireless service in the area to be served by the Facility (*see* Exhibit 2).

2. **The Board of Zoning Appeal shall consider "[t]he extent to which the visual impact of the various elements of the proposed facility is minimized: (1) through the use of existing mechanical elements on the building's roof or other features of the building as support and background, (2) through the use in materials that in texture and color blend with the materials to which the facilities are attached, or (3) other effective means to reduce the visual impact of the facility on the site."**

AT&T's Response: The design of the overall Facility, including the choice and placement of the proposed antennas and associated equipment minimizes the visual impact of the proposed Facility. The three sectors of antennas will be façade mounted on the north wall, south facing penthouse wall, and west facing lower building wall with antennas painted to match the building façade. The roof mounted equipment platform and equipment will be surrounded on the north, south and east sides and shielded from view by a screen wall painted to match the existing adjacent penthouse. The minimal visual impact of the Facility is shown in the photographs of the existing roof and the photosimulations that superimpose the proposed Facility (*see*, Exhibit 5).

3. **The Board of Zoning Appeal shall consider "[w]here it is proposed to erect such a facility in any residential zoning district, the extent to which there is a demonstrated public need for the facility at the proposed locations, the existence of alternative, functionally suitable sites in nonresidential locations, the character of the prevailing uses in the area, and the prevalence of other existing mechanical systems and equipment carried on or above the roof of nearby structures. The Board of Zoning Appeal shall grant a special permit to erect such a facility in a residential zoning district only upon finding that nonresidential uses predominate in the vicinity of the proposed facility's location and that the telecommunications facility is not inconsistent with the character that does prevail in the surrounding neighborhood.**

In granting a special permit the Board of Zoning Appeal shall set forth in its decision under which circumstances or procedures, if any, the permittee shall be allowed to replace and upgrade its equipment without the necessity of seeking a new special permit."

AT&T's Response: The proposed Facility will be located in the non-residential Office O-3A/PUD-3 district. As demonstrated by the Radio Frequency Report and the associated coverage maps, AT&T has demonstrated an immediate and compelling need for the proposed Facility located at the Property in order to continue to provide coverage to residents, businesses, and the general public in the area. AT&T requires this Facility to replace its existing facility at 215 First St. in order to satisfy

the ever-increasing need of its customers for data accessibility, navigation and use. This is especially critical in and around this area of Cambridge which also serves as home for numerous businesses.

As provided in Footnote 49, AT&T requests that once permission is received from the City to site the Facility at the Property, the Board permit AT&T to replace and upgrade the equipment at this Facility in the future without further zoning proceedings or a new special permit, provided that such equipment shall meet the eligible facilities request criteria set forth in 47 CFR § 1.40001.

B. AT&T complies with the Special Permit Criteria set forth in Section 10.43 of the Ordinance.

Section 10.43 of the Ordinance specifies the following criteria for issuance of a special permit: "Special permits will normally be granted where specific provisions of this Ordinance are met, except when particulars of the location or use, not generally true of the district or of the uses permitted in it, would cause granting of such permit to be to the detriment of the public interest because:

(a) The requirements of this Ordinance cannot or will not be met, or

AT&T's Response: As provided above, AT&T has met the requirements set forth in Section 4.32(g), Footnote 49 of the Ordinance. *Granting the special permit would not be a detriment to the public interest.*

(b) Traffic generated or patterns of access or egress would cause congestion, hazard, or substantial change in established neighborhood character for the following reasons, or

AT&T's Response: Given that the proposed Facility will be unmanned and only require infrequent visits by a technician (typically two times per month for routine diagnostics and/or maintenance, except in cases of emergency), there will be no material increase in traffic or disruption to patterns of access or egress that will cause congestion, hazards or a substantial change in the established neighborhood character. AT&T's maintenance personnel will make use of the existing access driveways and parking at the building. *Granting the special permit would not be a detriment to the public interest.*

(c) The continued operation of or the development of adjacent uses as permitted in the Zoning Ordinance would be adversely affected by the nature of the proposed use, or

AT&T's Response: As described above and illustrated on the attached photographs and photosimulations, the proposed Facility will produce a minimal change in the appearance of the building because the antennas will be façade mounted, and the antennas and the equipment platform screen wall will be painted to match the color of the building. The equipment platform will not be visually obtrusive because it is similar to other rooftop structures on the building (the existing penthouse) and in the neighborhood on similar buildings. As a result, the Facility will visually blend with existing characteristics of the building and the surrounding neighborhood.

Because the proposed installation will not generate any traffic, smoke, dust, heat or glare, discharge noxious substances, nor pollute waterways or groundwater, it will not adversely affect adjacent commercial and residential uses. Conversely, the surrounding properties and general public will benefit from the potential to enjoy improved wireless communications services. G*ranting the special permit would not be a detriment to the public interest.*

(d) Nuisance or hazard would be created to the detriment of the health, safety and/or welfare of the occupant of the proposed use or the citizens of the City, or

AT&T's Response: Because the proposed Facility will not generate any traffic, smoke, dust, heat or glare, discharge noxious substances, nor pollute waterways or groundwater, no nuisance or hazard will be created to the detriment of the health, safety, or welfare of the occupants of the building or the residents of the City of Cambridge. To the contrary, the proposed Facility will benefit the City and promote the safety and welfare of its residents, businesses and drivers by providing reliable state-of-the-art digital wireless voice and data services that will improve the reliability of emergency communications with the police and fire departments by eliminating dropped or blocked calls due to inadequate signal strength or insufficient network capacity to handle call volume, particularly important during emergency situations. The proposed Facility will comply with all federal, state and local safety requirements including the standards established by the FCC and Federal Aviation Administration (FAA). (*See* Exhibit 8, Maximum Permissible Exposure Study, Theoretical Report). G*ranting the special permit would not be a detriment to the public interest.*

(e) For other reasons, the proposed installation would impair the integrity of the district or adjoining district or otherwise derogate from the intent or purpose of this Ordinance, or

AT&T's Response: The purpose of the Ordinance is multifaceted, the relevant aspects of which relating to wireless telecommunications facilities include the lessening of congestion in the streets, conserving health, securing safety from fire, flood, panic and other danger, conserving the value of land and buildings and natural resources, preventing blight and pollution, encouraging the most rational use of land throughout the city, including encouraging appropriate economic development, and protecting residential neighborhoods from incompatible activities.

As noted above, the proposed Facility directly accords with the purposes of the Ordinance because it will not generate any traffic, smoke, dust, heat or glare, discharge noxious substances, nor pollute waterways or groundwater. As the Facility will improve the ability of residents, businesses, travelers and drivers in the area to access state-of-the-art wireless technology, the City's ability to provide emergency services will be improved, as will the economic development of the City as more people will be able to conduct commerce by virtue of a mobile platform. Finally, because the Facility visually is designed to blend with the existing characteristics of the Property, the visual impact on the underlying and adjacent zoning districts is minimal so the Facility is consistent with the Ordinance's purpose to allow for less intrusive wireless telecommunications facilities in all districts (other than Open Space) including the applicable overlay districts, and the underlying Office (O-3A) district. *Granting the special permit would not be a detriment to the public interest.*

(f) The new use or building construction is inconsistent with the Urban Design Objectives set forth in Section 19.30

AT&T's Response: As stated in the Section 19.30, the Citywide Urban Design Objectives ("Objectives") "are intended to provide guidance to property owners and the general public as to the city's policies with regard to the form and character desirable for new development in the city. It is understood that application of these principles can vary with the context of specific building proposals in ways that, nevertheless, fully respect the policies' intent. It is intended that proponents of projects, and city staff, the Planning Board and the general public, where public review or approval is required, should be open to creative variations from the detailed provisions presented in this Section as long as the core values expressed are being served. ***A project need not meet all the objectives of this Section 19.30 where this Section serves as the basis for issuance of a special permit. Rather the permit granting authority shall find that on balance the objectives of the city are being served.*** Nor shall a project subject to special permit review be required to conform to the Required Building and Site Plan Requirements set forth in Section 11.50." [emphasis added]. *For the reasons stated in AT&T's response to this Section 10.43(f) of the Zoning Ordinance and in its application generally, "on balance, the objectives of the city are being served" by the installation of the Facility at the Property so that granting the special permit would not be a detriment to the public interest.*

The following are the Objectives' headings as appearing in the Ordinance:

19.31: New projects should be responsive to the existing or anticipated pattern of development.

AT&T's Response: Inasmuch as the Facility is located on the rooftop of an existing building, the visibility of which blends with the structures and colors of the building and the surrounding buildings of a similar nature, it is responsive to the existing pattern of development in the Property's applicable zoning districts.

19.32: Development should be pedestrian and bicycle-friendly, with a positive relationship to its surroundings.

AT&T's Response: Inasmuch as the Facility is located on an existing building, access to which will be made only by AT&T's maintenance contractors monthly and will not be made by the general public, there will be no change in traffic patterns in the vicinity of the Property that would affect pedestrian flow or cyclists' access to the building or surrounding areas within the Property's applicable zoning districts.

19.33 The building and site design should mitigate adverse environmental impacts of a development upon its neighbors. Indicators include[[3]]

(1) Mechanical equipment that is carefully designed, well organized or visually screened from its surroundings and is acoustically buffered from neighbors.

[3] Inasmuch as Section 19.33is most relevant to the Facility, it is stated here in full.

Consideration is given to the size, complexity and appearance of the equipment, its proximity to residential areas, and its impact on the existing streetscape and skyline. The extent to which screening can bring order, lessen negative visual impacts, and enhance the overall appearance of the equipment should be taken into account. More specifically:

(a) Reasonable attempts have been made to avoid exposing rooftop mechanical equipment to public view from city streets. Among the techniques that might be considered are the inclusion of screens or a parapet around the roof of the building to shield low ducts and other equipment on the roof from view.

(b) Treatment of the mechanical equipment (including design and massing of screening devices as well as exposed mechanical elements) that relates well to the overall design, massing, scale and character of the building.

(c) Placement of mechanical equipment at locations on the site other than on the rooftop (such as in the basement), which reduces the bulk of elements located on the roof; however, at-grade locations external to the building should not be viewed as desirable alternatives.

(d) Tall elements, such as chimneys and air exhaust stacks, which are typically carried above screening devices for functioning reasons, are carefully designed as features of the building, thus creating interest on the skyline.

(e) All aspects of the mechanical equipment have been designed with attention to their visual impact on adjacent areas, particularly with regard to residential neighborhoods and views and vistas.

AT&T's Response: As shown in the photo simulations, the Facility's main components (the antennas and equipment platform) will be visually consistent with the color and texture of the building and with other rooftop equipment on the building (including the existing penthouse) and on other area buildings of a similar nature. Associated equipment will be located behind the proposed screen wall and shielded from view. As a result, AT&T's Facility is in keeping with the building's existing features without adversely affecting the building's overall design, massing, scale or character.

(2) Trash that is handled to avoid impacts (noise, odor, and visual quality) on neighbors, e.g. the use of trash compactors or containment of all trash storage and handling within a building is encouraged.

AT&T's Response: The Facility will not generate trash, so this design objective is inapplicable.

(3) Loading docks that are located and designed to minimize impacts (visual and operational) on neighbors.

AT&T's Response: The Facility will not utilize any loading dock, so this design objective is inapplicable.

(4) Stormwater Best Management Practices and other measures to minimize runoff and improve water quality are implemented.

AT&T's Response: Neither the Facility's installation on the existing building nor its operation will affect stormwater runoff, so this design objective is inapplicable.

(5) Landscaped areas and required Green Area Open Space, in addition to serving as visual amenities, are employed to reduce the rate and volume of stormwater runoff compared to pre-development conditions.

AT&T's Response: Inasmuch as the Facility is a building-mounted installation that will not affect any landscaped or Green Area Open Space, this design objective is inapplicable.

(6) The structure is designed and sited to minimize shadow impacts on neighboring lots, especially shadows that would have a significant impact on the use and enjoyment of adjacent open space and shadows that might impact the operation of a Registered Solar Energy System as defined in Section 22.60 of this Zoning Ordinance.

AT&T's Response: While the Facility will include additional structures on the roof (an equipment platform, cabinets, and proposed screen wall), these structures are relatively small and will be situated so as not to have shadow impacts on neighboring lots.

(7) Changes in grade across the lot are designed in ways that minimize the need for structural retaining walls close to property lines.

AT&T's Response: The Facility mounted entirely on the existing building will not change the grade of the Property, so this design objective is inapplicable.

(8) Building scale and wall treatment, including the provision of windows, are sensitive to existing residential uses on adjacent lots.

AT&T's Response: The Facility will not change the building's scale. The proposed Facility will not increase the height of the existing building (*see* Exhibit 3). Given that the equipment platform will be camouflaged by the proposed screen wall painted and textured to match the existing adjacent wall and the façade mounted antennas will be consistent with characteristics of the existing building's design as well as painted to match the color and texture of the building, any visual impact will be minimal.

(9) Outdoor lighting is designed to provide minimum lighting and necessary to ensure adequate safety, night vision, and comfort, while minimizing light pollution.

AT&T's Response: The Facility will not use any outdoor lighting except localized lighting for nighttime repairs, so this design objective is inapplicable.

(10) The creation of a Tree Protection Plan that identifies important trees on the site, encourages their protection, or provides for adequate replacement of trees lost to development on the site.

AT&T's Response: The Facility located entirely on the existing building will not affect any trees at the Property, so this design objective is inapplicable.

19.34: Projects should not overburden the City infrastructure services, including neighborhood roads, city water supply system, and sewer system.

AT&T's Response: Operation of the Facility is a passive use and will not generate trash, odor, excess noise, or utilize water or wastewater services. As such, it will not burden the City's infrastructure services.

19.35: New construction should reinforce and enhance the complex urban aspects of Cambridge as it has developed historically.

AT&T's Response: Given the Facility's installation on an existing building that already houses rooftop equipment, and the efforts to visually blend that equipment with the building texture and color by painting and texturing the antennas, cable trays, and proposed screen wall to match the façade, the Facility will reinforce the existing Cambridge landscape as it currently exists at the Property.

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19.36: Expansion of the inventory of housing in the city is encouraged.

AT&T's Response: The Facility and proposed modifications provide wireless services and will not adversely impact the City's housing inventory.

19.37. Enhancement and expansion of open space amenities in the city should be incorporated into new development in the city.

AT&T's Response: Given the Facility's installation on an existing building, the Facility will not adversely impact open space amenities or otherwise reduce open space amenities within the City.

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VI. SUMMARY

AT&T hereby requests that the Board determine that AT&T's installation of the proposed Facility will not have any adverse effect on the neighborhood within which the Property is located in particular, or on the City of Cambridge as a whole. The findings are made in view of the particular characteristics of the Property and the visual and structural design of AT&T's Facility. This Property is the most appropriate location for the installation and operation of AT&T's Facility in the area east of Kendall Square.

For the foregoing reasons AT&T respectfully requests that the Board grant the foregoing zoning relief in the form of a Special Permit and such other relief as the Board deems necessary to allow the installation and operation of AT&T's proposed Facility.

Sincerely,

Dan Bilezikian
Authorized Agent for New Cingular Wireless PCS, LLC ("AT&T")

cc:

Brian Grossman, Esq.

Tab 1

BZA APPLICATION FORM - OWNERSHIP INFORMATION

To be completed by OWNER, signed before a notary and returned to The Secretary of the Board of Zoning Appeals.

I/We Southern Energy Kendall, LLC (N/k/a Kendall Green Energy LLC)
(OWNER)

Address: c/o Brian Kramschuster, 1155 Perimeter Ctr. West
Atlanta, GA 30338-5416

State that I/We own the property located at 273 First St., Cambridge, MA,
which is the subject of this zoning application.

The record title of this property is in the name of Southern Energy Kendall, LLC
(now known as Kendall Green Energy LLC)

*Pursuant to a deed of duly recorded in the date 12/31/98, Middlesex South
County Registry of Deeds at Book 29606, Page 92; or
Middlesex Registry District of Land Court, Certificate No. _____
Book _____ Page _____.

SIGNATURE BY LAND OWNER OR
AUTHORIZED TRUSTEE, OFFICER OR AGENT*

Written evidence of Agent's standing to represent petitioner may be requested.

Commonwealth of Massachusetts, County of Suffolk

The above-name Robert Arendell personally appeared before me,
this 8th day of April, 2016, and made oath that the above statement is true.

Notary

My commission expires July 29, 2016 (Notary Seal)

JONATHAN E. SCHWARTZ
Notary Public
COMMONWEALTH OF MASSACHUSETTS
My Commission Expires
July 29, 2016

- If ownership is not shown in recorded deed, e.g. if by court order, recent deed, or inheritance, please include documentation.

Tab 2

http://wireless2.fcc.gov/UlsApp/UlsSearch/license.jsp?licKey=8893

Universal Licensing System

ULS License

PCS Broadband License - KNLF216 - New Cingular Wireless PCS, LLC

This license has pending applications: 0002158279

Call Sign	KNLF216	Radio Service	CW - PCS Broadband
Status	Active	Auth Type	Regular
Market			
Market	MTA008 - Boston-Providence	Channel Block	A
Submarket	11	Associated Frequencies (MHz)	1850.00000-1865.00000 1930.00000-1945.00000
Dates			
Grant	06/23/1995	Expiration	06/23/2005
Effective	10/28/2004	Cancellation	
Buildout Deadlines			
1st	06/23/2000	2nd	06/23/2005
Notification Dates			
1st	06/28/2000	2nd	03/08/2005

Licensee

Licensee ID SGIN	L00024153000	FRN	0003291192 (View Ownership)	Type	Corporation

Licensee

New Cingular Wireless PCS, LLC 17330 Preston Road, Suite 100A Dallas, TX 75252	P:(972)733-2092 F:(972)733-8141

ATTN Kellye E. Abernathy	

Contact

Cingular Wireless LLC Kellye E Abernathy Esq 17330 Preston Road, Suite 100A Dallas, TX 75252	P:(972)733-2092 F:(972)733-8141

Qualifications, Ownership, and Demographics

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

Has the Applicant or any party to this application or amendment had any FCC station authorization, license, or construction permit revoked or had any application for an initial, modification or renewal of FCC station authorization, license, construction permit denied by the Commission?	No
Has the Applicant or any party to this application or amendment, or any party directly or indirectly controlling the Applicant, ever been convicted of a felony by any state or federal court?	No
Has any court finally adjudged the Applicant or any party directly or indirectly controlling the Applicant guilty of unlawfully monopolizing or attempting unlawfully to monopolize radio communication, directly or indirectly, through control of manufacture or sale of radio apparatus, exclusive traffic arrangement, or any other means or unfair methods of competition?	No
Is the Applicant or any party directly or indirectly controlling the Applicant, currently a party in any pending matter referred to in the preceding two items?	**Yes**

Tribal Land Bidding Credits
This license did not have tribal land bidding credits.

Race			
Hispanic/Latino		Gender	

http://wireless2.fcc.gov/UlsApp/UlsSearch/license.jsp?licKey=12925

Universal Licensing System

ULS License

Cellular License - KNKA226 - ORANGE LICENSES HOLDING, LLC

HELP

New Search | Refine Search | Return to Results | Printable Page | Reference Copy | Map License

MAIN | ADMIN | LOCATIONS

Call Sign	KNKA226	Radio Service	CL - Cellular
Status	Active	Auth Type	Regular
Market			
Market	CMA006 - Boston-Lowell-Brockton-Lawrence-Haverhill, MA-NH	Channel Block	A (View Frequencies)
Submarket	0	Phase	2
Dates			
Grant	10/05/2004	Expiration	10/01/2014
Effective	01/20/2005	Cancellation	
Five Year Buildout Date			
06/28/1999			
Control Points			
2	100 LOWDER BROOK DR, NORFOLK, WESTWOOD, MA P: (617)462-7094		

Licensee					
Licensee ID SGIN	L00963843 000	FRN	0012362919 (View Ownership)	Type	Limited Liability Corporation
Licensee					
ORANGE LICENSES HOLDING, LLC 17330 PRESTON ROAD, SUITE 100A DALLAS, TX 75252 ATTN KELLYE E. ABERNATHY			P:(972)733-2092 F:(972)733-8141		

Contact	
CINGULAR WIRELESS LLC DAVID G RICHARDS 5565 GLENRIDGE CONNECTOR, SUITE 1700 ATLANTA, GA 30342	P:(404)236-5543 F:(404)236-5575

Qualifications, Ownership, and Demographics			
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	
Has the Applicant or any party to this application or amendment had any FCC station authorization, license, or construction permit revoked or had any application for an initial, modification or renewal of FCC station authorization, license, construction permit denied by the Commission?	No
Has the Applicant or any party to this application or amendment, or any party directly or indirectly controlling the Applicant, ever been convicted of a felony by any state or federal court?	No
Has any court finally adjudged the Applicant or any party directly or indirectly controlling the Applicant guilty of unlawfully monopolizing or attempting unlawfully to monopolize radio communication, directly or indirectly, through control of manufacture or sale of radio apparatus, exclusive traffic arrangement, or any other means or unfair methods of competition?	No
Is the Applicant or any party directly or indirectly controlling the Applicant, currently a party in any pending matter referred to in the preceding two items?	**Yes**

Race			
Hispanic/Latino		Gender	

ULS Help	ULS Glossary - FAQ - Online Help - Technical Support - Licensing Support
ULS Online Systems	CORES/Call Sign Registration - ULS Online Filing - License Search - Application Search
About ULS	Privacy Statement - About ULS - ULS Home
Basic Search	By Call Sign = SEARCH

ULS License

PCS Broadband License - WPOI214 - New Cingular Wireless PCS, LLC

Call Sign	WPOI214	Radio Service	CW - PCS Broadband
Status	Active	Auth Type	Regular

Market

Market	MTA008 - Boston-Providence	Channel Block	A
Submarket	7	Associated Frequencies (MHz)	001850.00000000-001865.00000000 001930.00000000-001945.00000000

Dates

Grant	07/07/2005	Expiration	06/23/2015
Effective	09/27/2005	Cancellation	

Buildout Deadlines

1st	06/23/2000	2nd	06/23/2005

Notification Dates

1st	07/06/2000	2nd	03/08/2005

Licensee

FRN	0003291192	Type	Limited Liability Company

Licensee

New Cingular Wireless PCS, LLC
5601 LEGACY DRIVE, MS: A-3
PLANO, TX 75024
ATTN FCC GROUP

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

Contact

Cingular Wireless LLC
Kellye E Abernathy Esq
5601 LEGACY DRIVE, MS: A-3
PLANO, TX 75024

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

ULS License

700 MHz Lower Band (Blocks C, D) License - WPWU950 - AT&T Mobility Spectrum LLC

Call Sign	WPWU950	Radio Service	WZ - 700 MHz Lower Band (Blocks C, D)
Status	Active	Auth Type	Regular

Market

Market	CMA006 - Boston-Lowell-Brockton-Lawrence-Haverhill, MA-NH	Channel Block	C
Submarket	0	Associated Frequencies (MHz)	000710.00000000-000716.00000000 000740.00000000-000746.00000000

Dates

Grant	01/24/2003	Expiration	06/13/2019
Effective	08/17/2016	Cancellation	

Buildout Deadlines

1st	06/13/2019	2nd	

Notification Dates

1st		2nd	

Licensee

FRN	0014980726	Type	Limited Liability Company

Licensee

AT&T Mobility Spectrum LLC
3300 E. Renner Road, B3132
Richardson, TX 75082
ATTN Leslie A. Wilson

P:(855)699-7073
F:(972)907-1131
E:FCCMW@att.com

Contact

AT&T Mobility LLC
Michael P Goggin
1120 20th Street, NW - Suite 1000
Washington, DC 20036
ATTN Michael P. Goggin

P:(202)457-2055
F:(202)457-3073
E:michael.p.goggin@att.com

Ownership and Qualifications

Radio Service Type	Fixed, Mobile, Radio Location		
Regulatory Status	Common Carrier, Non-Common Carrier, Private Comm	Interconnected	Yes

ULS License

700 MHz Lower Band (Blocks C, D) License - WPZA235 - AT&T Mobility Spectrum LLC

Call Sign	WPZA235	Radio Service	WZ - 700 MHz Lower Band (Blocks C, D)
Status	Active	Auth Type	Regular

Market

Market	EAG701 - Northeast	Channel Block	D
Submarket	0	Associated Frequencies (MHz)	000716.00000000-000722.00000000

Dates

Grant	12/11/2003	Expiration	06/13/2019
Effective	02/12/2014	Cancellation	

Buildout Deadlines

1st	06/13/2019	2nd	

Notification Dates

1st		2nd	

Licensee

FRN	0014980726	Type	Limited Liability Company

Licensee

AT&T Mobility Spectrum LLC
3300 E. Renner Road, B3132
Richardson, TX 75082
ATTN Reginald Youngblood

P:(855)699-7073
F:(972)907-1131
E:FCCMW@att.com

Contact

AT&T Mobility LLC
Michael P Goggin
1120 20th Street, NW - Suite 1000
Washington, DC 20036
ATTN Michael P. Goggin

P:(202)457-2055
F:(202)457-3073
E:michael.p.goggin@att.com

Ownership and Qualifications

Radio Service Type	Fixed, Mobile		
Regulatory Status	Non-Common Carrier	Interconnected	No

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

ULS License

PCS Broadband License - WPZY689 - NEW CINGULAR WIRELESS PCS, LLC

Call Sign	WPZY689	Radio Service	CW - PCS Broadband
Status	Active	Auth Type	Regular

Market

Market	BTA051 - Boston, MA	Channel Block	C
Submarket	2	Associated Frequencies (MHz)	001895.00000000-001910.00000000 001975.00000000-001990.00000000

Dates

Grant	02/28/2007	Expiration	01/03/2017
Effective	02/08/2007	Cancellation	

Buildout Deadlines

1st	12/07/2003	2nd	01/03/2007

Notification Dates

1st	01/30/2002	2nd	12/22/2006

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.

ULS License

700 MHz Lower Band (Blocks A, B & E) License - WQIZ616 - AT&T Mobility Spectrum LLC

HELP

New Search | Printable Page | Reference Copy | Map License

MAIN | ADMIN | MARKET | LEASES

Call Sign	WQIZ616	Radio Service	WY - 700 MHz Lower Band (Blocks A, B & E)
Status	Active	Auth Type	Regular
Market			
Market	BEA003 - Boston-Worcester-Lawrence-Lowell-Brockton, MA-NH-RI-VT	Channel Block	E
Submarket	0	Associated Frequencies (MHz)	000722.00000000-000728.00000000
Dates			
Grant	06/26/2008	Expiration	03/07/2021
Effective	02/12/2014	Cancellation	
Buildout Deadlines			
1st	03/07/2017	2nd	03/07/2021
Notification Dates			
1st		2nd	

Licensee			
FRN	0014980726 (View Ownership Filing)	Type	Limited Liability Company
Licensee			
AT&T Mobility Spectrum LLC 3300 E. Renner Road, B3132 Richardson, TX 75082 ATTN Reginald Youngblood		P:(855)699-7073 F:(972)907-1131 E:FCCMW@att.com	

Contact			
AT&T Mobility LLC Michael P Goggin 1120 20th Street, NW - Suite 1000 Washington, DC 20036 ATTN Michael P. Goggin		P:(202)457-2055 F:(202)457-3073 E:michael.p.goggin@att.com	

Ownership and Qualifications			
Radio Service Type	Fixed, Mobile		
Regulatory Status	Non-Common Carrier, Private Comm	Interconnected	No
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.			
Tribal Land Bidding Credits This license did not have tribal land bidding credits.			

Demographics			
Race			
Ethnicity		Gender	

ULS License

700 MHz Lower Band (Blocks A, B & E) License - WQJU427 - AT&T Mobility Spectrum LLC

Call Sign	WQJU427	Radio Service	WY - 700 MHz Lower Band (Blocks A, B & E)
Status	Active	Auth Type	Regular

Market

Market	CMA006 - Boston-Lowell-Brockton-Lawrence-Haverhill, MA-NH	Channel Block	B
Submarket	0	Associated Frequencies (MHz)	000704.00000000-000710.00000000 000734.00000000-000740.00000000

Dates

Grant	01/06/2009	Expiration	06/13/2019
Effective	07/30/2016	Cancellation	

Buildout Deadlines

1st	12/13/2016	2nd	06/13/2019

Notification Dates

1st	10/30/2012	2nd	10/30/2012

Licensee

FRN	0014980726	Type	Limited Liability Company

Licensee

AT&T Mobility Spectrum LLC
3300 E. Renner Road, B3132
Richardson, TX 75082
ATTN Leslie A. Wilson

P:(855)699-7073
F:(972)907-1131
E:FCCMW@att.com

Contact

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Michael P Goggin
1120 20th Street, NW - Suite 1000
Washington, DC 20036
ATTN Michael P. Goggin

P:(202)457-2055
F:(202)457-3073
E:michael.p.goggin@att.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.

Tab 3

CAMBRIDGE LINSKEY WAY
SITE NO.: MA2544
273 FIRST STREET
CAMBRIDGE, MA 02142

LOCUS MAP

TAKE I-90 E/MASSPIKE. TAKE EXIT 18 TOWARD CAMBRIDGE. TURN SLIGHT RIGHT ONTO CAMBRIDGE ST. TURN RIGHT ONTO MEMORIAL DR. CONTINUE ONTO EDWIN H LAND BLVD. TURN LEFT ONTO BINNEY ST. TURN LEFT AT THE 1ST CROSS ST. ONTO FIRST ST. SLIGHT RIGHT ONTO EDWIN L LAND BLVD/FIRST ST. THE SITE WILL BE ON THE RIGHT.

ENGINEER
DEWBERRY
280 SUMMER STREET
10TH FLOOR
BOSTON, MA 02210

PHONE # (617) 695-3400
FAX # (617) 695-3310

CONTACT: BENJAMIN REVETTE, P.E.

SITE ACQUISITION

SAI COMMUNICATIONS
27 NORTHWESTERN DRIVE
SALEM, NH 03079

PHONE # (603) 531-9230
FAX # (603) 893-1104

CONSULTANT TEAM

SITE NAME:
CAMBRIDGE LINSKEY WAY

PROPERTY OWNER:
SOUTHERN ENERGY KENDALL
13155 NOEL ROAD, SUITE 100
C/O BRIAN KRAMSCHUSTER
DALLAS, TX 75240

APPLICANT/DEVELOPER:
AT&T MOBILITY
550 COCHITUATE ROAD
SUITES 13 & 14
FRAMINGHAM, MA 01701

ELECTRIC UTILITY:
NSTAR
(800) 592-2000

TELEPHONE UTILITY:
VERIZON
(800) 837-4966

COORDINATES:*
LATITUDE: 42° 21' 46.93" N
LONGITUDE: 71° 04' 45.44 W
*PER GOOGLE MAPS

PROJECT SUMMARY

SITE ADDRESS:
273 FIRST STREET
CAMBRIDGE, MA 02142

ZONING DISTRICT
PLANNED UNIT DEVELOPMENT (PUD) DISTRICT PUD-3
OFFICE O-3A

PROJECT DIRECTORY

A PROPOSED EQUIPMENT PLATFORM WILL BE LOCATED ON THE LOWER ROOF LEVEL. EQUIPMENT PLATFORM TO BE ENCLOSED WITHIN A PROPOSED SCREEN WALL TO MATCH THE EXISTING BUILDING. TWELVE (12) PANEL ANTENNAS WILL BE INSTALLED (4/SECTOR) ON THE EXISTING BUILDING FACADE. AUXILIARY EQUIPMENT POWER TO BE SUPPLIED BY EXTERNAL CABINET BACK UP BATTERIES. POWER & TELCO WILL COME FROM EXISTING SOURCES ON SITE.

PROJECT DESCRIPTION

SAI CM	DATE
AT&T CM	DATE
SAI RF	DATE
AT&T RF	DATE

APPROVALS

THIS DOCUMENT WAS DEVELOPED TO REFLECT A SPECIFIC SITE AND ITS SITE CONDITIONS AND IS NOT TO BE USED FOR ANOTHER SITE OR WHEN OTHER CONDITIONS PERTAIN. REUSE OF THIS DOCUMENT IS AT THE SOLE RISK OF THE USER.

A.D.A. COMPLIANCE:

SHT. NO.	DESCRIPTION
T-1	TITLE SHEET
Z-1	ABUTTERS PLAN
Z-2	PROPOSED ROOF PLAN
Z-3	SOUTH ELEVATION
Z-4	EAST ELEVATION
Z-5	NORTH ELEVATION
Z-6	WEST ELEVATION
Z-7	EQUIPMENT ROOF PLAN & EQUIPMENT DETAILS

SHEET INDEX

at&t Mobility
550 COCHITUATE ROAD
SUITES 13 & 14
FRAMINGHAM, MA 01701

SAI
27 NORTHWESTERN DRIVE
SALEM, NH 03079

CAMBRIDGE
LINSKEY WAY
SITE NO.: MA2544

ZONING DRAWINGS		
7	06/20/17	FOR SUBMITTAL
6	06/09/17	FOR SUBMITTAL
5	04/20/17	FOR SUBMITTAL
4	02/13/17	FOR SUBMITTAL
3	01/09/17	FOR SUBMITTAL
2	12/06/16	FOR SUBMITTAL
1	08/17/16	FOR SUBMITTAL

Dewberry®
Dewberry Engineers Inc.
280 SUMMER STREET
10TH FLOOR
BOSTON, MA 02210
PHONE: 617.695.3400
FAX: 617.695.3310

COMMONWEALTH OF MASSACHUSETTS
LUI S. PUGA
CIVIL
NO. 51133
REGISTERED
PROFESSIONAL ENGINEER

DRAWN BY:	MR
REVIEWED BY:	LSP
CHECKED BY:	BBR
PROJECT NUMBER:	50003936
JOB NUMBER:	50062417
SITE ADDRESS	

273 FIRST STREET
CAMBRIDGE, MA 02142

SHEET TITLE

TITLE PAGE

SHEET NUMBER

T-1

PER SECTION 5.23 & 5.24.4 OF CAMBRIDGE ZONING REGULATIONS

SETBACK CALCULATION
FRONT
AVERAGE ROOF HEIGHT (FT.) = $\frac{(H1xL1)+(H2xL2)}{L1+L2}$

= $\frac{(30x57)+(39x88)+(22x105)+(61x91)+(68x48)}{(30+39+22+61+68)}$
= 73.94 (74 FT.)

FRONT:
$\frac{H+L}{5}$ =
= $\frac{(74')+(220')}{5}$ = 59'

SETBACK CALCULATION
SIDE
AVERAGE ROOF HEIGHT (FT.) = $\frac{(H1xL1)+(H2xL2)}{L1+L2}$

= $\frac{(91x114)+(102x52)}{(114+52)}$
= 94.45 (95 FT.)

SIDE:
$\frac{H+L}{5}$ =
= $\frac{(95')+(166')}{6}$ = 43.5' (44 FT.)

SETBACK CALCULATION
SIDE:

$\frac{H+L}{5}$ =
= $\frac{(102')+(83')}{5}$ = 37'

ZONING REQUIREMENTS*

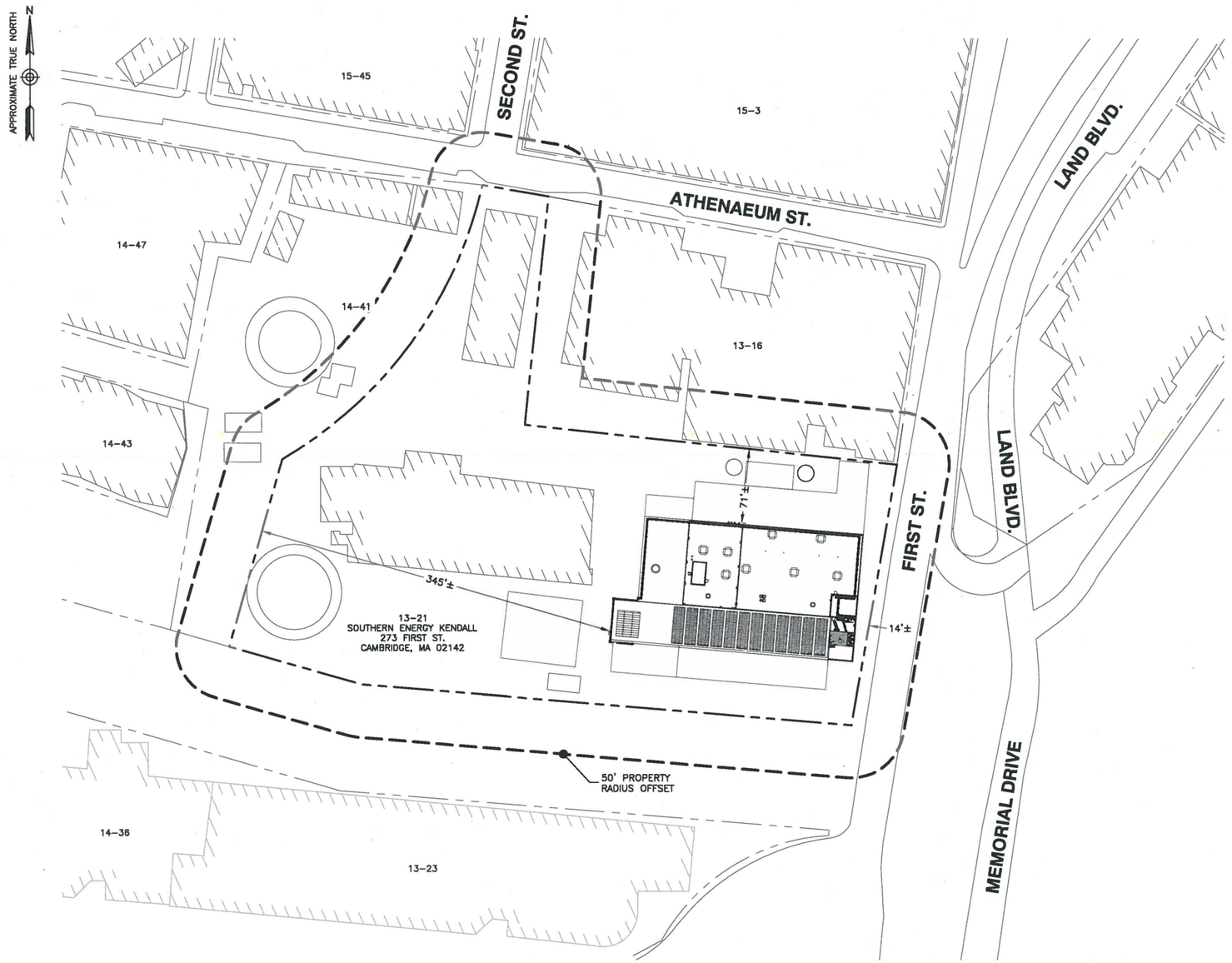
ZONING DISTRICT: O-3A

SETBACK:	REQUIREMENT:	PROPOSED: *
ANTENNA FRONT YARD MINIMUM (FT.)	59'	14'±
ANTENNA SIDE YARD MINIMUM (FT.)	44'	71'±
ANTENNA REAR YARD MINIMUM (FT.)	37'	345'±

*SEE NOTE 4

LEGEND

- LOCUS PROPERTY LINE
- Existing Property Line
- Edge Of Roadway
- 50' PROPERTY RADIUS OFFSET
- XX-XX MAP-LOT
- Existing Building



ABUTTERS PLAN 1
SCALE: 1"=120' FOR 11"x17"
1"=60' FOR 22"x34"

0' 60' 120'

NOTES:

1. PLOT PLAN BASED ON ONLINE ASSESSOR'S INFORMATION OBTAINED FROM THE CITY OF CAMBRIDGE GIS DATABASE ON 03/17/16.
2. SOME PROPOSED AND EXISTING INFORMATION NOT SHOWN FOR CLARITY.
3. NORTH ARROW SHOWN AS APPROXIMATE.
4. SETBACKS ARE TAKEN FROM THE CLOSEST POINT OF ANTENNAS TO PROPERTY LINES.
5. DOCUMENT IS FOR ZONING PURPOSES ONLY, NOT FOR CONSTRUCTION.
6. ALL BUILDING, PARKING LOTS, ROADS & PROPERTY LINES ARE SHOWN AS APPROXIMATE AND HAVE NOT BEEN VERIFIED THROUGH A FIELD SURVEY.

at&t Mobility
550 COCHITUATE ROAD
SUITES 13 & 14
FRAMINGHAM, MA 01701

SAI
27 NORTHWESTERN DRIVE
SALEM, NH 03079

CAMBRIDGE
LINSKEY WAY
SITE NO.: MA2544

ZONING DRAWINGS		
7	06/20/17	FOR SUBMITTAL
6	06/09/17	FOR SUBMITTAL
5	04/20/17	FOR SUBMITTAL
4	02/13/17	FOR SUBMITTAL
3	01/09/17	FOR SUBMITTAL
2	12/06/16	FOR SUBMITTAL
1	08/17/16	FOR SUBMITTAL

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BOSTON, MA 02210
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COMMONWEALTH OF MASSACHUSETTS
LUIS PUGA
CIVIL
NO. 51133
REGISTERED
PROFESSIONAL ENGINEER

DRAWN BY:	MR
REVIEWED BY:	LSP
CHECKED BY:	BBR
PROJECT NUMBER:	50003936
JOB NUMBER:	50062417

SITE ADDRESS

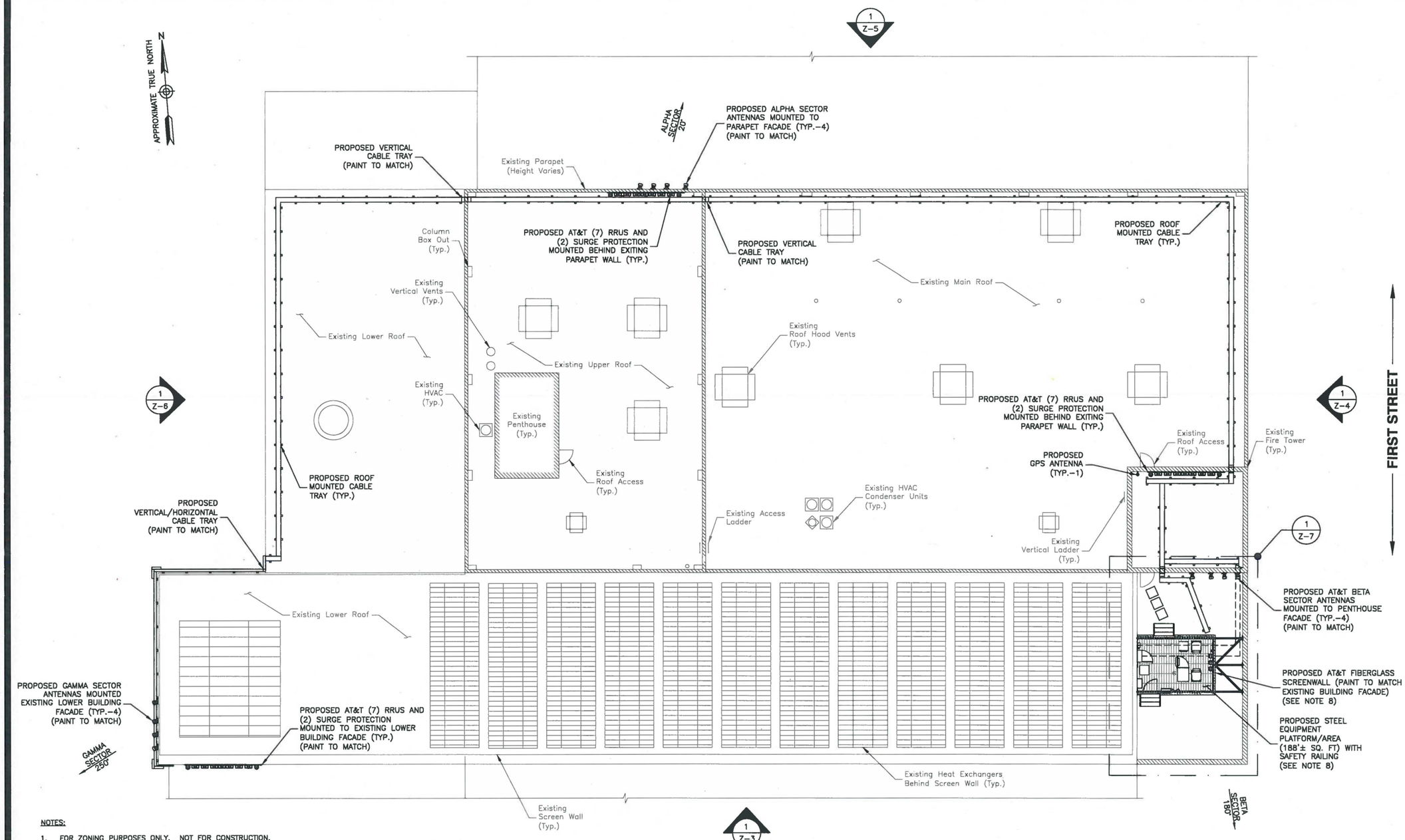
273 FIRST STREET
CAMBRIDGE, MA 02142

SHEET TITLE

ABUTTERS PLAN

SHEET NUMBER

Z-1



PROPOSED ROOF PLAN 1

SCALE: 3/64"=1' FOR 11"x17"
3/32"=1' FOR 22"x34"

0' 8' 16' 24'

NOTES:

1. FOR ZONING PURPOSES ONLY. NOT FOR CONSTRUCTION.
2. NORTH SHOWN AS APPROXIMATE.
3. SOME PROPOSED & EXISTING INFORMATION NOT SHOWN FOR CLARITY.
4. AT&T REQUIRES 200A 120/208V, 1ø POWER. MAIN POWER TO BE PROVIDED THROUGH UTILITY COMPANY ON NEW METER.
5. A 2" TELCO CONDUIT WILL BE ROUTED TO CLOSEST TELCO DEMARK LOCATION PENDING FINAL DESIGN AND LANDLORD APPROVAL.
6. GROUND TO STREET SIDE OF WATER METER OR BUILDING STEEL.
7. LOCATION OF ELECTRICAL AND TELCO ROOMS SHOWN ARE CONCEPTUAL. VERTICAL POWER, TELCO, & GROUND CONDUITS TO BE ROUTED FROM ROOF TO GROUND LEVEL.
8. ALL EQUIPMENT PLACEMENT AND LOCATIONS PENDING STRUCTURAL ANALYSIS & DESIGN.
9. AUXILIARY EQUIPMENT POWER TO BE SUPPLIED BY EXTERNAL BACK UP BATTERIES.

at&t Mobility
550 COCHITUATE ROAD
SUITES 13 & 14
FRAMINGHAM, MA 01701

SAI
27 NORTHWESTERN DRIVE
SALEM, NH 03079

CAMBRIDGE
LINSKEY WAY
SITE NO.: MA2544

ZONING DRAWINGS		
7	06/20/17	FOR SUBMITTAL
6	06/09/17	FOR SUBMITTAL
5	04/20/17	FOR SUBMITTAL
4	02/13/17	FOR SUBMITTAL
3	01/09/17	FOR SUBMITTAL
2	12/06/16	FOR SUBMITTAL
1	08/17/16	FOR SUBMITTAL

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Dewberry Engineers Inc.
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COMMONWEALTH OF MASSACHUSETTS
LUIS PUGA
CIVIL
NO. 51133
REGISTERED PROFESSIONAL ENGINEER

DRAWN BY:	MR
REVIEWED BY:	LSP
CHECKED BY:	BBR
PROJECT NUMBER:	50003936
JOB NUMBER:	50062417
SITE ADDRESS	

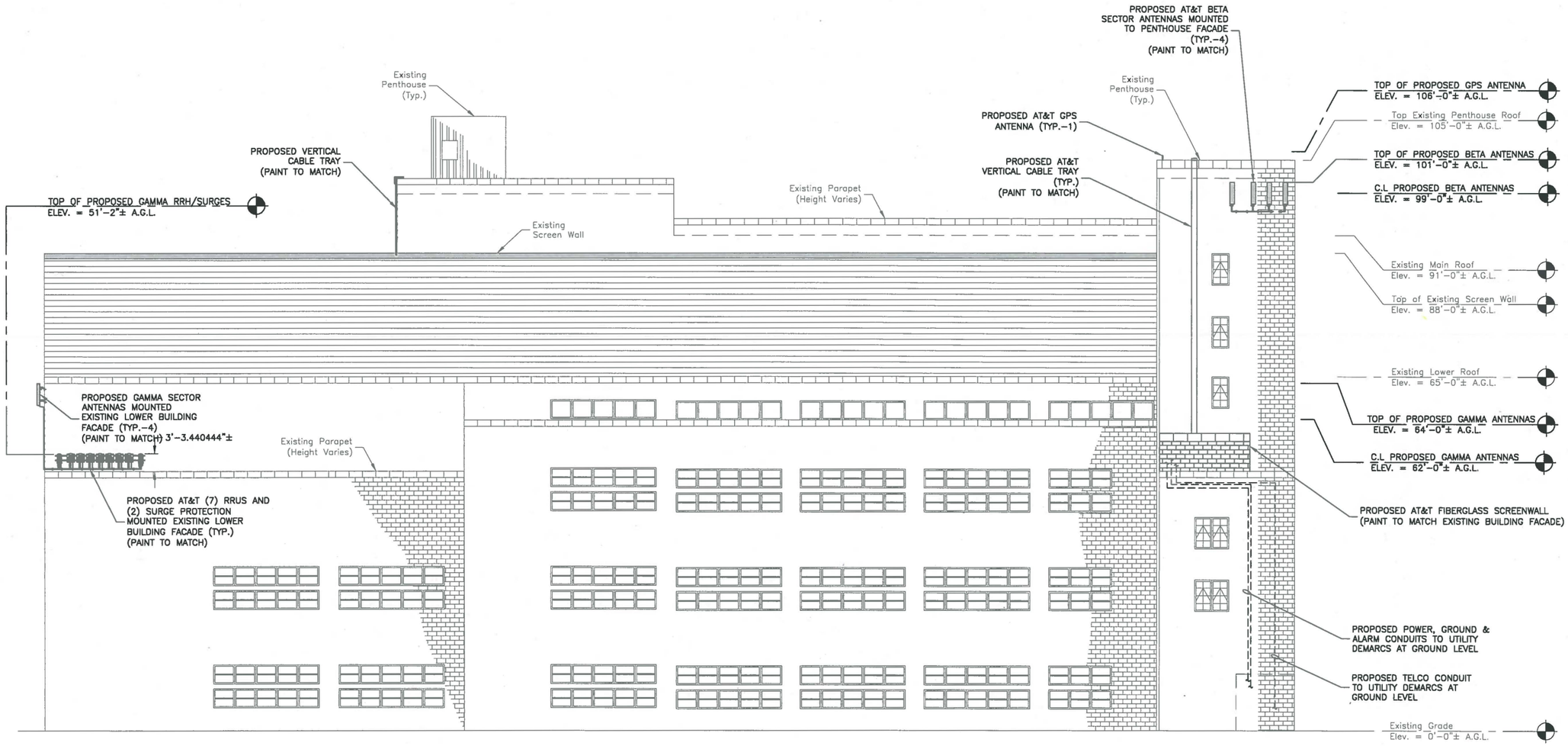
273 FIRST STREET
CAMBRIDGE, MA 02142

SHEET TITLE

PROPOSED ROOF PLAN

SHEET NUMBER

Z-2



SOUTH ELEVATION

SCALE: 3/64"=1' FOR 11"x17"
3/32"=1' FOR 22"x34"

1

0' 8' 16' 24'

NOTES:

1. SOME PROPOSED & EXISTING INFORMATION NOT SHOWN FOR CLARITY.
2. ELEVATIONS SHOWN ARE APPROXIMATE AND HAVE NOT BEEN VERIFIED BY MAPPING OR SURVEYING.
3. ALL EQUIPMENT PLACEMENT AND LOCATIONS PENDING STRUCTURAL ANALYSIS & DESIGN.

A.G.L. = ABOVE GRADE LEVEL
C.L. = CENTER LINE

at&t Mobility
550 COCHITUATE ROAD
SUITES 13 & 14
FRAMINGHAM, MA 01701

SAI
27 NORTHWESTERN DRIVE
SALEM, NH 03079

CAMBRIDGE
LINSKEY WAY
SITE NO.: MA2544

ZONING DRAWINGS		
7	06/20/17	FOR SUBMITTAL
6	06/09/17	FOR SUBMITTAL
5	04/20/17	FOR SUBMITTAL
4	02/13/17	FOR SUBMITTAL
3	01/09/17	FOR SUBMITTAL
2	12/06/16	FOR SUBMITTAL
1	08/17/16	FOR SUBMITTAL

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Dewberry Engineers Inc.
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10TH FLOOR
BOSTON, MA 02210
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FAX: 617.695.3310

COMMONWEALTH OF MASSACHUSETTS
LUIS PUGA
CIVIL
NO. 51133
REGISTERED PROFESSIONAL ENGINEER

DRAWN BY:	MR
REVIEWED BY:	LSP
CHECKED BY:	BBR
PROJECT NUMBER:	50003936
JOB NUMBER:	50062417
SITE ADDRESS	

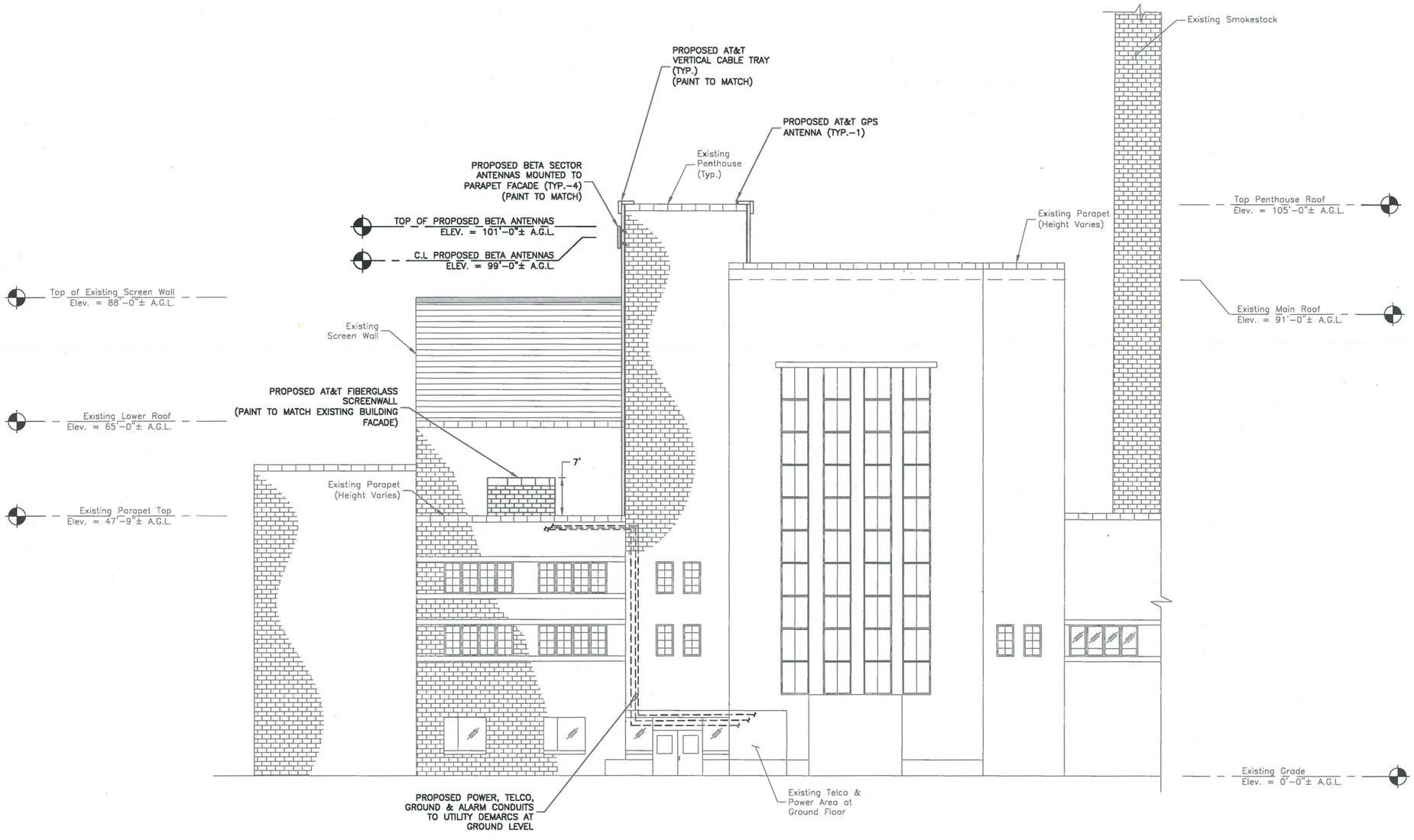
273 FIRST STREET
CAMBRIDGE, MA 02142

SHEET TITLE

SOUTH ELEVATION

SHEET NUMBER

Z-3



EAST ELEVATION 1

SCALE: 3/64"=1' FOR 11"x17"
3/32"=1' FOR 22"x34"

0' 8' 16' 24'

NOTES:

1. SOME PROPOSED & EXISTING INFORMATION NOT SHOWN FOR CLARITY.
2. ELEVATIONS SHOWN ARE APPROXIMATE AND HAVE NOT BEEN VERIFIED BY MAPPING OR SURVEYING.
3. ALL EQUIPMENT PLACEMENT AND LOCATIONS PENDING STRUCTURAL ANALYSIS & DESIGN.

A.G.L. = ABOVE GRADE LEVEL
C.L. = CENTER LINE

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LINSKEY WAY
SITE NO.: MA2544

ZONING DRAWINGS		
7	06/20/17	FOR SUBMITTAL
6	06/09/17	FOR SUBMITTAL
5	04/20/17	FOR SUBMITTAL
4	02/13/17	FOR SUBMITTAL
3	01/09/17	FOR SUBMITTAL
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1	08/17/16	FOR SUBMITTAL

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FAX: 617.695.3310

COMMONWEALTH OF MASSACHUSETTS
LUIS PUGA
CIVIL
NO. 51133
REGISTERED
PROFESSIONAL ENGINEER

DRAWN BY:	MR
REVIEWED BY:	LSP
CHECKED BY:	BBR
PROJECT NUMBER:	50003936
JOB NUMBER:	50062417

SITE ADDRESS

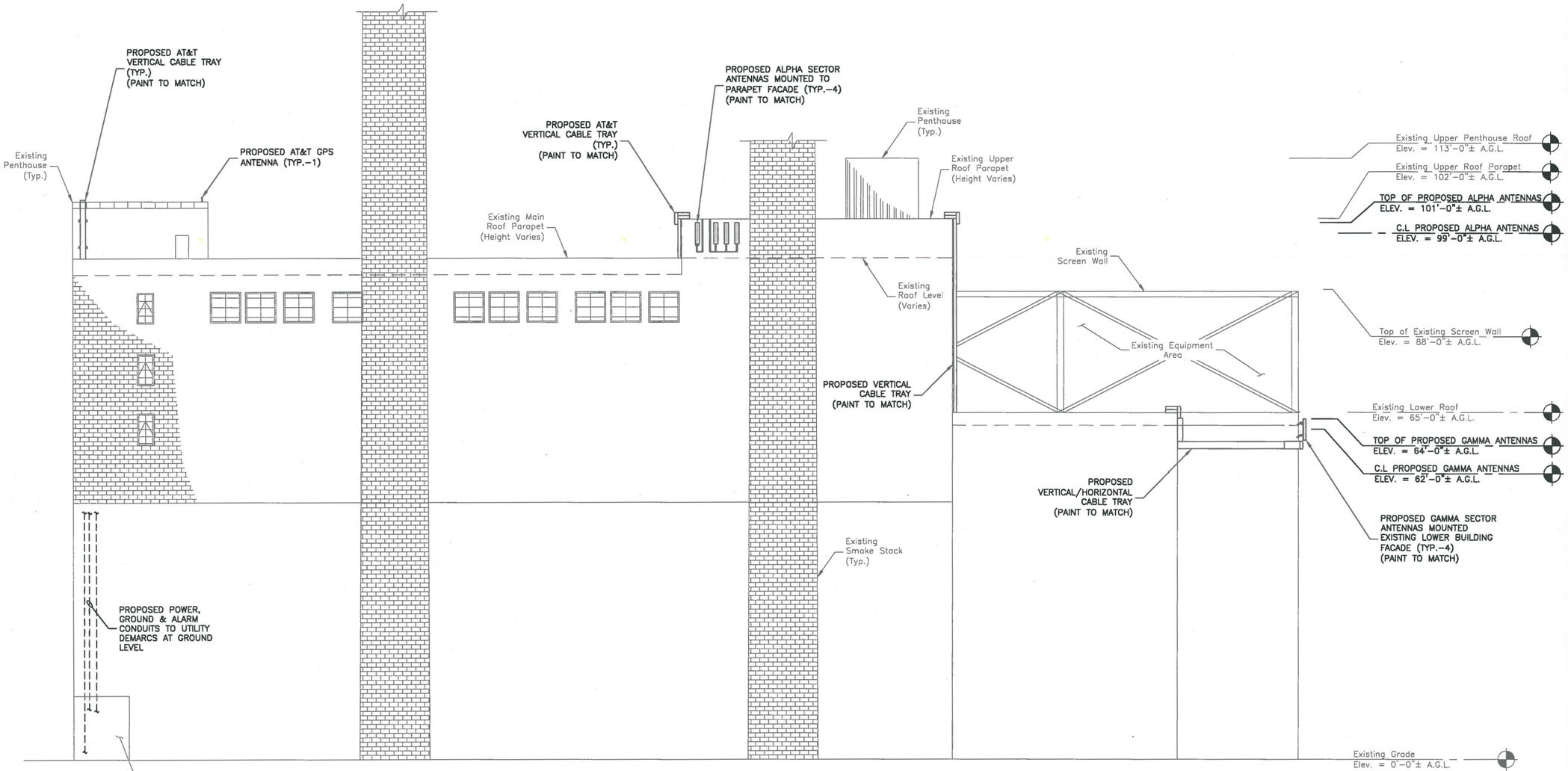
273 FIRST STREET
CAMBRIDGE, MA 02142

SHEET TITLE

EAST ELEVATION

SHEET NUMBER

Z-4



NORTH ELEVATION 1

SCALE: 3/64"=1' FOR 11"x17"
3/32"=1' FOR 22"x34"

0' 8' 16' 24'

NOTES:

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ZONING DRAWINGS		
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JOB NUMBER:	50062417
SITE ADDRESS	

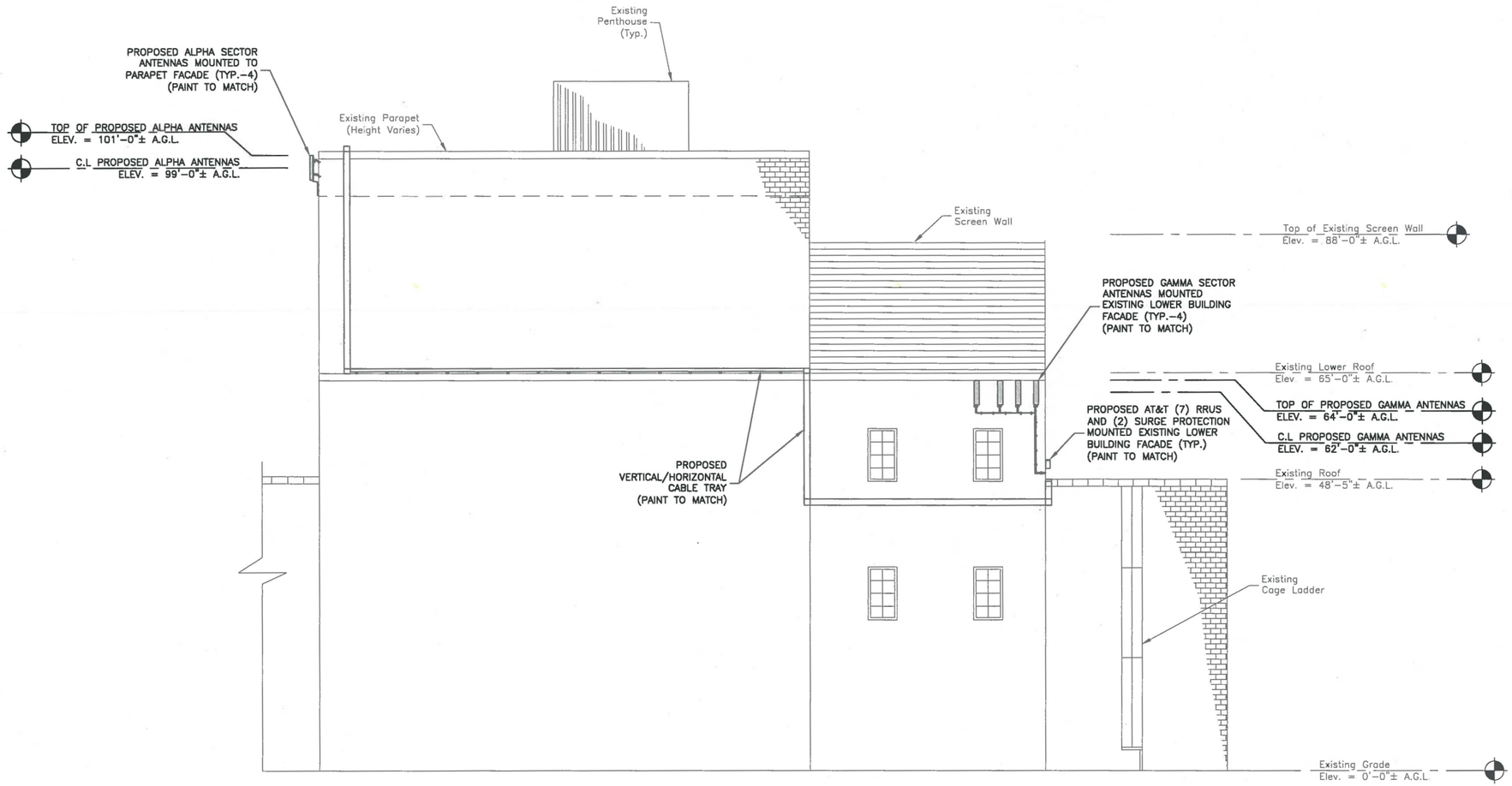
273 FIRST STREET
CAMBRIDGE, MA 02142

SHEET TITLE

NORTH ELEVATION

SHEET NUMBER

Z-5



WEST ELEVATION 1

SCALE: 3/64"=1' FOR 11"x17"
3/32"=1' FOR 22"x34"

0' 8' 16' 24'

NOTES:

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ZONING DRAWINGS		
7	06/20/17	FOR SUBMITTAL
6	06/09/17	FOR SUBMITTAL
5	04/20/17	FOR SUBMITTAL
4	02/13/17	FOR SUBMITTAL
3	01/09/17	FOR SUBMITTAL
2	12/06/16	FOR SUBMITTAL
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REGISTERED PROFESSIONAL ENGINEER

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SITE ADDRESS	

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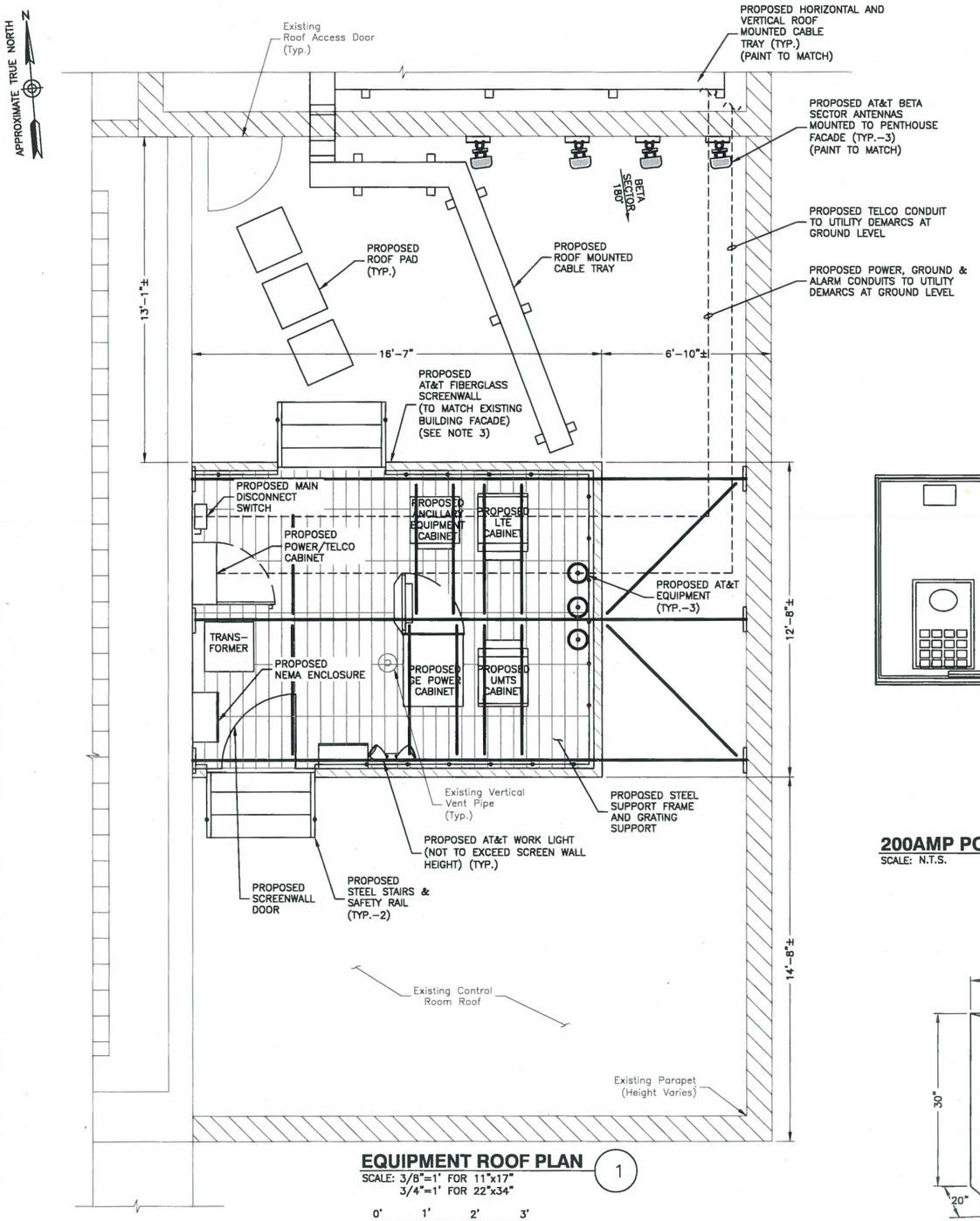
SHEET TITLE

WEST ELEVATION

SHEET NUMBER

Z-6



EQUIPMENT ROOF PLAN 1

SCALE: 3/8"=1' FOR 11"x17"
3/4"=1' FOR 22"x34"

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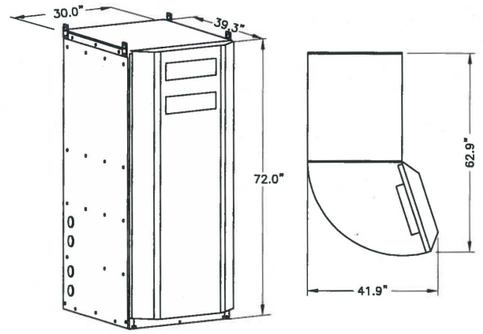
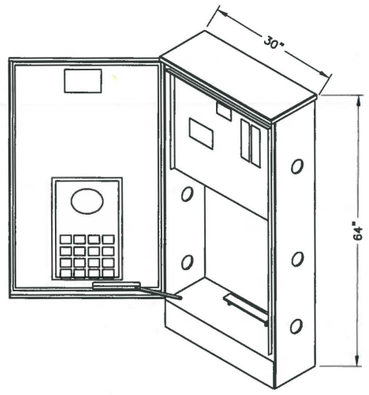


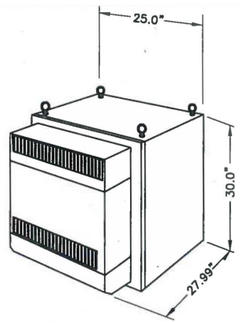
RBA72 CABINET 2

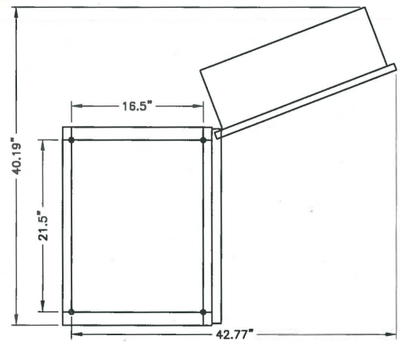
SCALE: N.T.S.



200AMP POWER/TELCO CABINET 3

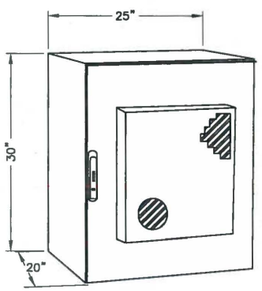
SCALE: N.T.S.





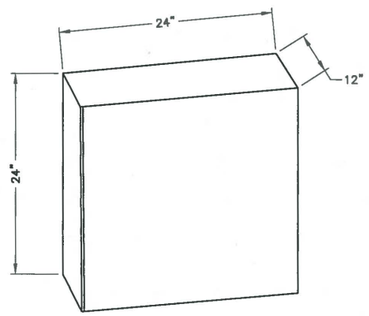
FLX16WS CABINET 4

SCALE: N.T.S.



FLEXSURE FLX16-2527 CABINET 5

SCALE: N.T.S.



NEMA 3R PANEL ENCLOSURE 6

SCALE: N.T.S.

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CHECKED BY:	BBR
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JOB NUMBER:	50062417
SITE ADDRESS	

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CAMBRIDGE, MA 02142

SHEET TITLE

EQUIPMENT ROOF PLAN & EQUIPMENT DETAILS

SHEET NUMBER

Z-7

Tab 4

Product Specifications

RBA72

RBA72 Multi-purpose Integrated Electronics Outdoor Cabinet

Dimensions

Depth	991.0 mm | 39.0 in
Depth, without door	864.00 mm | 34.02 in
Height	1830.0 mm | 72.0 in
Width	762.0 mm | 30.0 in

General Specifications

Access	Front door | Rear door
Batteries Supported	4
Batteries Supported, with optional battery pedestal	0 | No optional battery pedestal
Battery String Current, maximum	900 A-h @ -48 Vdc 1800 A-h @ 24 Vdc
Cabinet Type	Battery auxiliary cabinet | MCPA cabinet | Power cabinet | Radio cabinet
Color	Gray
Cooling Options	Air conditioned | Direct air with hydrophobic filter | Direct air with mesh filter | Heat exchange | Hybrid | Thermoelectric cooling
Electronics Bay Height, each	1644.7 mm | 64.8 in
Finish	Powder coated
Rack Type	EIA 19 in | EIA 23 in
Rack Units	37

Electrical Specifications

Voltage	-48 Vdc | 24 Vdc

Battery Compartment Dimensions

Depth	558.80 mm | 22.00 in
Height	320.04 mm | 12.60 in
Width	542.04 mm | 21.34 in

Battery Dimensions

Depth	559.00 mm | 22.01 in
Height	320.00 mm | 12.60 in
Width	123.00 mm | 4.84 in

Product Specifications

RBA72

Environmental Specifications

Qualification Standards	Telcordia GR-487, Zone 4 | UL/ETL Type 3R

Regulatory Compliance/Certifications

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

FlexSure®

FLX16WS

GR-487 Issue 3 Certified

Highly-Configurable and Modular

- FlexSure architecture uses interchangeable components to support virtually any configuration
- Expandable architecture allows cabinet additions and modifications as application requirements grow
- Optional components may be added to the equipment bay including thermal management, battery base, AC power termination and splice end chamber, and DC power management

Thermal Management Capabilities

- Available with 39W/°C or 70W/°C Heat Exchanger (HEX)
- Adjust thermal management as requirements change - replace the cabinet door in the field with no service interruption

Unique Cabinet Mounting Options

- Cabinet-on-cabinet vertical stacking maximizes available space
- Pad, pole, wall, and H-frame mounting available
- Plinth options allow for simple cable egress

FLX16WS shown with 70W/°C Heat Exchanger door

FlexSure®

FLX16WS

GR-487 Issue 3 Certified

Equipment Mounting
• 16RU 19” rails, front to back adjustable

Construction Materials
• Material: Aluminum (lightweight, corrosion-resistant)
• Paint: GR-487 tested & certified power coat

Door/Side Panel Construction
• Doors: Front door with door alarm and optional heat exchanger
• Latches: Two-point latched, pad lockable

Environmental Options
• 39W/ °C Heat Exchanger , +24VDC or -48VDC
• 70W/ °C Heat Exchanger , -48VDC

Cable Entry
• Bottom: (3) ½”; (3) 1”; (1) 2”; (2) 3 ½” or 2” knockouts
• Sides: Optional (8) 2”; (4) 1” knockouts each left and right side

Battery Pedestal
• Accommodates front terminal battery string up to 90Ahr
• Optional AC battery heater mat

GR-487 Issue 3 Certified

AC Power Options
• 30A-main power with optional transient voltage surge protection, 15A generator connection cable
• 6-position 19” rack-mounted (1RU) or 12-position (2U) AC load centers available in various configurations- can be equipped with surge protection devices that occupy 1-position or 2-positions and 6-position DIN-mounted AC breaker panel (120V or 240V configurations). Optional DIN-mounted TVSS
• 15A GFCI dual outlet receptacle convenience outlet

Mounting Options
• 4” plinth
• 14” plinth
• Pole mount kit
• Wall / H-Frame mount kit
• Vertical cabinet-on-cabinet stacking

Additional Options
• 11-position copper ground bar
• 10-postion GMT fuse panel (fuses optional)
• -48VDC light with optional door switch
• Heaters available up to 800W

Warranty
• 5 years enclosure/1 year thermal system

Configuration	Variable	Height	Width	Depth
Equipment Bay		30.00	25.00	20.00
Battery Pedestal	Equip. Bay + Batt. Ped. (12”/13”)	42.00/43.00		
	Equip. Bay + Batt. Ped. (12”/13”) + Demarc. Box	48.00/49.00		
	Equip. Bay + Batt. Ped. (12”/13”) + Demarc. Box + Eye Bolt	50.40/51.40		
Plinth	Equip. Bay + 4” Plinth	34.02		
	Equip. Bay + 4” Plinth+ Demarc Box	40.11		
	Equip. Bay + 4” Plinth + Demarc Box + Eye Bolt	42.42		
Plinth	Equip. Bay + 14” Plinth	44.02		
	Equip. Bay + 14” Plinth+ Demarc Box	50.11		
	Equip. Bay + 14” Plinth + Demarc Box + Eye Bolt	52.42		
Side Chamber			35.86	
Thermal Option	39W/ °C Heat Exchanger			23.21
	70W/ °C Heat Exchanger			27.12

Purcell Systems, Inc.
16125 East Euclid Avenue Spokane Washington 99216
Phone: 509.755.0341 **www.purcellsystems.com**

58532A

GPS L1 Reference Antenna

The Symmetricom 58532A GPS L1 Reference Antenna is the latest in a line of Symmetricom antennas used to deliver L1 carrier frequency signals to GPS synchronization modules and receivers. Based on a design with proven reliability in tens of thousands of installations, the 58532A, like its predecessors, is characterized by low noise and high gain to provide optimum signal quality.

Outstanding Immunity to RF Interference

Noise and interference near the L1 carrier can compromise reception of GPS signals. The 58532A features excellent filtering, with narrow bandwidth and steep rolloff to preserve the GPS signal while attenuating unwanted signals near the L1 carrier.

Improved Immunity to Lightning

Electromagnetic fields caused by nearby lightning strikes can induce surge voltages in the antenna cable, damaging the antenna. The 58532A offers improved immunity to induced voltages through built-in diode protection.

Symmetricom™
Heartbeat of the Net

Durable and Easy to Install

Designed for easy installation in outdoor locations, the 58532A features a durable, unobtrusive, cone-shaped cover that prevents snow and debris build-up. In addition, a sturdy aluminum mounting base allows easy attachment to the Option AUB antenna mast. With this type of mounting, the antenna/cable connector (type N) is protected from the weather. If your system requires the new 58529A Antenna Line Amplifier with Bandpass Filter or 58530A GPS L1 Bandpass Filter, then these cylindrical products can fit directly inside the antenna mast to be sheltered from the weather as well.

Power is conveniently supplied to the antenna via the RF cable. The antenna requires 5 Vdc at less than 27 mA. This is available from several different GPS engines.

Option 001 includes an N Plug to TNC Jack adapter to accommodate TNC cable users.

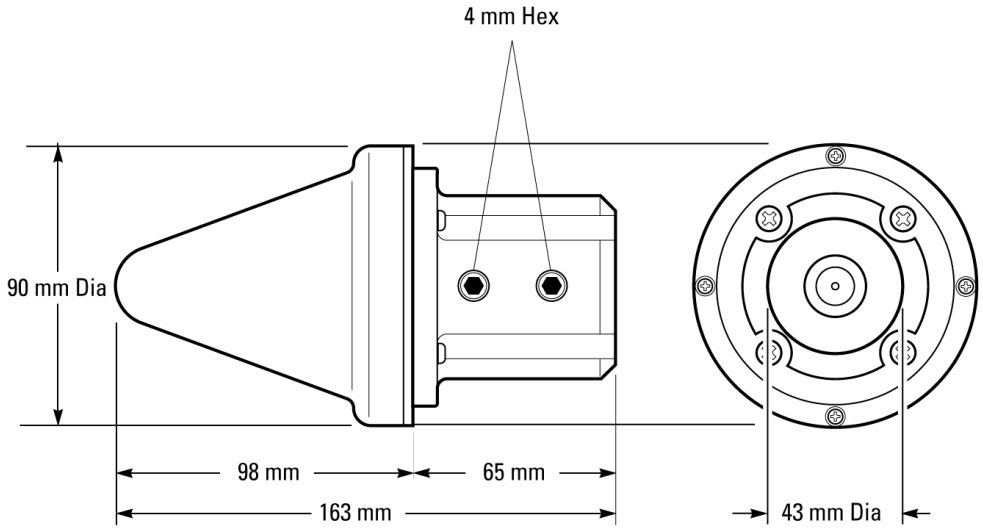

Figure 1. Antenna and mounting base dimensions

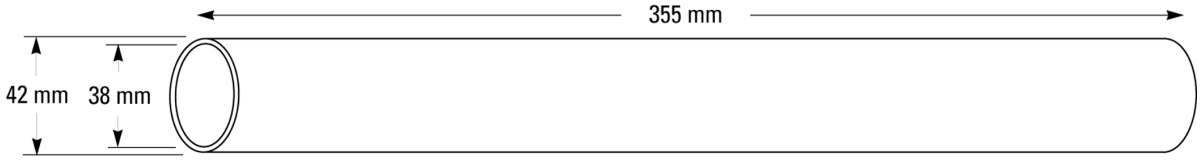

Figure 2. Option AUB mounting mast dimensions

Figure 3. Relative amplitude versus frequency response for 58532A GPS L1 Reference Antenna.

ELECTRICAL	
Frequency Range (3 dB Bandwidth)	1575.42 MHz ±10 MHz (typical)
Polarization	Right-hand circular
Output Impedance	50Ω (typical)
Total Gain	>30 dBi (38 dBi typical @ elevation angle 90°)
Out-of-Band Signal Attenuation	60 dB (typical) at 1575.42 MHz ±50 MHz
Noise Figure	<2.2 dB (1.8 dB typical)
VSWR	<2.5 (1.5 typical)
dc Power	5 Vdc ±0.5 Vdc, <27 mA (20 mA typical)
PHYSICAL	
Connector	Type-N Jack
Dimensions	
Antenna without Mounting Base	90 mm D x 128 mm H (includes connector)
Mounting Base	43 mm I.D. , 75 mm O.D., 65 mm H
Mounting Mast (Option AUB)	38 mm I.D., 42 mm O.D., 355 mm L
Weight	
Antenna without Mounting Base	187 g
Mounting Base	240 g
Mounting Mast (Option AUB)	250 g
Material	
Antenna	
Radome	UV-stabilized polycarbonate
Bottom housing	Die-cast aluminum, powder coated
Mounting Base	Die-cast aluminum, powder coated
Option AUB Mounting Mast	Anodized aluminum with teflon coating or stainless steel
Color, Antenna and Mounting Base	White
Operating Temperature	–40°C to +85°C
Storage Temperature	–45°C to +90°C

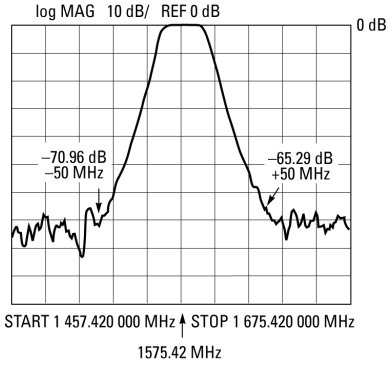

Figure 1. Relative amplitude versus frequency response for 58532A GPS L1 Reference Antenna.

Ordering Information: (Contact Symmetricom for pricing and availabilty)
58532A GPS L1 Reference Antenna
Option AUB Mounting Mast
Option 001 N to TNC Adapter

For more information:

Dependable Accessories for Your GPS Installation — Brochure

Designing Your GPS Antenna System — Configuration Guide

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2300 Orchard Parkway
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tel: 408-433-0910
fax: 408-428-7897
e-mail: info@symmetricom.com
http://www.symmetricom.com

Symmetricom Limited
2 The Billings
Walnut Tree Close
Guildford, Surrey
GU1 4UL, England
tel: 44-1483-510300
fax: 44-1483-510319

DS/58532A/D/0200/2M

NEMA 3R Enclosures

ENCLOSURE FINDER

Enclosure Type --select--

Enclosure Material --select--

Height Any

Width Any

Depth Any

Nema Rating --select--

ENCLOSURE RATINGS (HTTPS://WWW.NEMAENCLOSURES.COM/ENCLOSURE-RATINGS.HTML)

NEMA Enclosure Ratings (https://www.nemaenclosures.co ratings/nema-rated-enclosures.html)

NEMA 1 Enclosures (https://www.nemaenclosures.c ratings/nema-rated-enclosures/nema-1-enclosures.html)

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NEMA 4X Enclosures (https://www.nemaenclosures.c ratings/nema-rated-enclosures/nema-4x-enclosures.html)

NEMA 12 Enclosures (https://www.nemaenclosures.c ratings/nema-rated-enclosures/nema-12-enclosures.html)

Nema Enclosures manufactures NEMA 3R enclosures for housing power distribution, lighting contractors, switch gear, and other electrical components that need to be protected in an outdoor environment. Our adherence to UL 508A standards will give you a quality weatherproof enclosure resistant to rain, ice, and snow. NEMA 3R enclosures are compatible for both indoor or outdoor applications, and holds the least demanding rating for outdoor use. We produce top quality metal enclosures in a variety of types and materials, all at compet quick delivery is our specialty.

NEMA 3R Characteristics:

- Protection against incidental contact with enclosed equipment
- Protection from falling dirt, rain, sleet and/or snow
- Drainage provision
- Protection against rain at a level higher than the lowest live part
- Alternate locking and latching mechanisms available

The ratings shown in the chart below are based on similar a descriptions and performance expectations.

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DIMENSIONS

HEIGHT Select

WIDTH Select

DEPTH Select

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REQUEST A QUOTE » (/RFQ.HTML?HEIGHT=48

Wall Mount Single Door Type 3R w/ Back Panel 42 X 36 X 8 (https://www.nemaenclosures.com/carbon-steel-wall-mount-single-door-type-3r-42x36x8.html) 42x36x8.html) Learn More (https://www.nemaenc steel-wall-mount-singl

REQUEST A QUOTE » (/RFQ.HTML?HEIGHT=42

Wall Mount Single Door Type 3R w/ Back Panel 42 X 30 X 8 (https://www.nemaenclosures.com/carbon-steel-wall-mount-single-door-type-3r-42x30x8.html) 42x30x8.html) Learn More (https://www.nemaenc steel-wall-mount-singl

REQUEST A QUOTE » (/RFQ.HTML?HEIGHT=42

Electrical Enclosure Types – Non Hazardous Location Environmental Rating Standards Comparison

NEMA and UL are standards writing organizations. The ratings are based on similar application descriptions and performance expectations. UL requires testing for compliance by qualified evaluators independent of the manufacturer. NEMA does not require independent testing and leaves compliance up to the manufacturer.

Enclosure Rating	NEMA **National Electrical Manufacturers Association** (NEMA Standard 250)	UL **Underwriters Laboratories, Inc.** (UL50 and UL 508)
Type 1	Indoor use to provide a degree of protection to personnel against access to hazardous parts and to provide a degree of protection of the equipment inside the enclosure against ingress of solid foreign objects (falling dirt).	Indoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment and to provide a degree of protection against falling dirt.
Type 2	Indoor use to provide a degree of protection to personnel against access to hazardous parts; to provide a degree of protection of the equipment inside the enclosure against ingress of solid foreign objects (falling dirt); and to provide a degree of protection with respect to harmful effects on the equipment due to the ingress of water (dripping and light splashing).	Indoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment, to provide a degree of protection against falling dirt, and to provide a degree of protection against dripping and light splashing of non-corrosive liquids.
Type 3	Indoor or outdoor use to provide a degree of protection to personnel against access to hazardous parts; to provide a degree of protection of the equipment inside the enclosure against ingress of solid foreign objects (falling dirt and windblown dust); to provide a degree of protection with respect to harmful effects on the equipment due to the ingress of water (rain, sleet, snow); and that will be undamaged by the external formation of ice on the enclosure.	Indoor or outdoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment; to provide a degree of protection against falling dirt, rain, sleet, snow, and windblown dust; and that will be undamaged by the external formation of ice on the enclosure.
Type 3R	Enclosures constructed for either indoor or outdoor use to provide a degree of protection to personnel against access to hazardous parts; to provide a degree of protection of the equipment inside the enclosure against ingress of solid foreign objects (falling dirt); to provide a degree of protection with respect to harmful effects on the equipment due to the ingress of water (rain, sleet, snow); and that will be undamaged by the external formation of ice on the enclosure.	Indoor or outdoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment; to provide a degree of protection against falling dirt, rain, sleet, and snow; and that will be undamaged by the external formation of ice on the enclosure.
Type 3S	Indoor or outdoor use to provide a degree of protection to personnel against access to hazardous parts; to provide a degree of protection of the equipment inside the enclosure against ingress of solid foreign objects (falling dirt and windblown dust); to provide a degree of protection with respect to harmful effects on the equipment due to the ingress of water (rain, sleet, snow); and for which the external mechanism(s) remain operable when ice laden.	Indoor or outdoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment; to provide a degree of protection against falling dirt, rain, sleet, snow, and windblown dust; and in which the external mechanisms remain operable when ice laden.
Type 3X	Indoor or outdoor use to provide a degree of protection to personnel against access to hazardous parts; to provide a degree of protection of the equipment inside the enclosure against ingress of solid foreign objects (falling dirt and windblown dust); to provide a degree of protection with respect to harmful effects on the equipment due to the ingress of water (rain, sleet, snow); that provides an additional level of protection against corrosion and that will be undamaged by the external formation of ice on the enclosure.	
Type 3RX	Indoor or outdoor use to provide a degree of protection to personnel against access to hazardous parts; to provide a degree of protection of the equipment inside the enclosure against ingress of solid foreign objects (falling dirt); to provide a degree of protection with respect to harmful effects on the equipment due to the ingress of water (rain, sleet, snow); that will be undamaged by the external formation of ice on the enclosure that provides an additional level of protection against corrosion; and that will be undamaged by the external formation of ice on the enclosure.	
Type 3SX	Indoor or outdoor use to provide a degree of protection to personnel against access to hazardous parts; to provide a degree of protection of the equipment inside the enclosure against ingress of solid foreign objects (falling dirt and windblown dust); to provide a degree of protection with respect to harmful effects on the equipment due to the ingress of water (rain, sleet, snow); that provides an additional level of protection against corrosion; and for which the external mechanism(s) remain operable when ice laden.	
Type 4	Indoor or outdoor use to provide a degree of protection to personnel against access to hazardous parts; to provide a degree of protection of the equipment inside the enclosure against ingress of solid foreign objects (falling dirt and windblown dust); to provide a degree of protection with respect to harmful effects on the equipment due to the ingress of water (rain, sleet, snow, splashing water, and hose directed water); and that will be undamaged by the external formation of ice on the enclosure.	Indoor or outdoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment; to provide a degree of protection against falling dirt, rain, sleet, snow, windblown dust, splashing water, and hose-directed water; and that will be undamaged by the external formation of ice on the enclosure.
Type 4X	Indoor or outdoor use to provide a degree of protection to personnel against access to hazardous parts; to provide a degree of protection of the equipment inside the enclosure against ingress of solid foreign objects (windblown dust); to provide a degree of protection with respect to harmful effects on the equipment due to the ingress of water (rain, sleet, snow, splashing water, and hose directed water); that provides an additional level of protection against corrosion; and that will be undamaged by the external formation of ice on the enclosure.	Indoor or outdoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment; to provide a degree of protection against falling dirt, rain, sleet, snow, windblown dust, splashing water, hose-directed water, and corrosion; and that will be undamaged by the external formation of ice on the enclosure.
Type 5	Indoor or outdoor use to provide a degree of protection to personnel against access to hazardous parts; to provide a degree of protection of the equipment inside the enclosure against ingress of solid foreign objects (falling dirt and settling airborne dust, lint, fibers, and flyings); and to provide a degree of protection with respect to harmful effects on the equipment due to the ingress of water (dripping and light splashing).	Indoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment; to provide a degree of protection against falling dirt; against settling airborne dust, lint, fibers, and flyings; and to provide a degree of protection against dripping and light splashing of non-corrosive liquids.
Type 6	Indoor or outdoor use to provide a degree of protection to personnel against access to hazardous parts; to provide a degree of protection of the equipment inside the enclosure against ingress of solid foreign objects (falling dirt); to provide a degree of protection with respect to harmful effects on the equipment due to the ingress of water (hose directed water and the entry of water during occasional temporary submersion at a limited depth); and that will be undamaged by the external formation of ice on the enclosure.	Indoor or outdoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment; to provide a degree of protection against falling dirt, rain, sleet, snow, hose-directed water and the entry of water during occasional temporary submersion at a limited depth; and that will be undamaged by the external formation of ice on the enclosure.
Type 6P	Indoor or outdoor use to provide a degree of protection to personnel against access to hazardous parts; to provide a degree of protection of the equipment inside the enclosure against ingress of solid foreign objects (falling dirt); to provide a degree of protection with respect to harmful effects on the equipment due to the ingress of water (hose directed water and the entry of water during prolonged submersion at a limited depth); that provides an additional level of protection against corrosion and that will be undamaged by the external formation of ice on the enclosure.	Indoor or outdoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment; to provide a degree of protection against falling dirt, rain, sleet, snow, hose-directed water, corrosion, and the entry of water during prolonged submersion at a limited depth; and that will be undamaged by the external formation of ice on the enclosure.
Type 7	Designed to contain an internal explosion without causing an external hazard.	Indoor use in hazardous (Classified) locations classified as Class I, Division 1, Groups A, B, C, or D as defined in NFPA 70.
Type 8	Designed to prevent combustion through the use of oil-immersed equipment.	Indoor or outdoor use in hazardous (Classified) locations classified as Class I, Division 1, Groups A, B, C, and D as defined in NFPA 70.
Type 9	Designed to prevent the ignition of combustible dust.	Indoor use in hazardous (Classified) locations classified as Class II, Division 1, Groups E, F, or G as defined in NFPA 70.
Type 10	Designed to contain an internal explosion without causing an external hazard.	Meet the requirements of the Mine Safety and Health Administration, 30 CFR, Part 18.
Type 12	Constructed (without knockouts) for indoor use to provide a degree of protection to personnel against access to hazardous parts; to provide a degree of protection of the equipment inside the enclosure against ingress of solid foreign objects (falling dirt and circulating dust, lint, fibers, and flyings); and to provide a degree of protection with respect to harmful effects on the equipment due to the ingress of water (dripping and light splashing).	Constructed (without knockouts) for indoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment; to provide a degree of protection against falling dirt; against circulating dust, lint, fibers, and flyings; against dripping and light splashing of non-corrosive liquids; and against light splashing and consequent seepage of oil and non-corrosive coolants.
Type 12K	Constructed (with knockouts) for indoor use to provide a degree of protection to personnel against access to hazardous parts; to provide a degree of protection of the equipment inside the enclosure against ingress of solid foreign objects (falling dirt and circulating dust, lint, fibers, and flyings); and to provide a degree of protection with respect to harmful effects on the equipment due to the ingress of water (dripping and light splashing).	Constructed (with knockouts) for indoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment; to provide a degree of protection against falling dirt; against circulating dust, lint, fibers, and flyings; against dripping and light splashing of non-corrosive liquids; and against light splashing and consequent seepage of oil and non-corrosive coolants.
Type 13	Indoor use to provide a degree of protection to personnel against access to hazardous parts; to provide a degree of protection of the equipment inside the enclosure against ingress of solid foreign objects (falling dirt and circulating dust, lint, fibers, and flyings); to provide a degree of protection with respect to harmful effects on the equipment due to the ingress of water (dripping and light splashing); and to provide a degree of protection against the spraying, splashing, and seepage of oil and non-corrosive coolants	Indoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment; to provide a degree of protection against falling dirt; against circulating dust, lint, fibers, and flyings; and against the spraying, splashing, and seepage of water, oil, and non-corrosive coolants.

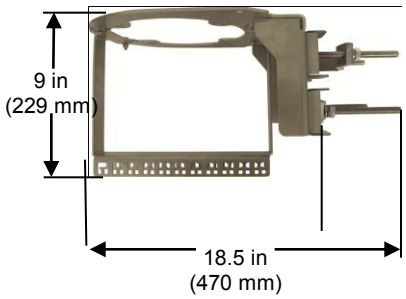
DC6-48-60-18-8F

DC Surge Suppression Solution

The DC6-48-60-18-8F is a dual chambered, DC surge suppression system for use in multi-circuit, Distributed Antenna Systems. The system will protect up to 6 Remote Radio Heads from voltage surges and lightning, and connect up to 18 fiber pairs. The system is enclosed in an IP 68 rated, waterproof enclosure.

FEATURES

- Protects up to 6 Remote Radio Heads, each with its own protection circuit.
- Flexible design allows for installation at the top of a tower for Remote Radio Head protection.
- Includes fiber connections for up to 18 pairs of fiber.
- LED indicators on individual circuits provide visual indication of suppressor status.
- Form 'C' relays allow for remote monitoring of the suppressor status.
- Patented Strikesorb technology provides over 60 kA of surge current capacity per circuit.
- Strikesorb suppression modules are fully recognized to UL 1449-3rd Edition Safety Standard, meeting all intermediate and high current fault requirements to facilitate use in OEM applications.
- Raycap recommends that DC protection system be installed within 2 meters or 6 feet of the radio.
- Dome design is lightweight and aerodynamic providing maximum flexibility for installation on top of towers.
- **Patent pending**



Raycap

US: Phone 208.777.1166 Toll Free 800.890.2569 Fax 208.777.4466
Europe: Tel +30 210 6152 000 Fax +30 210 6196 002
www.raycapsurgeprotection.com

DC6-48-60-18-8F

DC Power Surge Protection

Electrical Specifications	
Model Number	DC6-48-60-18-8F*
Nominal Operating Voltage	48 VDC
Nominal Discharge Current (I_n)	20 kA 8/20 µs
Maximum Discharge Current (I_{max}) per NEMA LS-1	60 kA 8/20 µs
Maximum Continuous Operating Voltage (U_c)	75 VDC
Voltage Protection Rating	400 V

*Module Assembly Part # - DC6-48-60-18-8F-U. Field upgradable, prewired module package for 1 remote radio.

Mechanical Specifications	
Suppression Connection Method	Compression lug, #2-#14 AWG Copper, #2-#12 Aluminum
Fiber Connection Method	LC-LC Single mode duplex
Environmental Rating	IP 68, 7m 72hrs
Operating Temperature	-40° C to + 80° C
Storage Temperature	-70° C to + 80° C
Cold Temperature Cycling	IEC 61300-2-22e -30° C to + 60° C 200 hrs @ 5 psi
Resistance to Aggressive Materials	CEI IEC 61073-2 including acids and bases
UV Protection	ISO 4892-2 Method A Xenon-Arc 2160 hrs

WEIGHT

System: 18.9 lbs (84.07 N)
Mount : 13.9 lbs (57.38 N)
Total: 32.8 lbs (141.45 N)

Stand-alone Module Assembly: 1 lb (4.45 N)

COMBINED WIND LOADING

150mph (sustained) : 105.7 lbs (470 N)
195mph (gust): 213.6 lbs (950 N)

STANDARDS

Strikesorb modules are compliant to the following Surge Protection Device (SPD) Standards:

- ANSI/UL 1449 – 3rd Edition
- IEEE C62.41
- NEMA LS-1, IEC 61643-1:2005 2nd Edition:2005
- IEC 61643-12
- EN 61643-11:2002 (including A11:2007)

GS-07F-0435V

Certified to ISO 9001:2000

TÜV Rheinland of North America

US: Phone 208.777.1166 Toll Free 800.890.2569 Fax 208.777.4466
Europe: Tel +30 210 6152 000 Fax +30 210 6196 002
www.raycapsurgeprotection.com

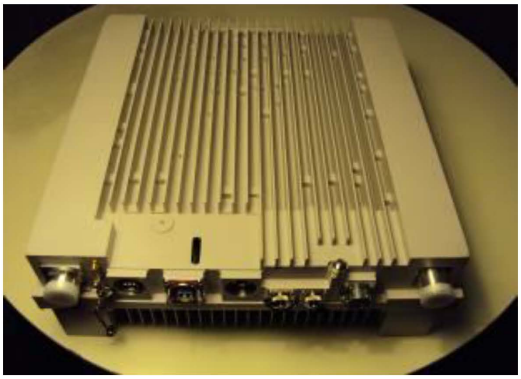
Remote Radio Head – RRUS11

Technical Specifications

Multi-standard support
- ✓ GSM, WCDMA & LTE
- ✓ 2x30W MIMO
- ✓ IBW of 20 MHz

Size & Weight
- ✓ B2 & B4: 44 lbs
- ✓ B12: 50 lbs
- ✓ 15.9 x 16.3 x 5.8 in. excl. sun shield
- ✓ 17.8 x 17.3 x 7.2 in. incl. sun shield

Power
- ✓ Input voltage: -48 VDC or AC



Description	Value
Color	
Gray	

The RRUS 02 size, height, width, and depth with solar shield, is shown in Figure 2.

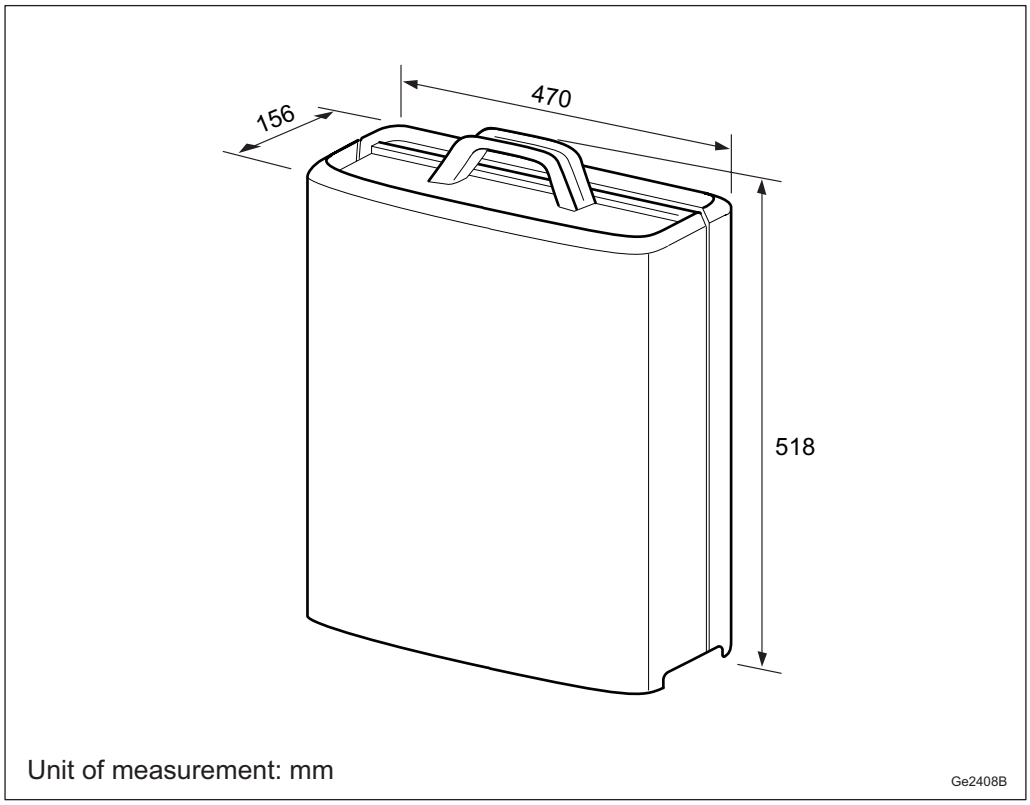


Figure 2 RRUS02 Height, Width, and Depth with Solar Shield

3.1.2 RRUS 12 Dimensions

Table 1 lists the technical data for the RRUS 12.

Table 2 RRUS 12 Technical Data

Description	Value
Maximum nominal output power	2x10 W, 2x20 W, 2x30 W, 2x40 W, 2x50 W, 2x60 W, and 2x60 W (subject for licence handling)
Number of carriers	One to four carriers (subject for licence handling)

Description	Value
Frequency	1,710 to 1,785 MHz uplink 1,805 to 1,880 MHz downlink IBW 25 MHz B3 for WCDMA and LTE (Type B)
Dimensions with Solar Shield and Handle and Feet	
Height	518 mm
Width	470 mm
Depth Type B	187 mm
Dimensions without Solar Shield and without Handle or Feet	
Height	418 mm
Width	458 mm
Depth Type B	159 mm
Weight	
RRUS 12 Type B	26.3 kg
Color	
Gray	

The RRUS 12 size, height, width, and depth with solar shield, is shown in Figure 2.

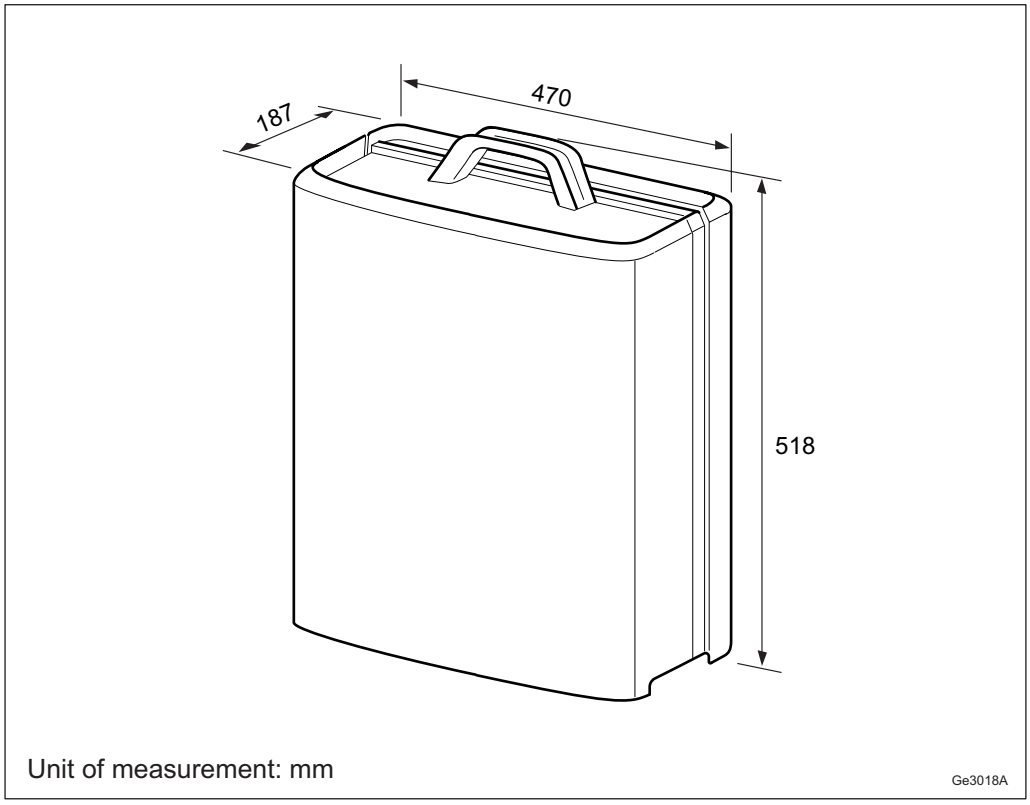


Figure 3 RRUS 12 Height, Width, and Depth with Solar Shield

3.2 Installation recommendations

In order to have a high Mean Time Before Failure (MTBF), reliable operation, and maximum performance, an appropriate installation location must be chosen.

3.2.1 Indoor Locations to Avoid

Despite that the unit is designed for outdoor use, it is recommended to operate in an indoor environment according to ETSI 300 019-1-3 class 3.1 and 3.3. This does not cover installation with heat traps or installation in lofts, where air ventilation does not exist. To ensure smooth performance of the product, it is recommended to ensure that the planned installation site for the unit is not a potential microclimate location. This typically occurs in places such as unventilated lofts, sites with heat traps, or sites where the product is exposed to direct sunlight through windows. Avoid installing the equipment under glass covers or skylight windows without proper ventilation.

RRUS 32 B30

- WCS A+B blocks
  - TX = 2350 – 2360 MHz
  - RX = 2305 – 2315 MHz
- CPRI 2 ports x 10 Gbps
- Only use Ericsson supplied and approved SFPs
- 6 external alarm inputs
- Max wind load @ 50m/sec = 350N
- Breaker size = 20A, DC Power Consumption = 800W
- 200mm horizontal separation required for side by side mounting
- 200mm separation required from antenna backplane to radio
- 600mm/800mm vertical outdoor/indoor separation required
- Max DC cable size from squid to radio = 8AWG
  - Adapter is required for 2-wire connection
  - Shielded DC cable is required
- Max Ground cable size = 6AWG
- Dimensions (incl. handles, feet and sunshield)
  - Height: 27.2” (690 mm)
  - Width: 12.1” (306 mm)
  - Depth: 7.0” (178 mm)
- Weight, excl. mounting hardware = 53 lbs (24 kg)

Product Specifications

COMMSCOPE®

on the go

CommScope—Private and Confidential. Preliminary specifications are for internal use only.

Andrew Solutions

SBNHH-1D65B

DualPol® Tri-band Teletilt® Smartbeam Antenna, 1 x 698-896 and 2 x 1710–2360 MHz, 65° horizontal beamwidth, RET compatible

- Three DualPol® antennas under one radome
- Interleaved dipole technology providing for attractive, low wind load mechanical package

Electrical Specifications

Frequency Band, MHz	698–806	806–896	1710–1880	1850–1990	1920–2180	2300–2360
Gain, dBi	14.9	15.2	17.4	17.7	17.9	18.0
Beamwidth, Horizontal, degrees	68	68	66	65	65	63
Beamwidth, Vertical, degrees	11.7	11.1	5.4	5.1	4.8	4.5
Beam Tilt, degrees	0–14	0–14	0–7	0–7	0–7	0–7
USLS, typical, dB	15	15	14	14	14	14
Front-to-Back Ratio at 180°, dB	30	30	30	30	30	30
CPR at Boresight, dB	20	20	20	20	18	18
CPR at Sector, dB	10	10	10	10	10	8
Isolation, dB	28	28	29	29	29	29
Isolation, Intersystem, dB	30	30	30	30	30	30
VSWR | Return Loss, dB	1.5:1 | 14.0	1.5:1 | 14.0	1.5:1 | 14.0	1.5:1 | 14.0	1.5:1 | 14.0	1.5:1 | 14.0
PIM, 3rd Order, 2 x 20 W, dBc	-150	-150	-150	-150	-150	-150
Input Power per Port, maximum, watts	400	400	350	350	350	250
Polarization	±45°	±45°	±45°	±45°	±45°	±45°
Impedance	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm
Lightning Protection	dc Ground	dc Ground	dc Ground	dc Ground	dc Ground	dc Ground

Mechanical Specifications

Color | Radome Material	Light gray | Fiberglass, UV resistant
Connector Interface | Location | Quantity	7-16 DIN Female | Bottom | 6
Wind Loading, maximum	617.7 N @ 150 km/h 138.9 lbf @ 150 km/h
Wind Speed, maximum	241.0 km/h | 149.8 mph

Dimensions

Depth	181.0 mm | 7.1 in
Length	1847.00 mm | 72.72 in
Width	301.00 mm | 11.85 in
Net Weight	23.00 kg | 50.71 lb

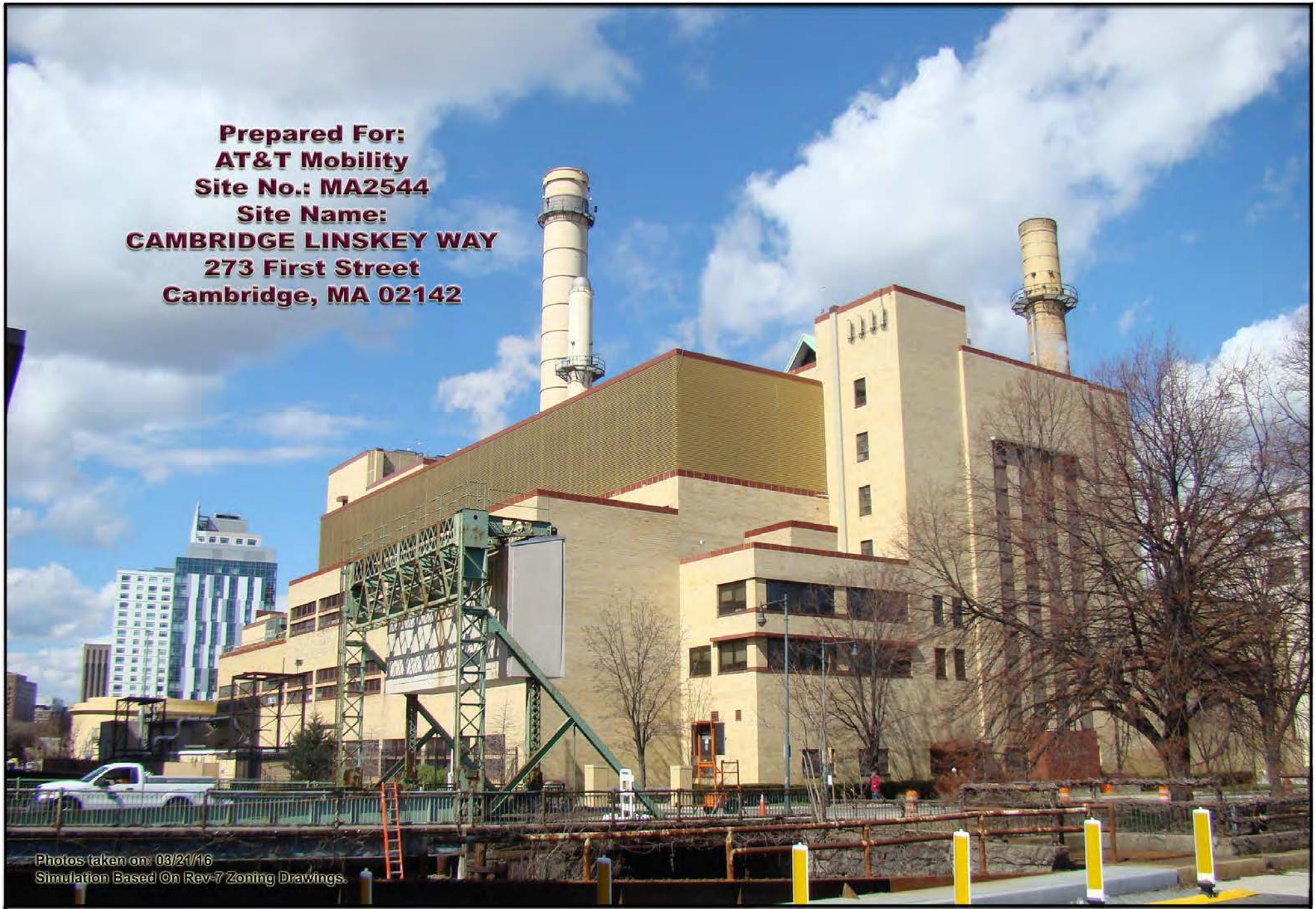
Regulatory Compliance/Certifications

Agency	Classification
RoHS 2002/95/EC	Compliant by Exemption
China RoHS SJ/T 11364-2006	Above Maximum Concentration Value (MCV)
ISO 9001:2008	Designed, manufactured and/or distributed under this quality management system

Included Products

DB380-5083 — Standard two point mounting system to secure BSA panels to pipes with an OD measuring 2.4-4.5" (60-115mm). Includes locking downtilt brackets and heavy guage pipe brackets to provide superior windload performance.

Tab 5



For visual reference only. Actual visibility is dependent upon weather conditions, season, sunlight, and viewer location.

at&t
550 Cochituate Road
Suites 13 & 14
Framingham, MA 01701

CAMBRIDGE LINSKEY WAY

DEWBERRY NO. 50062417
(Page 1 of 10)

SAI
27 Northwestern Drive
Salem, NH 03079

Dewberry
Dewberry Engineers Inc.
280 Summer St.
10th Floor
Boston, MA 02210


N
Binney St
E Kendall St
Second St
Commercial Avenue
Cambridge Pkwy
PHOTO 4
Kendall St
SITE LOCATION
PHOTO 1
First St
Broad Canal Way
PHOTO 3
Broad Canal Walk
Edwin H Land Blvd
3A
3
Main St
PHOTO 2
Memorial Dr
at&t
CAMBRIDGE LINSKEY WAY
Site No.: MA2544
273 First Street
Cambridge, MA 02142
(Page 2 of 10)
Dewberry


Actual View
VEOLIA
at&t
CAMBRIDGE LINSKEY WAY
Photo 1A
View Facing West
From Edwin H Land Blvd
(Page 3 of 10)
Dewberry

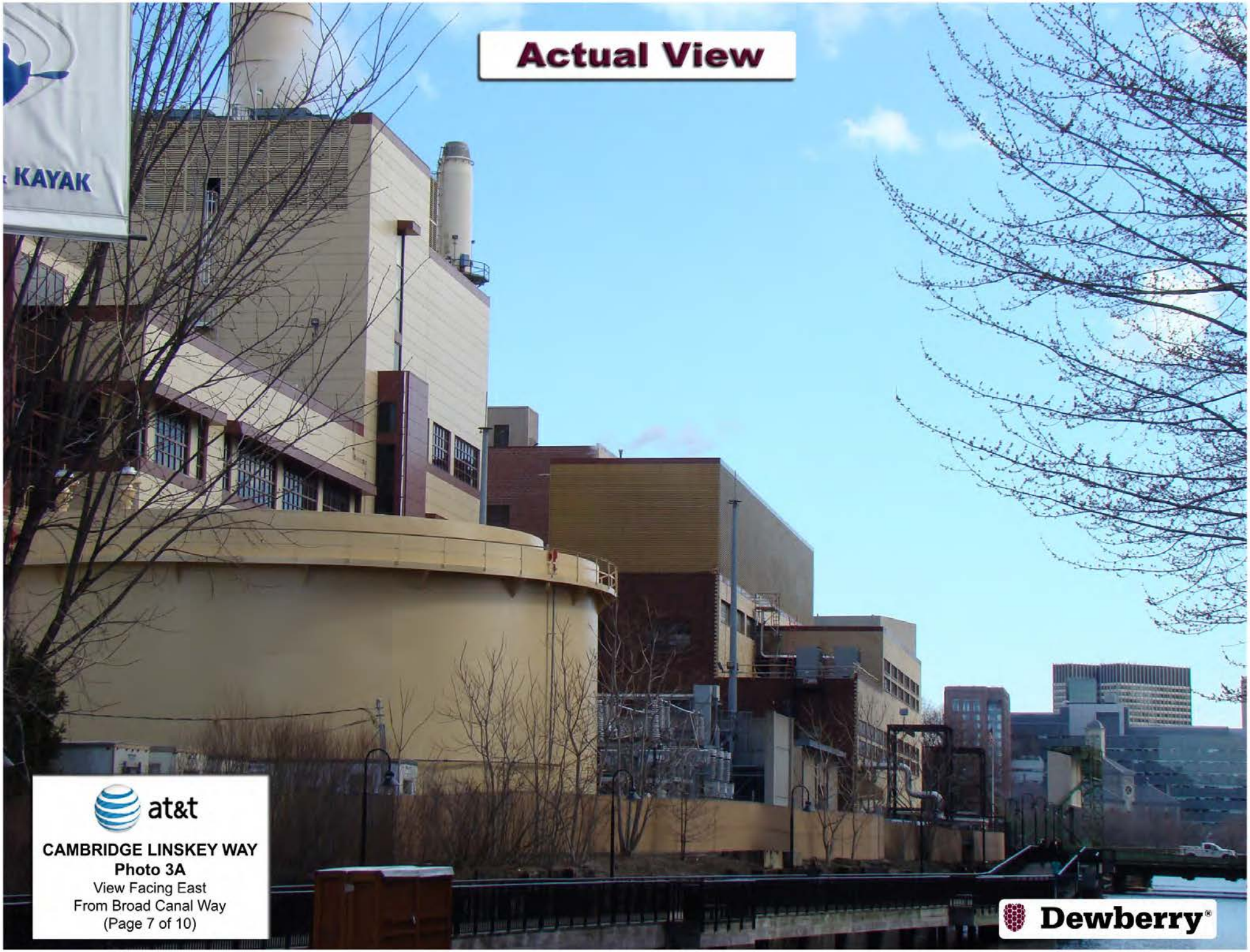
at&t

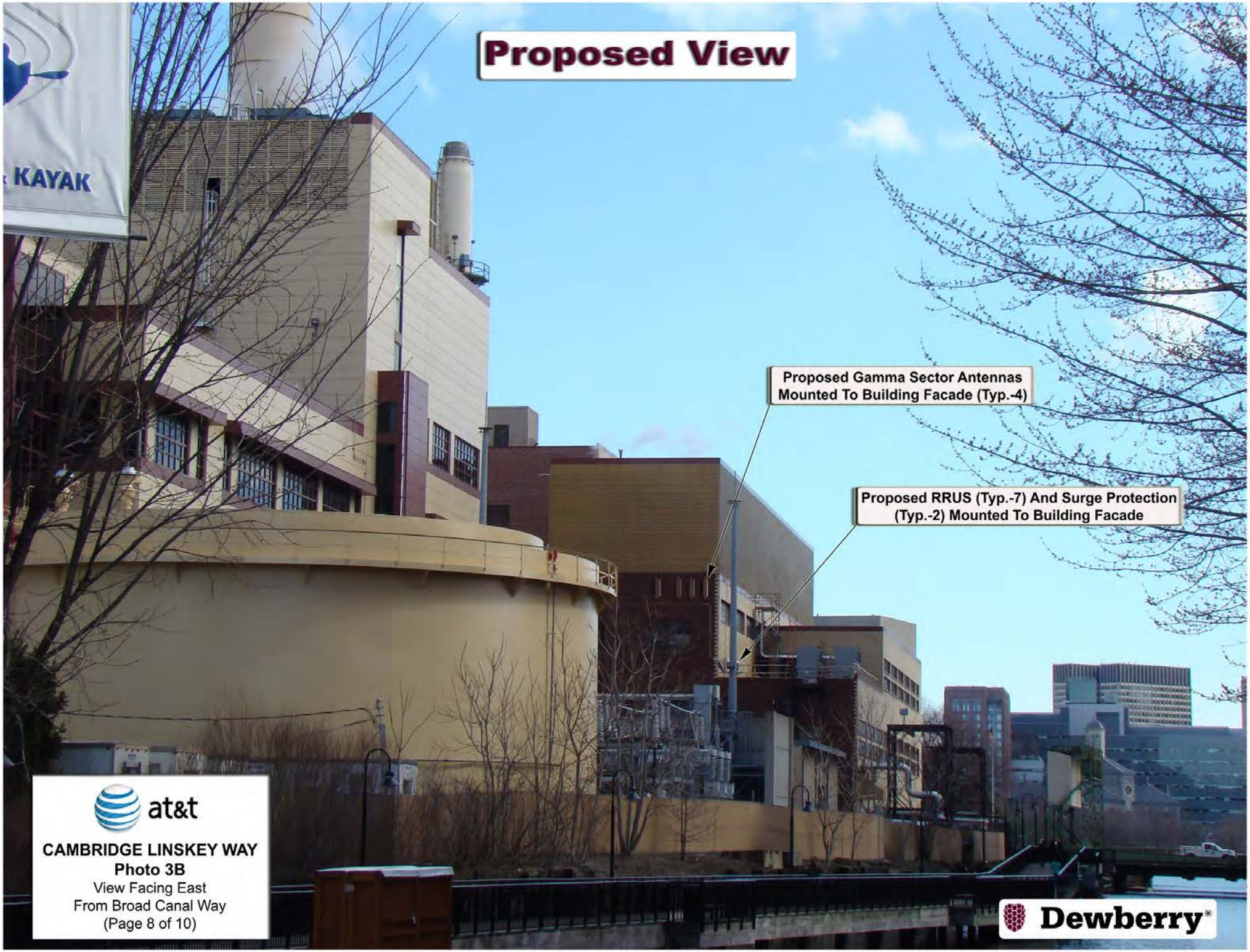
CAMBRIDGE LINSKEY WAY
Photo 1B
View Facing West
From Edwin H Land Blvd
(Page 4 of 10)

Dewberry®


Actual View
at&t
CAMBRIDGE LINSKEY WAY
Photo 2A
View Facing Northwest
From Edwin H Land Blvd
(Page 5 of 10)
Dewberry


Proposed View
Proposed Beta Sector Antennas Mounted To Building Facade (Typ.-4)
Proposed Vertical Cable Tray
Proposed Screen Wall Concealing Proposed Equipment Platform
at&t
CAMBRIDGE LINSKEY WAY
Photo 2B
View Facing Northwest
From Edwin H Land Blvd
(Page 6 of 10)
Dewberry


Actual View
KAYAK
at&t
CAMBRIDGE LINSKEY WAY
Photo 3A
View Facing East
From Broad Canal Way
(Page 7 of 10)
Dewberry


Proposed View
KAYAK
Proposed Gamma Sector Antennas
Mounted To Building Facade (Typ.-4)
Proposed RRUS (Typ.-7) And Surge Protection
(Typ.-2) Mounted To Building Facade
at&t
CAMBRIDGE LINSKEY WAY
Photo 3B
View Facing East
From Broad Canal Way
(Page 8 of 10)
Dewberry


Actual View
at&t
CAMBRIDGE LINSKEY WAY
Photo 4A
View Facing East
From Kendall Street
(Page 9 of 10)
Dewberry®

at&t

CAMBRIDGE LINSKEY WAY
Photo 4B
View Facing East
From Kendall Street
(Page 10 of 10)

Dewberry®

Tab 6

Radio Frequency Coverage Report

Proposed Cambridge PCS Facility

Site MA2544 – Cambridge Linskey Way Relo
273 First St.

April 24, 2017

TABLE OF CONTENTS

1. Overview 3
2. AT&T's Proposed Facility 3
3. Coverage and Capacity Objectives 4
4. Site Search and Selection Process/Candidate Evaluations 4
5. Alternative Sites Analysis 5
6. Coverage Plots 5
7. Summary 6
8. Statement of Certification 6

ATTACHMENTS

Exhibit 1: Current Coverage North of Kendall Square Cambridge MA,
Exhibit 2: Proposed Coverage North of Kendall Square Cambridge MA

1. Overview

New Cingular Wireless PCS, LLC ("AT&T") is providing the following information in support of its application to the Cambridge Board of Zoning Appeals (BZA) to construct and operate a rooftop mounted wireless telecommunications facility ("Facility") in Cambridge for its Personal Communication Services. The proposed Facility, to be located on the rooftop of the building at 273 First, Cambridge, MA (Assessors' Map 13, Lot 21) (the "Site"), is needed to replace coverage in the area north of Kendall Square currently being provided by an existing AT&T site at 215 First St., Cambridge, as discussed in this report. This report addresses AT&T's need for the proposed Facility at the Site and confirms that there are no superior existing structures, buildings or towers in this part of Cambridge on which AT&T could install a facility that would meet AT&T's radio frequency ("RF") coverage objectives for this area.

Included in this package are a brief summary of the proposed Facility's objectives, an analysis of alternative site candidates considered, and radio RF coverage plots showing the predicted propagation of the proposed Facility based on the antenna mounting height necessary to achieve AT&T's coverage goals.

2. AT&T's Proposed Facility

As shown on the zoning drawing plans submitted with the zoning application, AT&T proposes to construct, operate and maintain the "Facility" consisting principally of the following elements:

Twelve (12) panel antennas (four per sector) that will be mounted in three (3) locations (representing each of the 3 sectors), including alpha antennas (4) façade mounted on the north facing wall parapet, beta antennas (4) façade mounted on the south facing wall of a stairwell penthouse, and gamma antennas (4) will be attached to the west facing lower building facade at the southwest corner of the building Twenty-one (21) radio-head units (RRUs) (seven per sector), six (6) A2 modules (two per sector) and four (4) surge arrestors mounted on (i) one small ballast frame on the roof behind the Alpha Sector antennas, (ii) behind the existing parapet wall on the roof of the stairwell penthouse for Beta Sector, and mounted to the south wall of the lower building around the corner from where the antennas are attached for Gamma Sector

- Fiber optic and DC power cables running from the RRUs through a fiber and

power feed to AT&T's radio cabinets located on the roof mounted equipment platform.

- One GPS antenna, mounted on the equipment platform; unseen from the ground.

- Electric and telephone utilities conduits.

3. Coverage and Capacity Objectives

AT&T provides digital cellular communications service using UMTS (also referred as 3G) technology in the 850 MHz and 1900 MHz frequency bands as allocated by the Federal Communications Commission ("FCC"). In addition, AT&T is in the process of expanding and enhancing its network throughout Massachusetts and specifically in Cambridge to provide high speed data services commonly referred to as "long term evolution" ("LTE"). LTE operates in the 700, 850, 1900, and 2300 MHz frequencies under license from the FCC.

AT&T currently provides coverage in the area north of Kendall Square with a rooftop facility located at 215 First St. This facility has been online since 1997, but AT&T's lease, which is expiring in April 2017, will not be extended or renewed. In the absence of a suitable replacement facility, the loss of the 215 First St. facility will leave a significant RF coverage gap in East Cambridge, specifically in the area north of Kendall Square to the west of Land Blvd. (Targeted Coverage Area). AT&T's coverage needs are particularly significant with respect to in-building coverage in this area, as well as in-vehicle coverage.

Wireless communications are no longer limited to providing mobility for voice services. They have evolved into a wider range of advanced communications services to include wide-area voice, data, internet, video, and broadband wireless data, among others, all in a mobile environment. In order to continue offer these competitive services to local residents, businesses and commuters traveling in and through the Targeted Coverage Area, AT&T needs to maintain the quality of its coverage with signal strengths conducive to in-building and in-vehicle usage, and to provide the capacity and bandwidth requirements to meet the increasing demand on the network.

In summary, the key objective of the 273 First St. site is to continue to provide high quality in-building and in-vehicle coverage on both UMTS and LTE in the East Cambridge Area.

4. Site Search and Selection Process/Candidate Evaluation

To find a site that provides acceptable service and fills the gaps in coverage, computer modeling is used to define a search ring. The search ring is designed such that a site located within the ring would have a high probability of completing coverage in the Targeted Coverage Area (assuming that sufficient height is used).

Once the search ring is determined, AT&T's real estate consultants search within the defined area for existing buildings or tower structures of sufficient height that will fill coverage gaps within the network. As more fully explained below, AT&T will soon be losing its only existing facility that is capable of providing the required RF coverage to the Targeted Coverage Area. After a search of buildings within the search ring, only one property with a willing property owner, 273 First St., was found to satisfy AT&T's coverage needs for the replacement of its existing site at 215 First St.

5. Alternative Site Analysis

In searching the area defined by the radio frequency expert, in addition to the subject site, the following alternative possible locations were identified, considered, and rejected for the reasons stated below:

239 First Street (Rooftop), Cambridge, MA: AT&T's Radio Frequency Experts rejected this property because the rooftop was too high at over 200' and would not have been able to provide adequate coverage to the Targeted Coverage Area and without potentially causing interference with other facilities within Cambridge

245 First Street (Rooftop), Cambridge, MA: AT&T's Radio Frequency Experts rejected this property because the rooftop was too low at 70' to provide adequate coverage to the Targeted Coverage Area

161 First Street (Rooftop), Cambridge, MA: Property owner was unresponsive.

219 Second Street (Rooftop), Cambridge, MA: Property owner was unresponsive.

285 Third Street (Rooftop), Cambridge, MA: AT&T's Radio Frequency Experts rejected this property because it is located too far west to provide adequate coverage to the Targeted Coverage Area.

300 Third Street (Rooftop), Cambridge, MA: Property owner was unresponsive

350 Third Street (Rooftop), Cambridge, MA: Property owner was unresponsive

500 Kendall Street (Rooftop), Cambridge, MA: Property owner unwilling to lease space.

650 Kendall Street (Rooftop), Cambridge, MA: Property owner unwilling to lease space.

675 Kendall Street (Rooftop), Cambridge, MA: Property owner unwilling to lease space.

75-125 Binney Street (Rooftop – Under Construction), Cambridge, MA: Property owner unwilling to lease space.

66 Binney Street (Rooftop – Under Construction), Cambridge, MA: Property owner unwilling to lease space.

6. Coverage Plots

To demonstrate why the proposed Facility is necessary, I have developed the following radio frequency coverage maps attached to this report:

- Exhibit 1, entitled "Current Coverage North of Kendall Square, Cambridge MA", shows AT&T's existing wireless coverage in and around the Targeted Coverage Area without the proposed facility.
- Exhibit 2, entitled "Proposed Coverage North of Kendall Square, Cambridge MA", shows AT&T's proposed coverage in and around the Targeted Coverage Area with the proposed facility to be installed at

the Site.

These coverage maps were generated using Forsk Atoll, an RF Propagation computer modeling program. The software takes into account the geographical features of an area, antenna models, antenna heights and RF transmitting power. The pie-shaped symbols depict existing wireless facility site locations. The areas in blue will have adequate outdoor or "in-vehicle" coverage, but insufficient signal strength for reliable in-building service. The areas in green will have good in-building service as well.

The map showing coverage without the proposed Facility site indicates that AT&T cannot maintain its current coverage without replacing its currently existing site at 215 First St.. Accordingly, the proposed facility at the Site is necessary to continue to provide high quality coverage for AT&T's wireless service in and around the Targeted Coverage Area.

7. Summary

No other existing structures are better suited than the subject Site to provide the coverage and capacity requirements needed for this area of Cambridge, Massachusetts. The location and the facility configuration were chosen to achieve an optimal balance between meeting coverage objectives and minimizing the aesthetic impact to the community while fully complying with the Cambridge Zoning Ordinance. The Facility will comply with all applicable FCC regulations regarding RF emissions and other matters. The proposed Facility site is feasible and appropriate, and will enable AT&T to continue to provide high quality wireless service in the area west of Edwin H Land Blvd. just north of Kendall Square and the surrounding vicinity.

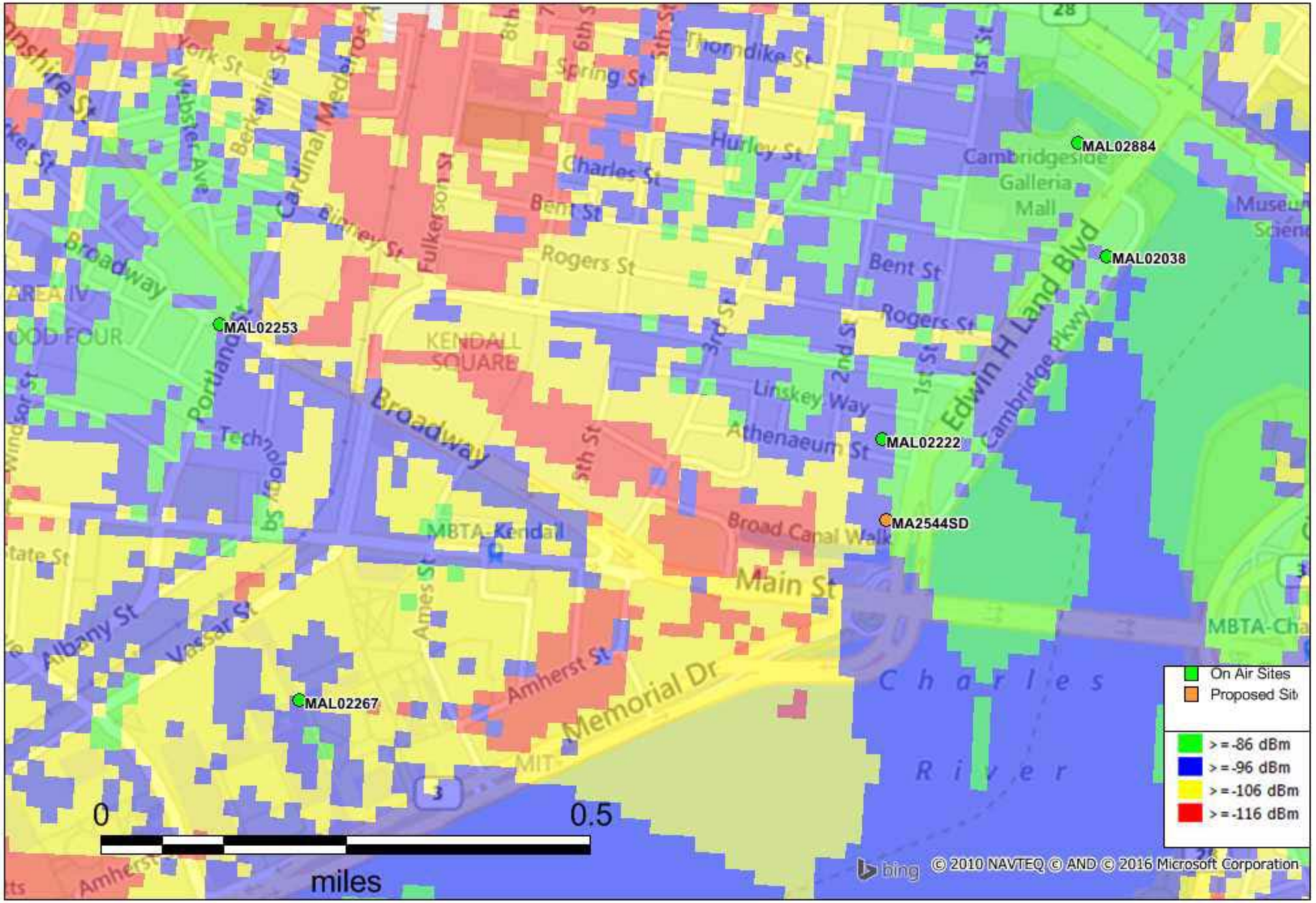
8. Statement of Certification

I certify to the best of my knowledge that the statements in this report are true and accurate.

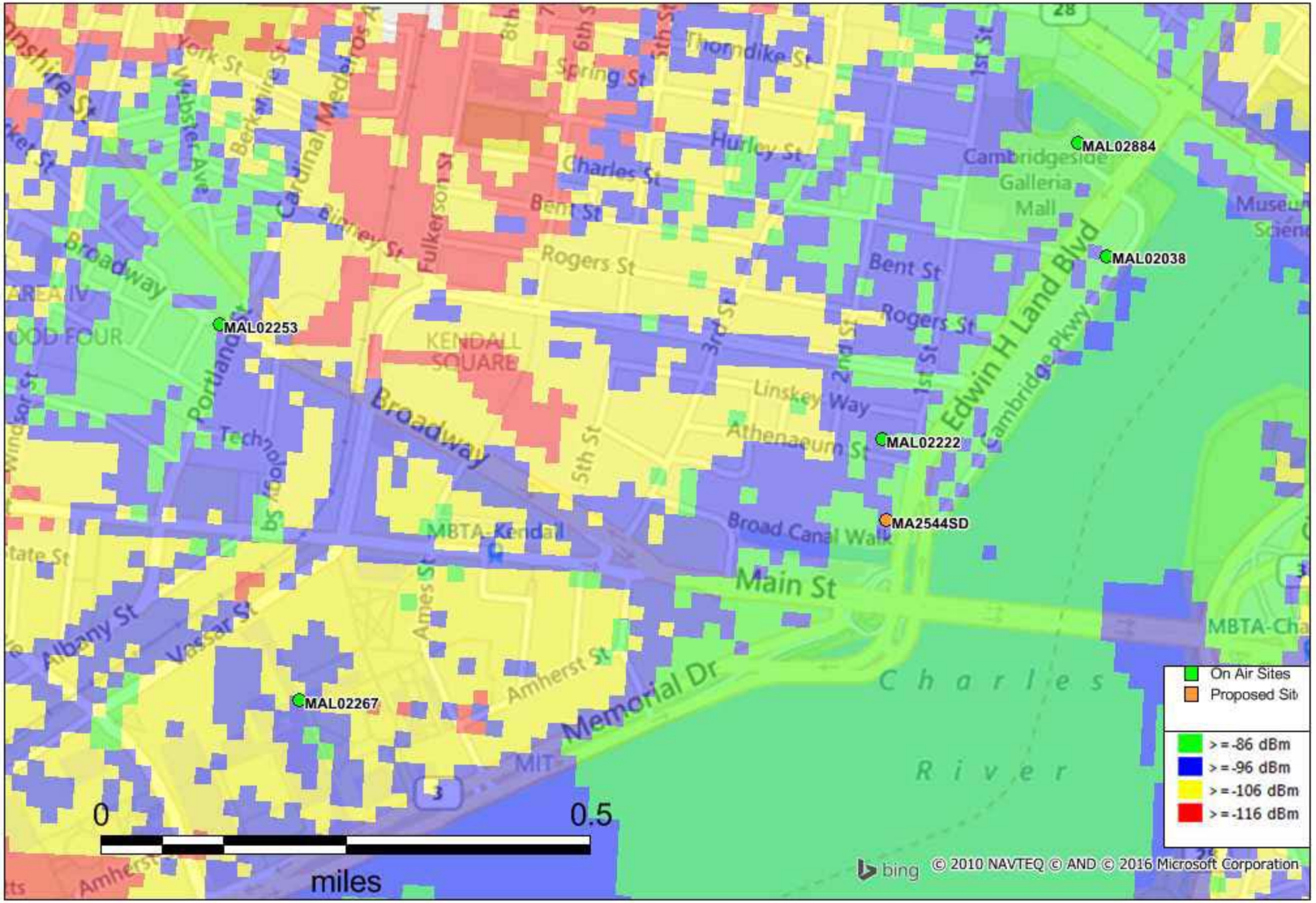
Radu Alecsandru, RF Engineer
AT&T Mobility

4/28/2017
Date

Current Coverage in Cambridge, MA



Proposed Coverage in Cambridge, MA



Tab 7

Dewberry

Dewberry Engineers Inc.
280 Summer Street, 10th Floor
Boston, MA 02210

617.695.3400
617.695.3310 fax
www.dewberry.com

June 9, 2017

SAI Communications
27 Northwestern Drive
Salem, NH 03079

Re: MA2544 Cambridge Linskey Way
273 First Street
Cambridge, MA 02142

To Whom It May Concern,

AT&T Mobility/ SAI has proposed to install the following at the above referenced location:

- (12) twelve panel antennas mounted to facade (4 antennas per sector).
- (21) twenty-one remote radio units (RRU's) mounted to facade (7 RRU's per sector).
- (6) six surge protectors mounted to facade (2 surges per sector).
- Steel equipment frame supporting outdoor cabinets & associated antenna equipment with a proposed 16'x12'-8"screenwall mounted on the lower roof.

These proposed equipment is to be located on various locations at the above referenced location. The existing building is a steel and concrete power plant. Dewberry Engineers Inc. (Dewberry) visited the site for a physical site assessment for the proposed installation.

Dewberry has performed an analysis of the existing structure and has determined that the existing structure has adequate reserve capacity to support the proposed conditions. The attached calculations include our analysis of the existing structure and the steel frame and screenwall designs. Structural assessment of the façade mounted equipment has been determined to be adequate. The proposed equipment is to be installed at this site to reference construction drawings by Dewberry and AT&T RFDS Version 5.0 updated 12/12/2016.

Our analysis is based on the assumption that the existing building is in good condition and the original design and construction was performed in accordance with all applicable state and local building codes. If during construction any damage or deterioration is noticed, Dewberry is to be notified to assess any deviation from the assumed condition. The addition or reconfiguration of any new equipment not accounted for will require further analysis and design.

If you have any questions, please do not hesitate to call me at 617-531-0742.

Sincerely,
Dewberry Engineers, Inc.

Brenden Alexander, P.E.
Manager MEPS Engineering

Dewberry
Structural Calculation Summary Sheet

Job No:	50003936/50062417	**By:** JJC	**Date:** 05/10/17
Job Name:	Cambridge Linskey Way	**Chkd:** BEA	**Date:** 6/09/2017

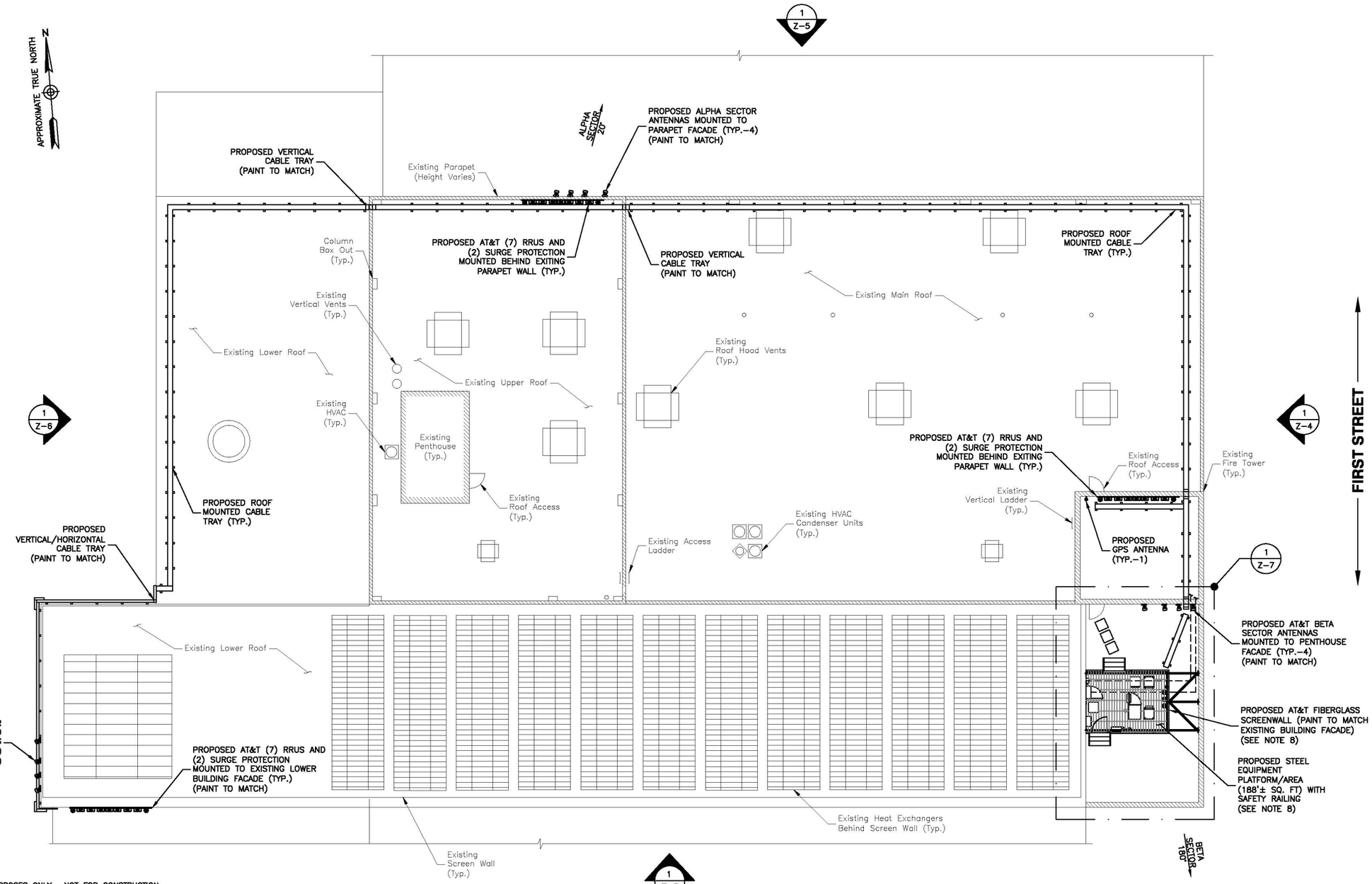
Location: 273 First Street, Cambridge, MA 02142
Client: AT&T

Site Inspection/Photos/Other Data provided by: Lui Puga

Brief Description:
1. Proposed addition of a steel platform supporting a 16' x 12'-8" screen wall and various support equipment.
2. Existing structure is a steel and concrete, power plant building.
3. Information for analysis from multiple site visits and existing building plans by Gilbert Associates Inc. dated 9/3/47.

Basic Criteria:
1. ASCE 7-05.
2. AISC 14th Ed.
3. MA State Building Code

Design/Analysis Summary:
1. Proposed equipment platform is to post down in (6) locations to existing steel beams.
2. Design and analysis based on dead, wind, and live load, design checks for normal bending stresses and shear.
3. The existing structural elements have sufficient capacity for proposed loading. See sketch for proposed location.



PROPOSED ROOF PLAN 1

SCALE: 3/64"=1' FOR 11"x17"
3/32"=1' FOR 22"x34"

0' 8' 16' 24'

NOTES:

1. FOR ZONING PURPOSES ONLY. NOT FOR CONSTRUCTION.
2. NORTH SHOWN AS APPROXIMATE.
3. SOME PROPOSED & EXISTING INFORMATION NOT SHOWN FOR CLARITY.
4. AT&T REQUIRES 200A 120/208V, 1ø POWER. MAIN POWER TO BE PROVIDED THROUGH UTILITY COMPANY ON NEW METER.
5. A 2" TELCO CONDUIT WILL BE ROUTED TO CLOSEST TELCO DEMARK LOCATION PENDING FINAL DESIGN AND LANDLORD APPROVAL.
6. GROUND TO STREET SIDE OF WATER METER OR BUILDING STEEL.
7. LOCATION OF ELECTRICAL AND TELCO ROOMS SHOWN ARE CONCEPTUAL. VERTICAL POWER, TELCO, & GROUND CONDUITS TO BE ROUTED FROM ROOF TO GROUND LEVEL.
8. ALL EQUIPMENT PLACEMENT AND LOCATIONS PENDING STRUCTURAL ANALYSIS & DESIGN.
9. AUXILIARY EQUIPMENT POWER TO BE SUPPLIED BY EXTERNAL BACK UP BATTERIES.

at&t Mobility
550 COCHITUATE ROAD
SUITES 13 & 14
FRAMINGHAM, MA 01701

SAI
27 NORTHWESTERN DRIVE
SALEM, NH 03079

CAMBRIDGE
LINSKEY WAY
SITE NO.: MA2544

ZONING DRAWINGS		
6	06/09/17	FOR SUBMITTAL
5	04/20/17	FOR SUBMITTAL
4	02/13/17	FOR SUBMITTAL
3	01/09/17	FOR SUBMITTAL
2	12/06/16	FOR SUBMITTAL
1	08/17/16	FOR SUBMITTAL
0	08/01/16	FOR SUBMITTAL

Dewberry®
Dewberry Engineers Inc.
280 SUMMER STREET
10TH FLOOR
BOSTON, MA 02210
PHONE: 617.695.3400
FAX: 617.695.3310

DRAWN BY:	MR
REVIEWED BY:	LSP
CHECKED BY:	BBR
PROJECT NUMBER:	50003936
JOB NUMBER:	50062417

SITE ADDRESS

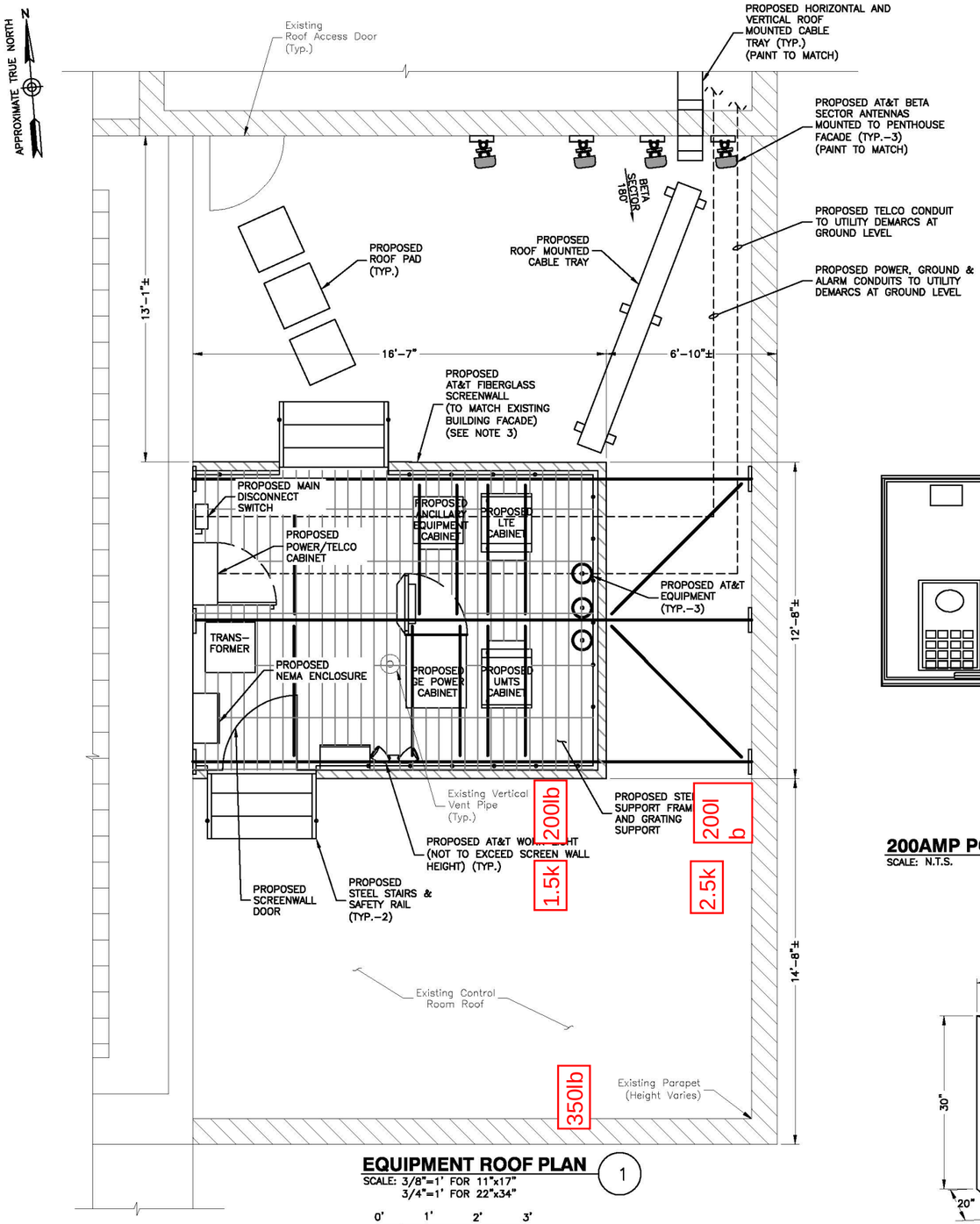
273 FIRST STREET
CAMBRIDGE, MA 02142

SHEET TITLE

PROPOSED ROOF PLAN

SHEET NUMBER

Z-2



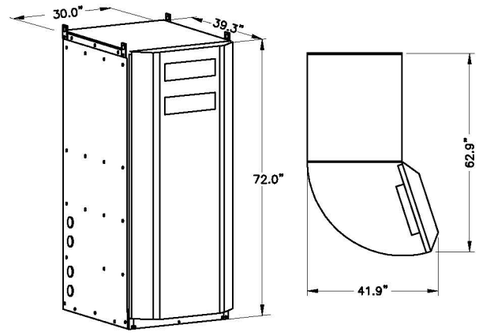
EQUIPMENT ROOF PLAN 1

SCALE: 3/8"=1' FOR 11"x17"
3/4"=1' FOR 22"x34"

0' 1' 2' 3'

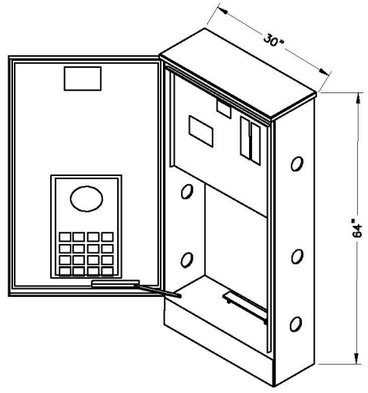
NOTES:

1. SOME PROPOSED & EXISTING INFORMATION NOT SHOWN FOR CLARITY.
2. PROPOSED EQUIPMENT SHOWN PENDING FINAL APPROVAL BY AT&T AND SAI C.M.
3. ALL EQUIPMENT PLACEMENT AND LOCATIONS PENDING STRUCTURAL ANALYSIS & DESIGN.



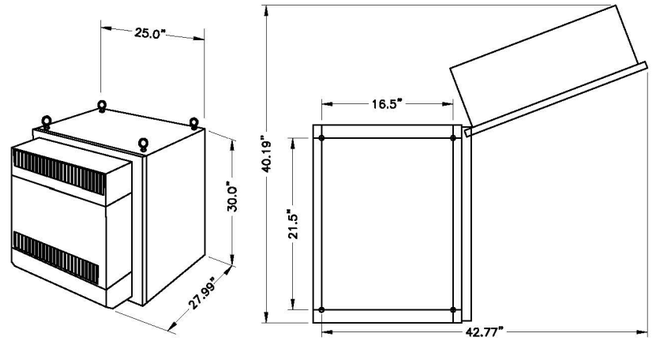
RBA72 CABINET 2

SCALE: N.T.S.



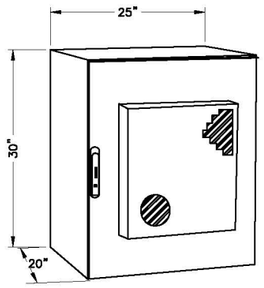
200AMP POWER/TELCO CABINET 3

SCALE: N.T.S.



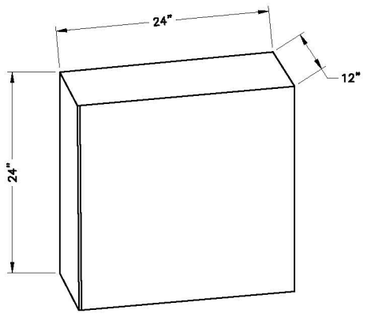
FLX16WS CABINET 4

SCALE: N.T.S.



FLEXSURE FLX16-2527 CABINET 5

SCALE: N.T.S.



NEMA 3R PANEL ENCLOSURE 6

SCALE: N.T.S.

at&t Mobility
550 COCHITUATE ROAD
SUITES 13 & 14
FRAMINGHAM, MA 01701

SAI
27 NORTHWESTERN DRIVE
SALEM, NH 03079

CAMBRIDGE
LINSKEY WAY
SITE NO.: MA2544

ZONING	DRAWINGS	
6	06/09/17	FOR SUBMITTAL
5	04/20/17	FOR SUBMITTAL
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1	08/17/16	FOR SUBMITTAL
0	08/01/16	FOR SUBMITTAL

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Dewberry Engineers Inc.
280 SUMMER STREET
10TH FLOOR
BOSTON, MA 02210
PHONE: 617.695.3400
FAX: 617.695.3310

DRAWN BY:	MR
REVIEWED BY:	LSP
CHECKED BY:	BBR
PROJECT NUMBER:	50003936
JOB NUMBER:	50062417

SITE ADDRESS

273 FIRST STREET
CAMBRIDGE, MA 02142

SHEET TITLE

EQUIPMENT ROOF PLAN & EQUIPMENT DETAILS

SHEET NUMBER

Z–7

Dewberry

Job Number	50062417
Made by:	JJC
Date:	5/10/17
Checked by:	BEA
Date:	6/8/17

Cambridge Linskey Way - Design Loads

R:\50003936\50062417-MA2544 Cambridge Linskey Way\Tech\Rev 1\50062417 - Cambridge Linskey Way Rev1.xlsx

Wind Load per ASCE 7-05

- Fiberglass Enclosure Wind Loading

Design Criteria

Height, z =	51.00 ft	*(CL of Screenwall / Enclosure)*
Risk Category =	II	*(Table 1-1, ASCE 7-05)*
Basic Wind Speed, V =	105 mph	*(780 CMR - MA Amendments to the IBC)*
K_d =	0.85	*(Table 6-4, ASCE 7-05)*
Exposure Category =	C	*(Sect. 6.5.6.3, ASCE 7-05)*
K_{zt} =	1	*(Sect. 6.5.7.2, ASCE 7-05)*
G =	0.85	*(Sect. 6.5.8.1, ASCE 7-05)*
K_z =	1.10	*(Table 6-3, ASCE 7-05)*
I =	1.00	*(Table 6-1, ASCE 7-05)*

Velocity Pressure

$q_h = 0.00256*K_z*K_{zt}*K_d*V^2I$ *(Eqn. 6-15, ASCE 7-05)*

$= 26.35$ lb/ft²

Design Wind Force

$Pw = q_zG*Cf$ *(Sect. 6.5.15, ASCE 7-05)*

$GCp = 1.9$ *(Sect. 6.5.15.1, ASCE 7-05)*

Pw= 50.1 psf

Dead Load

- STAAD to calculate self weight of enclosure & framing; assume 15 psf on all walkways for steel grating

- Platform equipment used in analysis:

(1x) Power Cabinet =	2500 lb	(2x) Cabinets =	200 lb
(1x) Telco =	350 lb	(1x) Ancillary Equip =	1500 lb

Snow Load/Live Load

- Use max. of 30 psf design live load, design snow load, or min. design snow load.
- In accordance with Chapter 7 of ASCE 7-05

$p_f = 0.7C_eC_tI_sp_g$

$= 25.20$

Use = 30 psf

where:

C_e =	0.9	p_g =	40 psf	*(780 CMR)*
C_t =	1	$p_{f\,min}$ =	30 psf	*(780 CMR)*
I_s =	1			

Drift Snow Load

- Windward snow drift at lower roof
- Drift decreases linearly from a max of "p_d" psf at the wall, to 0 psf at a distance of "w" ft from the wall

$\gamma = 0.13pg + 14$ *ASCE 7-05 Sect. 7.7.1*

$\gamma = 19.2$ pcf

$h_d = 0.75 * 1.8$ *ASCE 7-05 Fig. 7-9*

$h_d = 1.4$ ft

$w = 4*h_d$ *ASCE 7-05 Sect. 7.7.1*

$w = 5.4$ ft

$p_d = \gamma*h_d$ *ASCE 7-05 Sect. 7.7.1*

p_d = 26 psf *Max snow drift at wall*

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Job Number	50062417
Made by:	JJC
Date:	5/10/17
Checked by:	BEA
Date:	6/8/17

Cambridge Linskey Way - Building Wind Load

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Wind Load per ASCE 7-05

- Wind load on building walls transfering to existing spandrel beams

Design Criteria

Height, z =	50.00 ft	*(CL of Screenwall / Enclosure)*
Risk Category =	II	*(Table 1-1, ASCE 7-05)*
Basic Wind Speed, V =	105 mph	*(780 CMR - MA Amendments to the IBC)*
K_d =	0.85	*(Table 6-4, ASCE 7-05)*
Exposure Category =	C	*(Sect. 6.5.6.3, ASCE 7-05)*
K_{zt} =	1	*(Sect. 6.5.7.2, ASCE 7-05)*
G =	0.85	*(Sect. 6.5.8.1, ASCE 7-05)*
K_z =	1.09	*(Table 6-3, ASCE 7-05)*
I =	1.00	*(Table 6-1, ASCE 7-05)*

Velocity Pressure

$q_h = 0.00256*K_z*K_{zt}*K_d*V^2I$ *(Eqn. 6-15, ASCE 7-05)*

$= 26.24$ lb/ft²

Design Wind Force

$Pw = q_zG*Cf$ *(Sect. 6.5.15, ASCE 7-05)*

Cp =	0.8	*(Sect. 6.5.8.1, ASCE 7-05)*
G =	0.85	

Pw=	**17.8**	**psf**

Job Information

Equipment Platform Frame

	Engineer	Checked	Approved
Name:	JJC	BEA	
Date:	4/13/17	6-8-17	

Structure Type	SPACE FRAME

Number of Nodes	32	Highest Node	56
Number of Elements	45	Highest Beam	98

Number of Basic Load Cases	4
Number of Combination Load Cases	3

Included in this printout are data for:

All	The Whole Structure

Included in this printout are results for load cases:

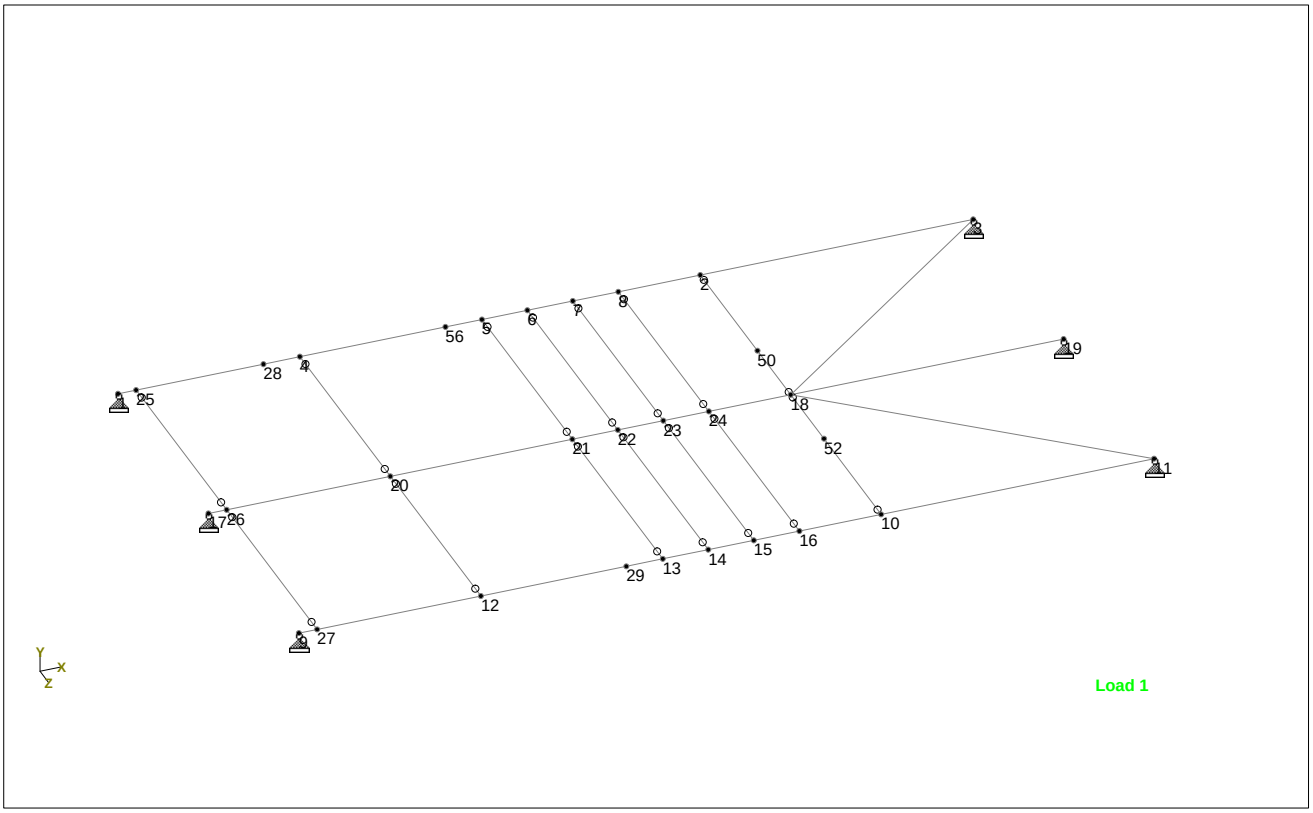
Type	L/C	Name
Primary	1	DEAD
Primary	2	LIVE
Primary	3	WIND X
Primary	4	WIND Z
Combination	5	COMBINATION LOAD CASE 5
Combination	6	COMBINATION LOAD CASE 6
Combination	7	COMBINATION LOAD CASE 7

Nodes

Node	X (ft)	Y (ft)	Z (ft)
1	0.000	0.000	0.000
2	16.000	0.000	0.000
3	23.500	0.000	0.000
4	5.000	0.000	0.000
5	10.000	0.000	0.000
6	11.250	0.000	0.000
7	12.500	0.000	0.000
8	13.750	0.000	0.000
9	0.000	0.000	12.660
10	16.000	0.000	12.660
11	23.500	0.000	12.660
12	5.000	0.000	12.660
13	10.000	0.000	12.660
14	11.250	0.000	12.660
15	12.500	0.000	12.660
16	13.750	0.000	12.660

Nodes Cont...

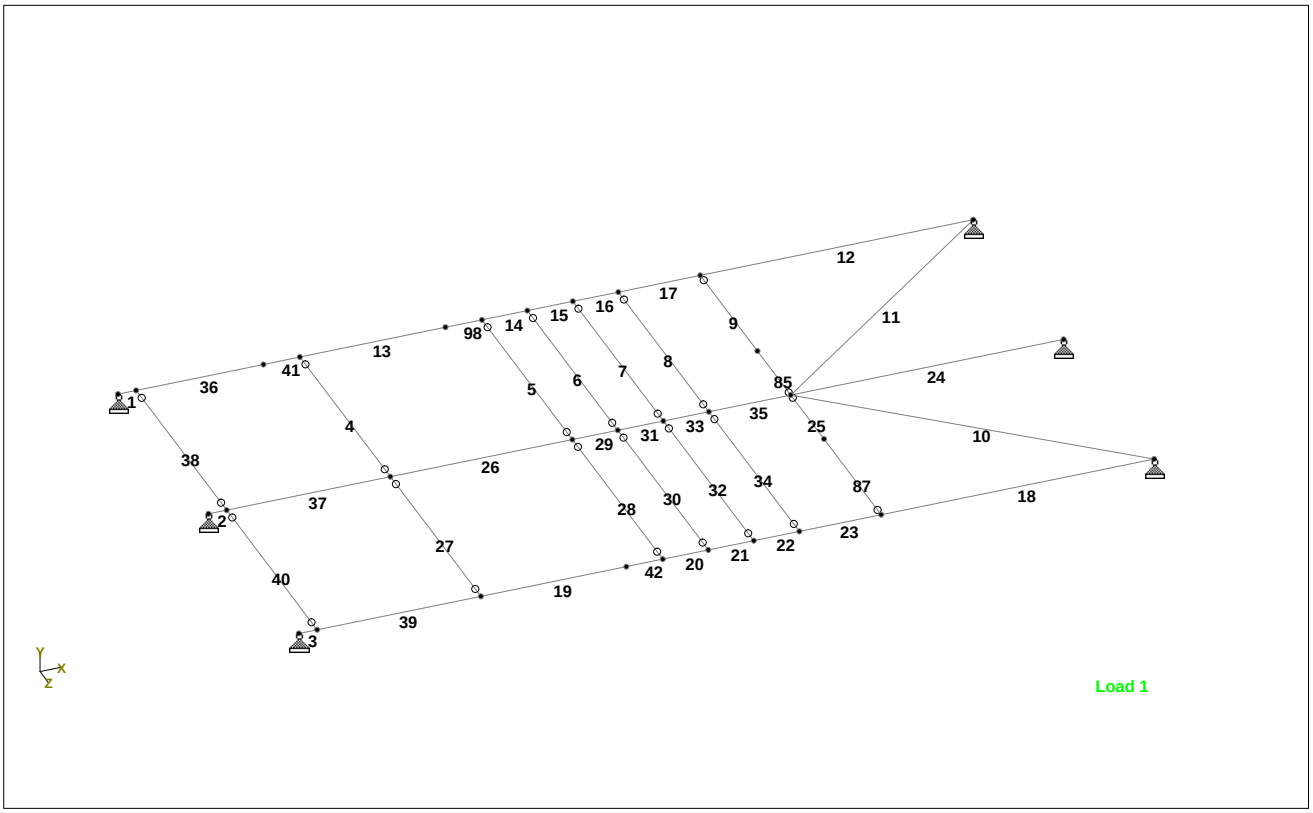
Node	X (ft)	Y (ft)	Z (ft)
17	0.000	0.000	6.330
18	16.000	0.000	6.330
19	23.500	0.000	6.330
20	5.000	0.000	6.330
21	10.000	0.000	6.330
22	11.250	0.000	6.330
23	12.500	0.000	6.330
24	13.750	0.000	6.330
25	0.500	0.000	0.000
26	0.500	0.000	6.330
27	0.500	0.000	12.660
28	4.000	0.000	0.000
29	9.000	0.000	12.660
50	16.000	0.000	4.000
52	16.000	0.000	8.660
56	9.000	0.000	0.000



Nodes

Beams

Beam	Node A	Node B	Length (ft)	Property	β (degrees)
1	1	25	0.500	1	0
2	17	26	0.500	1	0
3	9	27	0.500	1	0
4	4	20	6.330	2	0
5	5	21	6.330	2	0
6	6	22	6.330	2	0
7	7	23	6.330	2	0
8	8	24	6.330	2	0
9	2	50	4.000	1	0
10	18	11	9.814	2	0
11	18	3	9.814	2	0
12	2	3	7.500	1	0
13	4	56	4.000	1	0
14	5	6	1.250	1	0
15	6	7	1.250	1	0
16	7	8	1.250	1	0
17	8	2	2.250	1	0
18	10	11	7.500	1	0
19	12	29	4.000	1	0
20	13	14	1.250	1	0
21	14	15	1.250	1	0
22	15	16	1.250	1	0
23	16	10	2.250	1	0
24	18	19	7.500	1	0
25	18	52	2.330	1	0
26	20	21	5.000	1	0
27	20	12	6.330	2	0
28	21	13	6.330	2	0
29	21	22	1.250	1	0
30	22	14	6.330	2	0
31	22	23	1.250	1	0
32	23	15	6.330	2	0
33	23	24	1.250	1	0
34	24	16	6.330	2	0
35	24	18	2.250	1	0
36	25	28	3.500	1	0
37	26	20	4.500	1	0
38	25	26	6.330	2	0
39	27	12	4.500	1	0
40	26	27	6.330	2	0
41	28	4	1.000	1	0
42	29	13	1.000	1	0
85	50	18	2.330	1	0
87	52	10	4.000	1	0
98	56	5	1.000	1	0



Beams

Section Properties

Prop	Section	Area (in^2)	I_{yy} (in^4)	I_{zz} (in^4)	J (in^4)	Material
1	W12X26	7.650	17.300	204.000	0.285	STEEL
2	W8X13	3.840	2.700	39.600	0.076	STEEL

Materials

Mat	Name	E (kip/in^2)	ν	Density (kip/in^3)	α (/°F)
1	STEEL	29E+3	0.300	0.000	6E -6
2	STAINLESSSTEEL	28E+3	0.300	0.000	10E -6
3	ALUMINUM	10E+3	0.330	0.000	13E -6
4	FIBERGLASS	2.8E+3	0.350	0.000	4.4E -6
5	CONCRETE	3.15E+3	0.170	0.000	5E -6

Supports

Node	X (kip/in)	Y (kip/in)	Z (kip/in)	rX (kip-ft/deg)	rY (kip-ft/deg)	rZ (kip-ft/deg)
1	Fixed	Fixed	Fixed	-	-	-
3	Fixed	Fixed	Fixed	-	-	-
9	Fixed	Fixed	Fixed	-	-	-
11	Fixed	Fixed	Fixed	-	-	-
17	Fixed	Fixed	Fixed	-	-	-
19	Fixed	Fixed	Fixed	-	-	-

Releases

Beam ends not shown in this table are fixed in all directions.

Beam	Node	x	y	z	rx	ry	rz
4	4	Fixed	Fixed	Fixed	Fixed	Pin	Pin
4	20	Fixed	Fixed	Fixed	Fixed	Pin	Pin
5	5	Fixed	Fixed	Fixed	Fixed	Pin	Pin
5	21	Fixed	Fixed	Fixed	Fixed	Pin	Pin
6	6	Fixed	Fixed	Fixed	Fixed	Pin	Pin
6	22	Fixed	Fixed	Fixed	Fixed	Pin	Pin
7	7	Fixed	Fixed	Fixed	Fixed	Pin	Pin
7	23	Fixed	Fixed	Fixed	Fixed	Pin	Pin
8	8	Fixed	Fixed	Fixed	Fixed	Pin	Pin
8	24	Fixed	Fixed	Fixed	Fixed	Pin	Pin
9	2	Fixed	Fixed	Fixed	Fixed	Pin	Pin
25	18	Fixed	Fixed	Fixed	Fixed	Pin	Pin
27	20	Fixed	Fixed	Fixed	Fixed	Pin	Pin
27	12	Fixed	Fixed	Fixed	Fixed	Pin	Pin
28	21	Fixed	Fixed	Fixed	Fixed	Pin	Pin
28	13	Fixed	Fixed	Fixed	Fixed	Pin	Pin
30	22	Fixed	Fixed	Fixed	Fixed	Pin	Pin
30	14	Fixed	Fixed	Fixed	Fixed	Pin	Pin
32	23	Fixed	Fixed	Fixed	Fixed	Pin	Pin
32	15	Fixed	Fixed	Fixed	Fixed	Pin	Pin
34	24	Fixed	Fixed	Fixed	Fixed	Pin	Pin
34	16	Fixed	Fixed	Fixed	Fixed	Pin	Pin
38	25	Fixed	Fixed	Fixed	Fixed	Pin	Pin
38	26	Fixed	Fixed	Fixed	Fixed	Pin	Pin
40	26	Fixed	Fixed	Fixed	Fixed	Pin	Pin
40	27	Fixed	Fixed	Fixed	Fixed	Pin	Pin
85	18	Fixed	Fixed	Fixed	Fixed	Pin	Pin
87	10	Fixed	Fixed	Fixed	Fixed	Pin	Pin

Basic Load Cases

Number	Name
1	DEAD
2	LIVE
3	WIND X
4	WIND Z

Combination Load Cases

Comb.	Combination L/C Name	Primary	Primary L/C Name	Factor
5	COMBINATION LOAD CASE 5	1	DEAD	1.20
		3	WIND X	1.60
6	COMBINATION LOAD CASE 6	1	DEAD	1.20
		4	WIND Z	1.60
7	COMBINATION LOAD CASE 7	1	DEAD	1.20
		2	LIVE	1.60

Node Loads : 1 DEAD

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip-ft)	MY (kip-ft)	MZ (kip-ft)
2	-	-0.370	-	-	-	-
7	-	-0.169	-	-	-	-
10	-	-0.370	-	-	-	-
12	-	-0.227	-	-	-	-
15	-	-0.169	-	-	-	-
25	-	-0.199	-	-	-	-
27	-	-0.118	-	-	-	-
28	-	-0.209	-	-	-	-
29	-	-0.359	-	-	-	-
50	-	-0.344	-	-	-	-
52	-	-0.344	-	-	-	-
56	-	-0.274	-	-	-	-

Beam Loads : 1 DEAD

-Screen wall reactions for DL, WL X, and WL Z are input as point loads, see STAAD "Equipment Platform (Screen Wall)"

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
5	CON kip	GY	-0.750	2.000	-	-	-
6	CON kip	GY	-0.750	2.000	-	-	-
7	CON kip	GY	-0.100	2.000	-	-	-
8	CON kip	GY	-0.100	2.000	-	-	-
28	CON kip	GY	-1.250	2.000	-	-	-
30	CON kip	GY	-1.250	2.000	-	-	-
32	CON kip	GY	-0.100	2.000	-	-	-
34	CON kip	GY	-0.100	2.000	-	-	-
38	CON kip	GY	-0.350	-	-	-	-
40	CON kip	GY	-0.050	2.000	-	-	-
	CON kip	GY	-0.050	4.000	-	-	-

Selfweight : 1 DEAD

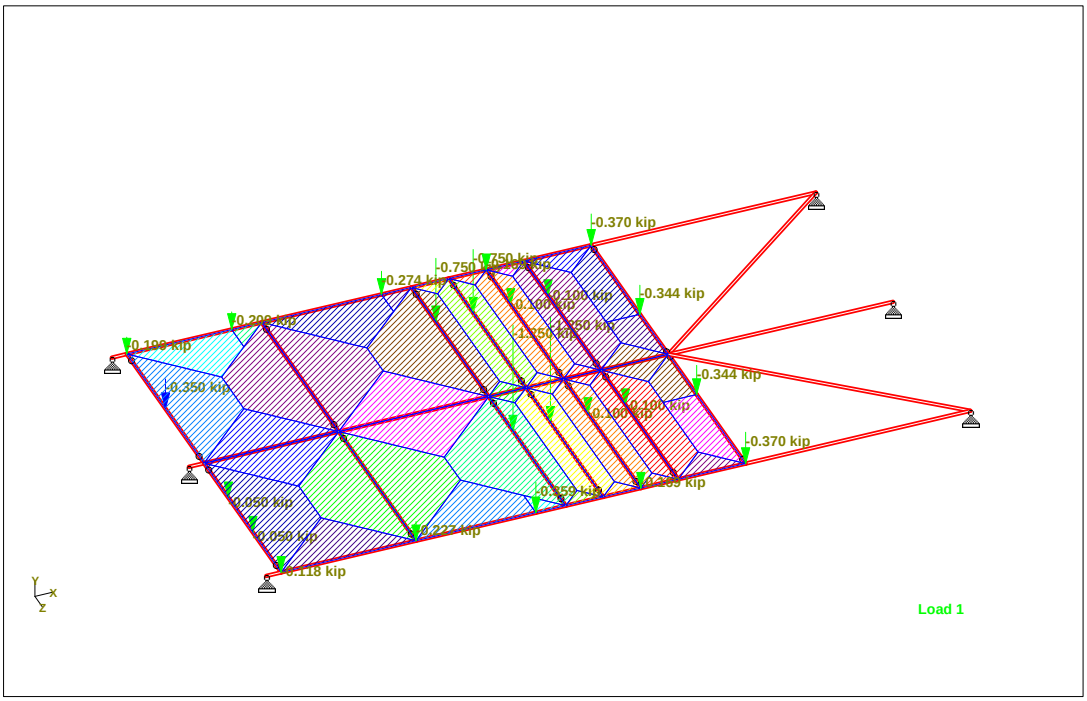
Direction	Factor
Y	-1.000

Node Loads : 3 WIND X

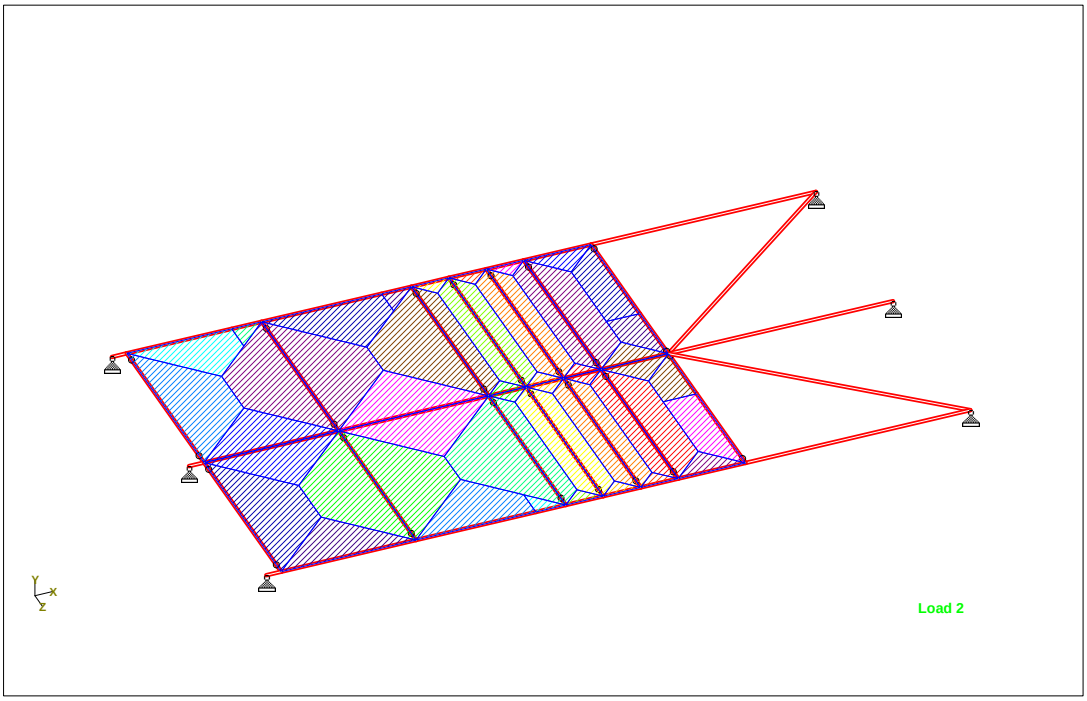
Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip-ft)	MY (kip-ft)	MZ (kip-ft)
2	0.638	-0.358	-	-	-	-
7	0.001	-0.340	-	-	-	-
10	0.593	-0.327	-	-	-	-
12	-0.040	0.250	-	-	-	-
15	-	-0.335	-	-	-	-
25	-0.156	0.130	-	-	-	-
27	-	0.087	-	-	-	-
28	0.177	-0.050	-	-	-	-
29	0.337	0.171	-	-	-	-
50	0.994	0.152	-	-	-	-
52	0.994	0.159	-	-	-	-
56	0.154	0.461	-	-	-	-

Node Loads : 4 WIND Z

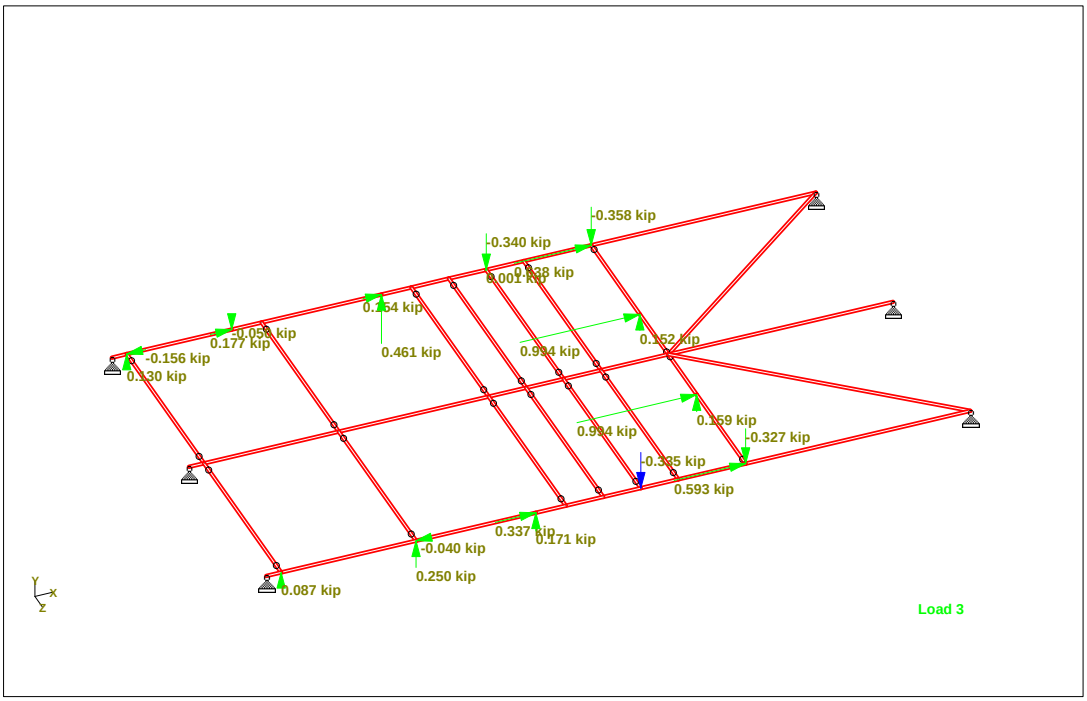
Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip-ft)	MY (kip-ft)	MZ (kip-ft)
2	-	1.123	0.710	-	-	-
7	-	0.412	-	-	-	-
10	-	-1.070	1.070	-	-	-
12	-	0.276	0.227	-	-	-
15	-	-0.500	-	-	-	-
25	-	0.026	0.186	-	-	-
27	-	-0.158	-	-	-	-
28	-	-0.047	0.208	-	-	-
29	-	0.297	0.621	-	-	-
50	-	0.297	0.582	-	-	-
52	-	-0.342	0.342	-	-	-
56	-	-0.310	0.397	-	-	-



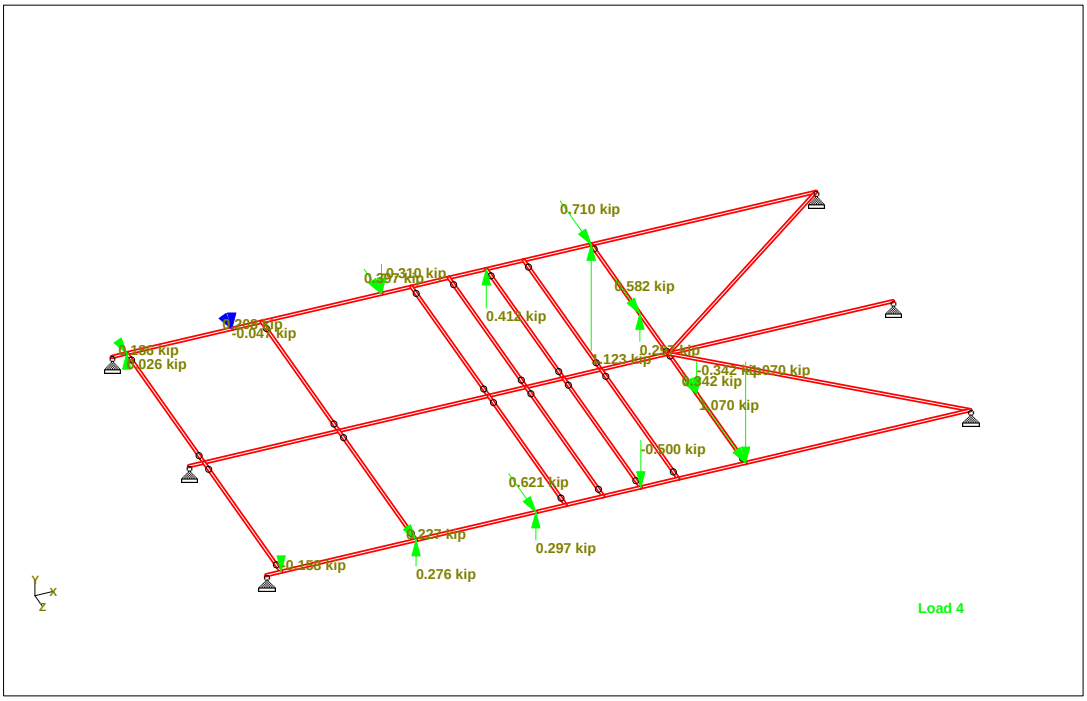
Dead Load



Live Load (30 psf)



Wind X (Load from fiberglass frame)



Wind Z (Loads from fiberglass frame)

Node Displacement Summary

	Node	L/C	X (in)	Y (in)	Z (in)	Resultant (in)	rX (rad)	rY (rad)	rZ (rad)
Max X	52	5:COMBINATIC	**0.026**	-0.335	0.000	0.336	-0.001	0.000	0.002
Min X	1	1:DEAD	**0.000**	0.000	0.000	0.000	0.000	0.000	-0.003
Max Y	7	4:WIND Z	0.000	**0.092**	0.047	0.103	0.000	0.001	0.000
Min Y	22	7:COMBINATIC	0.000	**-0.739**	0.000	0.739	0.000	0.000	-0.000
Max Z	29	6:COMBINATIC	0.000	-0.396	**0.133**	0.418	0.000	0.001	-0.002
Min Z	1	1:DEAD	0.000	0.000	**0.000**	0.000	0.000	0.000	-0.003
Max rX	50	6:COMBINATIC	0.000	-0.293	0.008	0.293	**0.003**	0.000	0.002
Min rX	52	7:COMBINATIC	0.000	-0.520	0.000	0.520	**-0.003**	0.000	0.004
Max rY	23	6:COMBINATIC	0.000	-0.464	0.074	0.470	0.000	**0.002**	0.001
Min rY	1	6:COMBINATIC	0.000	0.000	0.000	0.000	0.000	**-0.002**	-0.002
Max rZ	19	7:COMBINATIC	0.000	0.000	0.000	0.000	0.000	0.000	**0.008**
Min rZ	17	7:COMBINATIC	0.000	0.000	0.000	0.000	0.000	0.000	**-0.008**
Max Rst	22	7:COMBINATIC	0.000	-0.739	0.000	**0.739**	0.000	0.000	-0.000

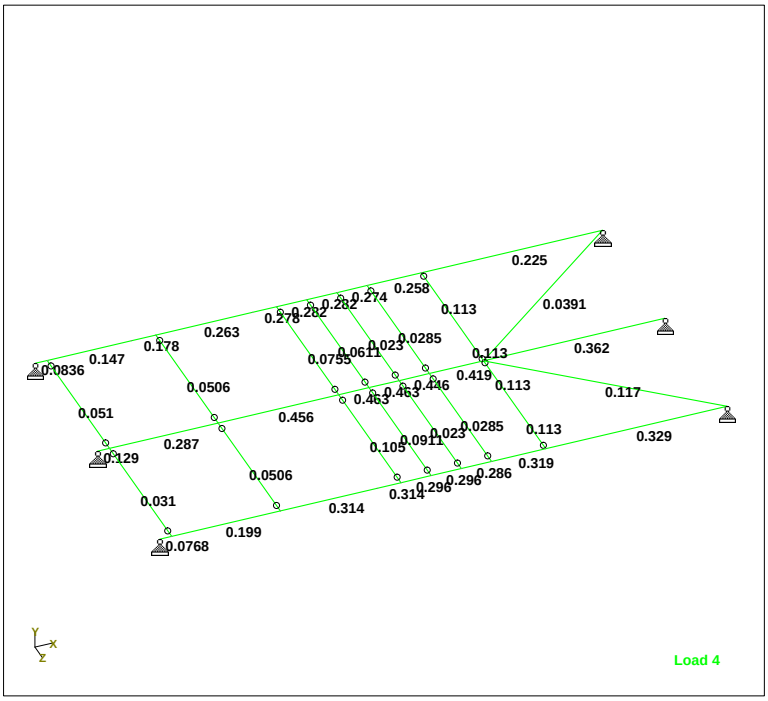
Allowable Deflection = 24' x 12in/ft / 240 = 1.2" > 0.74" --->>> Deflection O.K.

Reactions

		Horizontal	Vertical	Horizontal	Moment			
Node	L/C	FX (kip)	FY (kip)	FZ (kip)	MX (kip-ft)	MY (kip-ft)	MZ (kip-ft)	
1	1:DEAD	0.000	2.532	0.000	0.000	0.000	0.000	Post at 12' along roof beam
	2:LIVE	0.000	0.955	0.000	0.000	0.000	0.000	
	3:WIND X	-0.410	-0.115	0.000	0.000	0.000	0.000	
	4:WIND Z	0.000	-0.381	-0.255	0.000	0.000	0.000	
	5:COMBINATIC	-0.656	2.855	0.000	0.000	0.000	0.000	
	6:COMBINATIC	0.000	2.429	-0.408	0.000	0.000	0.000	
	7:COMBINATIC	0.000	4.567	0.000	0.000	0.000	0.000	
3	1:DEAD	0.000	1.893	0.000	0.000	0.000	0.000	Post at 12' along spandrel
	2:LIVE	0.000	0.517	0.000	0.000	0.000	0.000	
	3:WIND X	-0.917	0.216	0.124	0.000	0.000	0.000	
	4:WIND Z	2.326	-0.932	-1.846	0.000	0.000	0.000	
	5:COMBINATIC	-1.467	2.617	0.198	0.000	0.000	0.000	
	6:COMBINATIC	3.721	0.781	-2.953	0.000	0.000	0.000	
	7:COMBINATIC	0.000	3.099	0.000	0.000	0.000	0.000	
9	1:DEAD	0.000	2.224	0.000	0.000	0.000	0.000	Post at 1' along roof beam
	2:LIVE	0.000	0.955	0.000	0.000	0.000	0.000	
	3:WIND X	-0.482	-0.145	0.000	0.000	0.000	0.000	
	4:WIND Z	0.000	0.370	-0.267	0.000	0.000	0.000	
	5:COMBINATIC	-0.772	2.437	0.000	0.000	0.000	0.000	
	6:COMBINATIC	0.000	3.260	-0.428	0.000	0.000	0.000	
	7:COMBINATIC	0.000	4.197	0.000	0.000	0.000	0.000	
11	1:DEAD	0.000	1.786	0.000	0.000	0.000	0.000	Post at 1' along spandrel
	2:LIVE	0.000	0.517	0.000	0.000	0.000	0.000	
	3:WIND X	-0.920	0.240	-0.124	0.000	0.000	0.000	
	4:WIND Z	-2.326	0.911	-1.846	0.000	0.000	0.000	
	5:COMBINATIC	-1.472	2.528	-0.198	0.000	0.000	0.000	
	6:COMBINATIC	-3.721	3.601	-2.954	0.000	0.000	0.000	
	7:COMBINATIC	0.000	2.970	0.000	0.000	0.000	0.000	
17	1:DEAD	0.000	3.309	0.000	0.000	0.000	0.000	Post at 6' along roof beam
	2:LIVE	0.000	1.910	0.000	0.000	0.000	0.000	
	3:WIND X	-0.307	-0.063	0.000	0.000	0.000	0.000	
	4:WIND Z	0.000	0.009	-0.250	0.000	0.000	0.000	
	5:COMBINATIC	-0.492	3.871	0.000	0.000	0.000	0.000	
	6:COMBINATIC	0.000	3.985	-0.399	0.000	0.000	0.000	
	7:COMBINATIC	0.000	7.027	0.000	0.000	0.000	0.000	
19	1:DEAD	0.000	2.607	0.000	0.000	0.000	0.000	Post at 6' along spandrel
	2:LIVE	0.000	1.033	0.000	0.000	0.000	0.000	
	3:WIND X	-0.655	-0.134	0.000	0.000	0.000	0.000	
	4:WIND Z	0.000	0.019	0.121	0.000	0.000	0.000	
	5:COMBINATIC	-1.049	2.915	0.000	0.000	0.000	0.000	
	6:COMBINATIC	0.000	3.160	0.193	0.000	0.000	0.000	
	7:COMBINATIC	0.000	4.782	0.000	0.000	0.000	0.000	

Utilization Ratio

Beam	Analysis Property	Design Property	Actual Ratio	Allowable Ratio	Ratio (Act./Allow.)	Clause	L/C	Ax (in^2)	Iz (in^4)	Iy (in^4)	Ix (in^4)
1	W12X26	W12X26	0.084	1.000	0.084			7.650	204.000	17.300	0.300
2	W12X26	W12X26	0.129	1.000	0.129			7.650	204.000	17.300	0.300
3	W12X26	W12X26	0.077	1.000	0.077			7.650	204.000	17.300	0.300
4	W8X13	W8X13	0.051	1.000	0.051			3.840	39.600	2.700	0.090
5	W8X13	W8X13	0.075	1.000	0.075			3.840	39.600	2.700	0.090
6	W8X13	W8X13	0.061	1.000	0.061			3.840	39.600	2.700	0.090
7	W8X13	W8X13	0.023	1.000	0.023			3.840	39.600	2.700	0.090
8	W8X13	W8X13	0.028	1.000	0.028			3.840	39.600	2.700	0.090
9	W12X26	W12X26	0.113	1.000	0.113			7.650	204.000	17.300	0.300
10	W8X13	W8X13	0.117	1.000	0.117			3.840	39.600	2.700	0.090
11	W8X13	W8X13	0.039	1.000	0.039			3.840	39.600	2.700	0.090
12	W12X26	W12X26	0.225	1.000	0.225			7.650	204.000	17.300	0.300
13	W12X26	W12X26	0.263	1.000	0.263			7.650	204.000	17.300	0.300
14	W12X26	W12X26	0.282	1.000	0.282			7.650	204.000	17.300	0.300
15	W12X26	W12X26	0.282	1.000	0.282			7.650	204.000	17.300	0.300
16	W12X26	W12X26	0.274	1.000	0.274			7.650	204.000	17.300	0.300
17	W12X26	W12X26	0.258	1.000	0.258			7.650	204.000	17.300	0.300
18	W12X26	W12X26	0.329	1.000	0.329			7.650	204.000	17.300	0.300
19	W12X26	W12X26	0.314	1.000	0.314			7.650	204.000	17.300	0.300
20	W12X26	W12X26	0.296	1.000	0.296			7.650	204.000	17.300	0.300
21	W12X26	W12X26	0.296	1.000	0.296			7.650	204.000	17.300	0.300
22	W12X26	W12X26	0.286	1.000	0.286			7.650	204.000	17.300	0.300
23	W12X26	W12X26	0.319	1.000	0.319			7.650	204.000	17.300	0.300
24	W12X26	W12X26	0.362	1.000	0.362			7.650	204.000	17.300	0.300
25	W12X26	W12X26	0.113	1.000	0.113			7.650	204.000	17.300	0.300
26	W12X26	W12X26	0.456	1.000	0.456			7.650	204.000	17.300	0.300
27	W8X13	W8X13	0.051	1.000	0.051			3.840	39.600	2.700	0.090
28	W8X13	W8X13	0.105	1.000	0.105			3.840	39.600	2.700	0.090
29	W12X26	W12X26	0.463	1.000	0.463			7.650	204.000	17.300	0.300
30	W8X13	W8X13	0.091	1.000	0.091			3.840	39.600	2.700	0.090
31	W12X26	W12X26	0.463	1.000	0.463			7.650	204.000	17.300	0.300
32	W8X13	W8X13	0.023	1.000	0.023			3.840	39.600	2.700	0.090
33	W12X26	W12X26	0.446	1.000	0.446			7.650	204.000	17.300	0.300
34	W8X13	W8X13	0.028	1.000	0.028			3.840	39.600	2.700	0.090
35	W12X26	W12X26	0.419	1.000	0.419			7.650	204.000	17.300	0.300
36	W12X26	W12X26	0.147	1.000	0.147			7.650	204.000	17.300	0.300
37	W12X26	W12X26	0.287	1.000	0.287			7.650	204.000	17.300	0.300
38	W8X13	W8X13	0.051	1.000	0.051			3.840	39.600	2.700	0.090
39	W12X26	W12X26	0.199	1.000	0.199			7.650	204.000	17.300	0.300
40	W8X13	W8X13	0.031	1.000	0.031			3.840	39.600	2.700	0.090
41	W12X26	W12X26	0.178	1.000	0.178			7.650	204.000	17.300	0.300
42	W12X26	W12X26	0.314	1.000	0.314			7.650	204.000	17.300	0.300
85	W12X26	W12X26	0.113	1.000	0.113			7.650	204.000	17.300	0.300
87	W12X26	W12X26	0.113	1.000	0.113			7.650	204.000	17.300	0.300
98	W12X26	W12X26	0.278	1.000	0.278			7.650	204.000	17.300	0.300



Unity Check

Failed Members

There is no data of this type.

Job Information

Equipment Platform Screen Wall

	Engineer	Checked	Approved
Name:	JJC		
Date:	4/13/17		

Structure Type	SPACE FRAME

Number of Nodes	38	Highest Node	60
Number of Elements	48	Highest Beam	106
Number of Plates	7	Highest Plate	97

Number of Basic Load Cases	3
Number of Combination Load Cases	2

Included in this printout are data for:

All	The Whole Structure

Included in this printout are results for load cases:

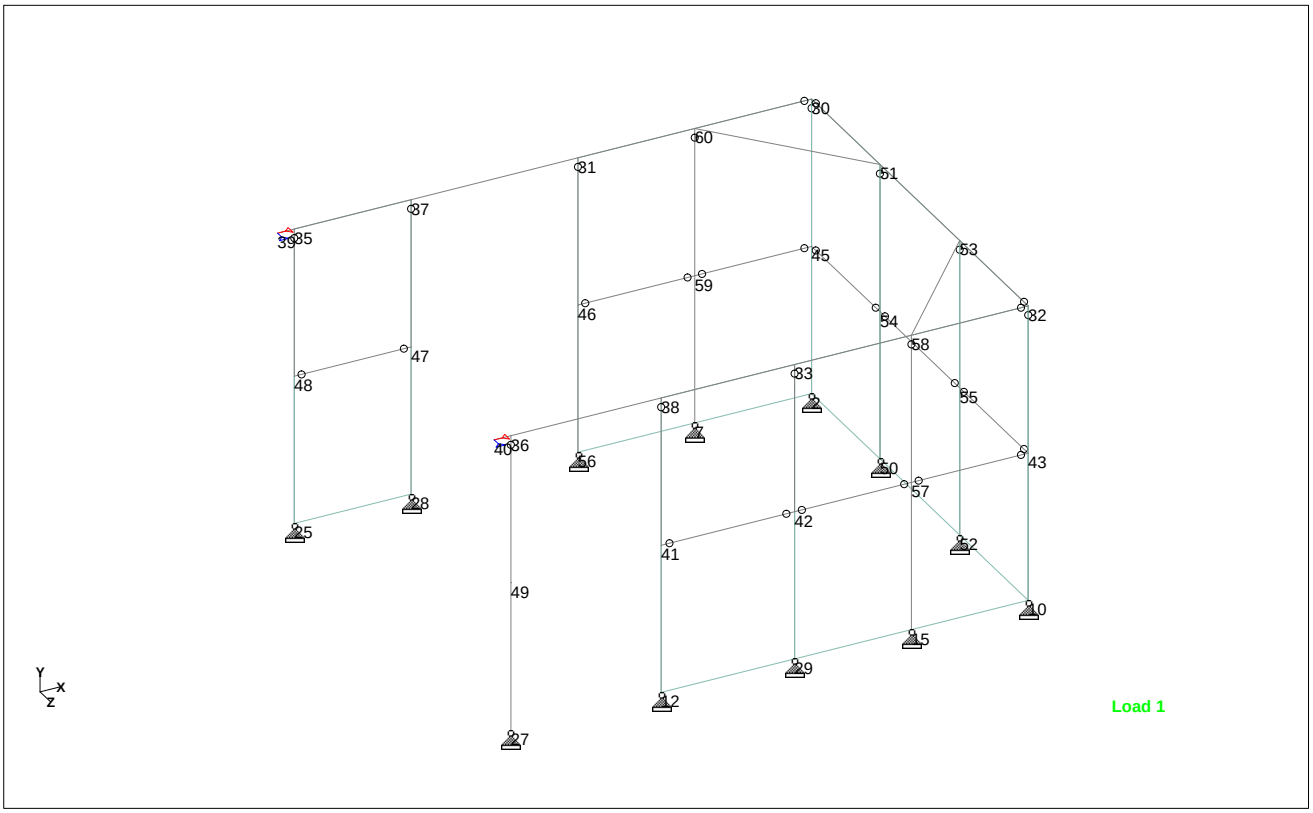
Type	L/C	Name
Primary	1	DEAD
Primary	2	WIND X
Primary	3	WIND Z
Combination	4	COMBINATION LOAD CASE 4
Combination	5	COMBINATION LOAD CASE 5

Nodes

Node	X (ft)	Y (ft)	Z (ft)
2	16.000	0.000	0.000
7	12.500	0.000	0.000
10	16.000	0.000	12.660
12	5.000	0.000	12.660
15	12.500	0.000	12.660
25	0.500	0.000	0.000
27	0.500	0.000	12.660
28	4.000	0.000	0.000
29	9.000	0.000	12.660
30	16.000	9.000	0.000
31	9.000	9.000	0.000
32	16.000	9.000	12.660
33	9.000	9.000	12.660
35	0.500	9.000	0.000
36	0.500	9.000	12.660
37	4.000	9.000	0.000
38	5.000	9.000	12.660

Nodes Cont...

Node	X (ft)	Y (ft)	Z (ft)
39	0.000	9.000	0.000
40	0.000	9.000	12.660
41	5.000	4.500	12.660
42	9.000	4.500	12.660
43	16.000	4.500	12.660
45	16.000	4.500	0.000
46	9.000	4.500	0.000
47	4.000	4.500	0.000
48	0.500	4.500	0.000
49	0.500	4.500	12.660
50	16.000	0.000	4.000
51	16.000	9.000	4.000
52	16.000	0.000	8.660
53	16.000	9.000	8.660
54	16.000	4.500	4.000
55	16.000	4.500	8.660
56	9.000	0.000	0.000
57	12.500	4.500	12.660
58	12.500	9.000	12.660
59	12.500	4.500	0.000
60	12.500	9.000	0.000



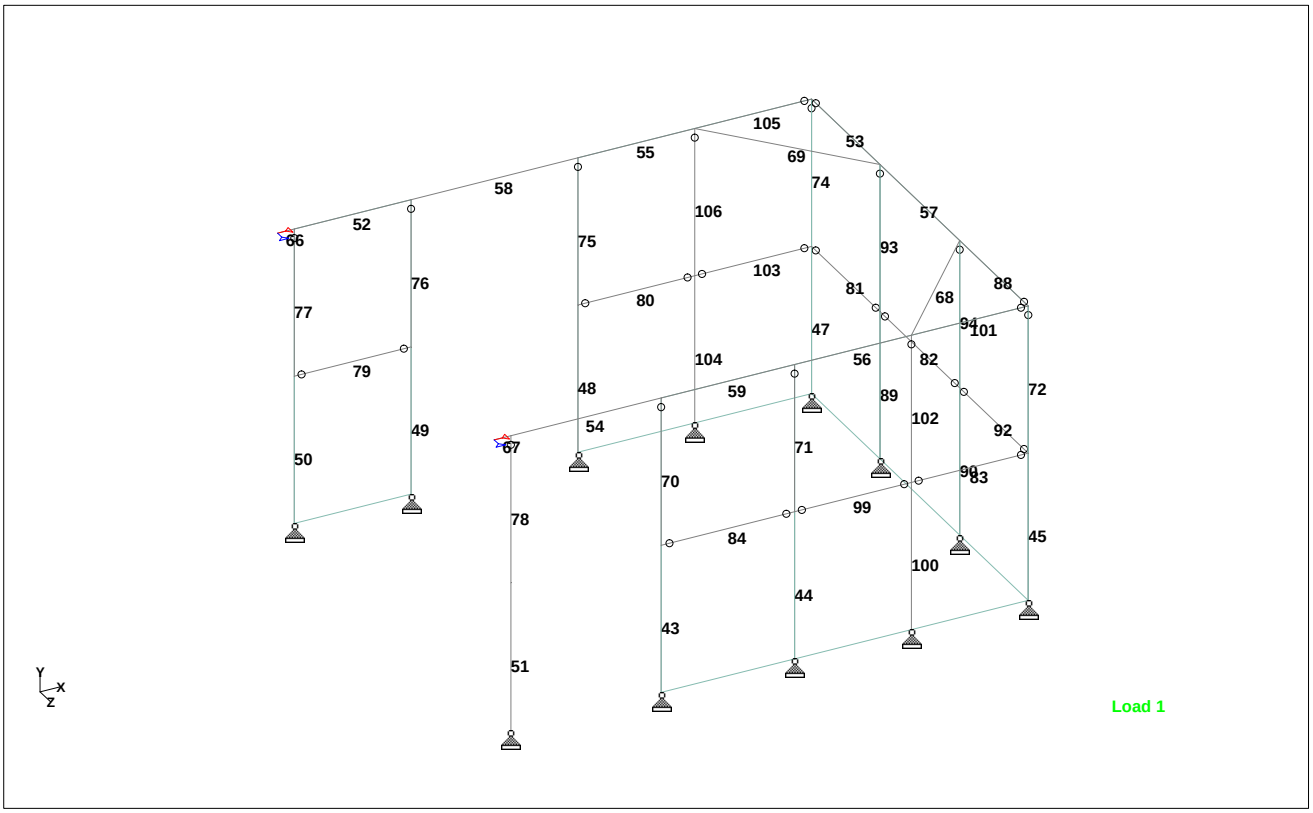
Nodes

Beams

Beam	Node A	Node B	Length (ft)	Property	β (degrees)
43	12	41	4.500	2	0
44	29	42	4.500	2	0
45	10	43	4.500	2	0
47	2	45	4.500	2	0
48	56	46	4.500	2	0
49	28	47	4.500	2	0
50	25	48	4.500	2	0
51	27	49	4.500	2	0
52	35	37	3.500	3	315
53	30	51	4.000	3	315
54	36	38	4.500	3	45
55	31	60	3.500	3	315
56	33	58	3.500	3	45
57	53	51	4.660	3	45
58	37	31	5.000	3	315
59	38	33	4.000	3	45
66	39	35	0.500	3	315
67	40	36	0.500	3	315

Beams Cont...

Beam	Node A	Node B	Length (ft)	Property	β (degrees)
68	58	53	5.315	3	45
69	60	51	5.315	3	45
70	41	38	4.500	2	0
71	42	33	4.500	2	0
72	43	32	4.500	2	0
74	45	30	4.500	2	0
75	46	31	4.500	2	0
76	47	37	4.500	2	0
77	48	35	4.500	2	0
78	49	36	4.500	2	0
79	48	47	3.500	3	315
80	46	59	3.500	3	315
81	45	54	4.000	3	315
82	55	54	4.660	3	45
83	43	57	3.500	3	315
84	42	41	4.000	3	315
88	53	32	4.000	3	315
89	50	54	4.500	2	0
90	52	55	4.500	2	0
92	55	43	4.000	3	315
93	54	51	4.500	2	0
94	55	53	4.500	2	0
99	57	42	3.500	3	315
100	15	57	4.500	2	0
101	58	32	3.500	3	45
102	57	58	4.500	2	0
103	59	45	3.500	3	315
104	7	59	4.500	2	0
105	60	30	3.500	3	315
106	59	60	4.500	2	0



Beams

Plates

Plate	Node A	Node B	Node C	Node D	Property
60	12	29	33	38	1
61	29	10	32	33	1
64	2	56	31	30	1
65	28	25	35	37	1
95	10	52	53	32	1
96	52	50	51	53	1
97	50	2	30	51	1

Section Properties

Prop	Section	Area (in^2)	I_{yy} (in^4)	I_{zz} (in^4)	J (in^4)	Material
2	HSST4X4X0.25	3.370	7.800	7.800	12.455	STEEL
3	L40404	1.938	4.853	1.225	0.041	STEEL

Plate Thickness

Prop	Node A (in)	Node B (in)	Node C (in)	Node D (in)	Material
1	0.499	0.499	0.499	0.499	FIBERGLASS

Materials

Mat	Name	E (kip/in^2)	ν	Density (kip/in^3)	α (/°F)
1	STEEL	29E+3	0.300	0.000	6E -6
2	STAINLESSSTEEL	28E+3	0.300	0.000	10E -6
3	ALUMINUM	10E+3	0.330	0.000	13E -6
4	FIBERGLASS	2.8E+3	0.350	0.000	4.4E -6
5	CONCRETE	3.15E+3	0.170	0.000	5E -6

Supports

Node	X (kip/in)	Y (kip/in)	Z (kip/in)	rX (kip-ft/deg)	rY (kip-ft/deg)	rZ (kip-ft/deg)
2	Fixed	Fixed	Fixed	-	-	-
7	Fixed	Fixed	Fixed	-	-	-
10	Fixed	Fixed	Fixed	-	-	-
12	Fixed	Fixed	Fixed	-	-	-
15	Fixed	Fixed	Fixed	-	-	-
25	Fixed	Fixed	Fixed	-	-	-
27	Fixed	Fixed	Fixed	-	-	-
28	Fixed	Fixed	Fixed	-	-	-
29	Fixed	Fixed	Fixed	-	-	-
39	Fixed	-	Fixed	-	-	-
40	Fixed	-	Fixed	-	-	-
50	Fixed	Fixed	Fixed	-	-	-
52	Fixed	Fixed	Fixed	-	-	-
56	Fixed	Fixed	Fixed	-	-	-

Releases

Beam ends not shown in this table are fixed in all directions.

Beam	Node	x	y	z	rx	ry	rz
53	30	Fixed	Fixed	Fixed	Fixed	Pin	Pin
70	38	Fixed	Fixed	Fixed	Fixed	Pin	Pin
71	33	Fixed	Fixed	Fixed	Fixed	Pin	Pin
72	32	Fixed	Fixed	Fixed	Fixed	Pin	Pin
74	30	Fixed	Fixed	Fixed	Fixed	Pin	Pin
75	31	Fixed	Fixed	Fixed	Fixed	Pin	Pin
76	37	Fixed	Fixed	Fixed	Fixed	Pin	Pin
77	35	Fixed	Fixed	Fixed	Fixed	Pin	Pin
78	36	Fixed	Fixed	Fixed	Fixed	Pin	Pin
79	48	Fixed	Fixed	Fixed	Fixed	Pin	Pin
79	47	Fixed	Fixed	Fixed	Fixed	Pin	Pin
80	46	Fixed	Fixed	Fixed	Fixed	Pin	Pin
80	59	Fixed	Fixed	Fixed	Fixed	Pin	Pin
81	45	Fixed	Fixed	Fixed	Fixed	Pin	Pin
81	54	Fixed	Fixed	Fixed	Fixed	Pin	Pin
82	55	Fixed	Fixed	Fixed	Fixed	Pin	Pin
82	54	Fixed	Fixed	Fixed	Fixed	Pin	Pin
83	43	Fixed	Fixed	Fixed	Fixed	Pin	Pin
83	57	Fixed	Fixed	Fixed	Fixed	Pin	Pin
84	42	Fixed	Fixed	Fixed	Fixed	Pin	Pin
84	41	Fixed	Fixed	Fixed	Fixed	Pin	Pin
88	32	Fixed	Fixed	Fixed	Fixed	Pin	Pin
92	55	Fixed	Fixed	Fixed	Fixed	Pin	Pin
92	43	Fixed	Fixed	Fixed	Fixed	Pin	Pin
93	51	Fixed	Fixed	Fixed	Fixed	Pin	Pin
94	53	Fixed	Fixed	Fixed	Fixed	Pin	Pin
99	57	Fixed	Fixed	Fixed	Fixed	Pin	Pin
99	42	Fixed	Fixed	Fixed	Fixed	Pin	Pin
101	32	Fixed	Fixed	Fixed	Fixed	Pin	Pin
102	58	Fixed	Fixed	Fixed	Fixed	Pin	Pin
103	59	Fixed	Fixed	Fixed	Fixed	Pin	Pin
103	45	Fixed	Fixed	Fixed	Fixed	Pin	Pin
105	30	Fixed	Fixed	Fixed	Fixed	Pin	Pin
106	60	Fixed	Fixed	Fixed	Fixed	Pin	Pin

Basic Load Cases

Number	Name
1	DEAD
2	WIND X
3	WIND Z

Combination Load Cases

Comb.	Combination L/C Name	Primary	Primary L/C Name	Factor
4	COMBINATION LOAD CASE 4	1	DEAD	1.20
		2	WIND X	1.60
5	COMBINATION LOAD CASE 5	1	DEAD	1.20
		3	WIND Z	1.60

Selfweight : 1 DEAD

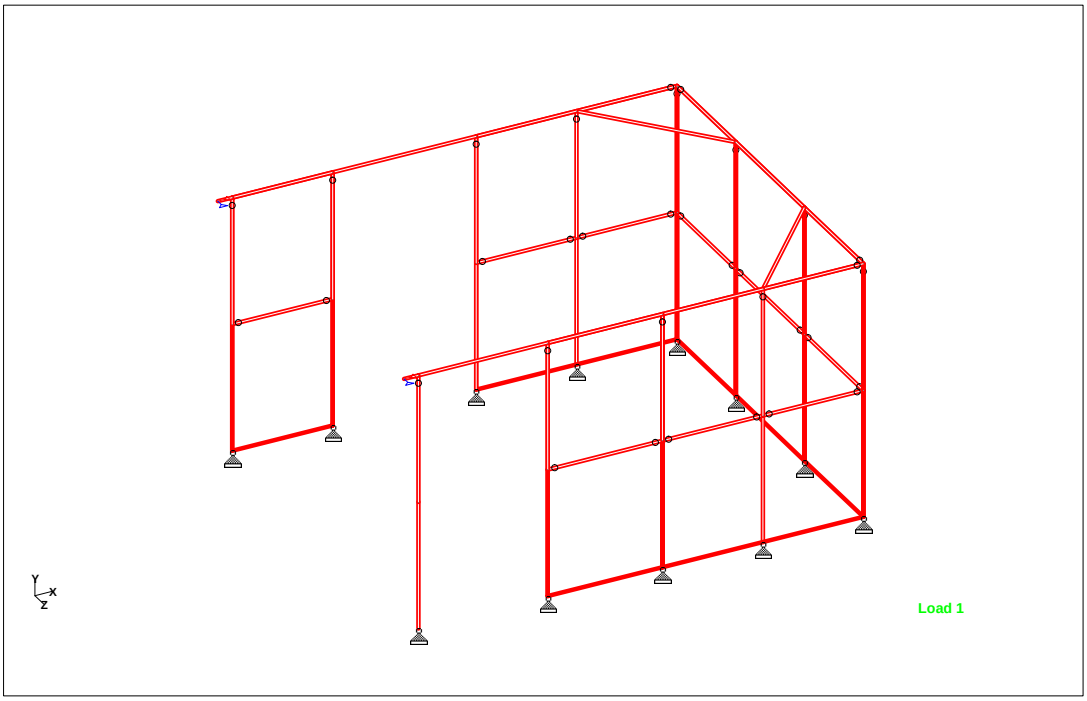
Direction	Factor
Y	-1.000

Plate Loads : 2 WIND X

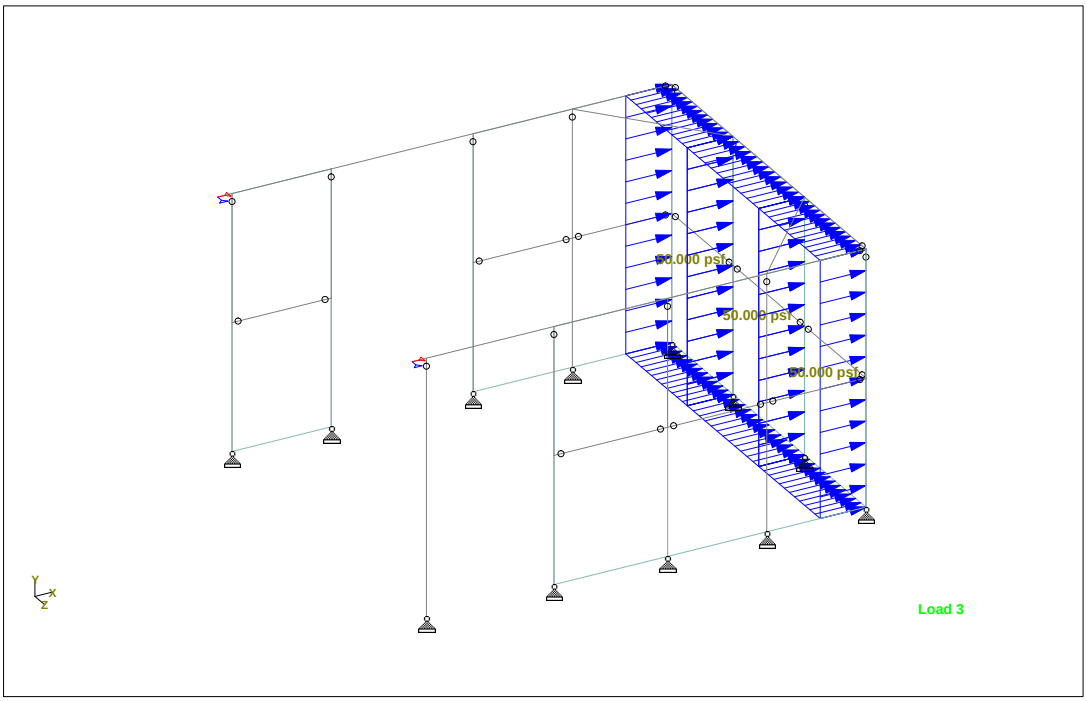
Plate	Type	Direction	Fa	Fb	X1 (ft)	Y1 (ft)	X2 (ft)	Y2 (ft)
95	PRE psf	GX	50.000	-	-	-	-	-
96	PRE psf	GX	50.000	-	-	-	-	-
97	PRE psf	GX	50.000	-	-	-	-	-

Plate Loads : 3 WIND Z

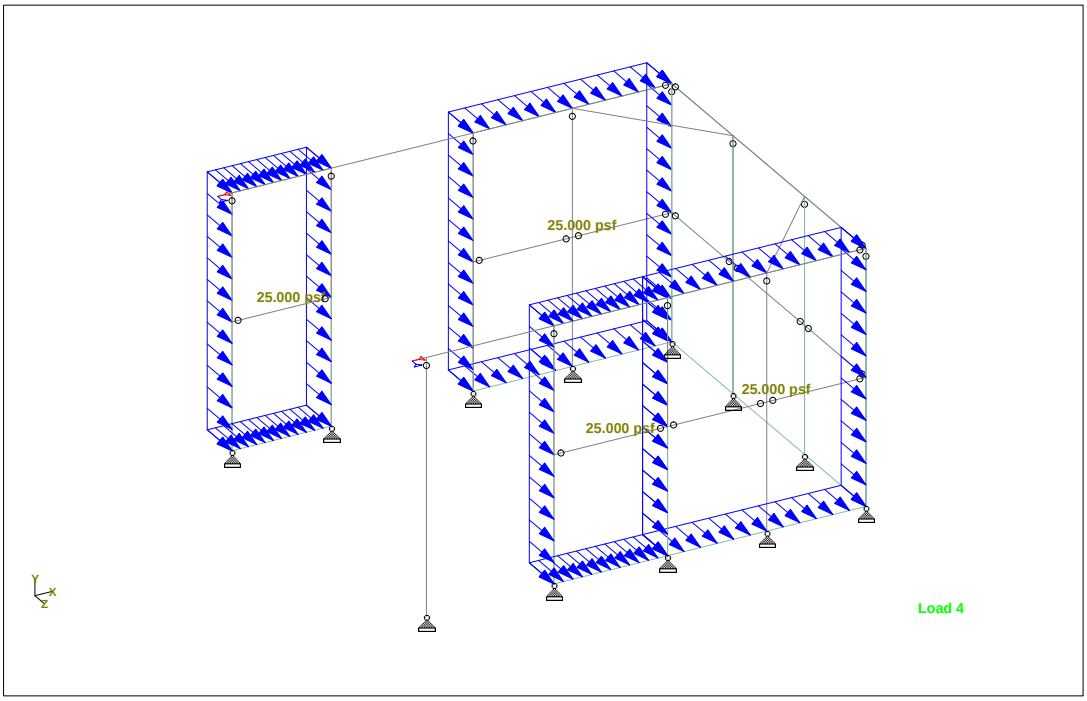
Plate	Type	Direction	Fa	Fb	X1 (ft)	Y1 (ft)	X2 (ft)	Y2 (ft)
60	PRE psf	GZ	25.000	-	-	-	-	-
61	PRE psf	GZ	25.000	-	-	-	-	-
64	PRE psf	GZ	25.000	-	-	-	-	-
65	PRE psf	GZ	25.000	-	-	-	-	-



Dead Load



Wind X



Wind Z

Node Displacement Summary

	Node	L/C	X (in)	Y (in)	Z (in)	Resultant (in)	rX (rad)	rY (rad)	rZ (rad)
Max X	53	4:COMBINATIC	**0.814**	0.000	0.000	0.814	-0.000	-0.010	-0.008
Min X	53	5:COMBINATIC	**-0.227**	-0.001	0.010	0.227	0.000	0.000	0.004
Max Y	40	4:COMBINATIC	0.000	**0.001**	0.000	0.001	-0.012	0.013	-0.000
Min Y	40	5:COMBINATIC	0.000	**-0.002**	0.000	0.002	0.006	-0.013	0.000
Max Z	31	4:COMBINATIC	0.003	-0.000	**0.934**	0.934	0.010	-0.000	0.000
Min Z	33	4:COMBINATIC	0.003	-0.000	**-0.941**	0.941	-0.009	0.000	0.000
Max rX	35	4:COMBINATIC	0.000	0.000	0.076	0.076	**0.010**	-0.013	-0.000
Min rX	36	4:COMBINATIC	0.000	0.000	-0.080	0.080	**-0.012**	0.013	-0.000
Max rY	40	4:COMBINATIC	0.000	0.001	0.000	0.001	-0.012	**0.013**	-0.000
Min rY	40	5:COMBINATIC	0.000	-0.002	0.000	0.002	0.006	**-0.013**	0.000
Max rZ	53	5:COMBINATIC	-0.227	-0.001	0.010	0.227	0.000	0.000	**0.004**
Min rZ	51	4:COMBINATIC	0.813	0.000	-0.000	0.813	-0.000	0.010	**-0.008**
Max Rst	33	4:COMBINATIC	0.003	-0.000	-0.941	**0.941**	-0.009	0.000	0.000

Allowable Deflection = L/240 = 10' x 12in/ft /240 = 1.2" > 0.94" -->> Deflection O.K.

Reactions

		Horizontal	Vertical	Horizontal	Moment		
Node	L/C	FX (kip)	FY (kip)	FZ (kip)	MX (kip-ft)	MY (kip-ft)	MZ (kip-ft)
2	1:DEAD	-0.051	0.370	0.021	0.000	0.000	0.000
	2:WIND X	-0.638	0.358	-0.049	0.000	0.000	0.000
	3:WIND Z	0.040	-1.123	-0.710	0.000	0.000	0.000
	4:COMBINATIC	-1.082	1.017	-0.053	0.000	0.000	0.000
	5:COMBINATIC	0.002	-1.354	-1.110	0.000	0.000	0.000
7	1:DEAD	0.000	0.169	-0.000	0.000	0.000	0.000
	2:WIND X	0.001	0.340	-0.000	0.000	0.000	0.000
	3:WIND Z	0.000	-0.412	0.000	0.000	0.000	0.000
	4:COMBINATIC	0.002	0.746	-0.000	0.000	0.000	0.000
	5:COMBINATIC	0.000	-0.456	0.000	0.000	0.000	0.000
10	1:DEAD	-0.048	0.370	-0.021	0.000	0.000	0.000
	2:WIND X	-0.593	0.327	0.052	0.000	0.000	0.000
	3:WIND Z	-0.031	1.073	-0.704	0.000	0.000	0.000
	4:COMBINATIC	-1.008	0.967	0.058	0.000	0.000	0.000
	5:COMBINATIC	-0.107	2.160	-1.152	0.000	0.000	0.000
12	1:DEAD	0.017	0.227	0.000	0.000	0.000	0.000
	2:WIND X	0.040	-0.250	-0.010	0.000	0.000	0.000
	3:WIND Z	-0.021	-0.276	-0.227	0.000	0.000	0.000
	4:COMBINATIC	0.084	-0.128	-0.015	0.000	0.000	0.000
	5:COMBINATIC	-0.013	-0.169	-0.364	0.000	0.000	0.000
15	1:DEAD	0.000	0.169	0.000	0.000	0.000	0.000
	2:WIND X	0.002	0.335	0.000	0.000	0.000	0.000
	3:WIND Z	0.000	0.504	0.000	0.000	0.000	0.000
	4:COMBINATIC	0.003	0.738	0.000	0.000	0.000	0.000
	5:COMBINATIC	0.000	1.010	0.000	0.000	0.000	0.000

-Screen wall reactions for DL, WL X, and WL Z are input as point loads into STAAD "Equipment Platform (Frame)"

Reactions Cont...

		Horizontal	Vertical	Horizontal	Moment		
Node	L/C	FX (kip)	FY (kip)	FZ (kip)	MX (kip-ft)	MY (kip-ft)	MZ (kip-ft)
25	1:DEAD	0.013	0.199	0.000	0.000	0.000	0.000
	2:WIND X	0.156	-0.130	0.026	0.000	0.000	0.000
	3:WIND Z	-0.067	-0.026	-0.186	0.000	0.000	0.000
	4:COMBINATIC	0.266	0.030	0.041	0.000	0.000	0.000
	5:COMBINATIC	-0.092	0.197	-0.298	0.000	0.000	0.000
27	1:DEAD	0.000	0.118	-0.000	0.000	0.000	0.000
	2:WIND X	0.000	-0.087	0.000	0.000	0.000	0.000
	3:WIND Z	0.000	0.158	0.000	0.000	0.000	0.000
	4:COMBINATIC	0.000	0.002	0.000	0.000	0.000	0.000
	5:COMBINATIC	0.000	0.395	-0.000	0.000	0.000	0.000
28	1:DEAD	-0.011	0.209	-0.000	0.000	0.000	0.000
	2:WIND X	-0.177	0.051	-0.025	0.000	0.000	0.000
	3:WIND Z	0.102	0.047	-0.208	0.000	0.000	0.000
	4:COMBINATIC	-0.297	0.332	-0.040	0.000	0.000	0.000
	5:COMBINATIC	0.150	0.325	-0.332	0.000	0.000	0.000
29	1:DEAD	0.028	0.359	-0.000	0.000	0.000	0.000
	2:WIND X	-0.337	-0.171	0.011	0.000	0.000	0.000
	3:WIND Z	-0.049	-0.297	-0.621	0.000	0.000	0.000
	4:COMBINATIC	-0.507	0.158	0.017	0.000	0.000	0.000
	5:COMBINATIC	-0.046	-0.044	-0.994	0.000	0.000	0.000
39	1:DEAD	0.002	0.000	-0.000	0.000	0.000	0.000
	2:WIND X	-1.045	0.000	-0.134	0.000	0.000	0.000
	3:WIND Z	0.347	0.000	-0.356	0.000	0.000	0.000
	4:COMBINATIC	-1.669	0.000	-0.214	0.000	0.000	0.000
	5:COMBINATIC	0.557	0.000	-0.569	0.000	0.000	0.000
40	1:DEAD	0.004	0.000	-0.000	0.000	0.000	0.000
	2:WIND X	-0.963	0.000	0.128	0.000	0.000	0.000
	3:WIND Z	-0.343	0.000	-0.231	0.000	0.000	0.000
	4:COMBINATIC	-1.536	0.000	0.205	0.000	0.000	0.000
	5:COMBINATIC	-0.544	0.000	-0.369	0.000	0.000	0.000
50	1:DEAD	0.000	0.344	0.009	0.000	0.000	0.000
	2:WIND X	-0.994	-0.152	0.030	0.000	0.000	0.000
	3:WIND Z	0.001	-0.297	-0.582	0.000	0.000	0.000
	4:COMBINATIC	-1.590	0.170	0.059	0.000	0.000	0.000
	5:COMBINATIC	0.002	-0.063	-0.921	0.000	0.000	0.000
52	1:DEAD	0.000	0.344	-0.009	0.000	0.000	0.000
	2:WIND X	-0.994	-0.159	-0.028	0.000	0.000	0.000
	3:WIND Z	0.005	0.342	-0.616	0.000	0.000	0.000
	4:COMBINATIC	-1.591	0.158	-0.056	0.000	0.000	0.000
	5:COMBINATIC	0.007	0.961	-0.997	0.000	0.000	0.000
56	1:DEAD	0.047	0.274	-0.000	0.000	0.000	0.000
	2:WIND X	-0.154	-0.461	-0.002	0.000	0.000	0.000
	3:WIND Z	0.017	0.307	-0.397	0.000	0.000	0.000
	4:COMBINATIC	-0.191	-0.409	-0.003	0.000	0.000	0.000

Reactions Cont...

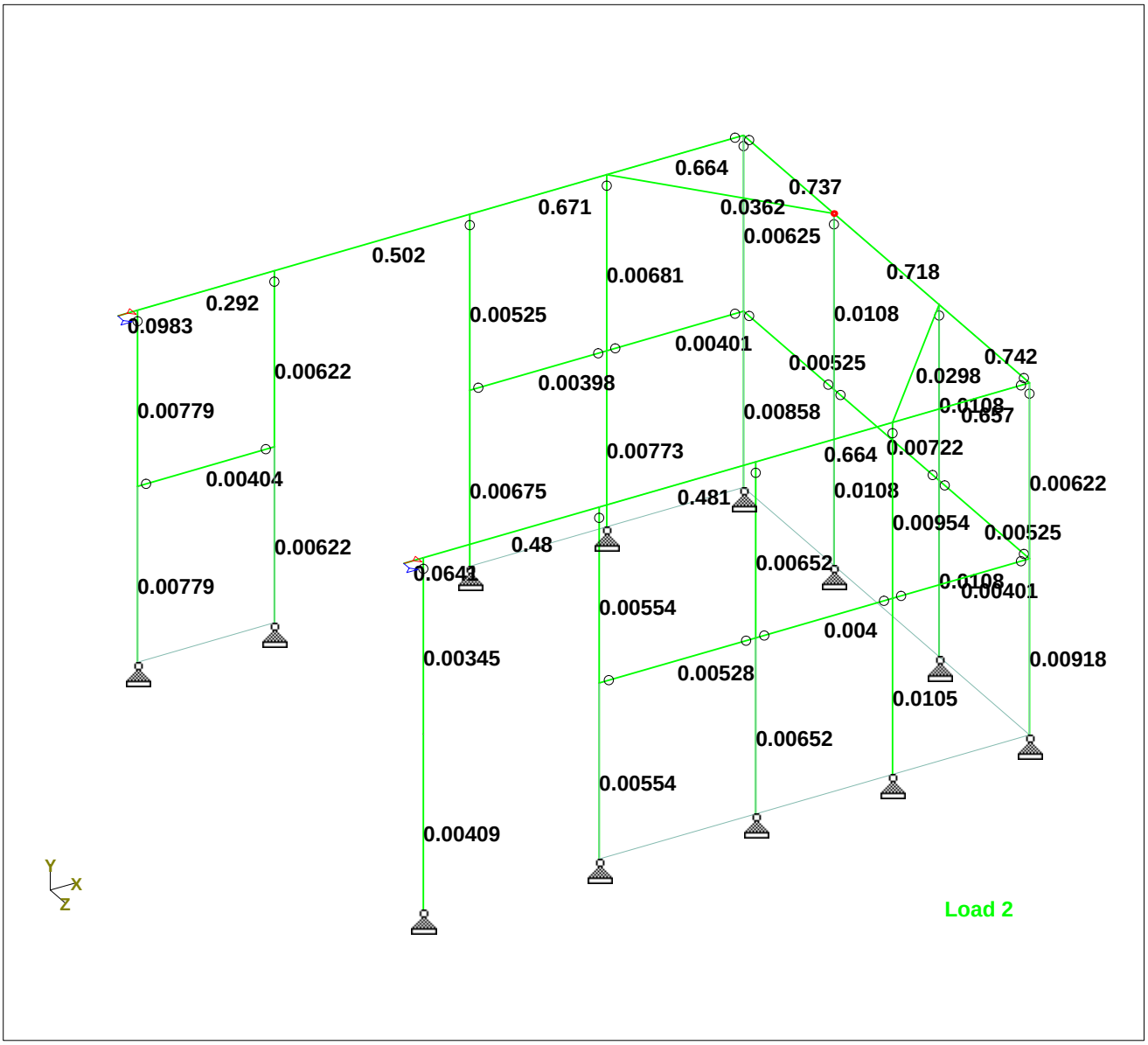
Node	L/C	Horizontal FX (kip)	Vertical FY (kip)	Horizontal FZ (kip)	Moment MX (kip-ft)	Moment MY (kip-ft)	Moment MZ (kip-ft)
	5:COMBINATIC	0.083	0.819	-0.635	0.000	0.000	0.000

Utilization Ratio

Beam	Analysis Property	Design Property	Actual Ratio	Allowable Ratio	Ratio (Act./Allow.)	Clause	L/C	Ax (in^2)	Iz (in^4)	Iy (in^4)	Ix (in^4)
43	HSST4X4X0	HSST4X4X0	0.006	1.000	0.006			3.370	7.800	7.800	12.800
44	HSST4X4X0	HSST4X4X0	0.007	1.000	0.007			3.370	7.800	7.800	12.800
45	HSST4X4X0	HSST4X4X0	0.009	1.000	0.009			3.370	7.800	7.800	12.800
47	HSST4X4X0	HSST4X4X0	0.009	1.000	0.009			3.370	7.800	7.800	12.800
48	HSST4X4X0	HSST4X4X0	0.007	1.000	0.007			3.370	7.800	7.800	12.800
49	HSST4X4X0	HSST4X4X0	0.006	1.000	0.006			3.370	7.800	7.800	12.800
50	HSST4X4X0	HSST4X4X0	0.008	1.000	0.008			3.370	7.800	7.800	12.800
51	HSST4X4X0	HSST4X4X0	0.004	1.000	0.004			3.370	7.800	7.800	12.800
52	L40404	L40404	0.292	1.000	0.292			1.938	1.225	4.854	0.040
53	L40404	L40404	0.737	1.000	0.737			1.938	1.225	4.854	0.040
54	L40404	L40404	0.480	1.000	0.480			1.938	1.225	4.854	0.040
55	L40404	L40404	0.671	1.000	0.671			1.938	1.225	4.854	0.040
56	L40404	L40404	0.664	1.000	0.664			1.938	1.225	4.854	0.040
57	L40404	L40404	0.718	1.000	0.718			1.938	1.225	4.854	0.040
58	L40404	L40404	0.502	1.000	0.502			1.938	1.225	4.854	0.040
59	L40404	L40404	0.481	1.000	0.481			1.938	1.225	4.854	0.040
66	L40404	L40404	0.098	1.000	0.098			1.938	1.225	4.854	0.040
67	L40404	L40404	0.064	1.000	0.064			1.938	1.225	4.854	0.040
68	L40404	L40404	0.030	1.000	0.030			1.938	1.225	4.854	0.040
69	L40404	L40404	0.036	1.000	0.036			1.938	1.225	4.854	0.040
70	HSST4X4X0	HSST4X4X0	0.006	1.000	0.006			3.370	7.800	7.800	12.800
71	HSST4X4X0	HSST4X4X0	0.007	1.000	0.007			3.370	7.800	7.800	12.800
72	HSST4X4X0	HSST4X4X0	0.006	1.000	0.006			3.370	7.800	7.800	12.800
74	HSST4X4X0	HSST4X4X0	0.006	1.000	0.006			3.370	7.800	7.800	12.800
75	HSST4X4X0	HSST4X4X0	0.005	1.000	0.005			3.370	7.800	7.800	12.800
76	HSST4X4X0	HSST4X4X0	0.006	1.000	0.006			3.370	7.800	7.800	12.800
77	HSST4X4X0	HSST4X4X0	0.008	1.000	0.008			3.370	7.800	7.800	12.800
78	HSST4X4X0	HSST4X4X0	0.003	1.000	0.003			3.370	7.800	7.800	12.800
79	L40404	L40404	0.004	1.000	0.004			1.938	1.225	4.854	0.040
80	L40404	L40404	0.004	1.000	0.004			1.938	1.225	4.854	0.040
81	L40404	L40404	0.005	1.000	0.005			1.938	1.225	4.854	0.040
82	L40404	L40404	0.007	1.000	0.007			1.938	1.225	4.854	0.040
83	L40404	L40404	0.004	1.000	0.004			1.938	1.225	4.854	0.040
84	L40404	L40404	0.005	1.000	0.005			1.938	1.225	4.854	0.040
88	L40404	L40404	0.742	1.000	0.742			1.938	1.225	4.854	0.040
89	HSST4X4X0	HSST4X4X0	0.011	1.000	0.011			3.370	7.800	7.800	12.800
90	HSST4X4X0	HSST4X4X0	0.011	1.000	0.011			3.370	7.800	7.800	12.800

Utilization Ratio Cont...

Beam	Analysis Property	Design Property	Actual Ratio	Allowable Ratio	Ratio (Act./Allow.)	Clause	L/C	Ax (in^2)	Iz (in^4)	Iy (in^4)	Ix (in^4)
92	L40404	L40404	0.005	1.000	0.005			1.938	1.225	4.854	0.040
93	HSST4X4X0	HSST4X4X0	0.011	1.000	0.011			3.370	7.800	7.800	12.800
94	HSST4X4X0	HSST4X4X0	0.011	1.000	0.011			3.370	7.800	7.800	12.800
99	L40404	L40404	0.004	1.000	0.004			1.938	1.225	4.854	0.040
100	HSST4X4X0	HSST4X4X0	0.010	1.000	0.010			3.370	7.800	7.800	12.800
101	L40404	L40404	0.657	1.000	0.657			1.938	1.225	4.854	0.040
102	HSST4X4X0	HSST4X4X0	0.010	1.000	0.010			3.370	7.800	7.800	12.800
103	L40404	L40404	0.004	1.000	0.004			1.938	1.225	4.854	0.040
104	HSST4X4X0	HSST4X4X0	0.008	1.000	0.008			3.370	7.800	7.800	12.800
105	L40404	L40404	0.664	1.000	0.664			1.938	1.225	4.854	0.040
106	HSST4X4X0	HSST4X4X0	0.007	1.000	0.007			3.370	7.800	7.800	12.800



Unity Check

Failed Members

No Failed Members -->> O.K.

There is no data of this type.

Job Information

	Engineer	Checked	Approved
Name:	JJC		
Date:	5/3/17		

Structure Type	SPACE FRAME

Number of Nodes	2	Highest Node	2
Number of Elements	1	Highest Beam	1

Number of Basic Load Cases	3
Number of Combination Load Cases	6

Included in this printout are data for:

All	The Whole Structure

Included in this printout are results for load cases:

Type	L/C	Name
Primary	1	DEAD
Primary	2	WIND
Primary	3	SNOW
Combination	4	GENERATED AISC GENERAL 1
Combination	5	GENERATED AISC GENERAL 2
Combination	6	GENERATED AISC GENERAL 3
Combination	7	GENERATED AISC GENERAL 4
Combination	8	GENERATED AISC GENERAL 5
Combination	9	GENERATED AISC GENERAL 6

Nodes

Node	X (ft)	Y (ft)	Z (ft)
1	0.000	0.000	0.000
2	20.000	0.000	0.000

Beams

Beam	Node A	Node B	Length (ft)	Property	β (degrees)
1	1	2	20.000	1	0

Section Properties

Prop	Section	Area (in^2)	I_{yy} (in^4)	I_{zz} (in^4)	J (in^4)	Material
1	W14X30	8.850	19.600	291.000	0.344	STEEL

Materials

Mat	Name	E (kip/in^2)	ν	Density (kip/in^3)	α (/°F)
1	STEEL	29E+3	0.300	0.000	6E -6
2	STAINLESSSTEEL	28E+3	0.300	0.000	10E -6
3	ALUMINUM	10E+3	0.330	0.000	13E -6
4	FIBERGLASS	2.8E+3	0.350	0.000	4.4E -6
5	CONCRETE	3.15E+3	0.170	0.000	5E -6

Supports

Node	X (kip/in)	Y (kip/in)	Z (kip/in)	rX (kip-ft/deg)	rY (kip-ft/deg)	rZ (kip-ft/deg)
1	Fixed	Fixed	Fixed	-	-	-
2	Fixed	Fixed	Fixed	-	-	-

Releases

There is no data of this type.

Basic Load Cases

Number	Name
1	DEAD
2	WIND
3	SNOW

Combination Load Cases

Comb.	Combination L/C Name	Primary	Primary L/C Name	Factor
4	GENERATED AISC GENERAL 1	1	DEAD	1.00
5	GENERATED AISC GENERAL 2	1	DEAD	1.00
		3	SNOW	1.00
6	GENERATED AISC GENERAL 3	1	DEAD	1.00
		3	SNOW	0.75
7	GENERATED AISC GENERAL 4	1	DEAD	1.00
		2	WIND	1.00
8	GENERATED AISC GENERAL 5	1	DEAD	1.00
		2	WIND	0.75
9	GENERATED AISC GENERAL 6	1	DEAD	1.00
		2	WIND	0.75
		3	SNOW	0.75

Beam Loads : 1 DEAD

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GY	-750.000	-	-	-	-
	CON kip	GY	-3.300	6.000	-	-	-
	CON kip	GY	-2.500	12.000	-	-	-

Reference STAAD "Equipment Platform (Frame)" reactions for point loads

Selfweight : 1 DEAD

Exterior Wall = 0.75'W x 9'H x 110pcf = 750 plf

Direction	Factor
Y	-1.000

Beam Loads : 2 WIND

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GZ	80.000	-	-	-	-

Beam Loads : 3 SNOW

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GY	-90.000	-	-	-	-
	UNI lbf/ft	GY	-56.000	12.000	-	-	-

Beam Combined Axial and Bending Stresses Summary

			Max Comp			Max Tens		
Beam	L/C	Length (ft)	Stress (ksi)	d (ft)	Corner	Stress (ksi)	d (ft)	Corner
1	1:DEAD	20.000	16.809	10.000	1	-16.809	10.000	3
	2:WIND	20.000	8.241	10.000	1	-8.241	10.000	2
	3:SNOW	20.000	1.547	11.667	1	-1.547	11.667	3
	4:GENERATEI	20.000	16.809	10.000	1	-16.809	10.000	3
	5:GENERATEI	20.000	18.348	10.000	1	-18.348	10.000	3
	6:GENERATEI	20.000	17.963	10.000	1	-17.963	10.000	3
	7:GENERATEI	20.000	25.049	10.000	1	-25.049	10.000	3
	8:GENERATEI	20.000	22.989	10.000	1	-22.989	10.000	3
	9:GENERATEI	20.000	24.144	10.000	1	-24.144	10.000	3

Reactions

		Horizontal	Vertical	Horizontal	Moment		
Node	L/C	FX (kip)	FY (kip)	FZ (kip)	MX (kip-ft)	MY (kip-ft)	MZ (kip-ft)
1	1:DEAD	0.000	11.111	0.000	0.000	0.000	0.000
	2:WIND	0.000	0.000	-0.800	0.000	0.000	0.000
	3:SNOW	0.000	0.990	0.000	0.000	0.000	0.000
	4:GENERATEI	0.000	11.111	0.000	0.000	0.000	0.000
	5:GENERATEI	0.000	12.100	0.000	0.000	0.000	0.000
	6:GENERATEI	0.000	11.853	0.000	0.000	0.000	0.000
	7:GENERATEI	0.000	11.111	-0.800	0.000	0.000	0.000
	8:GENERATEI	0.000	11.111	-0.600	0.000	0.000	0.000
	9:GENERATEI	0.000	11.853	-0.600	0.000	0.000	0.000
2	1:DEAD	0.000	10.291	0.000	0.000	0.000	0.000
	2:WIND	0.000	0.000	-0.800	0.000	0.000	0.000
	3:SNOW	0.000	1.258	0.000	0.000	0.000	0.000
	4:GENERATEI	0.000	10.291	0.000	0.000	0.000	0.000
	5:GENERATEI	0.000	11.549	0.000	0.000	0.000	0.000
	6:GENERATEI	0.000	11.234	0.000	0.000	0.000	0.000
	7:GENERATEI	0.000	10.291	-0.800	0.000	0.000	0.000
	8:GENERATEI	0.000	10.291	-0.600	0.000	0.000	0.000
	9:GENERATEI	0.000	11.234	-0.600	0.000	0.000	0.000

Utilization Ratio

Beam	Analysis Property	Design Property	Actual Ratio	Allowable Ratio	Ratio (Act./Allow.)	Clause	L/C	Ax (in^2)	Iz (in^4)	Iy (in^4)	Ix (in^4)
1	W14X30	W14X30	1.013	1.000	1.013			8.850	291.000	19.600	0.380

Failed Members

Beam	Analysis Property	Design Property	Actual Ratio	Allowable Ratio	Ratio (Act./Allow.)	Clause	L/C	Ax (in^2)	Iz (in^4)	Iy (in^4)	Ix (in^4)
1	W14X30	W14X30	1.013	1.000	1.013			8.850	291.000	19.600	0.380

Job Information

	Engineer	Checked	Approved
Name:	JJC		
Date:	5/3/17		

Structure Type	SPACE FRAME

Number of Nodes	2	Highest Node	2
Number of Elements	1	Highest Beam	1

Number of Basic Load Cases	3
Number of Combination Load Cases	5

Included in this printout are data for:

All	The Whole Structure

Included in this printout are results for load cases:

Type	L/C	Name
Primary	1	DEAD
Primary	2	WIND
Primary	3	LIVE
Combination	4	GENERATED AISC GENERAL 2
Combination	5	GENERATED AISC GENERAL 3
Combination	6	GENERATED AISC GENERAL 4
Combination	7	GENERATED AISC GENERAL 5
Combination	8	GENERATED AISC GENERAL 6

Nodes

Node	X (ft)	Y (ft)	Z (ft)
1	0.000	0.000	0.000
2	20.000	0.000	0.000

Beams

Beam	Node A	Node B	Length (ft)	Property	β (degrees)
1	1	2	20.000	1	0

Section Properties

See attached composite shape definition and Existing Drawings detail Spandrel TBK-TCQ

Prop	Section	Area (in^2)	I_{yy} (in^4)	I_{zz} (in^4)	J (in^4)	Material
1	PRISMATIC	13.993	88.418	312.263	0.560	STEEL

Materials

Mat	Name	E (kip/in^2)	ν	Density (kip/in^3)	α (/°F)
1	STEEL	29E+3	0.300	0.000	6E -6
2	STAINLESSSTEEL	28E+3	0.300	0.000	10E -6
3	ALUMINUM	10E+3	0.330	0.000	13E -6
4	FIBERGLASS	2.8E+3	0.350	0.000	4.4E -6
5	CONCRETE	3.15E+3	0.170	0.000	5E -6

Supports

Node	X (kip/in)	Y (kip/in)	Z (kip/in)	rX (kip-ft/deg)	rY (kip-ft/deg)	rZ (kip-ft/deg)
1	Fixed	Fixed	Fixed	-	-	-
2	Fixed	Fixed	Fixed	-	-	-

Releases

There is no data of this type.

Basic Load Cases

Number	Name
1	DEAD
2	WIND
3	LIVE

Combination Load Cases

Comb.	Combination L/C Name	Primary	Primary L/C Name	Factor
4	GENERATED AISC GENERAL 2	1	DEAD	1.00
		3	LIVE	1.00
5	GENERATED AISC GENERAL 3	1	DEAD	1.00
		3	LIVE	0.75
6	GENERATED AISC GENERAL 4	1	DEAD	1.00
		2	WIND	1.00
7	GENERATED AISC GENERAL 5	1	DEAD	1.00
		3	LIVE	0.75
		2	WIND	0.75
8	GENERATED AISC GENERAL 6	1	DEAD	0.60
		2	WIND	1.00

Beam Loads : 1 DEAD

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GY	-338.000	-	-	-	-
	CON kip	GY	-1.786	0.500	-	-	-
	CON kip	GY	-2.600	6.000	-	-	-
	CON kip	GY	-1.890	12.000	-	-	-

Reference STAAD "Equipment Platform (Frame)" reactions for point loads
Parapet Wall = 1'W x 3'H x 150pcf x 75% distribution to beam = 338 plf

Selfweight : 1 DEAD

Direction	Factor
Y	-1.000

Beam Loads : 2 WIND

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GZ	142.000	-	-	-	-
	CON kip	GZ	0.920	0.500	-	-	-
	CON kip	GZ	0.660	6.000	-	-	-
	CON kip	GZ	0.920	12.000	-	-	-

Beam Loads : 3 LIVE

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	CON kip	GY	-0.520	0.500	-	-	-
	CON kip	GY	-1.000	6.000	-	-	-
	CON kip	GY	-0.520	12.000	-	-	-

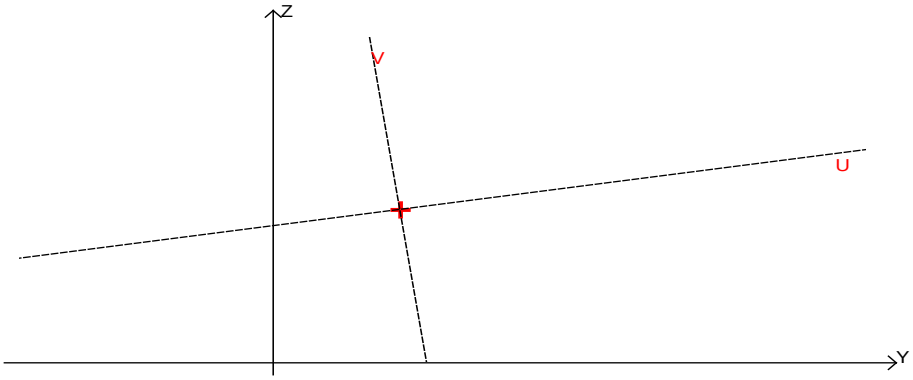
Beam Combined Axial and Bending Stresses Summary

			Max Comp			Max Tens		
Beam	L/C	Length (ft)	Stress (ksi)	d (ft)	Corner	Stress (ksi)	d (ft)	Corner
1	1:DEAD	20.000	7.256	10.000	1	-7.256	10.000	3
	2:WIND	20.000	9.840	11.667	1	-9.840	11.667	2
	3:LIVE	20.000	1.150	6.667	1	-1.150	6.667	3
	4:GENERATEI	20.000	8.333	10.000	1	-8.333	10.000	3
	5:GENERATEI	20.000	8.064	10.000	1	-8.064	10.000	3
	6:GENERATEI	20.000	17.060	10.000	1	-17.060	10.000	3
	7:GENERATEI	20.000	15.417	10.000	1	-15.417	10.000	3
	8:GENERATEI	20.000	14.157	10.000	1	-14.157	10.000	3

Max Stress O.K. by engineering judgement

Reactions

		Horizontal	Vertical	Horizontal	Moment		
Node	L/C	FX (kip)	FY (kip)	FZ (kip)	MX (kip-ft)	MY (kip-ft)	MZ (kip-ft)
1	1:DEAD	0.000	8.173	0.000	0.000	0.000	0.000
	2:WIND	0.000	0.000	-3.147	0.000	0.000	0.000
	3:LIVE	0.000	1.415	0.000	0.000	0.000	0.000
	4:GENERATEC	0.000	9.588	0.000	0.000	0.000	0.000
	5:GENERATEC	0.000	9.234	0.000	0.000	0.000	0.000
	6:GENERATEC	0.000	8.173	-3.147	0.000	0.000	0.000
	7:GENERATEC	0.000	9.234	-2.360	0.000	0.000	0.000
	8:GENERATEC	0.000	4.904	-3.147	0.000	0.000	0.000
2	1:DEAD	0.000	5.814	0.000	0.000	0.000	0.000
	2:WIND	0.000	0.000	-2.193	0.000	0.000	0.000
	3:LIVE	0.000	0.625	0.000	0.000	0.000	0.000
	4:GENERATEC	0.000	6.439	0.000	0.000	0.000	0.000
	5:GENERATEC	0.000	6.283	0.000	0.000	0.000	0.000
	6:GENERATEC	0.000	5.814	-2.193	0.000	0.000	0.000
	7:GENERATEC	0.000	6.283	-1.645	0.000	0.000	0.000
	8:GENERATEC	0.000	3.488	-2.193	0.000	0.000	0.000



Section element	Rotation angle	Mirror	Material	E (kip/inch^2)
W - Wide Flange Beams W10X22			Steel	29732.747
Sheet 11 x 0.375			Steel	29732.747
C - American Standard Channels C8X11.5	-90.0		Steel	29732.747

The overall dimentions of the section are 11 x 11 inch

Basic geometry of the section

	Parameter	Value	
A	Cross sectional area	13.99	$inch^2$
α	Angle between Y-Z and U-V axes	8.46	deg
I_y	Moment of inertia about axis parallel to Y passing through centroid	307.41	$inch^4$
I_z	Moment of inertia about axis parallel to Z passing through centroid	93.28	$inch^4$
I_t	Torsional moment of inertia (St. Venant)	0.55	$inch^4$
i_y	Radius of gyration about axis parallel to Y passing through centroid	4.69	inch
i_z	Radius of gyration about axis parallel to Z passing through centroid	2.58	inch
W_{u+}	Max elastic modulus about U-axis	49.46	$inch^3$
W_{u-}	Min elastic modulus about U-axis	52.29	$inch^3$
W_{v+}	Max elastic modulus about V-axis	15.02	$inch^3$
W_{v-}	Min elastic modulus about V-axis	17.51	$inch^3$
$W_{pl,u}$	Plastic modulus about U-axis	60.92	$inch^3$
$W_{pl,v}$	Plastic modulus about V-axis	0.0	$inch^3$
I_u	Moment of inertia about U-axis	312.26	$inch^4$
I_v	Moment of inertia about V-axis	88.43	$inch^4$
i_u	Radius of gyration about U-axis	4.72	inch
i_v	Radius of gyration about V-axis	2.51	inch
a_{u+}	Centroid to edge of compression zone along +ve U-axis	1.07	inch
a_{u-}	Centroid to edge of compression zone along -ve U-axis	1.25	inch
a_{v+}	Centroid to edge of compression zone along +ve V-axis	3.53	inch
a_{v-}	Centroid to edge of compression zone along -ve V-axis	3.74	inch
y_M	Distance to centroid along Y-axis	3.35	inch
z_M	Distance to centroid along Z-axis	4.67	inch
y_P	Distance to equal area axis along Y-axis	18.39	inch
z_P	Distance to equal area axis along Z-axis	3.59	inch

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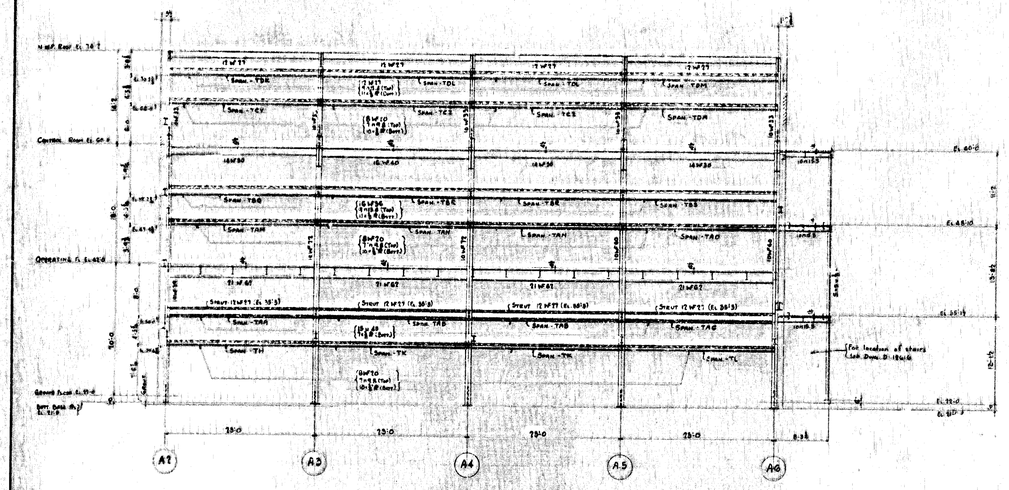
ELEVATION A-A (1) LINE

SECTION B-B (2) LINE

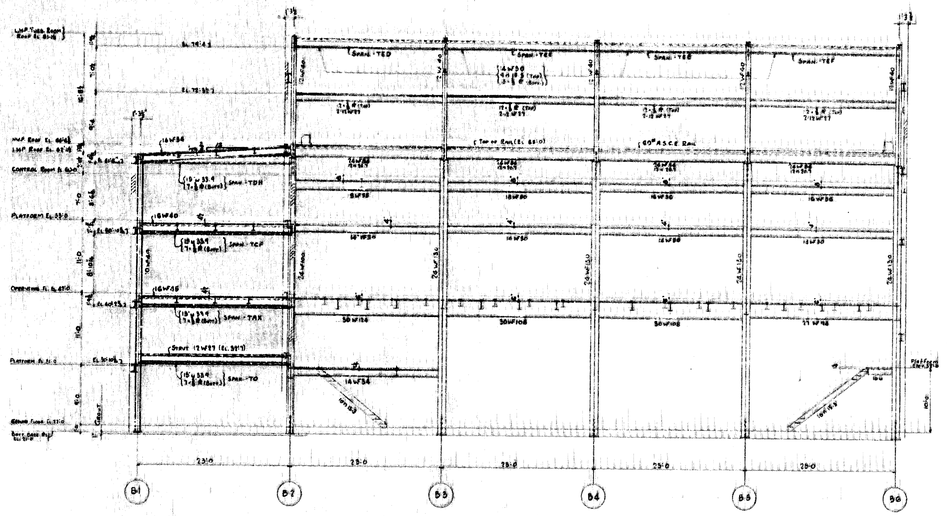
CAMBRIDGE ELECTRIC LIGHT CO.
Kendall Square Station
Structural-Steel Framing
Elevation A-A & Section B-B

GILBERT ASSOCIATES INC
ENGINEERS AND CONSULTANTS
NEW YORK WASHINGTON

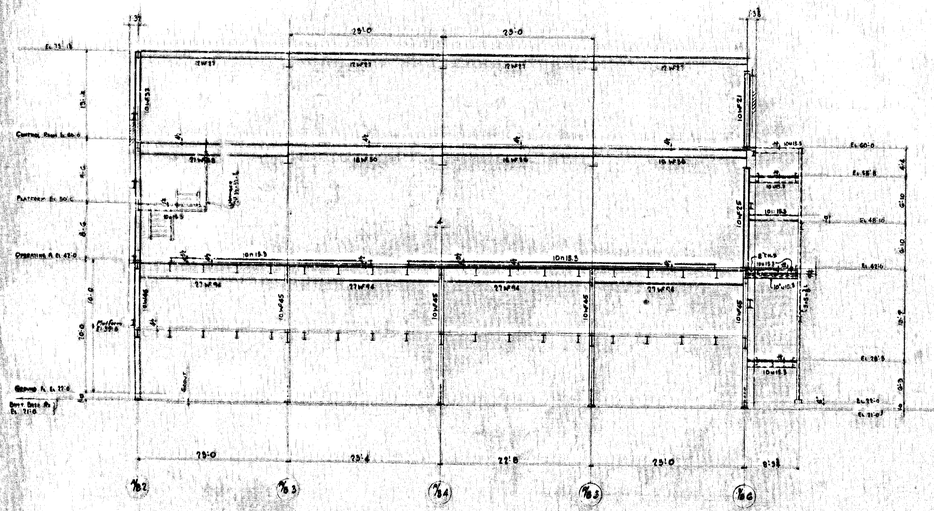
D-18610



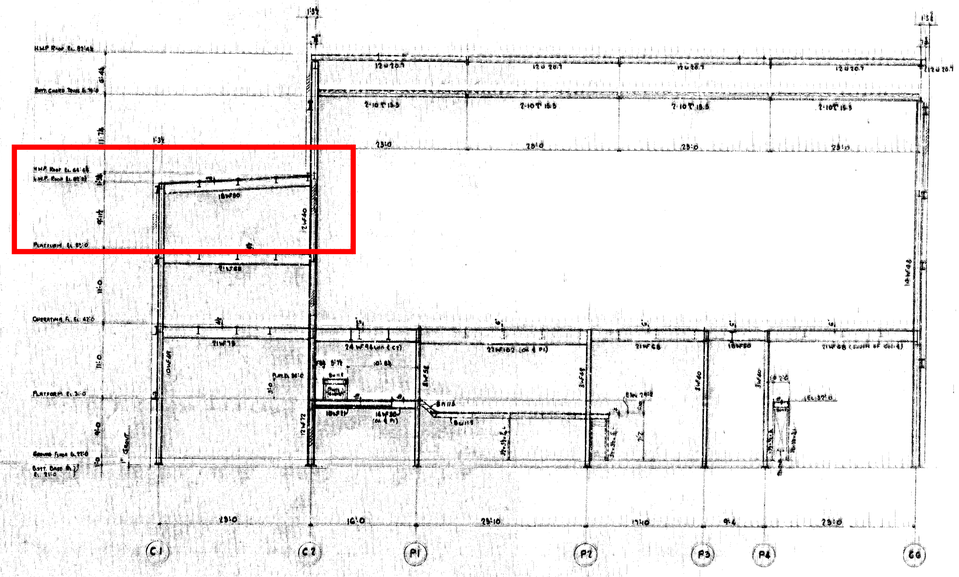
SECTION G-G Ⓐ LINE



SECTION J-J Ⓑ LINE



SECTION H-H Ⓗ LINE

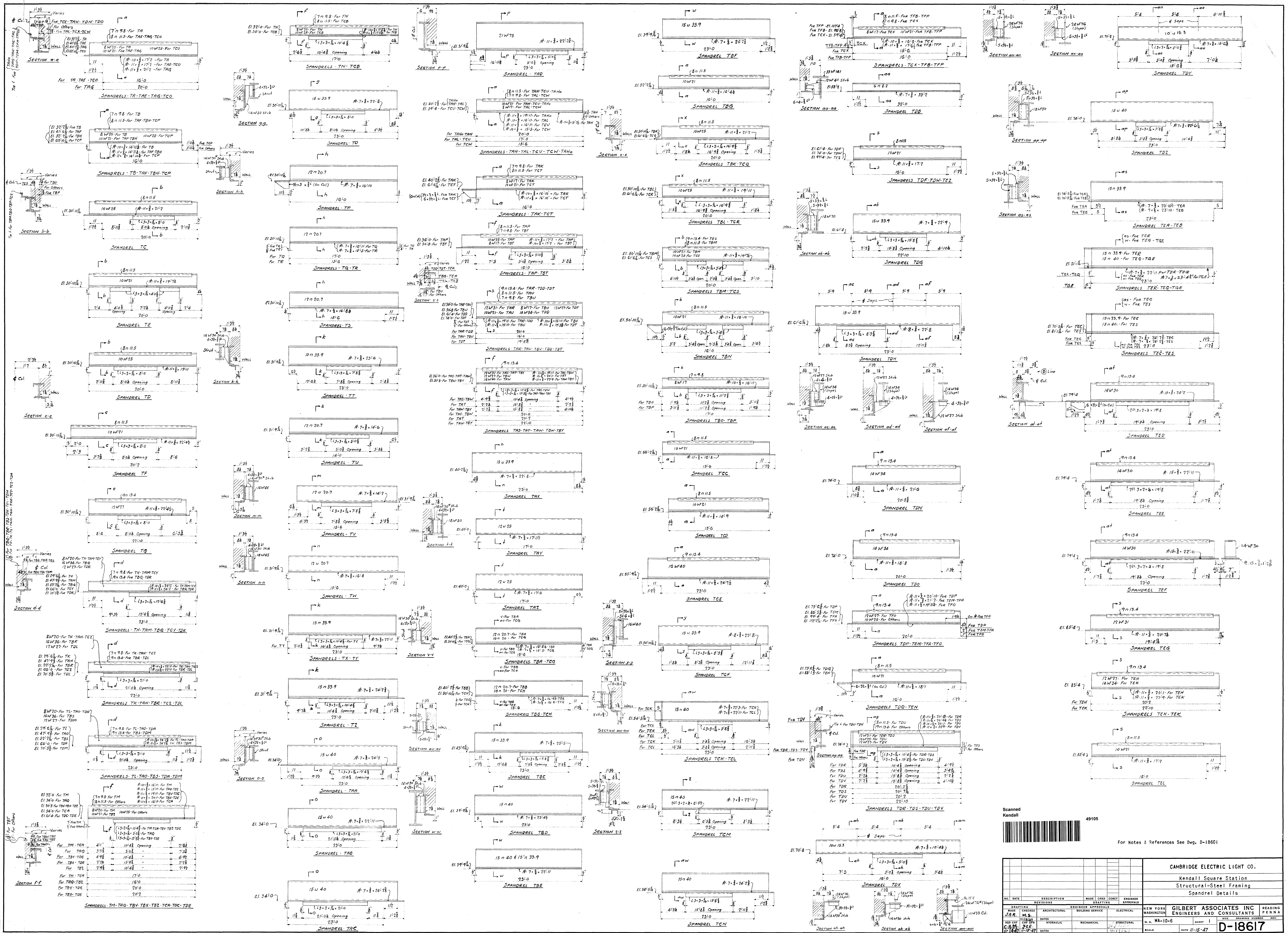


SECTION K-K Ⓒ LINE

CAMBRIDGE ELECTRIC LIGHT CO.
Kendall Square Station
Structural-Steel Framing
Sections G-G, H-H, J-J & K-K

GILBERT ASSOCIATES INC
ENGINEERS AND CONSULTANTS
READING PENNA.

D-18613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Spandrels - TB - TAF - TBH - TCP
Section b-b
Spandrel TC
Spandrel TE
Spandrel TD
Section c-c
Spandrel TF
Spandrel TG
Section d-d
Spandrels - TH - TAM - TBQ - TCY - TDK
Spandrels TK - TAN - TBR - TCZ - TDL
Spandrels - TL - TAO - TBS - TDA - TDM
Section f-f
Spandrels - TM - TAQ - TBV - TBX - TBZ - TCA - TDC - TDE
Spandrels - TN - TCB
Section g-g
Spandrel - TO
Section h-h
Spandrel - TP
Spandrels - TQ - TR
Section k-k
Spandrel - TS
Spandrel - TT
Spandrel - TU
Section m-m
Spandrel - TV
Section n-n
Spandrel - TW
Spandrels - TX - TY
Spandrel - TZ
Section o-o
Spandrel - TAA
Spandrel - TAB
Spandrel TAC
Section p-p
Spandrel - TAD
Spandrels - TAH - TAL - TCU - TCW - TAHa
Spandrels - TAK - TCT
Spandrels - TAP - TBT
Spandrels - TAR - TAU - TBU - TDD - TDT
Spandrels TAS - TAT - TAW - TBW - TBY
Spandrel TAX
Spandrel TAY
Spandrel TAZ
Spandrels TBA - TCG
Spandrels TBD - TCH
Spandrel TBC
Spandrel TBD
Spandrel TBE
Section s-s
Section t-t
Section v-v
Section w-w
Section x-x
Section y-y
Section z-z
Section aw-aw
Spandrel TBF
Spandrel TBG
Spandrels TBK - TCQ
Spandrels TBL - TCR
Spandrels TBM - TCS
Spandrel TBN
Spandrels TBO - TBP
Spandrel TCC
Spandrel TCD
Spandrel TCE
Spandrel TCF
Spandrels TCK - TCL
Spandrel TCM
Spandrel TCN
Section aa-aa
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Spandrel TDB
Spandrels TDF - TDW - TEZ
Section ab-ab
Spandrel TDG
Spandrel TDH
Section ac-ac
Section ad-ad
Section af-af
Spandrel TDN
Spandrel TDO
Spandrels TDP - TEM - TFA - TFO
Spandrels TDQ - TEN
Spandrels TDR - TDS - TDU - TDV
Spandrel TDX
Section ah-ah
Section ak-ak
Section am-am
Section an-an
Section ao-ao
Spandrel TDY
Section ap-ap
Spandrel TDZ
Section as-as
Spandrels TEA - TEB
Spandrels TER - TEQ - TGE
Spandrels TEC - TES
Section at-at
Spandrel TED
Spandrel TEE
Spandrel TEF
Spandrel TEG
Spandrels TEH - TEK
Spandrel TEL

Scanned
Kendall
49105

For Notes & References See Dwg. D-18601

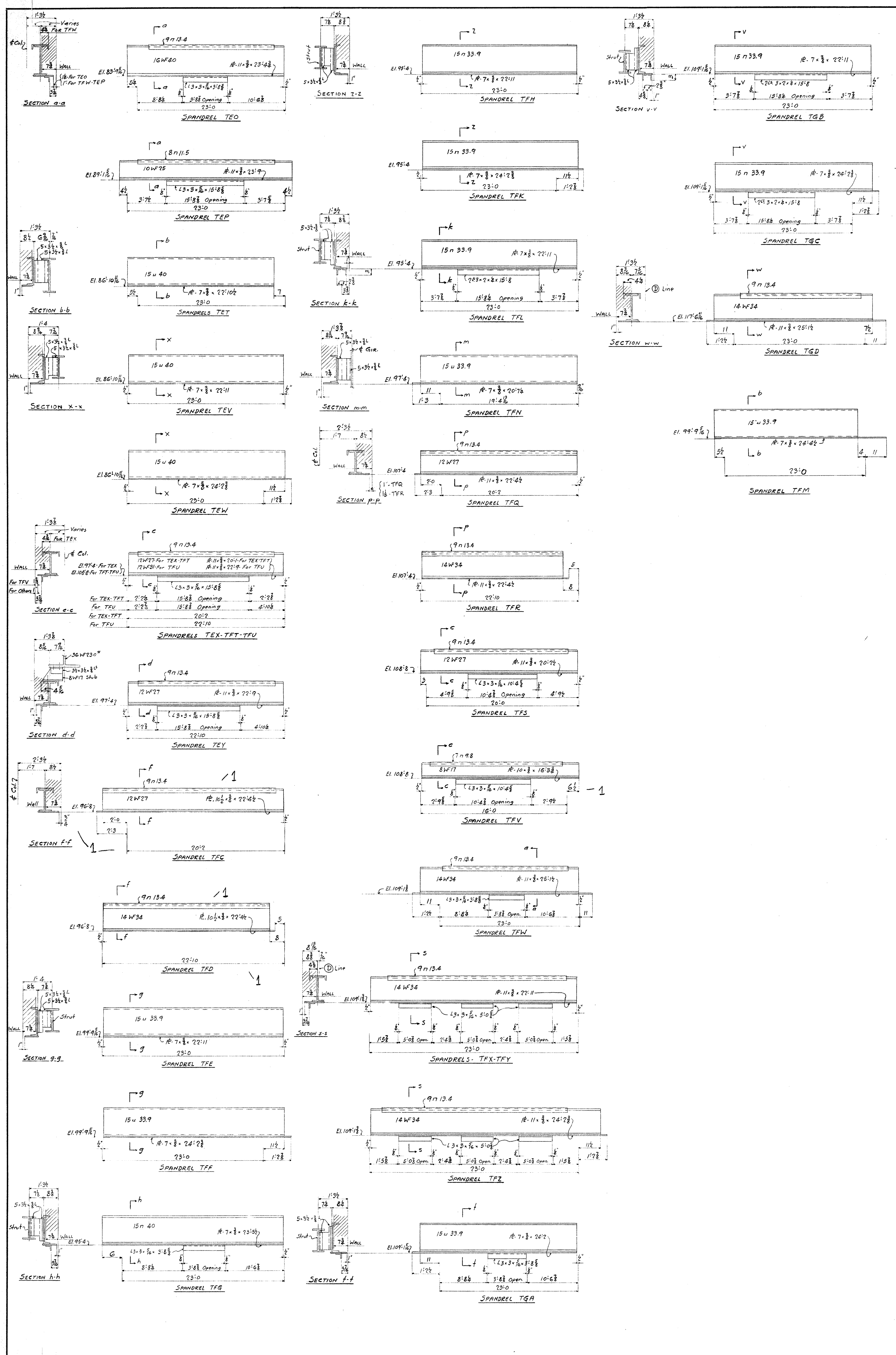
NO.	DATE	DESCRIPTION	MADE	CHKD	CORCT	ENGINEER APPROVALS
		REVISIONS	DRAFTING			

DRAFTING		ENGINEER APPROVALS		
MADE J.A.R.	CHECKED M.S. 11/13/47	ARCHITECTURAL	BUILDING SERVICE	ELECTRICAL
		DATES		
SQD CHF C.A.M. 11-14-47	CHF DFN J.L.R. 11-15-47	HYDRAULIC	MECHANICAL	STRUCTURAL [illegible] 11-17-47
		DATES		

CAMBRIDGE ELECTRIC LIGHT CO.
Kendall Square Station
Structural-Steel Framing
Spandrel Details

NEW YORK WASHINGTON — GILBERT ASSOCIATES INC ENGINEERS AND CONSULTANTS — READING PENNA

W. O. WA-10-6 SHEET 1
SCALE DATE 11-15-47
SIZE DRAWING NUMBER REV.
D-18617



For notes & references see Dwg. D-18601

NO.	DATE	DESCRIPTION	MADE	CHKD	CORCT	ENGINEER APPROVALS	
1	12/18/47	As indicated	M.S.	D.G.R.	C.A.M. / J.K.R.	H.J.L.	12/19/47
REVISIONS			DRAFTING				

DRAFTING		ENGINEER APPROVALS		
MADE: J.A.R.	CHECKED: M.S. 11/13/47	ARCHITECTURAL	BUILDING SERVICE	ELECTRICAL
SQD CHF: C.A.M. 11-14-47	CHF DFN: J.K.R. 11-15-47	HYDRAULIC	MECHANICAL	STRUCTURAL: H.J.L. 11-17-47

CAMBRIDGE ELECTRIC LIGHT CO.

Kendall Square Station

Structural-Steel Framing

Spandrel Details

NEW YORK WASHINGTON — GILBERT ASSOCIATES INC ENGINEERS AND CONSULTANTS — READING PENNA

W.O. WA-10-6 — SHEET 2 — SCALE — DATE 11-15-47

SIZE / DRAWING NUMBER / REV.: D-18618-1

CAMBRIDGE ELECTRIC LIGHT CO.

Kendall Square Station

Structural-Steel Framing

Plan at Elev. 42'-0"

Operating Floor

NEW YORK / WASHINGTON — GILBERT ASSOCIATES INC. ENGINEERS AND CONSULTANTS — READING / PENNA

W.O. WA-10-6 — SCALE As Noted — DATE 8-28-47 — SIZE — DRAWING NUMBER D-18603-3 — REV.

For sections A6, A7, B47, B48, B49 see D-18602
For sections A23, B24, B35 see Dwg. D-18616
For Spandrel details see Dwg. D-18617
For Notes & References see Dwg. D-18601

NO.	DATE	REVISIONS	DRAFTING MADE	ENGINEER APPROVALS CHKD	CORR'T	ENGINEER APPROVALS
4	7/16/47	Erect. Notes changed & Temporary Beam removed	JRW	PGK	V.H.M.	
3	5/14/47	Erect. Notes changed & Temporary Beam removed	JRW	PGK	M.S.	
2	4/11/47	Changes in Erection Loads A2.5 & Erection Notes	JRW	PGK	M.S.	
1	10/16/46	Previous Issued as CALCARED. Changes shown in red.	JRW	PGK	V.H.M.	

DRAFTING	ENGINEER APPROVALS		
MADE	ARCHITECTURAL	BUILDING SERVICE	ELECTRICAL
JRW 8-28-47			
SCD CRF	CHK DFW	HYDRAULIC	MECHANICAL
8-28-47	8-28-47		
DATES			

STRUCTURAL: PGK 8/27/47

Scanned ID KENDALL 02731

Tab 8

MAXIMUM PERMISSIBLE EXPOSURE STUDY

THEORETICAL REPORT

Site Number:	MA2544
Site Name:	Cambridge First Street
Latitude:	42.363015
Longitude:	-71.0791
Address:	273 First Street, Cambridge, MA

Conclusion: ***AT&T's proposed antenna installation is calculated to be within the FCC Standard for Uncontrolled/General Public and Controlled/Occupational Maximum Permissible Exposure (MPE).***

Prepared by: **SAI Communications**
260 Cedar Hill Street
Marlborough, MA 01752
(603) 421-0470

Date of Report: March 1, 2017

Table of Contents

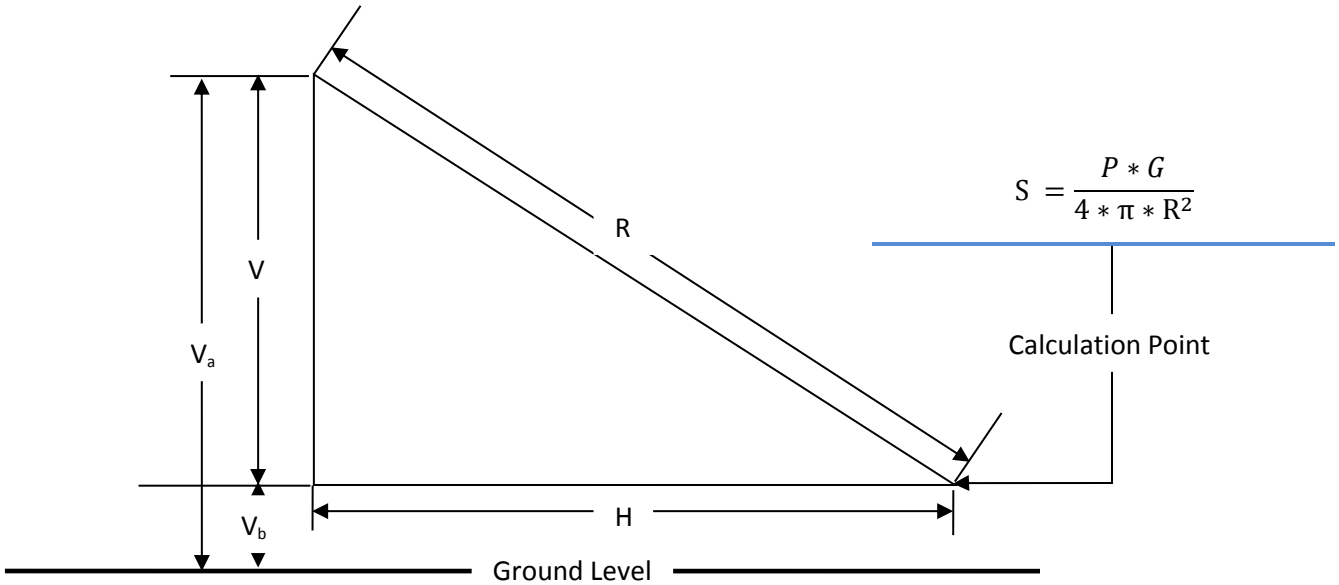
Introduction 3
RF Exposure Prediction Method 3
Case Summary 4
RF Design Specifications 4
FCC Guidelines 5
FCC RF Exposure Limits 6
Calculation Results (6ft AGL) 7
Statement of Certification 8

Introduction

SAI Communications has conducted this theoretical analysis for AT&T, to ensure that the proposed radio facility complies with Federal Communications Commission (FCC) regulations. This report will show that, through the use of FCC suggested prediction methods, the radio facility in question will be in compliance with all appropriate Federal regulations in regards to Radio Frequency (RF) Exposure.

RF Exposure Prediction Method

Power Density is calculated in accordance with FCC OET Bulletin 65 formula (3):



Where:
S = Power Density
P = Power input to the antenna
G = Gain of an antenna
R = Radial distance = $\sqrt{H^2 + V^2}$
H = Horizontal distance from antenna
V = Vertical distance from antenna = $Va - Vb$
V_a = Antenna height above ground
V_b = Calculation height above ground = 6ft

Case Summary

The proposed radio facility will have radiation centers of 99/62ft located at the following geographic coordinates:

Latitude:	42.363015
Longitude:	-71.0791

See sketch below for specific property location.

RF Design Specifications

AT&T Mobility is planning to install 12 panel antennas, 4 per sector for LTE Technologies with azimuths of 20-180-250 for alpha-beta-gamma sectors. Table below shows the technical data used for the calculation.

	LTE700BC	LTE850	LTE1900	LTEWCS
Antenna Type:	Andrew SBNHH-1D65A			
Antenna Gain (dBd)	10.85	10.85	14.65	14.95
Rad Center, AGL (ft)	62	62	62	62
ERP (dBm)	55.85	55.85	59.65	59.95
No of Radios	1	1	1	1

FCC Guidelines

Table 1. MPE Limits for General Population/ Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Averaging Time for $\|E\|^2$, $\|H\|^2$, or S (Minutes)
0.3 – 1.34	614	1.63	(100)*	30
1.34 -30	824/f	2.19/f	$(180/f^2)$*	30
30 – 300	27.5	0.073	0.2	30
300 – 1500	--	--	f/1500	30
1500– 100,000	--	--	1.0	30
f = frequency in MHz		* = Plane wave equivalent power density		

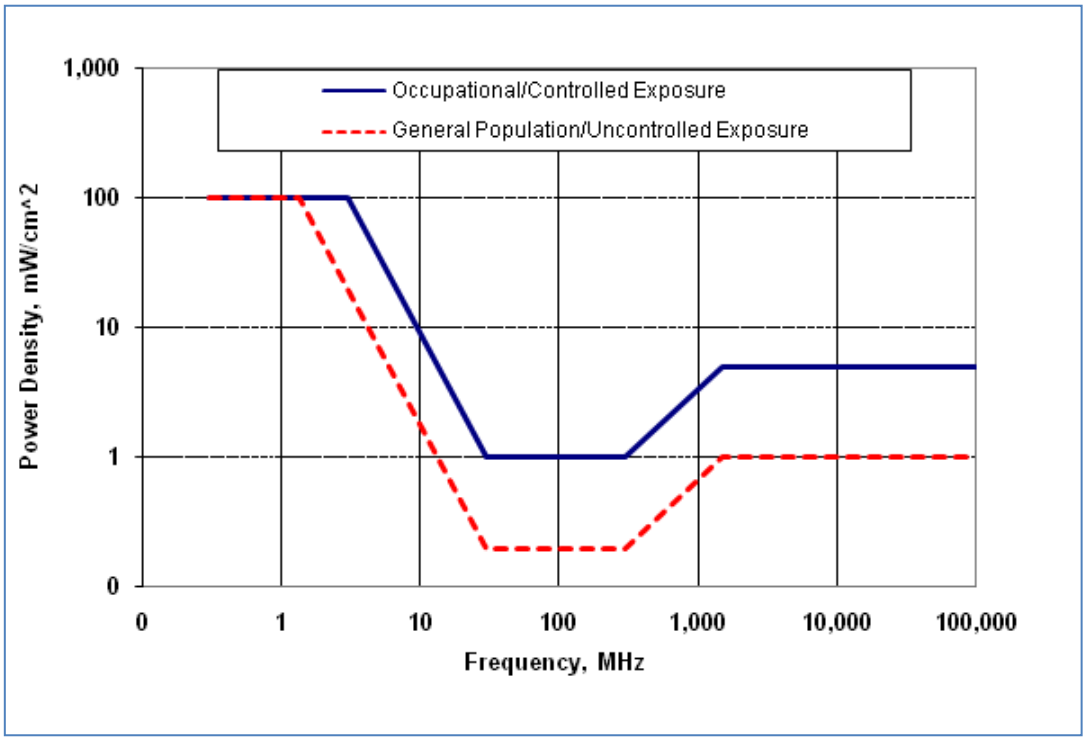
General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can't exercise control over their exposure.

Table 2. MPE Limits for Occupational/Controlled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Averaging Time for $\|E\|^2$, $\|H\|^2$, or S (Minutes)
0.3 – 3.0	614	1.63	(100)*	6
3.0 – 30	1842/f	4.89/f	$(900/f^2)$*	6
30 – 300	61.4	0.163	1.0	6
300 – 1500	--	--	f/300	6
1500– 100,000	--	--	5.0	6
f = frequency in MHz		* = Plane wave equivalent power density		

Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where such occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

FCC RF Exposure Limits

FCC MPE LIMITS (mW/cm^2)		
EXPOSURE ENVIRONMENT	**AT&T FREQUENCY BANDS**	
	Cellular	**PCS**
General Public (Uncontrolled)	0.59	1.0
Occupational (Controlled)	2.93	5.0

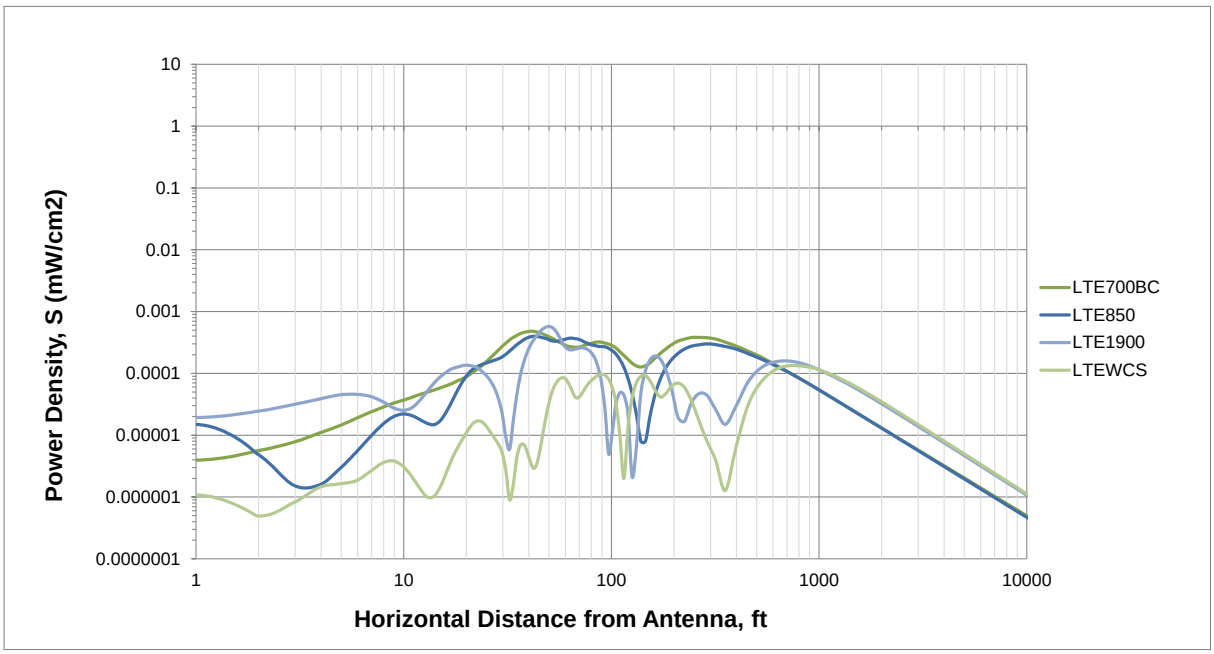


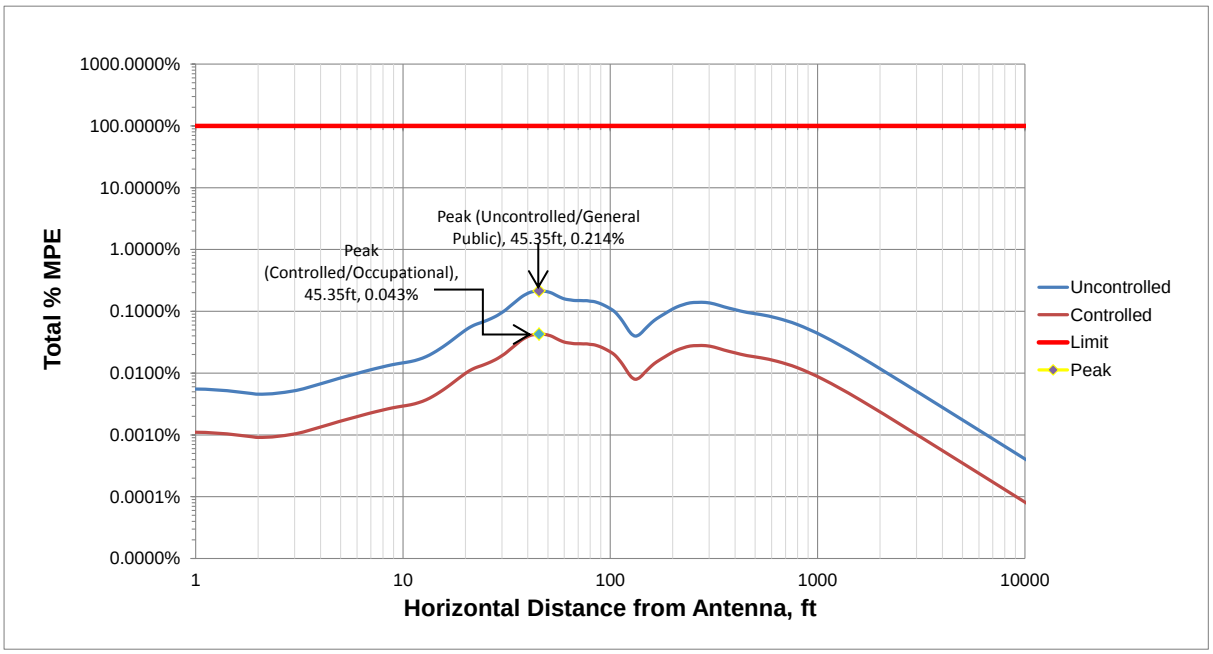
Maximum Permissible Exposures. Occupational/Controlled and General Population/Uncontrolled MPE's are functions of frequency.

Calculation Results (6ft AGL)

The following charts show the graphical representation of the calculated AT&T contribution on power density levels and % MPE at 6ft above ground, as horizontal distance from antenna increases. The calculations take into account the vertical pattern of the antennas and represent the immediate direction of each sector azimuth within the antenna horizontal beamwidth. The calculations also assume line of site to the antennas and the result will be lower if measured indoor due to in-building penetration loss.

Power Density and %MPE





Statement of Certification

I certify to the best of my knowledge that the statements contained in this report are true and accurate. The theoretical computations contained are based on FCC recommended methods, with industry standard assumptions & formulas, and complies with FCC mandated Maximum Permissible RF Exposure requirements.

A comprehensive field survey was not performed prior to the generation of this report. If questions arise regarding the calculations herein, SAI Communications recommends that a comprehensive field survey be performed to resolve any disputes.

Michael Doiron
SAI Communications

March 1, 2017
Date

MAXIMUM PERMISSIBLE EXPOSURE STUDY

THEORETICAL REPORT

Site Number:	MA2544
Site Name:	Cambridge First Street
Latitude:	42.363015
Longitude:	-71.0791
Address:	273 First Street, Cambridge, MA

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Prepared by: **SAI Communications**
260 Cedar Hill Street
Marlborough, MA 01752
(603) 421-0470

Date of Report: March 1, 2017

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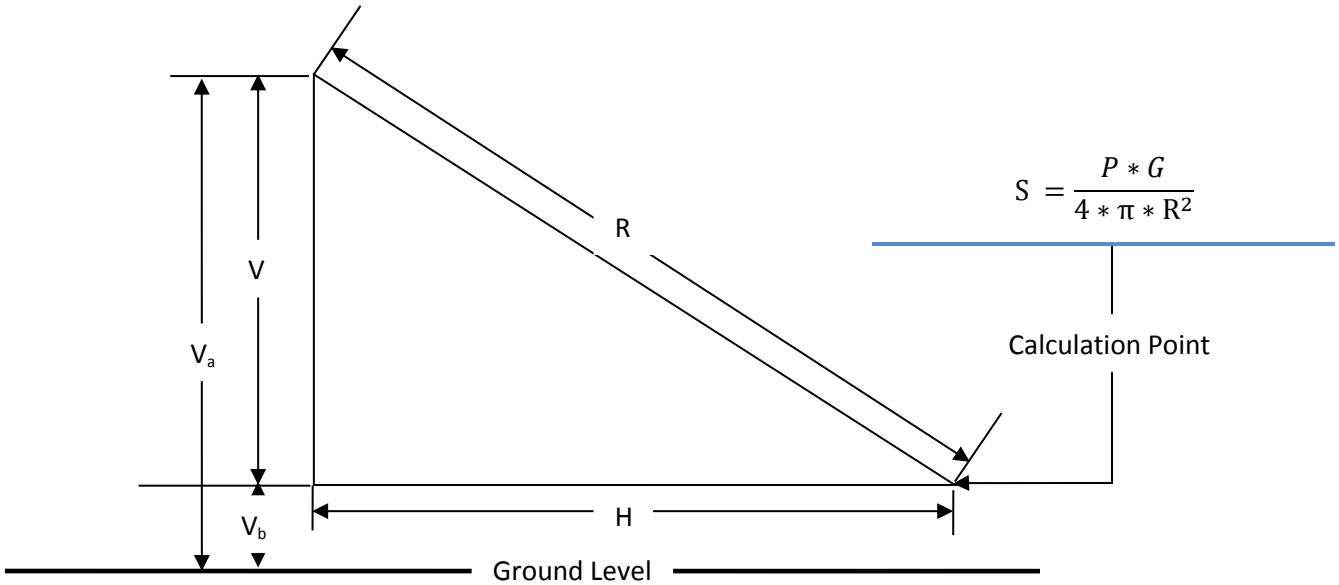

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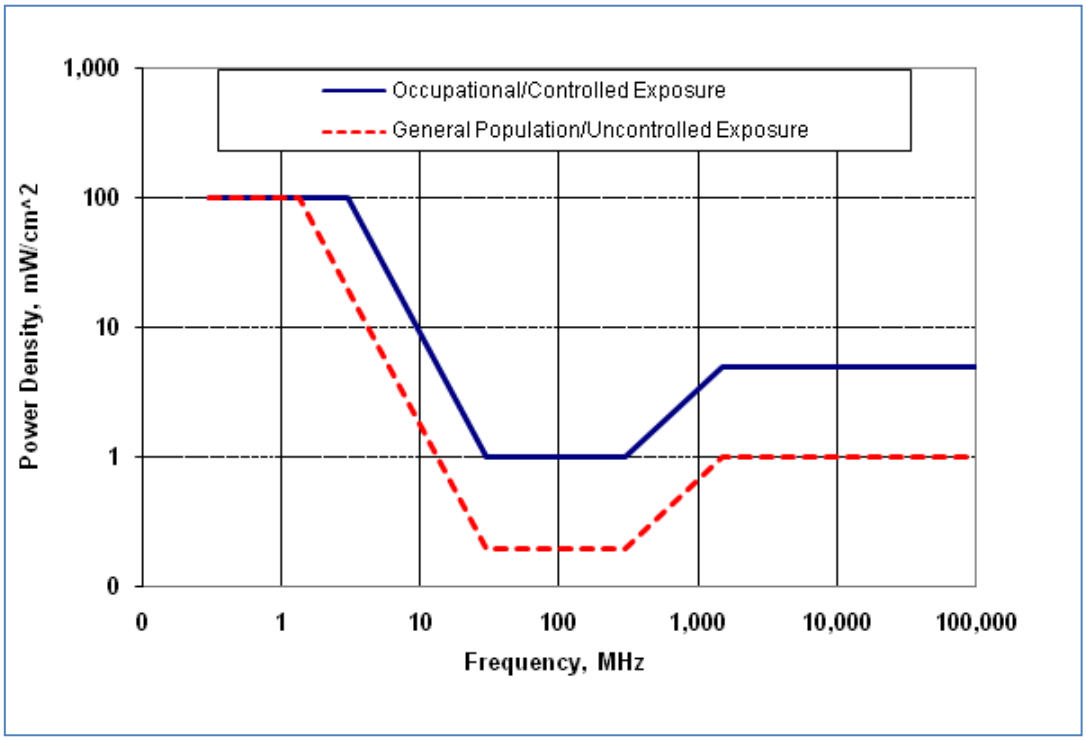

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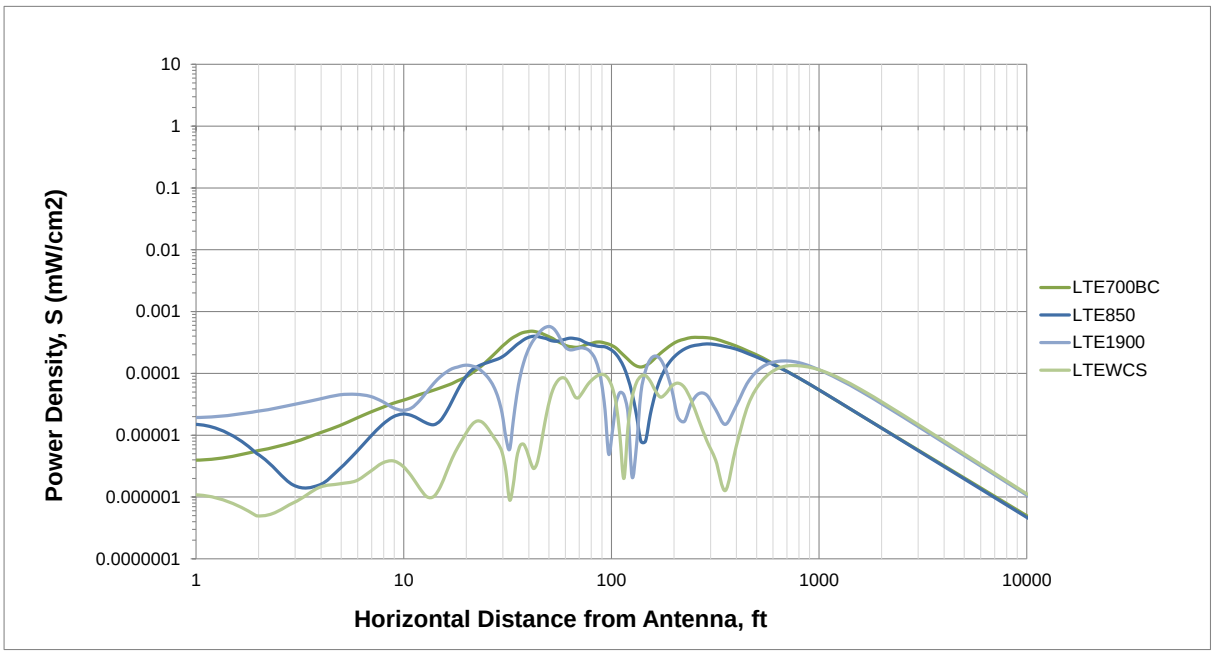

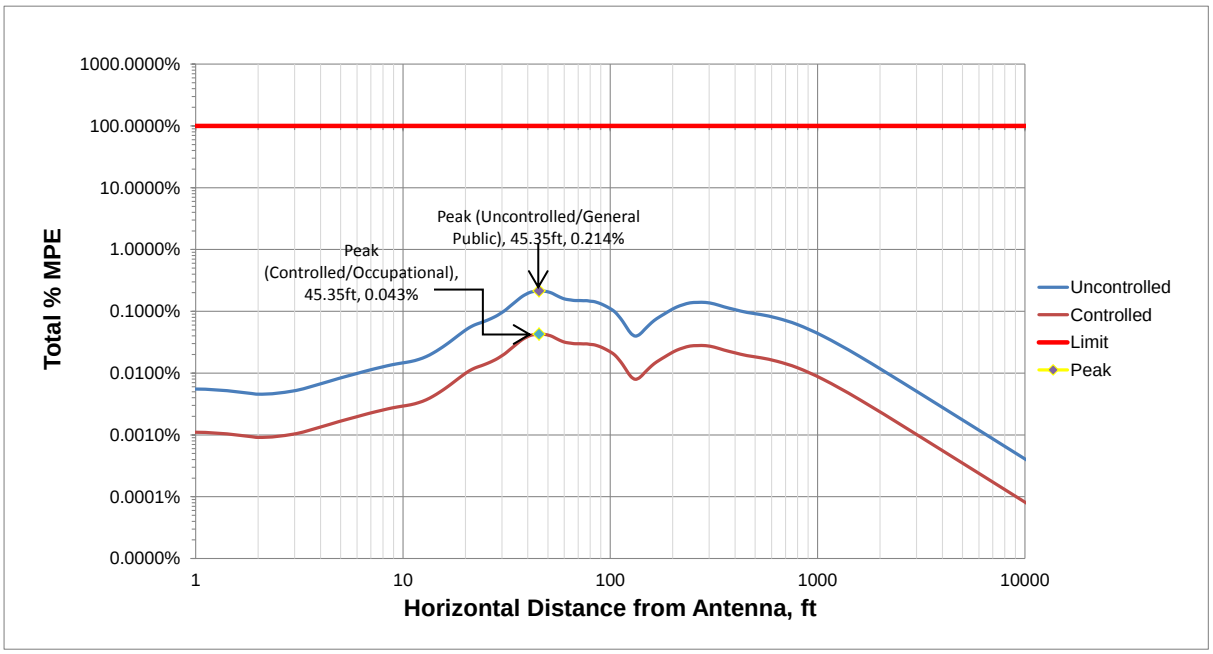

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I certify to the best of my knowledge that the statements contained in this report are true and accurate. The theoretical computations contained are based on FCC recommended methods, with industry standard assumptions & formulas, and complies with FCC mandated Maximum Permissible RF Exposure requirements.

A comprehensive field survey was not performed prior to the generation of this report. If questions arise regarding the calculations herein, SAI Communications recommends that a comprehensive field survey be performed to resolve any disputes.

Michael Doiron
SAI Communications

March 1, 2017
Date

Tab 9

VEOLIA

Kendall Green Energy LLC
53 State St, 14th Floor, Boston, MA 02109

September 26, 2016

City of Cambridge
City Hall
Cambridge, MA 02139

Re: AT&T Wireless Communications Facility / 273 First St.

To whom it may concern:

Please allow this letter to serve as authorization to New Cingular Wireless PCS, LLC (AT&T) to file for all necessary permits with the City of Cambridge and any other applicable permitting and regulatory agencies which may require approvals to construct the proposed wireless communications facility at the referenced property.

As the property owner, Kendall Green Energy LLC is in receipt of the plans for this wireless communications facility and hereby authorize AT&T to file for the permits required for the commencement of the project. All applications should be made in the name of AT&T.

Thank you for your attention to this matter.

Sincerely,

Steve Almeida
Authorized Officer

Tab 10

Kendall

DEED

MSD 12/31/98 09:48:32 280 25.00

Cambridge Electric Light Company, a Massachusetts corporation ("Grantor") with a principal place of business at One Main Street, Cambridge, Massachusetts 02142 for consideration paid of $3,600,000 and in further consideration of the grant by Grantee to Grantor of certain easements relating to the property herein granted, GRANTS with quitclaim covenants to Southern Energy Kendall, L.L.C., a Delaware limited liability company ("Grantee") with a principal place of business at 900 Ashwood Parkway, Suite 500, Atlanta, Georgia 30338, the land with the buildings and other improvements thereon, together with the rights appurtenant thereto, in Cambridge, Middlesex County, Massachusetts, located at First Street in said Cambridge, which land is described as follows:

Parcel 1: The premises shown as Land Now or Formerly of Cambridge Electric Light Company containing 168,162 +/- square feet on a plan entitled "Research Park, Subdivision Plan of Land in Cambridge, Massachusetts, Middlesex County," dated January 30, 1998, by Gunther Engineering, Inc., recorded with the Middlesex County South District Registry of Deeds as Plan No. 186 of 1998 (the "1998 Plan"). Being a portion of the same premises described in a deed of Cambridge Gas Light Company, dated April 1, 1947, recorded with said Deeds at Book 7237, Page 207.

Parcel 2: The premises shown as Lot A1 on the 1998 Plan referred to in the description of Parcel 1 above. Being a portion of the premises described in a deed of Commonwealth Gas Company, dated August 10, 1982, recorded with said Deeds in Book 14695, Page 58.

Subject to and together with the benefit of all matters appearing of record at said Registry of Deeds, including without limitation a Notice of Activity and Use Limitation dated November 20, 1998 and recorded with said Deeds on November 24, 1998 as Instrument no. 653.

The granted premises do not constitute all or substantially all of the assets of the Grantor located in the Commonwealth of Massachusetts.

**** MASS. EXCISE TAX: 16416.00 ***

In witness whereof, Grantor has caused this deed to be executed as a sealed instrument as of December 30, 1998.

Cambridge Electric Light Company

By: Deborah A McLaughlin
Name: Deborah A. McLaughlin
Title: President

By: James D Rappoli
Name: James D. Rappoli
Title: Treasurer

COMMONWEALTH OF MASSACHUSETTS
COUNTY OF SUFFOLK, SS.

December 18, 1998

Then personally appeared the above-named Deborah A. McLaughlin and James D. Rappoli, respectively the President and Treasurer of Cambridge Electric Light Company, and acknowledged the foregoing to be the free act and deed of Cambridge Electric Light Company, before me

Richard J. Morris
Notary Public
My Commission Expires: 9/27/99

BS2-37333-2

Tab 11

Noise Control Engineering, LLC

799 MIDDLESEX TNPK.
BILLERICA MA 01821-3445
PHONE: 978-670-5339
FAX: 978-667-7047
E-mail: nonoise@noise-control.com

NOISE STUDY

TO:	**Lui Puga**
COMPANY	Dewberry Engineers, Inc.
FROM:	Ben Bonnice {B.Bonnice@noise-control.com}
DATE:	May 5, 2017
SUBJECT:	Cell Site MA2544: 273 First Street Cambridge, MA, Rev. 1

INTRODUCTION

Noise Control Engineering, LLC (NCE) has been retained by Dewberry Engineers, Inc. to perform a noise evaluation for a proposed AT&T Mobility site. The proposed equipment is to be located on the rooftop of 273 First St, Cambridge, MA (Site # MA2544). The noise producing equipment consists of four electronics cabinets located on the roof.

NOISE LIMIT

The "Zoning Bylaws" for the City of Cambridge, Section 8.16, reference [1] states the maximum allowable noise levels for various zoning districts. As the abutting properties are commercial, the commercial limit has been chosen. The maximum overall allowable noise level is taken to be 65 dB(A). In addition to the overall dB(A) limit, an octave band criteria is also given, however, sufficient source level information is not available to assess these limits.

NOISE EVALUATION; RESULTS

To determine the acoustic impact of the proposed equipment, the property line sound pressure levels (SPL) from the AT&T cabinets were determined. The "source" sound levels provided by the equipment vendors are given in Table 1. Sound data for the two types of equipment cabinets were provided by email in references [2, 3]. Further, NCE assumed all sound pressure levels provided for the equipment cabinets to be measured at a distance of 5 feet (a typical distance for equipment of this size). NCE could not evaluate the octave band requirement as octave band source levels are not available for the equipment.

TABLE 1: Equipment Source Sound Level at Distance

Equipment	Sound Pressure Level dB(A) re: 20µPa	Distance (feet)
AT&T RBA72	59	*5
Purcell FL16WS cabinets (daytime value)	65	*5

** Distance assumed by NCE*

To calculate the noise levels at the property lines, NCE used the Table 1 sound pressure levels with further attenuation for spherical spreading. NCE determined distances between the equipment and the property lines at four locations in the four cardinal directions using the zoning drawing, reference [4], sheets Z-1 through Z-7. The four locations are shown in Figure 1. From qualitative inspection, it appears there will be a barrier effect from the building itself in the northern and western directions and from the fiberglass screen wall and the building rooftop in the eastern and southern directions. NCE included a conservative estimate of the barrier effects in the prediction. Table 2 contains the calculations of the projected equipment cabinet noise levels at the property line for each direction as compared with the nighttime noise limit of 65 dB(A).

TABLE 2: Calculated Cabinet SPL at the Property Lines, dB(A) re: 20µPa

Direction	North	West	South	East
AT&T RBA72 Power Cabinets (1 unit)	59	59	59	59
Purcell FL16WS cabinets (3 units)	65	65	65	65
Total Lp for five units @ 5 ft	**71**	**71**	**71**	**71**
Horizontal Distance to Property Line, feet	150	540	76	14
Vertical Distance to Property Line, feet	47.75	47.75	47.75	47.75
Total Distance Roof to Property Line	157	542	90	50
Minimum Roof Barrier Attenuation, dB	10	10	5	5
Calculated SPL @ Property Line, dB(A)	**31**	**20**	**41**	**46**
Nighttime Noise Limit, dB(A)	65	65	65	65
Excess to Limit, dB	-	-	-	-

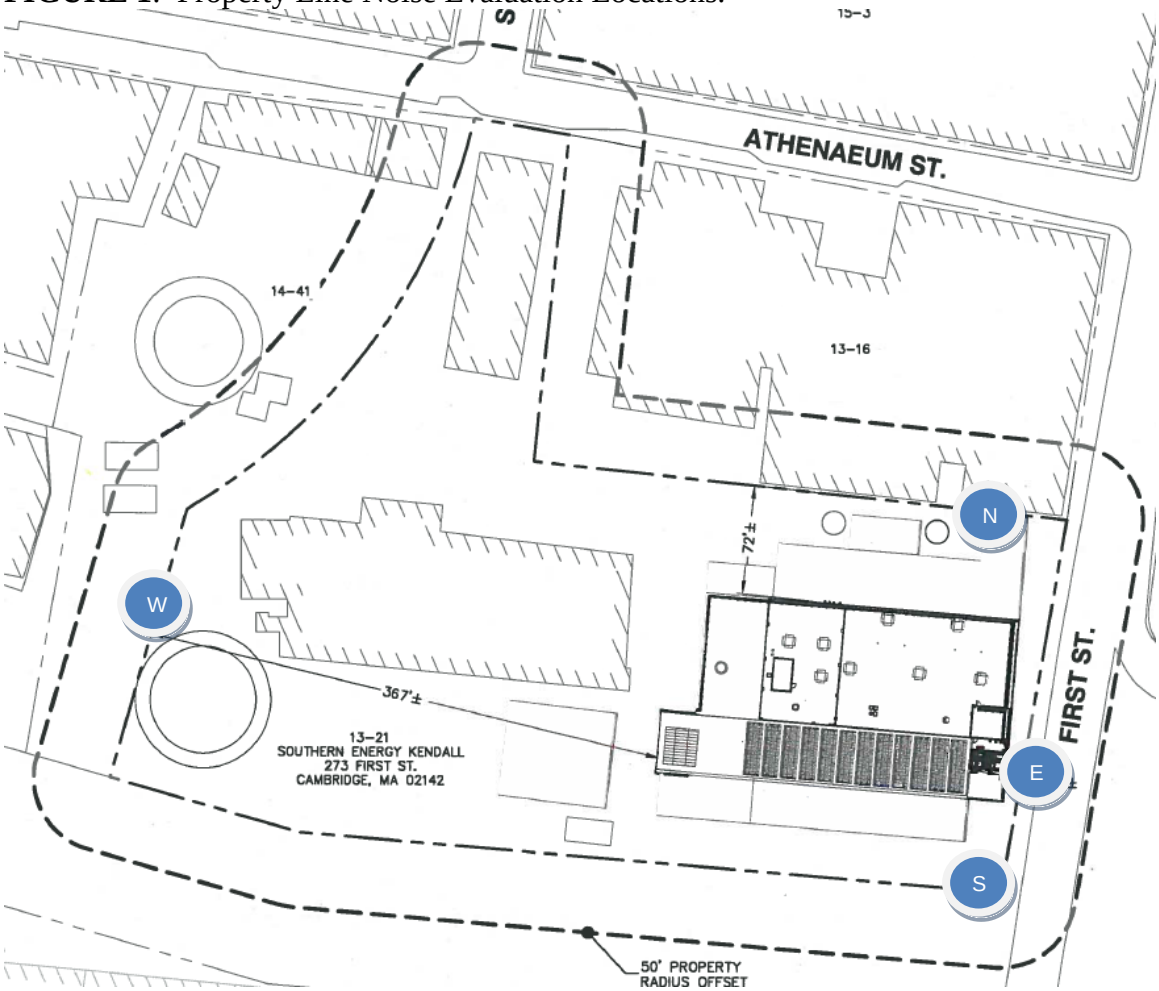
CONCULSION

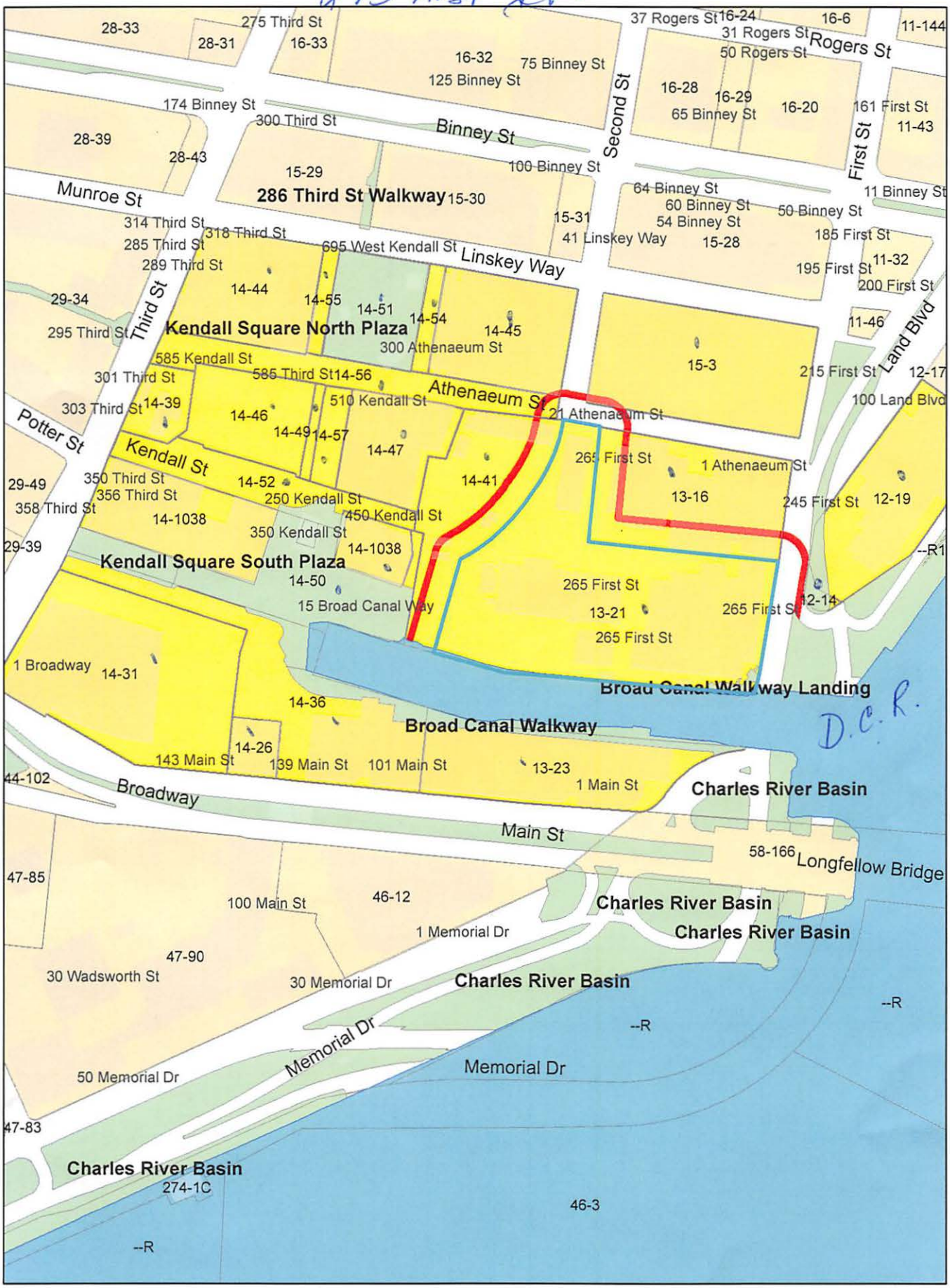
The proposed units to be installed on the rooftop of 273 First Street, Cambridge, MA taken together will comply with the overall dB(A) requirements of the Zoning Bylaws of the City of Cambridge. Insufficient source noise information is available to assess compliance with the octave band limits, however, as the conservative evaluation of the overall level is 19 to 45 dB below the overall limit of 65 dB(A), NCE expects the octave band limits will be met as well.

REFERENCES

1. City of Cambridge Municipal Code, Title 8 Health and Safety, Chapter 8.16 Noise Control. Dated 1991.
2. Email from Paul Dokulil at Purcell Systems to AT&T, dated 08/09/2013.
3. Email from Ronald Coleman to AT&T dated 08/12/2013.
4. AT&T Mobility Drawing (prepared by Dewberry Engineering Inc), 273 First St, Cambridge, Massachusetts (Site # MA2544, Rev 5, dated 4/21/2017).

FIGURE 1: Property Line Noise Evaluation Locations.




273 First St.
28-33
275 Third St
28-31
16-33
16-32
75 Binney St
125 Binney St
37 Rogers St
16-24
31 Rogers St
50 Rogers St
16-6
11-144
Rogers St
Second St
16-28
16-29
65 Binney St
16-20
161 First St
11-43
First St
174 Binney St
300 Third St
Binney St
28-39
28-43
15-29
286 Third St Walkway
15-30
100 Binney St
64 Binney St
60 Binney St
54 Binney St
50 Binney St
11 Binney St
Munroe St
314 Third St
285 Third St
289 Third St
318 Third St
695 West Kendall St
Linskey Way
15-31
41 Linskey Way
15-28
185 First St
195 First St
11-32
200 First St
29-34
295 Third St
Third St
14-44
14-55
14-51
14-54
14-45
Kendall Square North Plaza
300 Athenaeum St
11-46
Land Blvd
585 Kendall St
585 Third St
14-56
Athenaeum St
15-3
215 First St
12-17
100 Land Blvd
301 Third St
303 Third St
14-39
14-46
510 Kendall St
21 Athenaeum St
Potter St
14-49
14-57
14-47
Kendall St
265 First St
1 Athenaeum St
29-49
350 Third St
356 Third St
358 Third St
14-52
250 Kendall St
14-41
13-16
245 First St
12-19
14-1038
450 Kendall St
350 Kendall St
29-39
14-1038
Kendall Square South Plaza
14-50
15 Broad Canal Way
265 First St
13-21
265 First St
265 First St
12-14
--R1
1 Broadway
14-31
Broad Canal Walkway Landing
14-36
Broad Canal Walkway
D.C.R.
14-26
143 Main St
139 Main St
101 Main St
13-23
1 Main St
44-102
Broadway
Charles River Basin
Main St
58-166
Longfellow Bridge
47-85
100 Main St
46-12
Charles River Basin
1 Memorial Dr
Charles River Basin
47-90
30 Wadsworth St
30 Memorial Dr
Charles River Basin
--R
--R
Memorial Dr
50 Memorial Dr
Memorial Dr
47-83
Charles River Basin
274-1C
46-3
--R

273 first St.

Petitioner

12-14
MASSACHUSETTS COMMONWEALTH OF
STATE HOUSE
BOSTON, MA 02133

12-19
PRESIDENT & FELLOWS OF HARVARD COLLEGE
C/O HARVARD REAL ESTATE, INC.
HOLYOKE CENTER,ROOM 1000
1350 MASSACHUSETTS AVE
CAMBRIDGE, MA 02138

NEW CINGULAR WIRELESS PCS LLC
C/O DAN BILEZIKIAN/ SAI CO.
125 TREMONT STREET
REHOBOTH, MA 02769

13-21-41
SOUTHERN ENERGY KENDALL
C/O BRIAN KRAMSCHUSTER
13155 NOEL RD., SUITE 100
DALLAS , TX 75240

14-1038
WATERMARK II MEMBER, LLC
801 GRAND AVENUE
DES MOINES, IA 50392

14-26
THE AMERICAN NATIONAL RED CROSS
C/O AMERICAN RED CROSS OF MASS. BAY
ATT: DEBORAH C. JACKSON
139 MAIN STREET
CAMBRIDGE, MA 02142

14-31
MIT ONE BROADWAY FEE OWNER , LLC
C/O MIT INVESTMENT MANG.
238 MAIN ST., SUITE #200
CAMBRIDGE, MA 02142

14-36 /13-23
RREEF AMERICA REIT II CORP. PPP
C/O CB RICHARD ELLIS
P.O BX 4900, #207
SCOTTSDALE, AZ 85261

14-39
COMMONWEALTH GAS CO.
C/O NSTAR GAS CO
PROPERTY TAX DEPT
P.O. BOX 270
HARTFORD, CT 06141

14-46
CONSTELLATION CHARITABLE FOUNDATION
43 THORNDIKE STREET
CAMBRIDGE, MA 02141

15-3
ARE-MA REGION NO. 38 LLC,
PO BOX 847
CARLSBAD, CA 92018

14-1038
TP/P KENDALL SQUARE, LLC.
225 N.E. MIZNER BLVD. UNIT #400
BOCA RATON, FL 33432

13-16
JAMESTOWN PREMIER 245 FIRST LLC
245 FIRST ST
CAMBRIDGE, MA 02142

14-49-50-51-52-54-55-56
BMR KENDALL DEVELOPMENT LLC,
C/O BIOMED REALTY TRUST, INC. ATTN: AP
17190 BERNARDO CENTER DR.
SAN DIEGO, CA 92128

14-44-45-47-1038
BMR-675 WEST KENDALL STREET LLC,
C/O PARADIGM TAX GROUP
5694 MISSION CENTER RD. - SUITE 602-800
SAN DIEGO, CA 92108

14-57
BMR KENDALL DEVELOPMENT LLC
C/O BIOMED REALTY LLP
17140 BERNARDO CENTER DR. - SUITE #222
SAN DIEGO, CA 92128

DEPARTMENT OF CONSERVATION &
RECREATION
251 CAUSEWAY ST. – SUITE 600
BOSTON, MA 02114-2119

CAMBRIDGE HISTORICAL COMMISSION

831 Massachusetts Avenue, 2nd Floor, Cambridge, Massachusetts 02139
Telephone: 617 349 4683 TTY: 617 349 6112
E-mail: histcomm@cambridgema.gov URL: http://www.cambridgema.gov/Historic

Jurisdiction Advice

To the Owner of Property at 273 First Street

The above-referenced property is subject to the jurisdiction of the Cambridge Historical Commission (CHC) by reason of the status referenced below:

__ Old Cambridge Historic District
__ Fort Washington Historic District
(M.G.L. Ch. 40C, City Code §2.78.050)
__ Avon Hill Neighborhood Conservation District
__ Half Crown – Marsh Neighborhood Conservation District
__ Harvard Square Conservation District
__ Mid Cambridge Neighborhood Conservation District
__ Designated Landmark
__ Property is being studied for designation: _____
(City Code, Ch. 2.78., Article III, and various City Council Orders)
__ Preservation Restriction or Easement (as recorded)
_X_ Structure is fifty years or more old and therefore subject to CHC review of any application for a demolition permit, if one is required by ISD. (City Code, Ch. 2.78, Article II). **See the back of this page for definition of demolition.**
No demolition proposed in zoning application.
__ No jurisdiction: not a designated historic property and the structure is less than fifty years old.
__ No local jurisdiction, but the property is listed on the National Register of Historic Places; CHC staff is available for consultation, upon request.
Staff comments: _____

The Board of Zoning Appeal advises applicants to complete Historical Commission or Neighborhood Conservation District Commission reviews before appearing before the Board.

If a line indicating possible jurisdiction is checked, the owner needs to consult with the staff of the Historical Commission to determine whether a hearing will be required.

CHC staff initials SLB Date May 10, 2017

Received by Uploaded to Energov Date May 10, 2017
Relationship to project BZA 13173-2017

cc: Applicant
Inspectional Services Commissioner

Demolition Delay Ordinance and Application Information

The Demolition Delay Ordinance (Chapter 2.78, Article II of the Cambridge Municipal Code) was adopted by the City Council in 1979 to afford public review of demolition permit applications for potentially significant buildings. When the Historical Commission determines that a building is significant and should be preserved, demolition will be delayed for up to six months so that solutions can be sought to preserve the building indefinitely. The Ordinance covers all buildings over 50 years old, city-wide. The Historical Commission archives provide dates of construction for all properties in the City.

Demolition is defined in the ordinance as "the act of pulling down, destroying, removing or razing a building or commencing the work of total or substantial destruction with the intent of completing the same." The Inspectional Services Commissioner has provided further guidelines to outline what actions require a demolition permit. **In addition to complete demolition of a building, the following actions may require a demolition permit,**

- **removal of a roof,**
- **removal of one side of a building,**
- **gutting of a building's interior to the point where exterior features (windows, etc.) are impacted, and**
- **removal of more than 25% of a structure.**

Please contact the building inspector or a staff member of the Historical Commission if you have questions about whether a demolition permit is required for a particular project.

Demolition permit applications can be obtained from the Inspectional Services Department. The completed application should be submitted to the Historical Commission, where the staff will review the application. If the Executive Director of the Historical Commission makes an initial determination that the building is significant, a public hearing will be scheduled with Historical Commission. If the staff makes an initial determination that the building is not significant, the application is released for further review by the Building Commissioner.

More information about the demolition permit application procedures is available on the Historical Commission's web site or by calling or dropping by the Historical Commission office.

July 2003

Cambridge Historical Commission
831 Massachusetts Ave., 2nd Fl.
Cambridge, MA 02139
Ph: 617/349-4683 or TTY: 617/349-6112
http://www.cambridgema.gov/Historic