EVERSOURCE ENERGY

56 Prospect Street
P.O. Box 270
Hartford, CT 06141-0270

Kathleen M. Shanley
Manager – Transmission Siting
Tel: 860-728-4527

January 23, 2016

Robert Stein, Chairman
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: Petition No. 1226
Towantic Switching Station and Line Modification Project

Dear Chairman Stein:

On May 27, 2016, The Connecticut Light and Power Company doing business as Eversource Energy (Eversource) received a Declaratory Ruling (Ruling) from the Connecticut Siting Council (Council) that a Certificate of Environmental Compatibility and Public Need would not be required for the planned 115-kilovolt (kV) Towantic Switching Station and related modifications to the existing 1575 and 1585 115-kV transmission lines proposed in Petition No. 1226 (referred to herein as "the Project"). Condition 7 of the Council's ruling required that:

7. "If FAA hazard lighting and/or marking or modifications are required, Eversource shall file a Petition Amendment/Modification for Council review and approval for such modifications."

Based on the Notices of Proposed Construction or Alteration (FAA Form 7460-1) filed with the FAA, Eversource received Notices of Presumed Hazard for a total of eleven (11) structures. Consistent with the Council's condition of approval, enclosed are proposed lighting modifications for three (3) of the structures (Utility Pole A, Structure 11166 and Structure 11166A). Eversource is continuing its discussion with the FAA on the remaining eight (8) structures and requesting that the FAA perform further study so as to limit the amount of lighting and/or marking requirements necessary to receive a Determination of No Hazard to Air Navigation for these remaining structures. If lighting and/or marking is required for these remaining structures, Eversource will then submit the proposed lighting/marking modifications to the Council for its review and approval.

For the three new structures subject of this submittal, Eversource has designed aviation lighting in accordance with the FAA's conditions contained in the Determinations of No Hazard to Air Navigation (included in Attachment A) for the above referenced structures. Eversource therefore submits the proposed hazard lighting to the Council for review and approval to incorporate the aviation warning mitigation for these structures into the Project design.

The three structures are located in the vicinity of the Oxford airport, in the Towns of Middlebury and Oxford. Eversource proposes to install steady-state red obstruction lights on two of the new transmission line structures, Structures 11166 and 11166A; and at two locations within the new Towantic Switching Station ("Station"). The Station was identified as "Utility Pole A Frame" since it is considered to be one major extensive obstruction (i.e., multiple obstructions at the same height located relatively close together including the lightning masts installed on A-frames, H-frames, and independent poles.)

All aviation warning lights will be powered from an internal distribution service line located within the property limits for the Station structures and within the right-of-way for the line structures. Attachment B contains cross section drawings FAA-1 and FAA-2 which illustrate the design of the aviation lighting on the structures. Table 1 in Attachment C provides specifications regarding the FAA-recommended lighting and identifies the transmission line structures on which lighting will be provided. Figures 1a and 1b in Attachment D provide photographs of representative examples of aviation warning lights on structures and the warning lights planned for the Station and line structures will be the same, or similar to, these lights.

The drawing provided in Attachment E illustrates the design of the aviation warnings on the transmission line structures and the proposed locations of the aviation warning lights on the Station structures.

To incorporate the FAA's conditions of lighting into the Project design documents, Eversource proposes to add notations on Mapsheet 22, which depicts the structures affected by the FAA determinations. The modified Mapsheet 22 is included in Attachment F.

Enclosed please find an original and 15 copies of this submission.

Should you or other Council members have any questions regarding this submission, please do not hesitate to contact me via e-mail at kathleen.shanley@eversource.com or telephone at (860) 728-4527.

Sincerely,

Kathleen M. Shanley

Kathleen M. Shanley
Manager, Transmission Siting

CC:
Neil O'Leary, Mayor of Waterbury (letter only)
Joe Geary, Chief of Staff, Mayor's Office, Waterbury (letter only)
Edward St. John, Middlebury First Selectman (letter only)
George Temple, Oxford First Selectman (letter only)

ATTACHMENT A

FAA DETERMINATIONS OF NO HAZARD TO

AIR NAVIGATION

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2016-ANE-2344-OE

Issued Date: 01/19/2017

John Case
Eversource
56 Prospect St
Hartford, CT 06103

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Utility Pole A Frame
Location:	Waterbury, CT
Latitude:	41-29-06.67N NAD 83
Longitude:	73-07-21.41W
Heights:	830 feet site elevation (SE)
	81 feet above ground level (AGL)
	911 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure would have no substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on the operation of air navigation facilities. Therefore, pursuant to the authority delegated to me, it is hereby determined that the structure would not be a hazard to air navigation provided the following condition(s) is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 1, Obstruction Marking and Lighting, red lights - Chapters 4,5(Red),&12.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

__X__ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 07/19/2018 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

(b) extended, revised, or terminated by the issuing office.

(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is subject to review if an interested party files a petition that is received by the FAA on or before February 18, 2017. In the event a petition for review is filed, it must contain a full statement of the basis upon which it is made and be submitted to the Manager, Airspace Policy & Regulation, Federal Aviation Administration, 800 Independence Ave, SW, Room 423, Washington, DC 20591.

This determination becomes final on February 28, 2017 unless a petition is timely filed. In which case, this determination will not become final pending disposition of the petition. Interested parties will be notified of the grant of any review. For any questions regarding your petition, please contact Airspace Regulations & ATC Procedures Group via telephone -- 202-267-8783 - or facsimile 202-267-9328.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This aeronautical study considered and analyzed the impact on existing and proposed arrival, departure, and en route procedures for aircraft operating under both visual flight rules and instrument flight rules; the impact on all existing and planned public-use airports, military airports and aeronautical facilities; and the cumulative impact resulting from the studied structure when combined with the impact of other existing or proposed structures. The study disclosed that the described structure would have no substantial adverse effect on air navigation.

An account of the study findings, aeronautical objections received by the FAA during the study (if any), and the basis for the FAA's decision in this matter can be found on the following page(s).

If we can be of further assistance, please contact Darin Clipper, at (404) 305-6531. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2016-ANE-2344-OE.

Signature Control No: 293469513-318092272 (DNH)
Mike Helvey
Manager, Obstruction Evaluation Group

Attachment(s)
Additional Information
Case Description
Map(s)

The proposed utility pole (A-Frame) supporting a 115-kV line, at a height of 81 feet (ft.) AGL / 911 ft. AMSL, would be located approximately 3,925 ft. east of the approach end Runway 18 at Waterbury- Oxford Airport (OXC), Waterbury, CT. The proposed structure has been identified as an obstruction under the standards of Title 14, Code of Federal Regulations (CFR), Part 77, as applied to OXC as follows:

Section 77.17 (a) (5): The surface of a takeoff and landing area of an airport or any imaginary surface established under 77.19, 77.21, or 77.23. However, no part of the takeoff or landing area itself will be considered an obstruction.

Section 77.19 (a): A Horizontal plane 150 feet above the established airport elevation, the perimeter of which is constructed by swinging arcs of a specified radii from the center of each end of the primary surface of each runway of each airport and connecting the adjacent arcs by lines tangent to those arcs. The proposed structure exceeds the Horizontal Surface by up to 35 ft.

The proposed structure would also be located within the traffic pattern airspace (TPA) for all categories of aircraft using the Waterbury-Oxford Airport. The proposal would exceed the Part 77 Horizontal Surface as applied to visual approach runways at OXC by 35 ft.

The proposed structure was issued a Notice of Presumed Hazard on September 27, 2016 and a request for public circularization was received from the proponent on November 22, 2016.

The proposed structure was then circularized to the public by means of a public notice issued on November 23, 2016. After circularization to all known aviation interests and non-aeronautical interests that may be affected by the proposal, no letters of objection were received as a result of public circularization from the public or from any other FAA or DOD offices / air traffic control facilities.

The proposed structure would have no effect on any existing or proposed arrival, departure, or en route instrument flight rule (IFR) operations, minimum flight altitudes, minimum vectoring altitudes (MVA), aeronautical procedures, or on any aeronautical facilities as it relates to either current or future runway extensions or proposals at OXC or at any other known public use or military airport. A 2C survey is on file for the proposed structure, and information on the proposed structure shall be forwarded for appropriate aeronautical charting.

The proposed structure would exceed 77.19 (a) and also be located within the TPA for all categories of aircraft using the Waterbury-Oxford Airport. However, the normal flight path for an aircraft within a traffic pattern is based upon the category/approach speed of said aircraft. The higher the category/approach speed, the larger the traffic pattern flown. Category A aircraft would be the most likely aircraft affected by the proposed structure as this traffic pattern keeps this category aircraft closer to the airport thereby closer to the proposed structure more so than any other category of aircraft when OXC is utilizing left traffic to Runway 18 or right traffic to Runway 36.

The proposed structure would be located 3,800 ft. abeam OXC near where aircraft would begin transitioning from level flight to the climb/decent area of the TPA, and approximately 3,925 ft. from approach end Runway 18. It is a commonly accepted practice for aircraft to establish the downwind leg of their traffic pattern approximately one nautical mile from the runway (farther for Category B or larger aircraft). The expected flight path of aircraft on the downwind leg of the traffic pattern would place an aircraft approximately 3,800 ft. east of the proposed structure. It is unlikely than an aircraft would need to fly directly over the proposed

structure, as the traffic pattern for category A aircraft extends up to 1.25 NM abeam the runway and therefore should not require a VFR aircraft to change its regular flight course or altitude when entering or establishing the aircraft on down wind or completing pattern work.

To date, the traffic pattern altitude at OXC is 1,699 ft. AMSL for aircraft up to 12,500 pounds or 2,199 ft. for aircraft greater than 12,500 pounds. The airport elevation is 726 ft. AMSL and the height of the proposed structure is 911 ft. AMSL. The difference is 189 ft. Aircraft operating at the established pattern altitude should be a minimum of 788 ft. or more above the proposed structure depending on the traffic pattern being flown. There is also an airport remark in the Airport Facility Directory of existing 748 ft. electric transmission towers running NE to SW .2 NM north of the middle marker and it should also be noted the terrain itself in the general vicinity of the proposed structure exceeds OXC's Horizontal Surface by up to 219 ft.

It was found that the proposed structure would not restrict the clear view of any runway or traffic pattern from the tower cab or derogate the airport's capacity or efficiency or affect the usable length of any existing or planned runway.

Study for possible visual flight rules (VFR) effect disclosed that the proposed structure would have no substantial adverse effect on any existing or proposed arrival or departure VFR operations or procedures. It would not conflict with airspace required to conduct normal VFR traffic pattern operations at OXC or any other known public use or military airports. At 81 ft. AGL or below, the proposed structure would not have a substantial adverse effect on VFR en route flight operations.

It is recommended the proposed structure be lit with a red light to make it more conspicuous to airmen should circumnavigation be necessary.

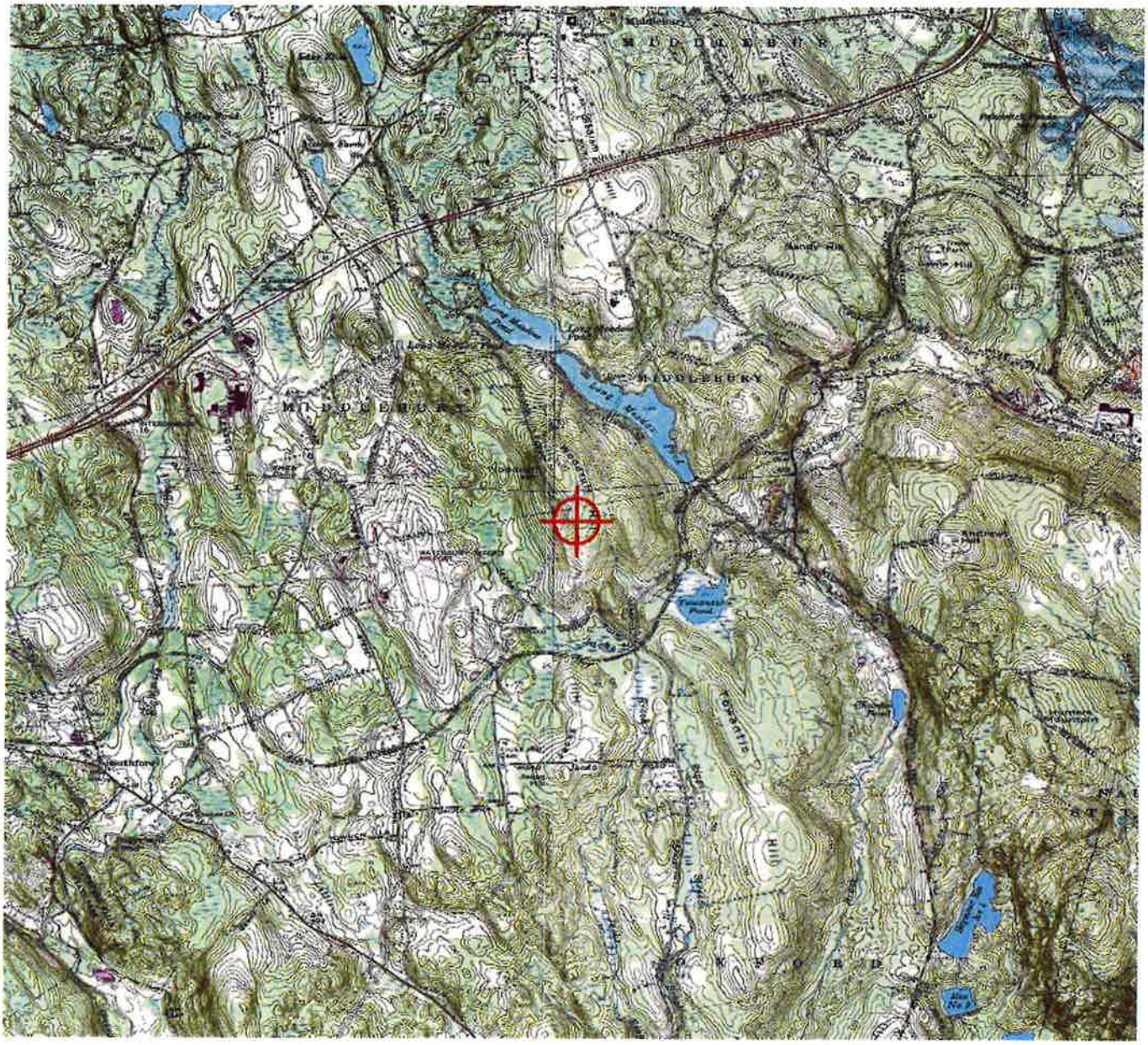
The cumulative impact of the proposed structure, when combined with other proposed and existing structures, is not considered to be significant. Study did not disclose any adverse effects on existing or proposed public-use or military airports or navigational facilities, nor does the proposal affect the capacity of any known existing or planned public-use or military airport.

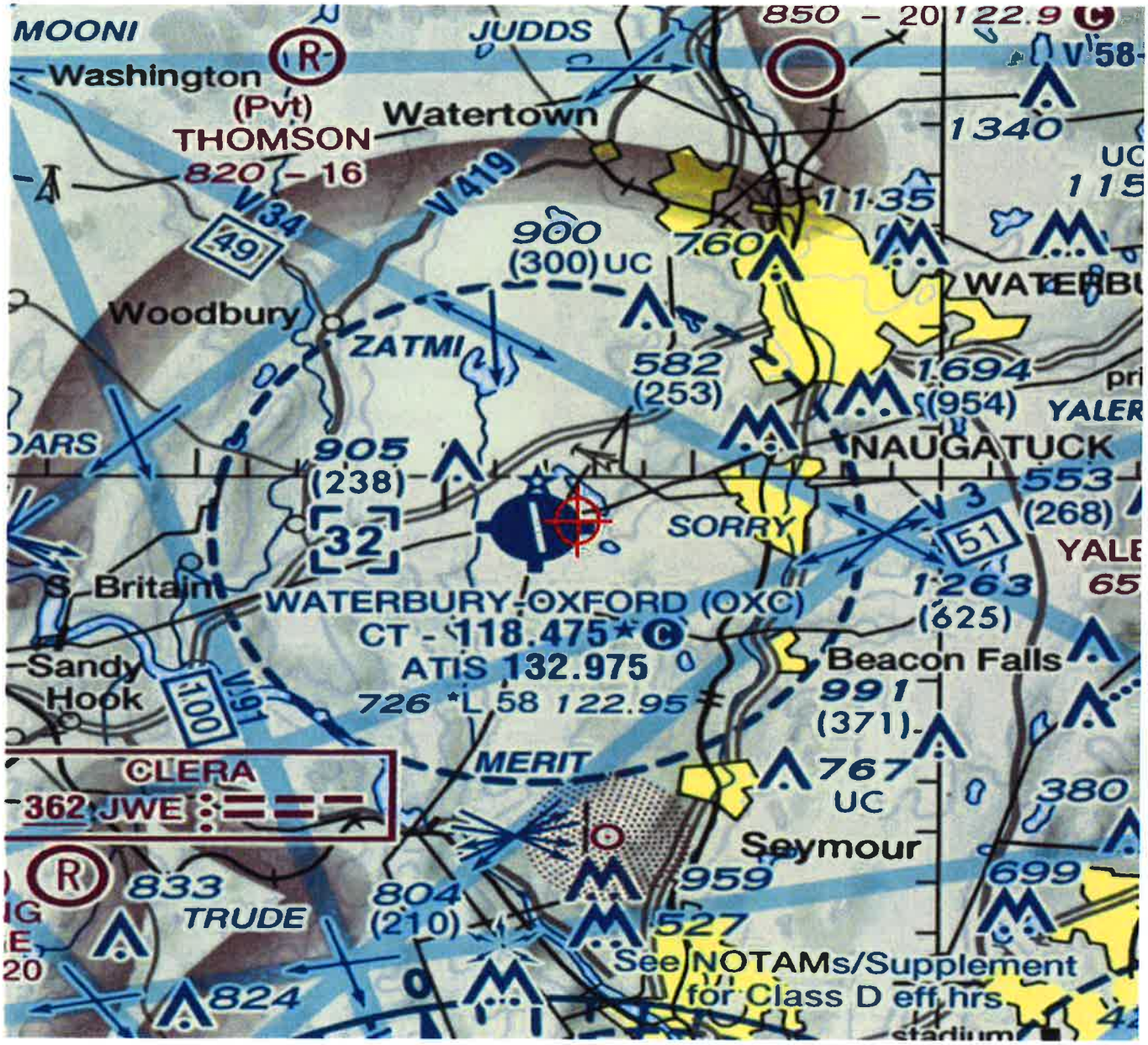
Therefore, it is determined that the proposed structure would not have a substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation as long as all conditions written within this determination are met.

It is also recommended that any construction equipment used be e-filed with the FAA at least 60-90 days prior to construction equipment exceeding the proposed structure's AGL height. When a crane is e-filed with the FAA, it is recommended that crane specifications documents, work schedule including times/dates, and a marking and lighting plan be attached with the e-filed proposal to ensure the FAA evaluation is completed as expeditiously as possible or construction delays should be expected.

Eversource is proposing to construct a new 115 kV substation, the Towantic Switching Station, and to modify its 115 kV transmission facilities. The new structures associated with the transmission line modifications will be filed individually and separately from this filing.

TOPO Map for ASN 2016-ANE-2344-OE

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Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2016-ANE-2852-OE

Issued Date: 01/20/2017

John Case
Eversource
56 Prospect St
Hartford, CT 06103

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Utility Pole 11166-1990S
Location:	Waterbury, CT
Latitude:	41-29-05.81N NAD 83
Longitude:	73-07-25.42W
Heights:	807 feet site elevation (SE)
	96 feet above ground level (AGL)
	903 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure would have no substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on the operation of air navigation facilities. Therefore, pursuant to the authority delegated to me, it is hereby determined that the structure would not be a hazard to air navigation provided the following condition(s) is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 1, Obstruction Marking and Lighting, red lights - Chapters 4,5(Red),&12.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

__X__ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 07/20/2018 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

(b) extended, revised, or terminated by the issuing office.

(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is subject to review if an interested party files a petition that is received by the FAA on or before February 19, 2017. In the event a petition for review is filed, it must contain a full statement of the basis upon which it is made and be submitted to the Manager, Airspace Policy & Regulation, Federal Aviation Administration, 800 Independence Ave, SW, Room 423, Washington, DC 20591.

This determination becomes final on March 01, 2017 unless a petition is timely filed. In which case, this determination will not become final pending disposition of the petition. Interested parties will be notified of the grant of any review. For any questions regarding your petition, please contact Airspace Regulations & ATC Procedures Group via telephone -- 202-267-8783 - or facsimile 202-267-9328.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This aeronautical study considered and analyzed the impact on existing and proposed arrival, departure, and en route procedures for aircraft operating under both visual flight rules and instrument flight rules; the impact on all existing and planned public-use airports, military airports and aeronautical facilities; and the cumulative impact resulting from the studied structure when combined with the impact of other existing or proposed structures. The study disclosed that the described structure would have no substantial adverse effect on air navigation.

An account of the study findings, aeronautical objections received by the FAA during the study (if any), and the basis for the FAA's decision in this matter can be found on the following page(s).

If we can be of further assistance, please contact Darin Clipper, at (404) 305-6531. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2016-ANE-2852-OE.

Signature Control No: 297648350-318569282 (DNH)
Mike Helvey
Manager, Obstruction Evaluation Group

Attachment(s)
Additional Information
Case Description
Map(s)

The proposed utility pole (11166-1990S) supporting a 115-kV line, at a height of 96 feet (ft.) AGL / 903 ft. AMSL, would be located approximately 3,630 ft. southeast of the approach end Runway 18 at Waterbury-Oxford Airport (OXC), Waterbury, CT. The proposed structure has been identified as an obstruction under the standards of Title 14, Code of Federal Regulations (CFR), Part 77, as applied to OXC as follows:

Section 77.17 (a) (5): The surface of a takeoff and landing area of an airport or any imaginary surface established under 77.19, 77.21, or 77.23. However, no part of the takeoff or landing area itself will be considered an obstruction.

Section 77.19 (a): A Horizontal plane 150 feet above the established airport elevation, the perimeter of which is constructed by swinging arcs of a specified radii from the center of each end of the primary surface of each runway of each airport and connecting the adjacent arcs by lines tangent to those arcs. The proposed structure exceeds the Horizontal Surface by up to 27 ft.

The proposed structure would also be located within the traffic pattern airspace (TPA) for all categories of aircraft using the Waterbury-Oxford Airport. The proposal would exceed the Part 77 Horizontal Surface as applied to visual approach runways at OXC by 27 ft.

The proposed structure was issued a Notice of Presumed Hazard on August 25, 2016 and a request for public circularization was received from the proponent on November 22, 2016.

The proposed structure was then circularized to the public by means of a public notice issued on November 23, 2016. After circularization to all known aviation interests and non-aeronautical interests that may be affected by the proposal, no letters of objection were received as a result of public circularization from the public or from any other FAA or DOD offices / air traffic control facilities.

The proposed structure would have no effect on any existing or proposed arrival, departure, or en route instrument flight rule (IFR) operations, minimum flight altitudes, minimum vectoring altitudes (MVA), aeronautical procedures, or on any aeronautical facilities as it relates to either current or future runway extensions or proposals at OXC or at any other known public use or military airport. A 2C survey is on file for the proposed structure, and information on the proposed structure shall be forwarded for appropriate aeronautical charting.

The proposed structure would exceed 77.19 (a) and also be located within the TPA for all categories of aircraft using the Waterbury-Oxford Airport. However, the normal flight path for an aircraft within a traffic pattern is based upon the category/approach speed of said aircraft. The higher the category/approach speed, the larger the traffic pattern flown. Category A aircraft would be the most likely aircraft affected by the proposed structure as this traffic pattern keeps this category aircraft closer to the airport thereby closer to the proposed structure more so than any other category of aircraft when OXC is utilizing left traffic to Runway 18 or right traffic to Runway 36.

The proposed structure would be located 3,550 ft. abeam OXC near where aircraft would begin transitioning from level flight to the climb/decent area of the TPA, and approximately 3,630 ft. from approach end Runway 18. It is a commonly accepted practice for aircraft to establish the downwind leg of their traffic pattern approximately one nautical mile from the runway (farther for Category B or larger aircraft). The expected flight path of aircraft on the downwind leg of the traffic pattern would place an aircraft approximately 4,100 ft. east of the proposed structure. It is unlikely than an aircraft would need to fly directly over the proposed

structure, as the traffic pattern for category A aircraft extends up to 1.25 NM abeam the runway and therefore should not require a VFR aircraft to change its regular flight course or altitude when entering or establishing the aircraft on down wind or completing pattern work.

To date, the traffic pattern altitude at OXC is 1,699 ft. AMSL for aircraft up to 12,500 pounds or 2,199 ft. for aircraft greater than 12,500 pounds. The airport elevation is 726 ft. AMSL and the height of the proposed structure is 903 ft. AMSL. The difference is 177 ft. Aircraft operating at the established pattern altitude should be a minimum of 796 ft. or more above the proposed structure depending on the traffic pattern being flown. There is also an airport remark in the Airport Facility Directory of existing 748 ft. electric transmission towers running NE to SW .2 NM north of the middle marker and it should also be noted the terrain itself in the general vicinity of the proposed structure exceeds OXC's Horizontal Surface by up to 219 ft.

It was found that the proposed structure would not restrict the clear view of any runway or traffic pattern from the tower cab or derogate the airport's capacity or efficiency or affect the usable length of any existing or planned runway.

Study for possible visual flight rules (VFR) effect disclosed that the proposed structure would have no substantial adverse effect on any existing or proposed arrival or departure VFR operations or procedures. It would not conflict with airspace required to conduct normal VFR traffic pattern operations at OXC or any other known public use or military airports. At 96 ft. AGL or below, the proposed structure would not have a substantial adverse effect on VFR en route flight operations.

It is recommended the proposed structure be lit with a red light to make it more conspicuous to airmen should circumnavigation be necessary.

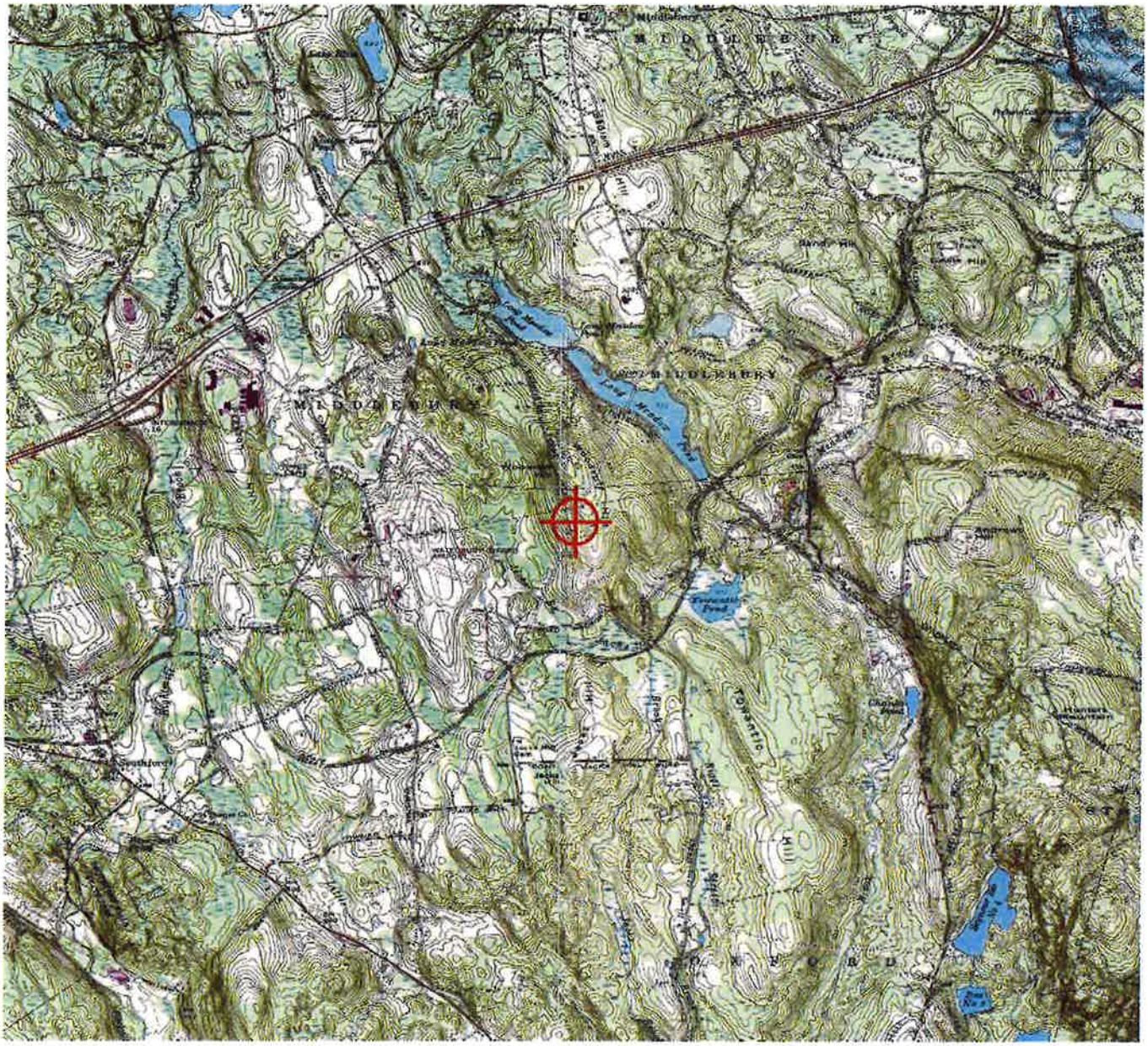
The cumulative impact of the proposed structure, when combined with other proposed and existing structures, is not considered to be significant. Study did not disclose any adverse effects on existing or proposed public-use or military airports or navigational facilities, nor does the proposal affect the capacity of any known existing or planned public-use or military airport.

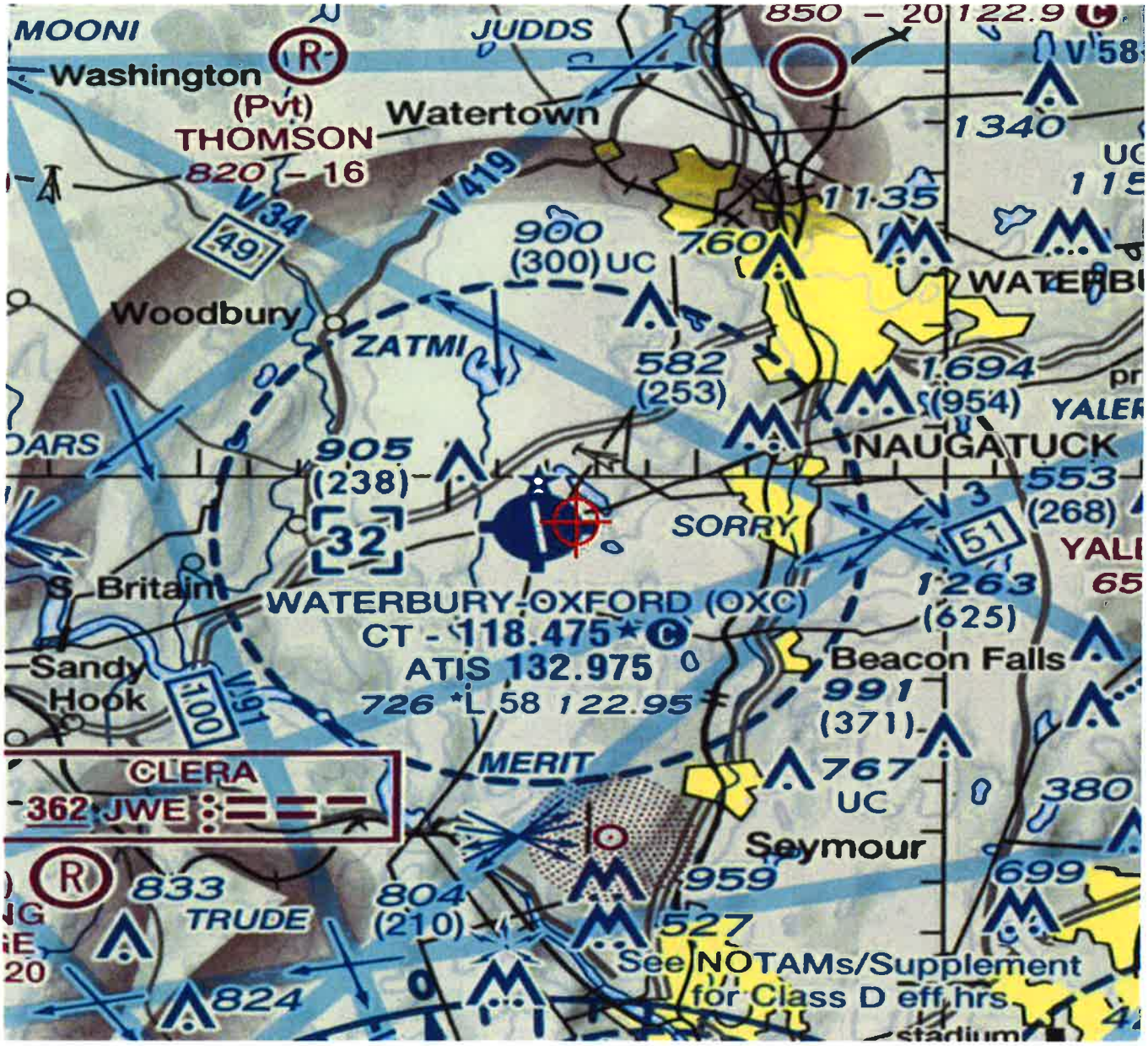
Therefore, it is determined that the proposed structure would not have a substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation as long as all conditions written within this determination are met.

It is also recommended that any construction equipment used be e-filed with the FAA at least 60-90 days prior to construction equipment exceeding the proposed structure's AGL height. When a crane is e-filed with the FAA, it is recommended that crane specifications documents, work schedule including times/dates, and a marking and lighting plan be attached with the e-filed proposal to ensure the FAA evaluation is completed as expeditiously as possible or construction delays should be expected.

Eversource is planning to rebuild a 6 mile portion of a 115 kV overhead transmission line facility. The existing lattice towers will be removed and replaced with steel monopole structures.

TOPO Map for ASN 2016-ANE-2852-OE




MOONI
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THOMSON
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(625)
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CLERA
362 JWE
Seymour
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699
833
TRUDE
804
(210)
527
See NOTAMs/Supplement
for Class D eff hrs
824
stadium

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2016-ANE-2853-OE
Prior Study No.
2017-ANE-49-OE

Issued Date: 01/20/2017

John Case
Eversource
56 Prospect St
Hartford, CT 06103

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Utility Pole 11166A - 1990N
Location:	Waterbury, CT
Latitude:	41-29-07.11N NAD 83
Longitude:	73-07-24.83W
Heights:	830 feet site elevation (SE)
	96 feet above ground level (AGL)
	926 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure would have no substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on the operation of air navigation facilities. Therefore, pursuant to the authority delegated to me, it is hereby determined that the structure would not be a hazard to air navigation provided the following condition(s) is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 1, Obstruction Marking and Lighting, red lights - Chapters 4,5(Red),&12.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

__X__ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 07/20/2018 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

(b) extended, revised, or terminated by the issuing office.

(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is subject to review if an interested party files a petition that is received by the FAA on or before February 19, 2017. In the event a petition for review is filed, it must contain a full statement of the basis upon which it is made and be submitted to the Manager, Airspace Policy & Regulation, Federal Aviation Administration, 800 Independence Ave, SW, Room 423, Washington, DC 20591.

This determination becomes final on March 01, 2017 unless a petition is timely filed. In which case, this determination will not become final pending disposition of the petition. Interested parties will be notified of the grant of any review. For any questions regarding your petition, please contact Airspace Regulations & ATC Procedures Group via telephone -- 202-267-8783 - or facsimile 202-267-9328.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This aeronautical study considered and analyzed the impact on existing and proposed arrival, departure, and en route procedures for aircraft operating under both visual flight rules and instrument flight rules; the impact on all existing and planned public-use airports, military airports and aeronautical facilities; and the cumulative impact resulting from the studied structure when combined with the impact of other existing or proposed structures. The study disclosed that the described structure would have no substantial adverse effect on air navigation.

An account of the study findings, aeronautical objections received by the FAA during the study (if any), and the basis for the FAA's decision in this matter can be found on the following page(s).

If we can be of further assistance, please contact Darin Clipper, at (404) 305-6531. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2016-ANE-2853-OE.

Signature Control No: 297648358-318579795 (DNH)
Mike Helvey
Manager, Obstruction Evaluation Group

Attachment(s)
Additional Information
Case Description
Map(s)

The proposed utility pole (11166A-1990N) supporting a 115-kV line, at a height of 96 feet (ft.) AGL / 926 ft. AMSL, would be located approximately 3,661 ft. southeast of the approach end Runway 18 at Waterbury-Oxford Airport (OXC), Waterbury, CT. The proposed structure has been identified as an obstruction under the standards of Title 14, Code of Federal Regulations (CFR), Part 77, as applied to OXC as follows:

Section 77.17 (a) (5): The surface of a takeoff and landing area of an airport or any imaginary surface established under 77.19, 77.21, or 77.23. However, no part of the takeoff or landing area itself will be considered an obstruction.

Section 77.19 (a): A Horizontal plane 150 feet above the established airport elevation, the perimeter of which is constructed by swinging arcs of a specified radii from the center of each end of the primary surface of each runway of each airport and connecting the adjacent arcs by lines tangent to those arcs. The proposed structure exceeds the Horizontal Surface by up to 50 ft.

The proposed structure would also be located within the traffic pattern airspace (TPA) for all categories of aircraft using the Waterbury-Oxford Airport. The proposal would exceed the Part 77 Horizontal Surface as applied to visual approach runways at OXC by 50 ft.

The proposed structure was issued a Notice of Presumed Hazard on August 25, 2016 and a request for public circularization was received from the proponent on November 22, 2016.

The proposed structure was then circularized to the public by means of a public notice issued on November 23, 2016. After circularization to all known aviation interests and non-aeronautical interests that may be affected by the proposal, no letters of objection were received as a result of public circularization from the public or from any other FAA or DOD offices / air traffic control facilities.

The proposed structure would have no effect on any existing or proposed arrival, departure, or en route instrument flight rule (IFR) operations, minimum flight altitudes, minimum vectoring altitudes (MVA), aeronautical procedures, or on any aeronautical facilities as it relates to either current or future runway extensions or proposals at OXC or at any other known public use or military airport. A 2C survey is on file for the proposed structure, and information on the proposed structure shall be forwarded for appropriate aeronautical charting.

The proposed structure would exceed 77.19 (a) and also be located within the TPA for all categories of aircraft using the Waterbury-Oxford Airport. However, the normal flight path for an aircraft within a traffic pattern is based upon the category/approach speed of said aircraft. The higher the category/approach speed, the larger the traffic pattern flown. Category A aircraft would be the most likely aircraft affected by the proposed structure as this traffic pattern keeps this category aircraft closer to the airport thereby closer to the proposed structure more so than any other category of aircraft when OXC is utilizing left traffic to Runway 18 or right traffic to Runway 36.

The proposed structure would be located 3,575 ft. abeam OXC near where aircraft would begin transitioning from level flight to the climb/decent area of the TPA, and approximately 3,661 ft. from approach end Runway 18. It is a commonly accepted practice for aircraft to establish the downwind leg of their traffic pattern approximately one nautical mile from the runway (farther for Category B or larger aircraft). The expected flight path of aircraft on the downwind leg of the traffic pattern would place an aircraft approximately 4,050 ft. east of the proposed structure. It is unlikely than an aircraft would need to fly directly over the proposed

structure, as the traffic pattern for category A aircraft extends up to 1.25 NM abeam the runway and therefore should not require a VFR aircraft to change its regular flight course or altitude when entering or establishing the aircraft on down wind or completing pattern work.

To date, the traffic pattern altitude at OXC is 1,699 ft. AMSL for aircraft up to 12,500 pounds or 2,199 ft. for aircraft greater than 12,500 pounds. The airport elevation is 726 ft. AMSL and the height of the proposed structure is 926 ft. AMSL. The difference is 200 ft. Aircraft operating at the established pattern altitude should be a minimum of 773 ft. or more above the proposed structure depending on the traffic pattern being flown. There is also an airport remark in the Airport Facility Directory of existing 748 ft. electric transmission towers running NE to SW .2 NM north of the middle marker and it should also be noted the terrain itself in the general vicinity of the proposed structure exceeds OXC's Horizontal Surface by up to 219 ft.

It was found that the proposed structure would not restrict the clear view of any runway or traffic pattern from the tower cab or derogate the airport's capacity or efficiency or affect the usable length of any existing or planned runway.

Study for possible visual flight rules (VFR) effect disclosed that the proposed structure would have no substantial adverse effect on any existing or proposed arrival or departure VFR operations or procedures. It would not conflict with airspace required to conduct normal VFR traffic pattern operations at OXC or any other known public use or military airports. At 96 ft. AGL or below, the proposed structure would not have a substantial adverse effect on VFR en route flight operations.

It is recommended the proposed structure be lit with a red light to make it more conspicuous to airmen should circumnavigation be necessary.

The cumulative impact of the proposed structure, when combined with other proposed and existing structures, is not considered to be significant. Study did not disclose any adverse effects on existing or proposed public-use or military airports or navigational facilities, nor does the proposal affect the capacity of any known existing or planned public-use or military airport.

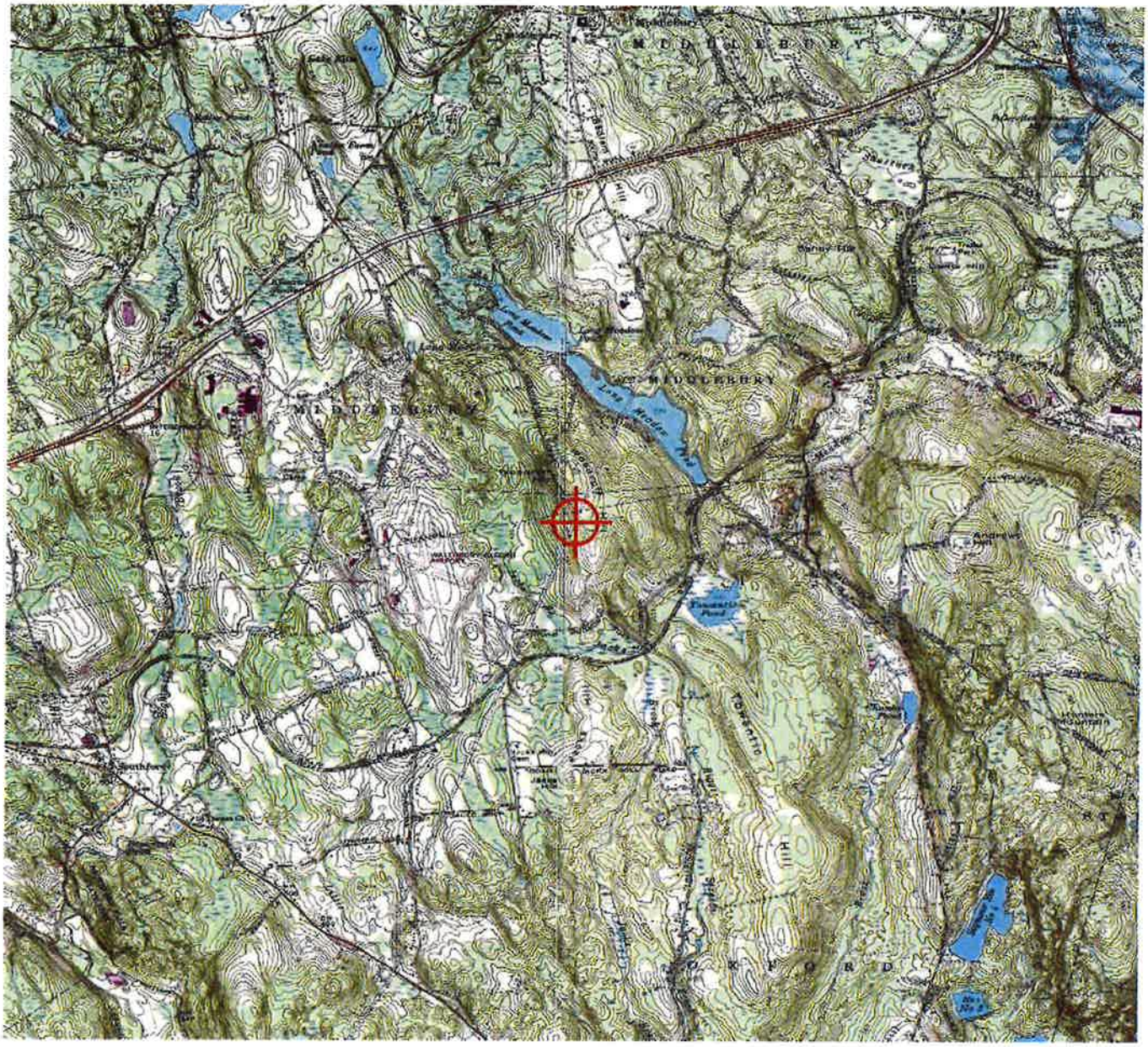
Therefore, it is determined that the proposed structure would not have a substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation as long as all conditions written within this determination are met.

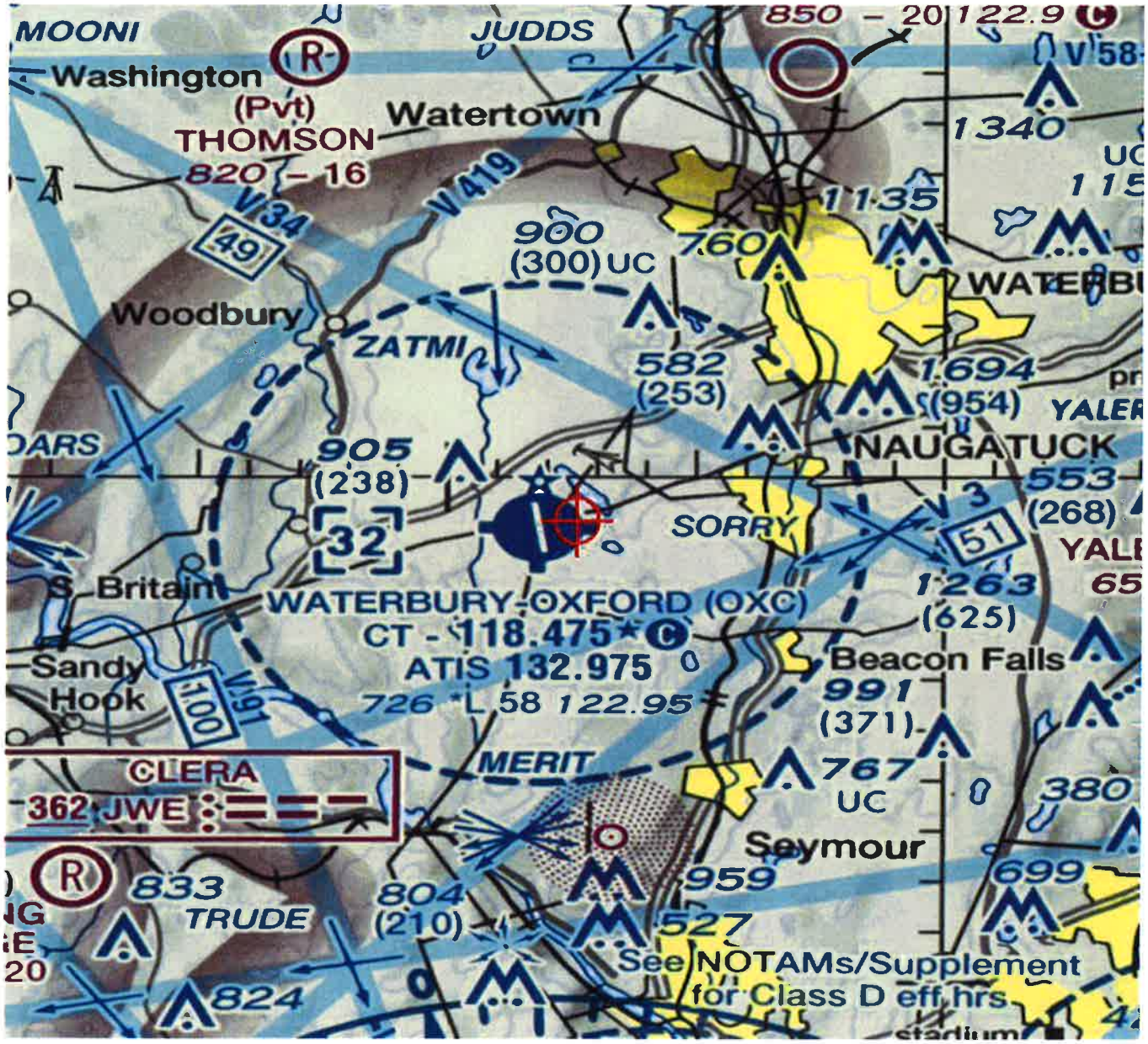
It is also recommended that any construction equipment used be e-filed with the FAA at least 60-90 days prior to construction equipment exceeding the proposed structure's AGL height. When a crane is e-filed with the FAA, it is recommended that crane specifications documents, work schedule including times/dates, and a marking and lighting plan be attached with the e-filed proposal to ensure the FAA evaluation is completed as expeditiously as possible or construction delays should be expected.

Case Description for ASN 2016-ANE-2853-OE

Eversource is planning to rebuild a 6 mile portion of a 115 kV overhead transmission line facility. The existing lattice towers will be removed and replaced with steel monopole structures.

TOPO Map for ASN 2016-ANE-2853-OE




MOONI
Washington
(Pvt)
THOMSON
820 – 16
JUDDS
Watertown
850 – 20
122.9
V 58
1340
V 34
V 419
49
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(300) UC
760
1135
WATERBU
Woodbury
ZATMI
582
(253)
1694
(954)
YALER
NAUGATUCK
553
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905
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32
SORRY
51
S Britain
WATERBURY-OXFORD (OXC)
CT - 118.475
ATIS 132.975
726 L 58 122.95
1263
(625)
Beacon Falls
Sandy
Hook
V 191
100
991
(371)
CLERA
362 JWE
MERIT
767
UC
380
Seymour
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699
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TRUDE
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(210)
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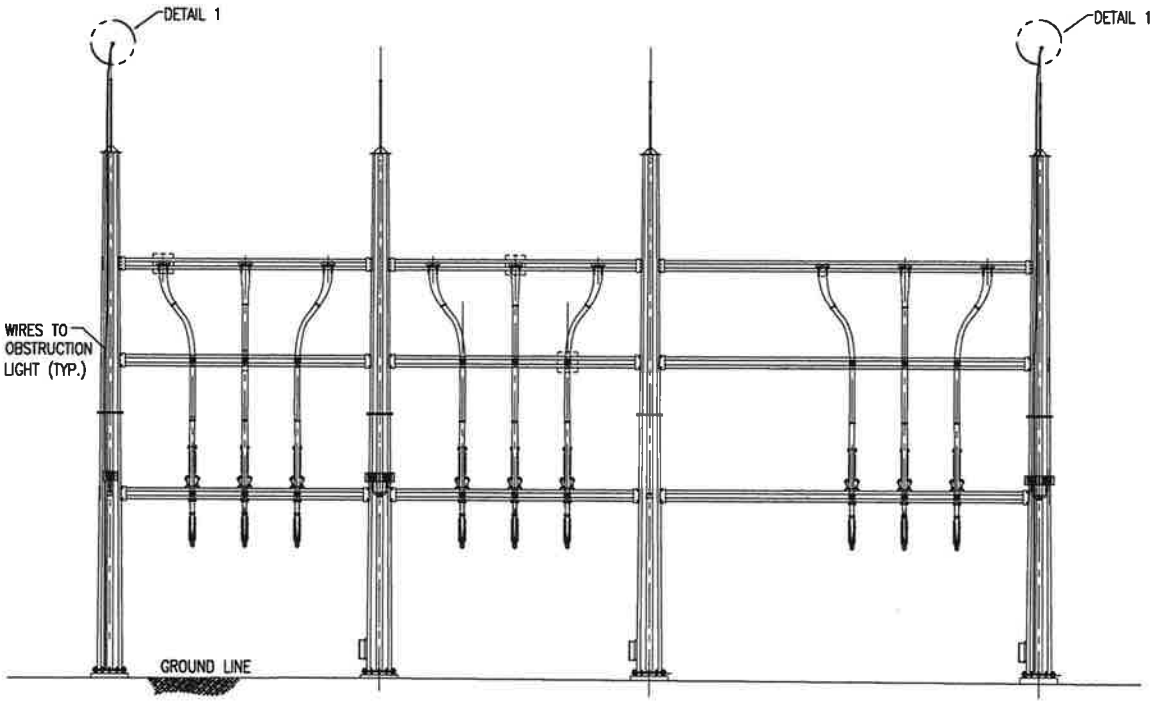
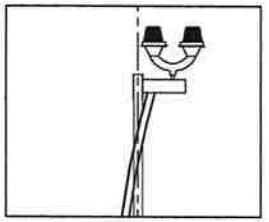
See NOTAMs/Supplement
for Class D eff hrs
824

ATTACHMENT B

CROSS SECTION DRAWINGS





DETAIL 1

OBSTRUCTION LIGHT LOCATION

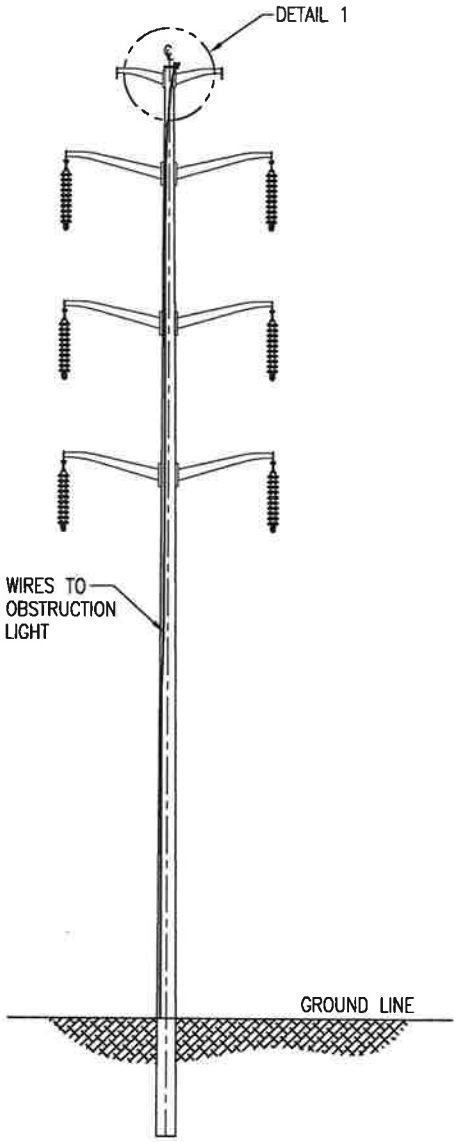
REVISIONS DURING CONSTRUCTION						

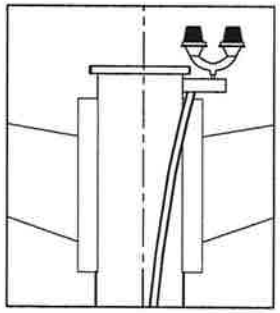
NO.	DATE	AS BUILT REVISIONS	BY	CHK	APP	APP

EVERSOURCE ENERGY

BUNKER HILL - OXFORD
115kV SWITCHING STATION
FAA LIGHT ARRANGEMENT
OXFORD/WATERBURY/MIDDLEBURY, CT

BY	DDM	CHKD	BRS	APP	APP
DATE	01/2017	DATE	01/2017	DATE	DATE
H-SCALE	N.T.S.	SIZE	B	FIELD BOOK & PAGES	
V-SCALE	N.T.S.	V.S.		E.C. BRB	
E.C. PROJ. NUMBER				DWG NO.	FAA-1





DETAIL 1
OBSTRUCTION LIGHT LOCATION

REVISIONS DURING CONSTRUCTION						

NO.	DATE	AS BUILT REVISIONS	BY	CHK	APP	APP

EVERSOURCE ENERGY

BUNKER HILL - OXFORD
115kV TRANSMISSION
FAA LIGHT & SOLAR PANEL ARRANGEMENT
OXFORD/WATERBURY/MIDDLEBURY, CT

BY KSC	CHKD BRS	APP	APP		
DATE 01/2017	DATE 01/2017	DATE	DATE		
H-SCALE N.T.S.	SIZE B	FIELD BOOK & PAGES			
V-SCALE N.T.S.	W.O.	N.C. SAP			
N.E. PROJ. NUMBER		DWG NO.			

FAA-2

ATTACHMENT C

SPECIFICATIONS REGARDING

FAA-RECOMMENDED LIGHTING

Table 1: Specifications Regarding FAA-Recommended Lighting
(Changes from Approved Mapsheet, dated April 1, 2016 REVISED January 20, 2017, are shown in RED)

Mapsheet Number	SUMMARY OF STRUCTURE INFORMATION			TYPE OF LIGHTING PER FAA
	EVERSOURCE STRUCTURE NUMBER	DESCRIPTION	HEIGHT (FT)	1-810 Light Power Source
OXFORD				
22	11166A	Single Circuit Steel Pole	96	Distribution Line
22	11166	Single Circuit Steel Pole	96	Distribution Line
22	N/A	Lightning Mast Within Switchyard (Utility Pole A Frame)	81	Distribution Line
22	N/A	Lightning Mast Within Switchyard (Utility Pole A Frame)	81	Distribution Line

ATTACHMENT D

REPRESENTATIVE EXAMPLES OF

AVIATION WARNING LIGHTS ON STRUCTURES

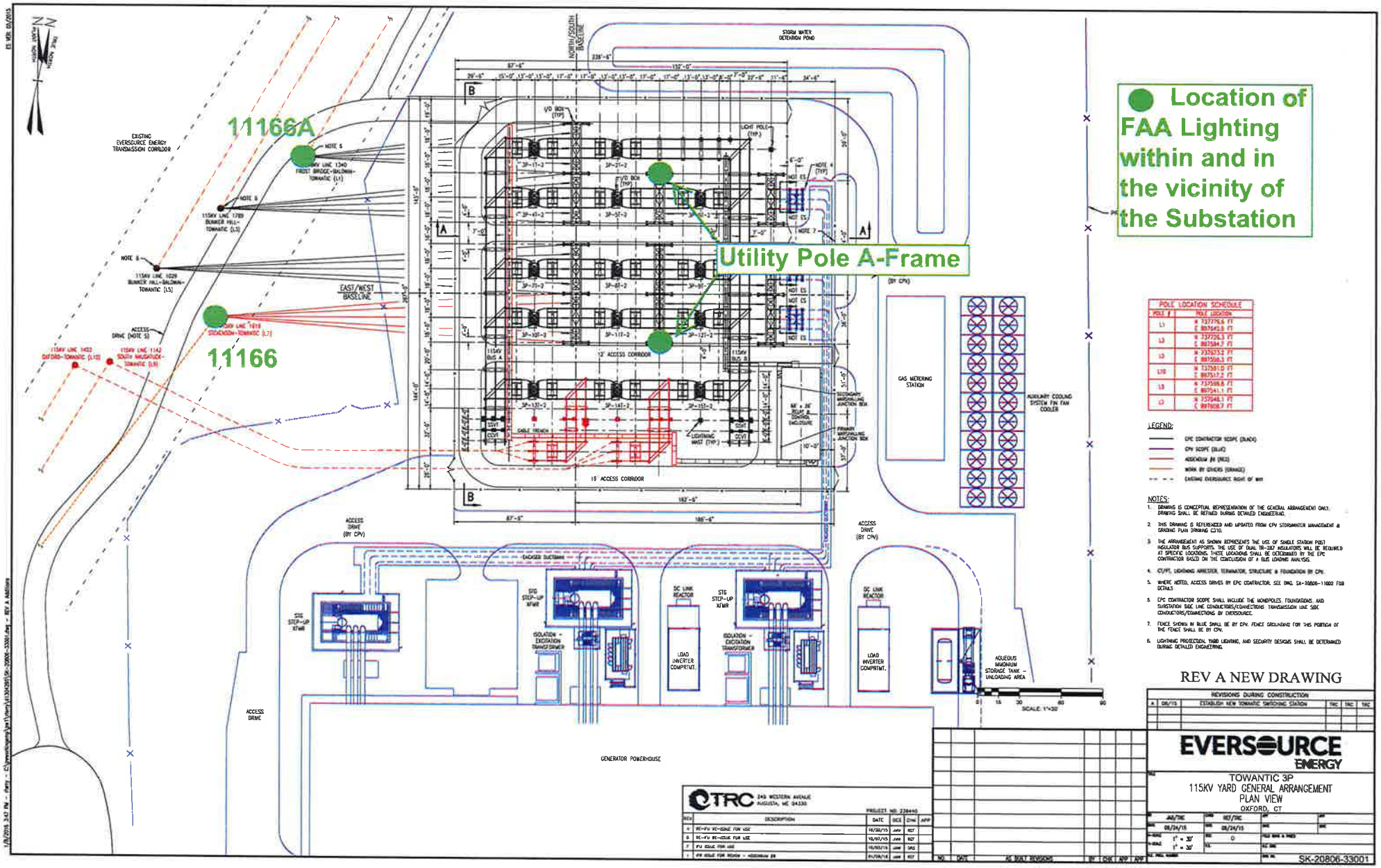
Figure 1a

Figure 1b

Figure 1 (a-b)
Representative Examples of Aviation Warning Lights on Structures

ATTACHMENT E

DESIGN OF AVIATION WARNING LIGHTS ON TRANSMISSION LINE AND STATION STRUCTURES


11166A
11166
Location of FAA Lighting within and in the vicinity of the Substation
Utility Pole A-Frame
EXISTING EVERSOURCE ENERGY TRANSMISSION CORRIDOR
EAST/WEST BASELINE
NORTH/SOUTH BASELINE
STORM WATER DETENTION POND
GAS METERING STATION
AUXILIARY COOLING SYSTEM FIN FAN COOLER
12' ACCESS CORRIDOR
15' ACCESS CORRIDOR
ACCESS DRIVE (BY CPV)
GENERATOR POWERHOUSE
AQUEOUS AMMONIUM STORAGE TANK - UNLOADING AREA
POLE LOCATION SCHEDULE
LEGEND:
NOTES:
1. DRAWING IS CONCEPTUAL REPRESENTATION OF THE GENERAL ARRANGEMENT ONLY. DRAWING SHALL BE REFINED DURING DETAILED ENGINEERING.
2. THIS DRAWING IS REFERENCED AND UPDATED FROM CPV STORMWATER MANAGEMENT & GRADING PLAN DRAWING C310.
3. THE ARRANGEMENT AS SHOWN REPRESENTS THE USE OF SINGLE STATION POST INSULATOR BUS SUPPORTS. THE USE OF DUAL TR-287 INSULATORS WILL BE REQUIRED AT SPECIFIC LOCATIONS. THESE LOCATIONS SHALL BE DETERMINED BY THE EPC CONTRACTOR BASED ON THE CONCLUSION OF A BUS LOADING ANALYSIS.
4. CT/PT, LIGHTNING ARRESTER, TERMINATOR, STRUCTURE & FOUNDATION BY CPV.
5. WHERE NOTED, ACCESS DRIVES BY EPC CONTRACTOR. SEE DWG. SK-20806-11002 FOR DETAILS
6. EPC CONTRACTOR SCOPE SHALL INCLUDE THE MONOPOLES, FOUNDATIONS, AND SUBSTATION SIDE LINE CONDUCTORS/CONNECTIONS TRANSMISSION LINE SIDE CONDUCTORS/CONNECTIONS BY EVERSOURCE.
7. FENCE SHOWN IN BLUE SHALL BE BY CPV. FENCE GROUNDING FOR THIS PORTION OF THE FENCE SHALL BE BY CPV.
8. LIGHTNING PROTECTION, YARD LIGHTING, AND SECURITY DESIGNS SHALL BE DETERMINED DURING DETAILED ENGINEERING.
REV A NEW DRAWING
REVISIONS DURING CONSTRUCTION
EVERSOURCE ENERGY
TOWANTIC 3P
115KV YARD GENERAL ARRANGEMENT
PLAN VIEW
OXFORD, CT
SK-20806-33001
TRC
245 WESTERN AVENUE
AUGUSTA, ME 04330

ATTACHMENT F

REVISED PETITION MAPSHEET 22

INCORPORATING LIGHTING MODICATIONS

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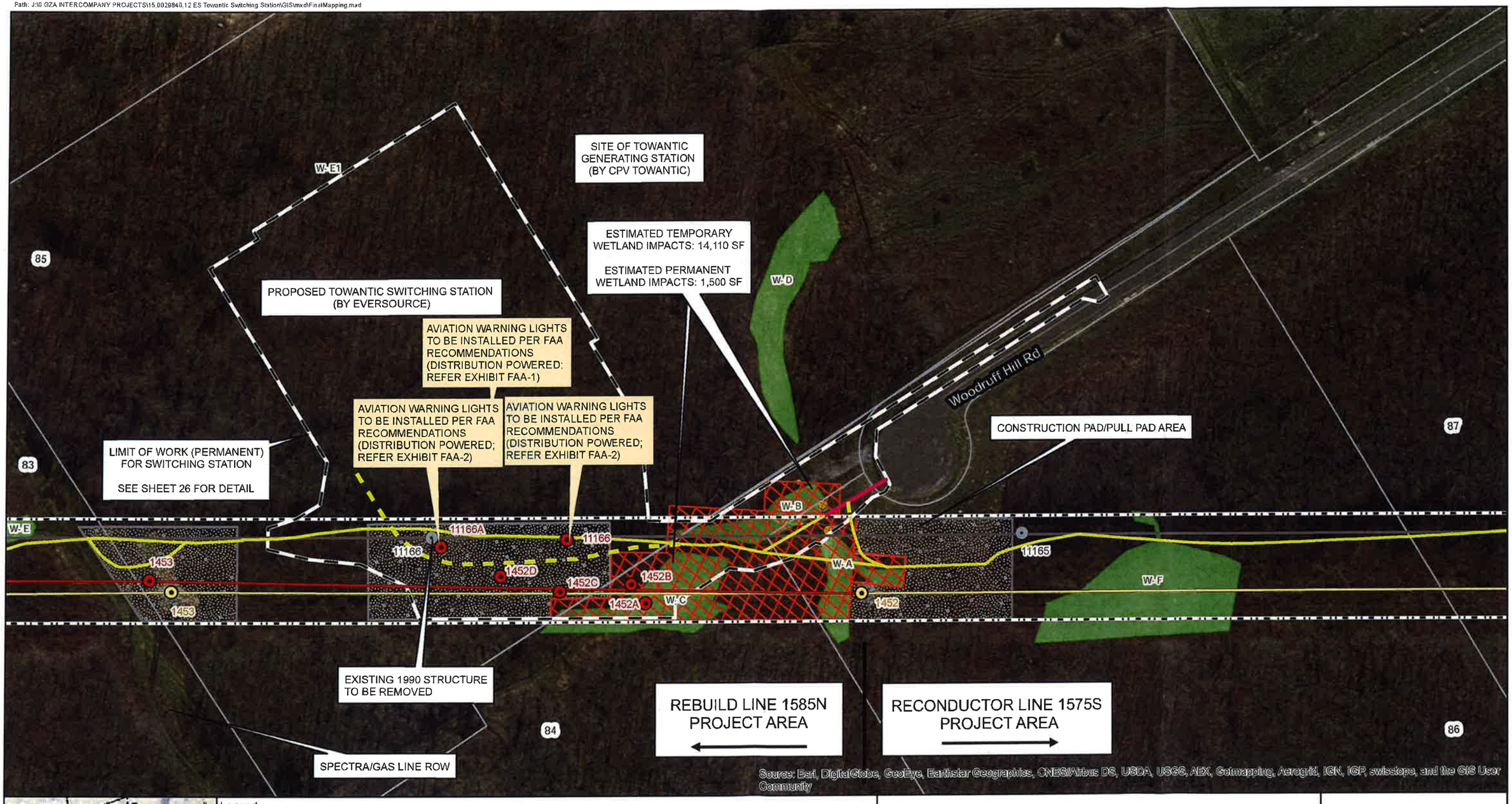

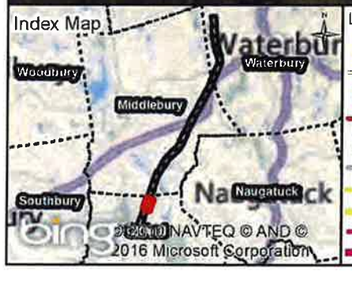

Legend

- Ex. 1575/1585 Structures
- Ex. 1575/1585 Line
- Proposed 1575/1585 Structures
- Proposed 1575/1585 Line
- Ex. 1990 Structures
- Existing 1990 Line
- Access - Existing
- Access - Proposed
- Access - Off ROW Existing
- Access - Off ROW Proposed
- Proposed Construction Mats
- Proposed Construction Pad
- Vernal Pools
- Field Delineated Wetlands
- Parcels
- ROW Limits
- Perennial Stream/River
- Intermittent Stream
- Culverts
- Rare Species Habitat
- FEMA 100 Year Flood Zone
- FEMA Regulatory Floodway
- 1 Line List Properties Reference Number
- Existing Distribution Structure To Be Removed
- Proposed Distribution Structure

1 inch = 100 feet

0 50 100 200

Feet

Data Sources:
CAI
GZA
Eversource
CT DEEP
AECOM, Davison
FEMA
Base Map acquired from ESRI Online.

TOWANTIC SWITCHING STATION AND LINE PROJECT

APRIL 1, 2016
REVISED: JANUARY 23, 2017
WATERBURY, MIDDLEBURY, & OXFORD, CT

EVERSOURCE ENERGY

GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com