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March 3, 2022

Lori Capone, Conservation Coordinator Sudbury Conservation Commission 275 Old Lancaster Road Sudbury, MA 01776

Re: Important Wildlife Habitat Features Mapping and Supplemental Restoration Plan Sudbury to Hudson Transmission Reliability Project Sudbury, Massachusetts
SWCA Project No. 00678949-000-AMH

Dear Ms. Capone and Sudbury Conservation Commission Members:

SWCA Environmental ("SWCA") has developed this report and associated mapping on behalf of NSTAR d/b/a Eversource Energy ("Eversource)" and as per Special Condition L of Part II: Conditions Specific to Phase I: Eversource Underground Transmission Line in the Order of Conditions issued by the Sudbury Conservation Commission ("Commission") on February 4, 2021, for the Sudbury to Hudson Transmission Reliability Project ("the Project") (MADEP File No. 301-1287). Specifically, this Special Condition requires the Applicant's wildlife biologist or other qualified individual to document the location of all important habitat features that will be removed (such as brush piles, snags, overhanging trees, logs within or near the water, large woody debris, etc.).

The following sections provide detailed descriptions of the method of data collection implemented to document important habitat features and presents the results along with proposed restoration measures to supplement the previously approved plans associated with the Order of Conditions for the Project. This information will be utilized by the Environmental Monitor and the Contractor during construction for each wetland impact area along the Project in Sudbury to finalize the exact location of the installation of the wildlife habitat features proposed to restore disturbed areas and to ensure that the Project will not result in an adverse effect to important wildlife habitat features. Please note that the Commission reviewed and approved certain important wildlife habitat feature restoration measures, such as the installation of brush piles in wetland impact areas as part of the approved plans for the Project. Also, as per the findings in the Order of Conditions, the Sudbury Conservation Commission has already found that the project as designed would meet the performance standards of the Wetlands Protection Act and the Sudbury Wetlands Administration Bylaw, including for wildlife habitat. As required by this Special Condition, supplemental reports will be provided to the Commission every six months, for the life of the Order, documenting wildlife habitat feature removal and restoration efforts implemented in each wetland impact area in Sudbury.

# WILDLIFE HABITAT FEATURES REVIEWED

A Detailed Wildlife Habitat Evaluation was originally completed by VHB during the Notice of Intent process for the Project. Specifically, VHB submitted a Detailed Wildlife Habitat Evaluation with the Notice of Intent filed in March 2020 and then provided additional detail and information related to



important wildlife habitat features on October 15, 2020 (see Attachment A- Wildlife Habitat Summary Tables).

On September 6, 2021, wildlife biologists with SWCA Environmental Consultants (SWCA) have reviewed and documented important habitat features within 100 feet of vernal pool locations and within 200 feet of Hop Brook in the Town of Sudbury along the Project corridor. An additional survey was conducted on January 27, 2022, during which SWCA wildlife biologists reviewed all Wetland Impact Areas identifying locations of snags, overhanging trees, and trees (both live and dead) with cavities. During the January site visit, SWCA reviewed and updated data on previously observed snags. It is important to note that a handful of snags have fallen since the last visit. It is also important to note that as survey parameters have changed, additional snags have been identified. Please refer to Attachment B for mapping of the reviewed habitat features and Attachment C for representative site photographs.

The evaluation completed by SWCA is consistent with VHB's Detailed Wildlife Habitat Evaluation and in accordance with 310 CMR 10.60, of the implementing regulations of the Massachusetts Wetlands Protection Act (WPA) (MGL Ch. 131 s. 40), and the 2006 Massachusetts Wildlife Habitat Protection Guidance for Inland Resources¹ (Guidance). As identified during the NOI process, the Guidance does not specifically state size requirements for habitat features such as brush piles, woody debris, or snags to be considered significant. As previously mentioned, this mapping and evaluation of important wildlife habitat features within the proposed Impact Areas along the Project was completed to supplement the previous evaluations and to finalize the restoration approach within each impact area. It is important to note that trees and tree limbs fall over time, which may cause minor discrepancies in the data between observation periods; snags were observed even within the four-month period between SWCA's surveys in September 2021 and January 2022 to have fallen creating downed woody debris.

## **SNAGS**

As part of the Detailed Wildlife Habitat Evaluation completed during the NOI process, all snags within the Project Site and the proposed limits of work were counted. It was determined that snags removed from the impact areas would not result in an adverse effect to wildlife habitat given the general abundance of snags in the remaining and undisturbed portions of the Project Site. As part of this exercise to comply with the Special Condition, this evaluation was completed to specifically map each snag within the Wetland Impact Areas and to determine if any supplemental restoration or mitigation could be implemented. All snags within Wetland Impact Areas were surveyed with a tablet/geode capable of sub-meter accuracy, diameter-at-breast-heigh (DBH) was estimated and recorded. Each snag was evaluated for potential in providing significant wildlife habitat functions. If there was no evidence of existing wildlife habitat function or potential for these functions, the dead tree was not regarded as an important habitat feature.

<sup>&</sup>lt;sup>1</sup> Massachusetts Department of Environmental Conservation. 2006. Massachusetts Wildlife Habitat Protection Guidance of Inland Wetlands. MassDEP, Bureau of Resource Protection, Wetlands and Waterways Program, Boston, MA. 64 pp.



Determination of significance in providing important wildlife habitat function was based on size (as estimated by DBH), the presence of insect holes or cavities, proximity to open water, and perching opportunities. The following criteria were used to establish significance of each snag:

- All snags with a DBH of less than 1-inch were considered **not significant**.
- All snags with a DBH of greater than or equal to 5 inches were considered significant.
- Snags with a DBH 1-5 inches with any of the following features were considered **significant**:
  - Evidence of many insect holes;
  - Small or large cavities that could be used by wildlife;
  - Significant decay;
  - Actively used by wildlife;
  - Adjacent to water;
  - Peeling bark that could be used for bat roosting; or
  - Branches that would be suitable for perching.
- Snags within a DBH of 1-5 inches that lacked the above characteristics were considered to have low significance.

During the January 2022 survey, SWCA observed that several previously identified significant snags have fallen. The mapping data has therefore been updated by removing any fallen snags and adding any new significant snags. A total of 46 significant snags were identified within the Sudbury Project route with five (5) of the significant snags also having cavities. Photos 1 through 7, in Attachment C, show snags within Wetland Impact Areas along the Project route.

## **BRUSH PILES / LARGE WOODY DEBRIS**

As part of the Detailed Wildlife Habitat Evaluation completed during the NOI process, all brush piles/large woody debris within the Project Site and the proposed limits of work were counted. The approved restoration plan included the installation of brush piles and woody debris within certain Wetland Impact Areas. As part of this exercise to comply with the Special Condition, this evaluation was completed to specifically map each existing brush pile/large woody debris within the Wetland Impact Areas to inform the Environmental Monitor and the Contractor where to install the approved "restoration brush piles". In general, brush piles and large woody debris are defined as fallen woody material, such as tree limbs, fallen trees, and logs. They can be an important habitat feature, as they provide breeding/nesting areas, shelter, and overwintering/hibernation habitat. Large woody debris can be in the form of a single or pile or fallen trees or large limbs.

Fallen trees and brush within each Wetland Impact Area and within 200 feet of both Hop Brook bridge crossings were assessed in accordance with the following criteria:

• Trees and brush deemed to be **significant** were identified as those which:

- overhang over water, allowing for wildlife to span across the wet area;
- are partially submerged within the water, allowing for potential for egg mass attachment in vernal pools;
- have fallen and are decomposing; and/or
- have fallen and created a shelter-like feature.
- Individual fallen trees and branches that did not display any of the above features were deemed not significant.

It is important to note that there are several brush piles and large woody debris currently located within some of the Wetland Impact Areas, which were cut and placed there by people. Though these features were man-made, and the habitat functions provided by them were most likely not made intentionally, if they appear to display any of the above-mentioned features, they were identified and deemed **significant**.

Within the Wetland Impact Area within the Project route in Sudbury, a significant quantity of brush piles/ woody debris was observed in Wetland Impact Area 5 and 19. Several brush piles and woody debris, along route, appear to be cut and placed by people, possibly to clean up the walking path. Please refer to Photos 10 through 12 in Attachment C.

### **CAVITIES**

As part of the Detailed Wildlife Habitat Evaluation completed during the NOI process, all cavities within the Wetland Impact Areas were counted. During the most recent survey in January 2022, SWCA completed the cavity evaluation to specifically map each existing cavity within the Wetland Impact Areas. Cavities are an important habitat feature as they provide nests or dens to both birds and mammals. Cavities are also used by wildlife as a temporary shelter from elements or protection from predators. Feeding cavities are often created by birds to access a variety of insects, however feeding cavities are considered of lesser importance. Cavities can be found in live and dead standing trees. During the site survey all cavities within the Wetland Impact Area have been identified, with "Tree with cavities" referring to live trees. Occasionally, more than one cavity was observed on a tree.

Within all Wetland Impact Areas along the Project route in Sudbury, a total of 21 cavities were observed, with 10 of cavities located within snags and 11 of cavities were located within live and overhanging trees. All cavities observed were approximately 6 inches or smaller. Cavities were observed at the base of trees and approximately halfway up trees. It is important to note that many more cavities and larger in size cavities were observed outside the Wetland Impact Area. Please refer to Photos 10 through 12, in Attachment C, to see examples of cavities observed within the Wetland Impact Area.

### **OVERHANGING TREES**

As part of the Detailed Wildlife Habitat Evaluation completed during the NOI process, all overhanging trees within the Wetland Impact Areas were counted. Overhanging trees are an important wildlife feature, as they help moderate the effects of extreme temperatures, as they provide shade to the



resource area during the summers and can act as insulators to a stream or wetland area during the winter. Overhanging trees also act as perches for birds to use when scavenging for food sources.

During the site visit in January, SWCA identified trees within the Wetland Impact Area that were overhanging over Hop Brook or wetland resource areas. SWCA observed a significant number of trees overhanging wetlands and Hop Brook; however, if they were outside the Wetland Impact Area, they were not counted. A total of 128 trees were identified as overhanging trees within the Wetland Impact Areas along the Project route in Sudbury. Please see Photo 8 and 9 in Attachment C for a representation of overhanging trees.

### SMALL MAMMAL BURROWS

As part of the Detailed Wildlife Habitat Evaluation completed during the NOI process, VHB identified small mammal burrows within each Wetland Impact Area. During the January 2022 survey, SWCA observed several burrows along the Project route in Sudbury. Many of the burrows were near and around the base of live or dead standing trees and typically were no more than 3 inches in diameter, which were consistent with VHB's observations of these burrows being used by chipmunks or other small mammals.

It is important to note that suitable small mammal habitat is also prevalent outside Wetland Impact Areas, where small mammal burrows were observed during the recent survey and are expected to be in great numbers. In addition, the Project includes mitigation that will include the placement of brush piles to provide mitigation for wildlife. Please refer to Photo 16 through 19 in Attachment C for a representative photo of small mammal burrow.

## CONCLUSION

Those habitat features that were determined to be **significant**, in accordance with the methodology noted above, are depicted on the attached Pre-Construction Significant Wildlife Habitat Features mapping, provided in Attachment B. Table 1 in Attachment A compares the 2020 and 2022 Field surveys for Significant Wildlife Habitat Features and any suggested mitigation measures.

The Habitat Maps and Table 1 above will be used during construction by the environmental compliance monitors to inform habitat feature mitigation. As required under the Order of Conditions, mitigation will be provided for significant wildlife habitat features located within wetland resource areas that are impacted by Project construction, and these mitigation measures will be documented in reports that will be provided to the Commission every 6 months.

WPA regulations define adverse effect as any impact that would alter habitat characteristics listed in 310 CMR 10.60(2), such that the alteration will substantially reduce the capacity of the area to provide wildlife habitat functions following two growing seasons after project completion. The 2006 Guidance notes that it is insufficient to find that a project will result in adverse impacts to wildlife habitat simply because alterations to habitat are proposed. In addition, the Guidance notes, that impacts to wildlife habitat only become "adverse when they substantially reduce a site's capability to provide important wildlife habitat functions (such as shelter, food, breeding areas, etc.) and consequently reduce the site's capacity to support wildlife." A project may demonstrate No Adverse Effect through two methods: (1) demonstrating that the site lacks any important wildlife habitat features; or (2)



demonstrating that important habitat features exist on a site, but that adverse effects will be avoided because the project will not substantially reduce the capacity of the site to provide important wildlife habitat functions.

The Wetland Impact Areas associated with this Project are predominantly within an old railroad bed with few trees growing between the rails. Important wildlife habitat features were identified within the Wetland Impact Area; however, numerous important wildlife habitat features were also observed immediately adjacent to each of the Wetland Impact Areas. Though impacts are proposed in the area, with the proposed restoration and mitigation efforts and with the numerous important wildlife habitat features adjacent to the Wetland Impact Areas, the overall area will continue to have sufficient undisturbed important habitat for wildlife use. Therefore, the capacity of the Site to provide important wildlife habitat functions will not be impaired, and there will be No Adverse Effect as a result of this Project.

Sincerely,

Poli Sof-

Polina Safran, AWB Wildlife Biologist

Attachments: Attachment A - Table 1 Wetland Impact Areas: Comparison

Attachment B - Significant Habitat Features Maps Attachment C - Habitat Features Photographs

# ATTACHMENT A TABLE 1 WETLAND IMPACT AREAS: COMPARISON

standing dead tree. Other significant snag to be reused as fallen

log.



Wetland Impact Area ID	Map Sheet # (Attachment A)	2020 Features Identified	2020 Mitigation Approved Habitat Features	2022 Significant Features Identified <sup>1, 2</sup>	2022 Supplemental Mitigation Proposed
S1	1 and 2	Upland food plants Dense herbaceous vegetation	Lowbush blueberry and black huckleberry plantings and woody seed mix; two brush piles	None	None required
S2	2 and 3	Upland food plants	Plantings and woody seed mix; one brush pile	None	None required
S3	5	Upland food plants Standing dead tree (1 snag) Large woody debris (scattered, minimal) Overhanging veg (12 trees)	Woody seed mix; 5 brush piles	Significant snags (1) Overhanging veg (4)	Reuse two significant snags as fallen logs
S4	5 and 6	Upland food plants Large woody debris (minor and insignificant) Overhanging veg (35 trees)	Woody seed mix; tree and shrub plantings	Significant snags (2) Overhanging veg (22)	Work with contractor to determine if snag on southern limit of work can be saved as

Wetland Impact Area ID	Map Sheet # (Attachment A)	2020 Features Identified	2020 Mitigation Approved Habitat Features	2022 Significant Features Identified <sup>1, 2</sup>	2022 Supplemental Mitigation Proposed
\$5	6	Upland food plants Standing dead trees (10 snags) Tree cavity (1) Large woody debris (minor and insignificant) Fall log near water (2) Overhanging veg (45 trees)	Tree and shrub plantings; woody seed mix; two fallen logs to be placed	Significant snags (3) Overhanging veg (19) Overhanging veg with cavity (1) Large woody debris/ brush pile/ fallen log (3)	Work with contractor to determine if snag on northern limit of work can be saved as standing dead tree. Other two significant snags to be used as the two 2020 approved fallen logs.
S6	6	Upland food plants Standing dead trees (2 snags) Large woody debris (scattered, limited) Overhanging veg (5 trees)	Woody seed mix; two fallen logs	Significant snags (1) Overhanging veg (2) Large woody debris/ brush pile/ fallen log (1)	None required (significant snag to be reused as one of the two 2020 approved fallen logs)
S7	6, 7, and 8	Upland good plants Standing dead trees (7 snags) Large woody debris (limited/scattered)	Woody seed mix; shrub plantings; 5 brush piles	Significant snags (3) Overhanging veg (2) Large woody debris/ brush pile/ fallen log (1)	Work with contractor to determine if any significant snags can remain as dead standing trees or reuse as fallen logs placed near the vernal pools.
S8	10 and 11	Upland food plants Standing dead trees (4 snags) Tree cavities (1) Small mammal burrows (1) Dense herbaceous cover Large woody debris (abundant)	Woody seed mix; shrub plantings; 6 brush piles	Significant snags (1) Tree cavities (1)	None required

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Wetland Impact Area ID	Map Sheet # (Attachment A)	2020 Features Identified	2020 Mitigation Approved Habitat Features	2022 Significant Features Identified <sup>1, 2</sup>	2022 Supplemental Mitigation Proposed
S9	11 and 12	Upland food plants Standing dead trees (3 snags) Small mammal burrows (1) Large woody debris (abundant)	Woody seed mix; shrub plantings; 6 brush piles	Significant snags (3) Significant snag with cavity (1) Tree cavities (2) Large woody debris/ brush pile/ fallen log (1)	Work with contractor to determine if any significant snags can remain as dead standing trees or reuse as fallen logs placed near vernal pools.
S10	12 and 13	Upland food plants Standing dead trees (2 snags) Tree cavities (1) Small mammal burrows (1) Large woody debris (scattered and abundant)	Woody seed mix; shrub plantings; 4 brush piles	Significant snags (2)	None required
S11	15 and 16	Upland food plants Standing dead trees (1 snag) Dense herbaceous cover Large woody debris (scattered, limited)	Woody seed mix; 3 brush piles	Significant snags (2) Tree cavities (2) Overhanging veg (3)	Work with contractor to determine if any significant snags can remain as dead standing trees or reuse as fallen logs placed near vernal pools.
S12	18	Upland food plants Small mammal burrows (1) Dense herbaceous cover Large woody debris (limited, scattered)	Woody seed mix; 2 brush piles	Overhanging veg (2)	None required
S13	19-21	Upland food plants Small mammal burrows (1) Large woody debris	Woody seed mix; shrub plantings; 7 brush piles	None	None required

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Wetland Impact Area ID	Map Sheet # (Attachment A)	2020 Features Identified	2020 Mitigation Approved Habitat Features	2022 Significant Features Identified <sup>1, 2</sup>	2022 Supplemental Mitigation Proposed
S14	21	Upland food plants Standing dead trees (1 snag)	Woody seed mix; shrub plantings	Significant snags (1)	None required
S15	21-23	Upland food plants Standing dead trees (13 snags) Large woody debris (limited, scattered)	Woody seed mix; shrub plantings; 5 brush piles	Significant snags (4)	None required
S16	23-24	Upland food plants Standing dead trees (10 snags) Tree cavities (16) Large woody debris (moderate, scattered) Overhanging veg (9 trees)	Woody seed mix; shrub plantings; 6 brush piles	Significant snags (2) Significant snag with cavities (2) Tree cavities (4) Overhanging veg (19) Overhanging veg with cavity (1) Large woody debris/ brush pile/ fallen log (1)	None required
S17	24	Upland food plants Standing dead trees (6 snags) Tree cavities (8) Overhanging branches Overhanging veg (25 trees) Standing water during growing season	Woody seed mix; shrub and tree plantings	Significant snags (1) Overhanging veg with cavity (1) Overhanging veg (9)	None required

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Wetland Impact Area ID	Map Sheet # (Attachment A)	2020 Features Identified	2020 Mitigation Approved Habitat Features	2022 Significant Features Identified <sup>1, 2</sup>	2022 Supplemental Mitigation Proposed
S18	24 and 25	Upland food plants Standing dead trees (1 snag) Logs near water (3) Overhanging veg (8 trees) Standing water during growing season	Woody seed mix; shrub and tree plantings; 2 fallen logs	Significant snags (1) Overhanging veg (8)	Significant snag to be reused as one of the two fallen logs
S19	25-28	Upland food plants Standing dead trees (13 snags) Tree cavities (8) Large woody debris (scattered, abundant) Overhanging veg (29 trees)	Woody seed mix; shrub plantings; 11 brush piles	Significant snags (8) Significant snag with cavities (2) Overhanging veg (38) Large woody debris/ brush pile/ fallen log (4)	Work with contractor to determine if any significant snags can remain as dead standing trees or reuse as fallen logs placed near vernal pools.
S20	29-30	Upland food plants Standing dead trees (4 snags) Dense herbaceous vegetation Large woody debris (limited, scattered) Standing water during growing season	Woody seed mix; Shrub plantings; wetland replication area; 3 brush piles	Significant snags (4)	Work with contractor to determine if any significant snags can remain as dead standing trees or reuse as fallen logs placed near vernal pools.

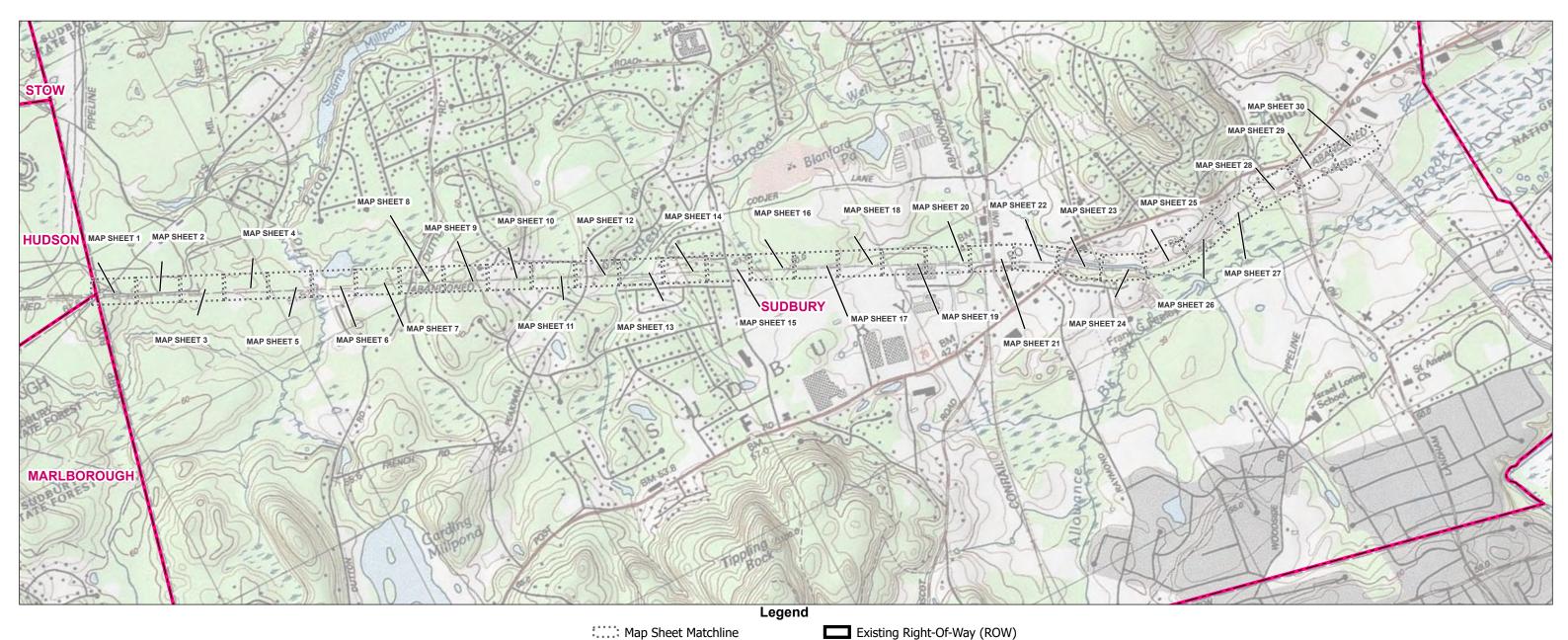
- 1 Cavity numbers in table may differ slightly from what appears on maps, because multiple cavities may be located in the same tree.
- 2 SWCA's counts are based on GPS survey of features identified within geo-referenced wetland impact areas.

# ATTACHMENT B SIGNIFICANT HABITAT FEATURES MAP

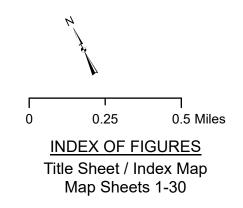
# **Sudbury to Hudson Construction Compliance Monitoring**

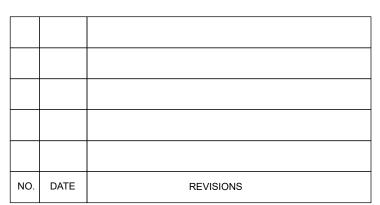
# SUDBURY, MA Wildlife Habitat Features Map

Date: March 1, 2022



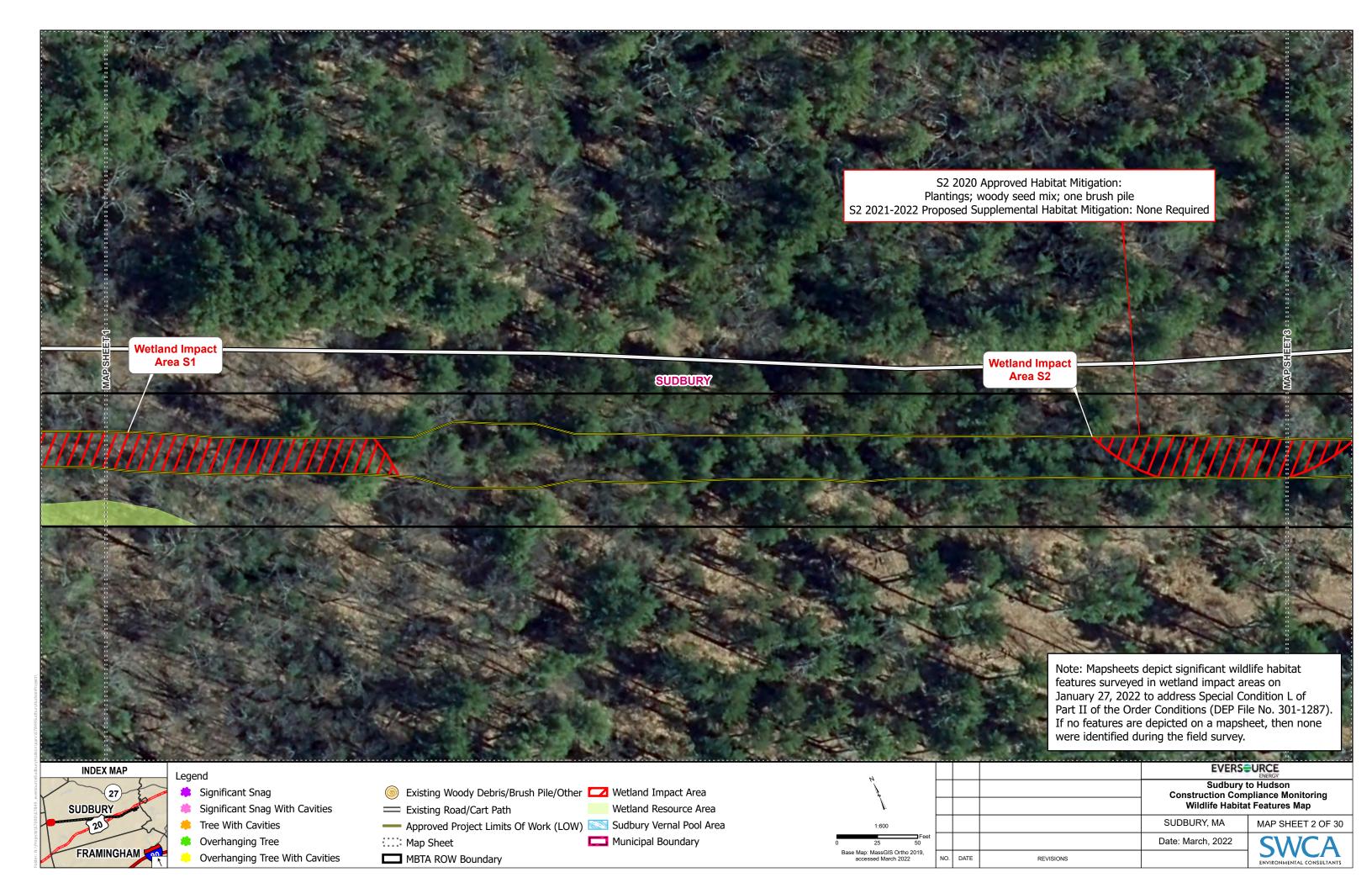






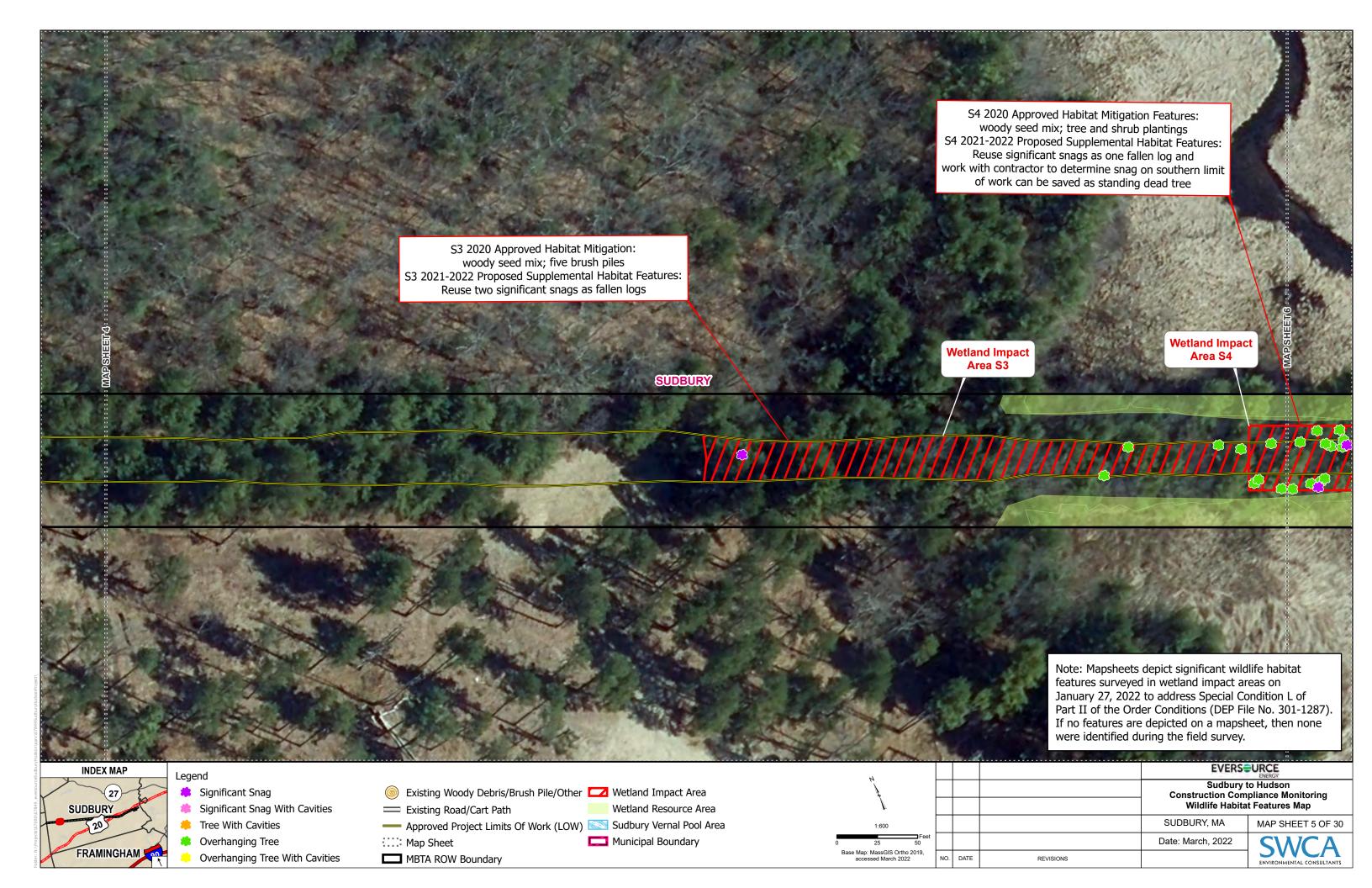


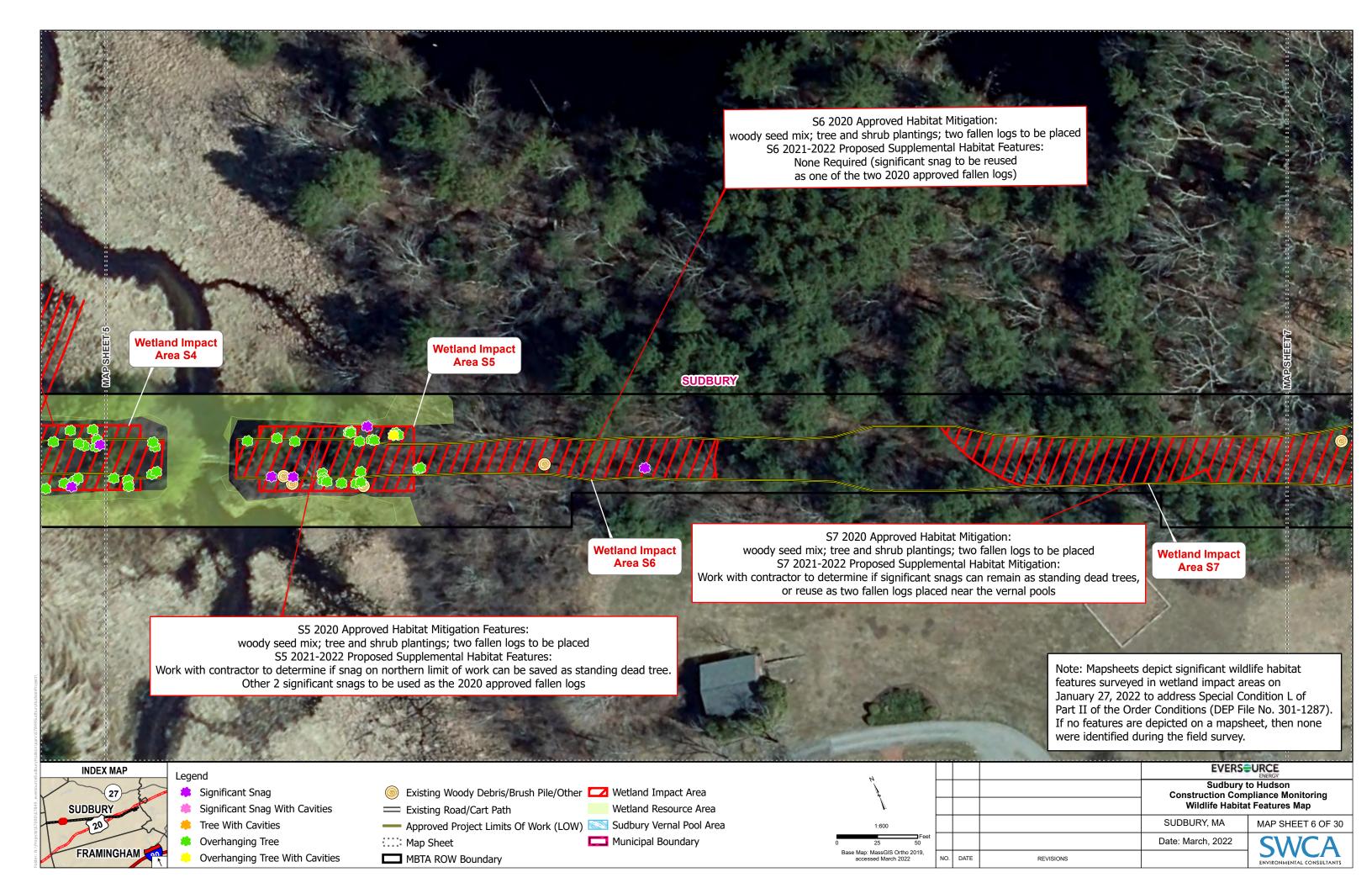


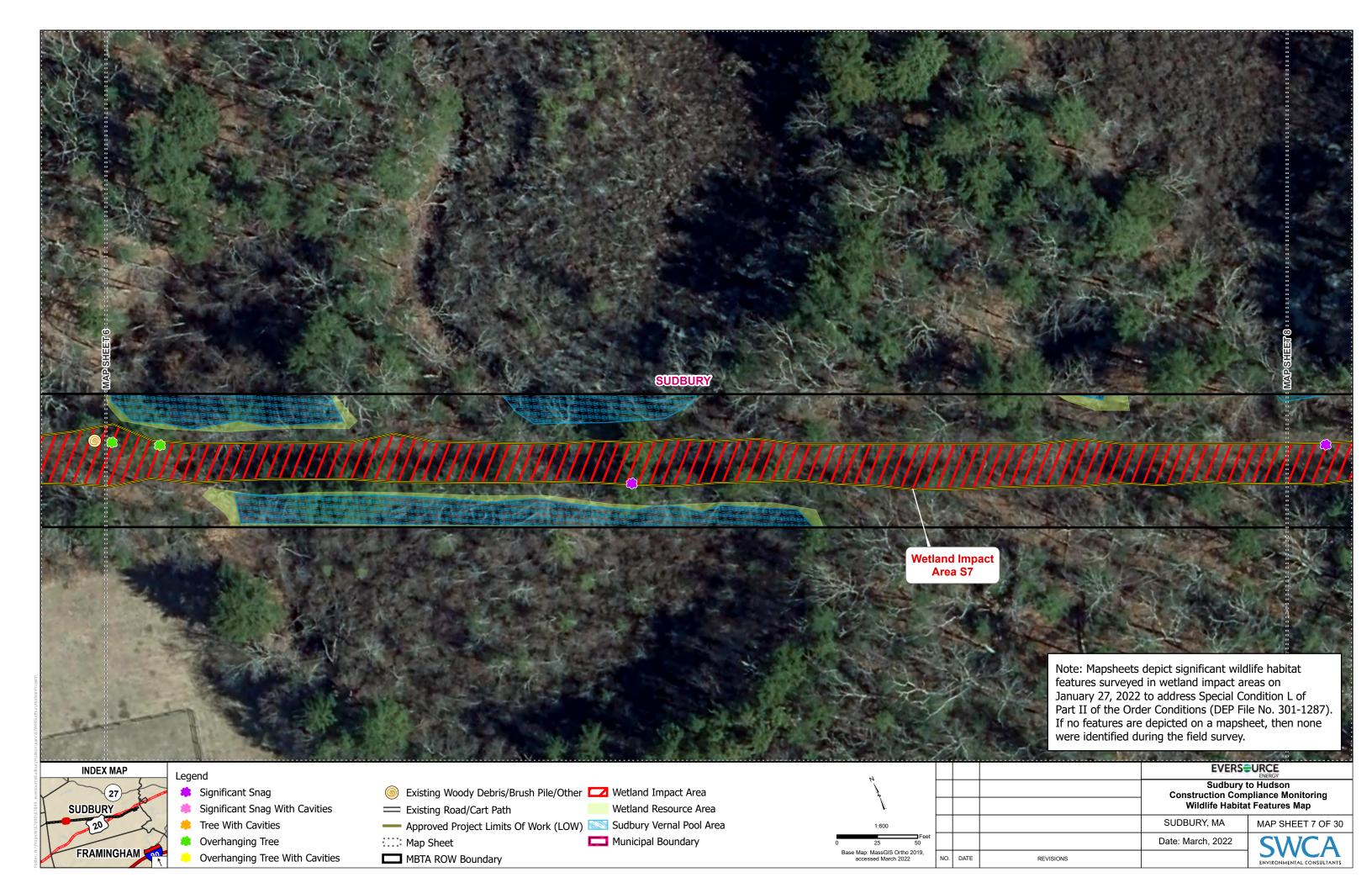


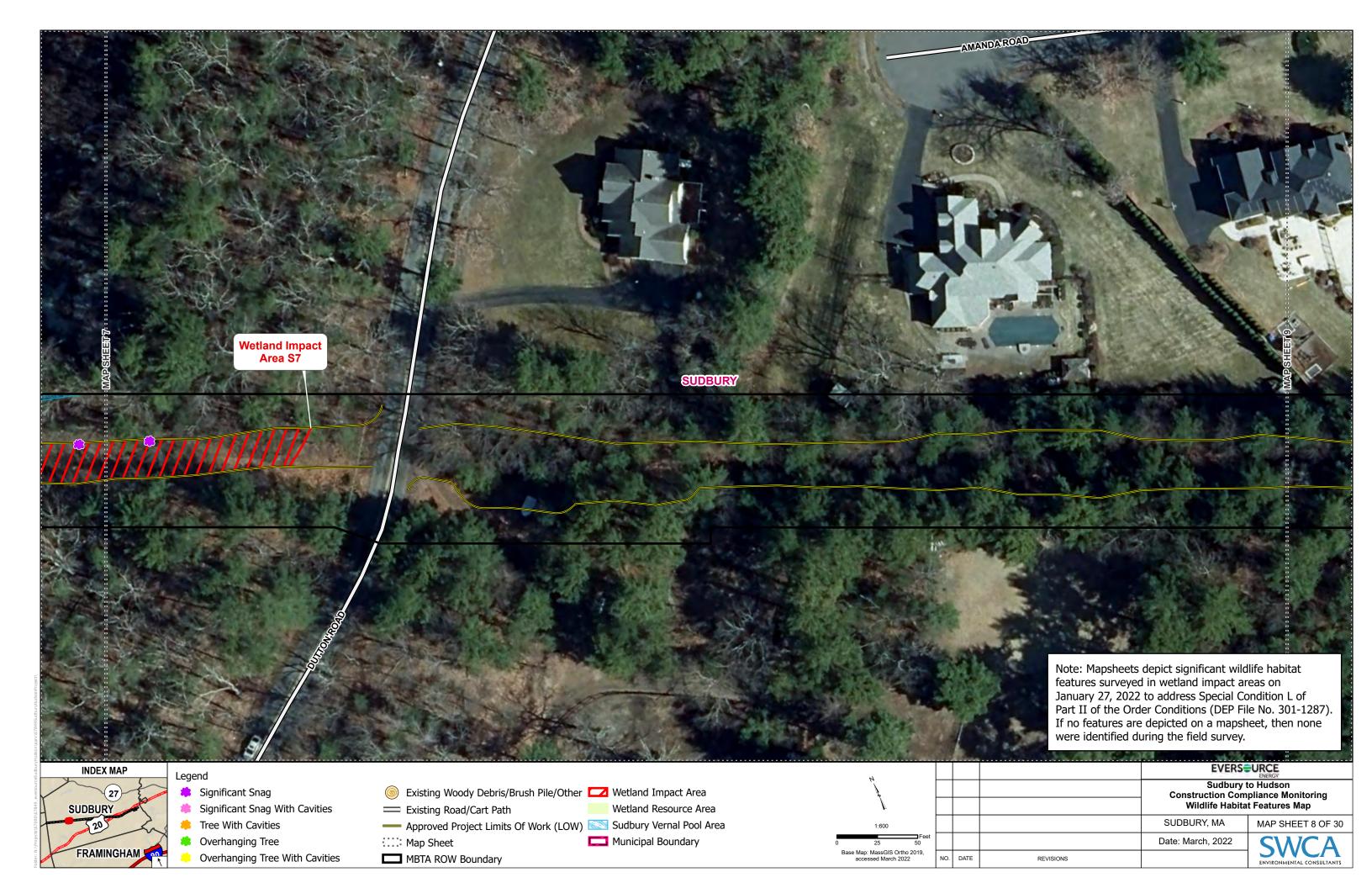






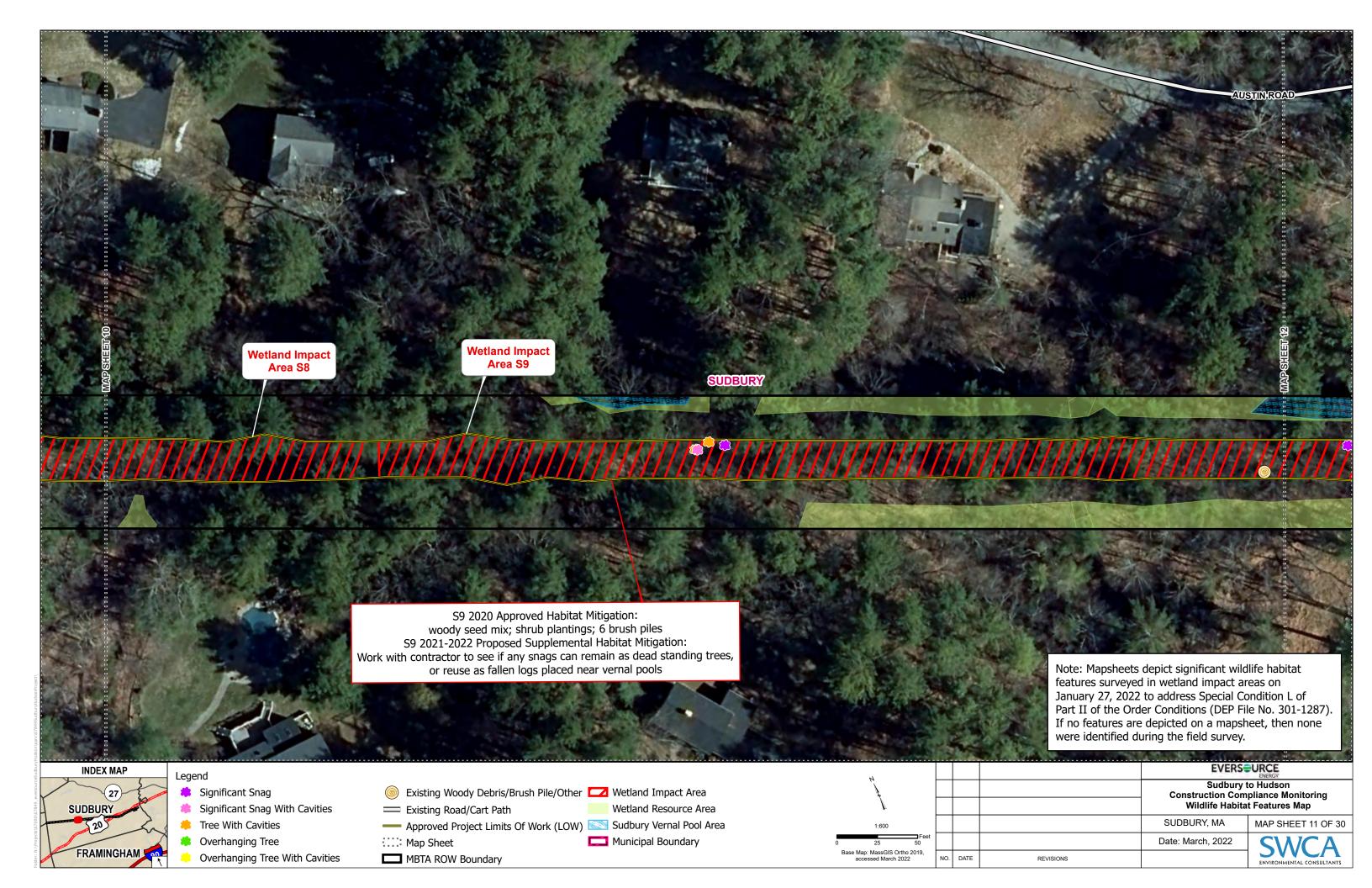


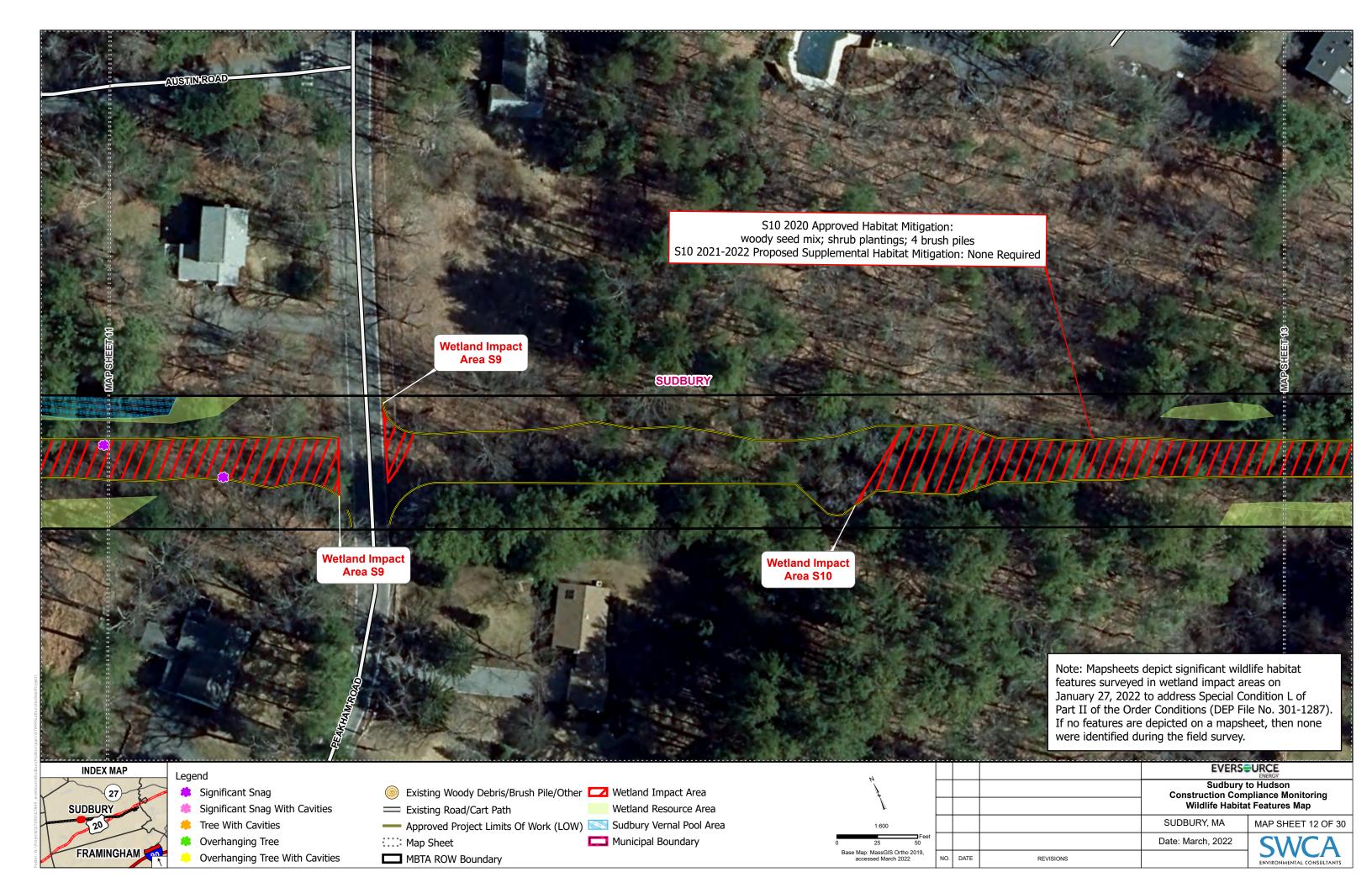








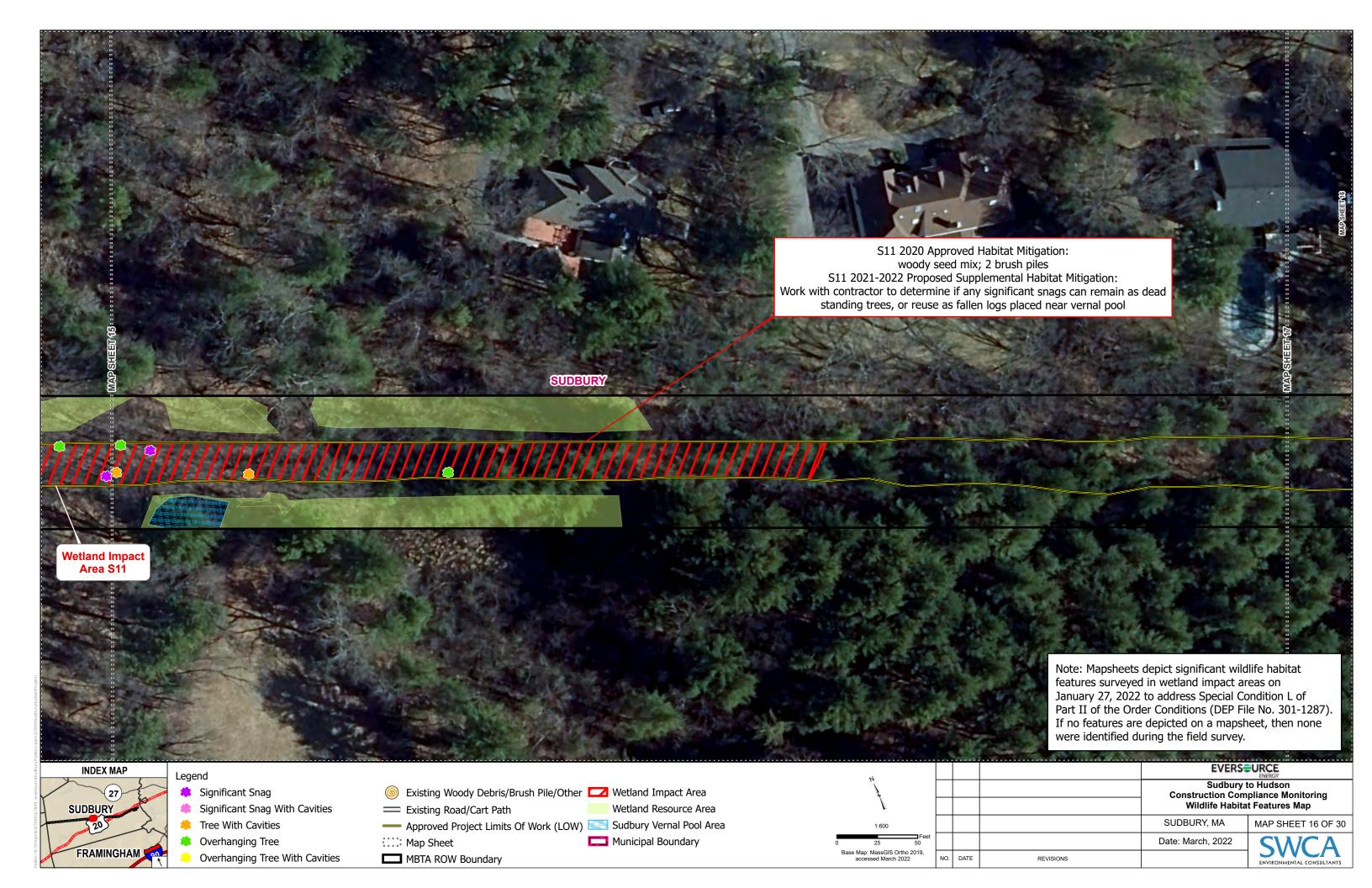




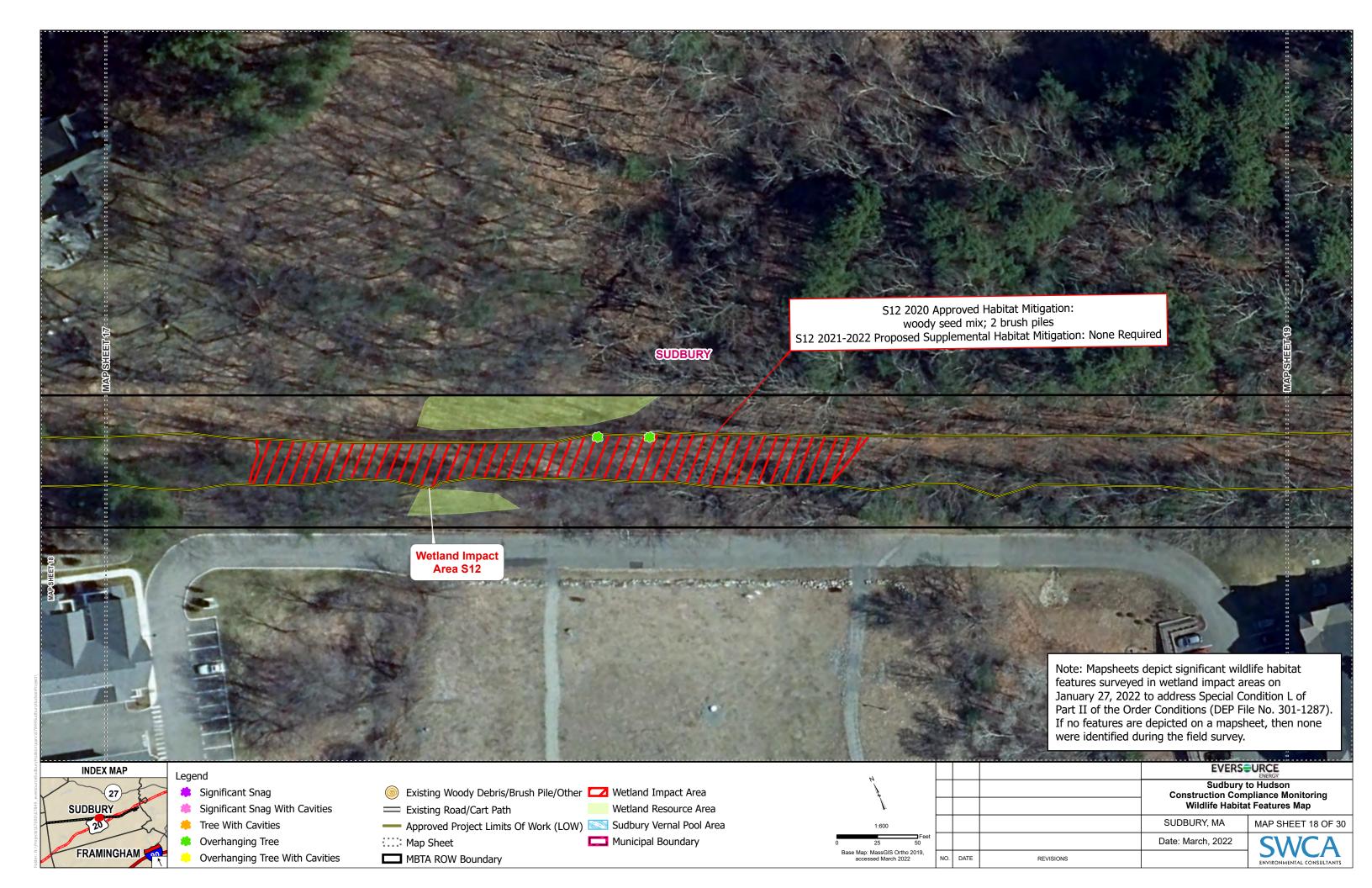


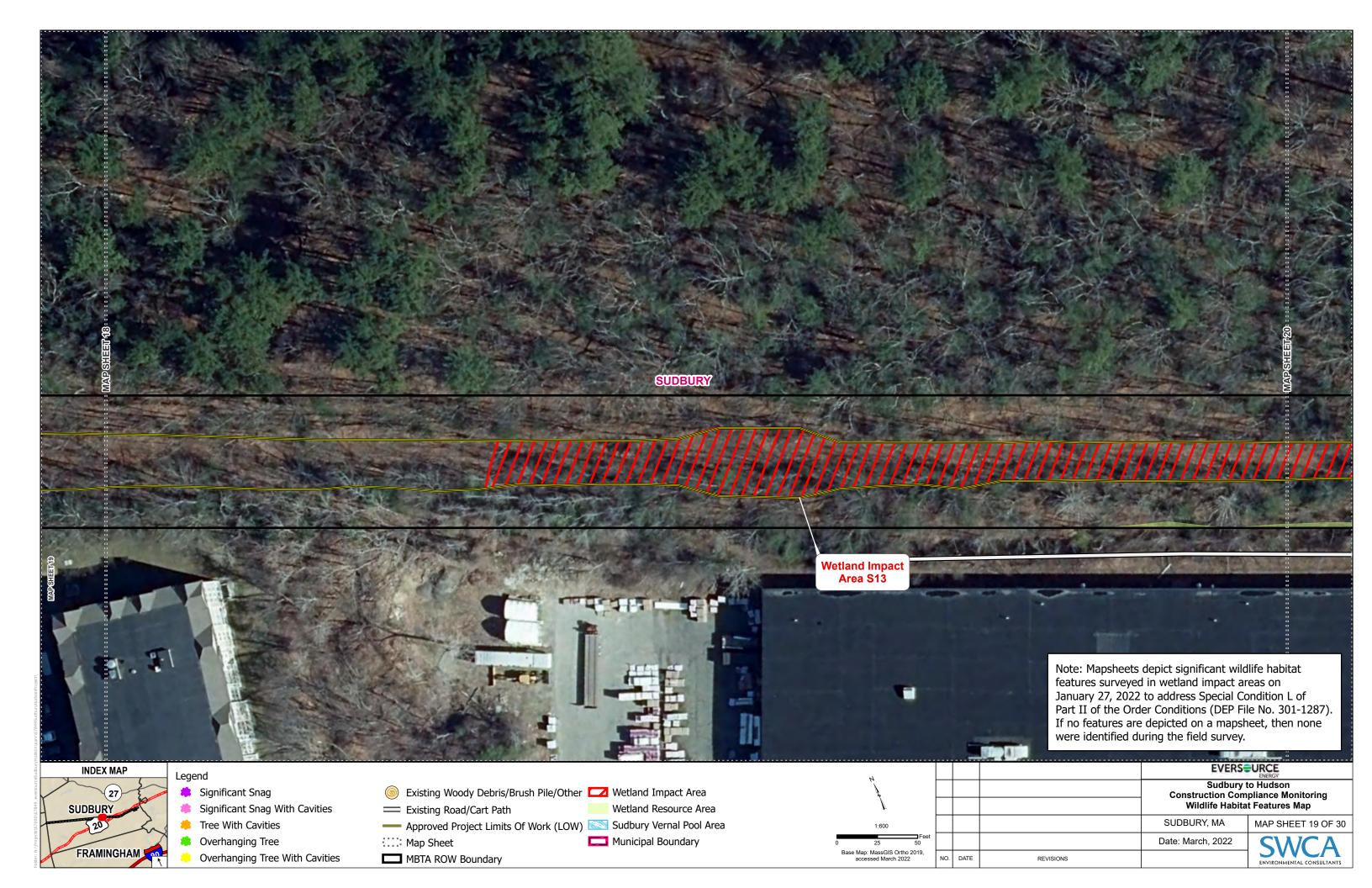


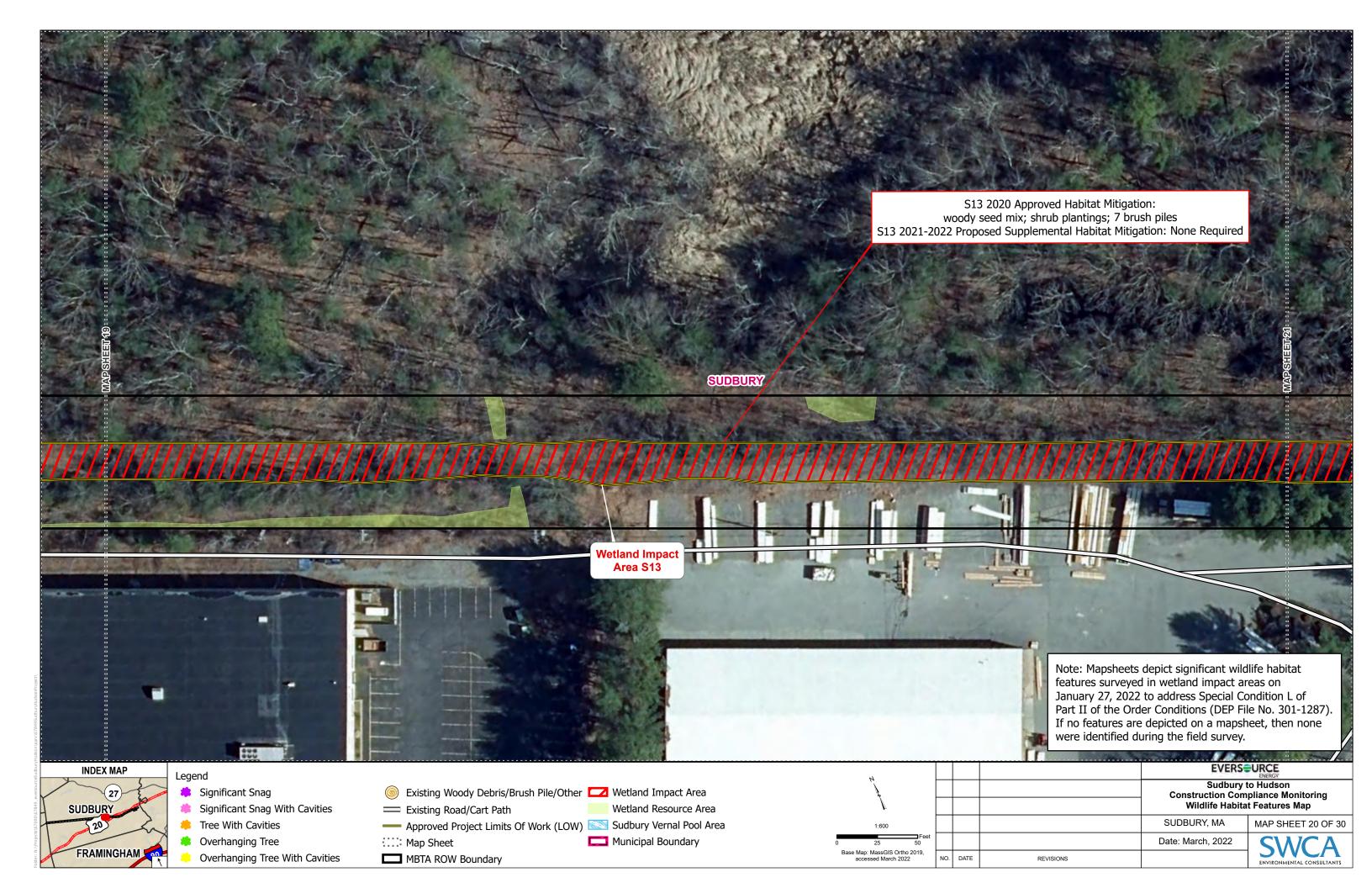


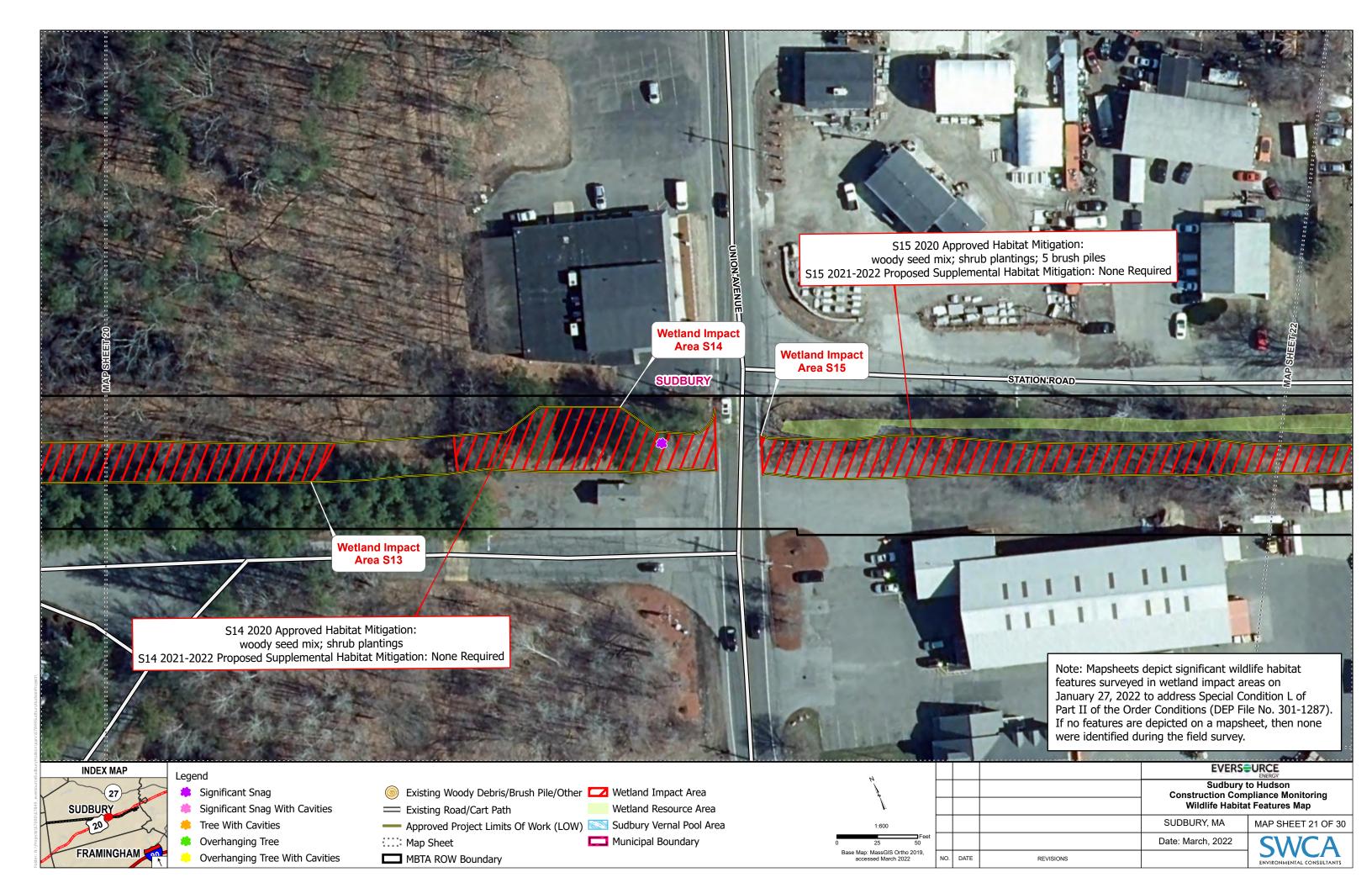


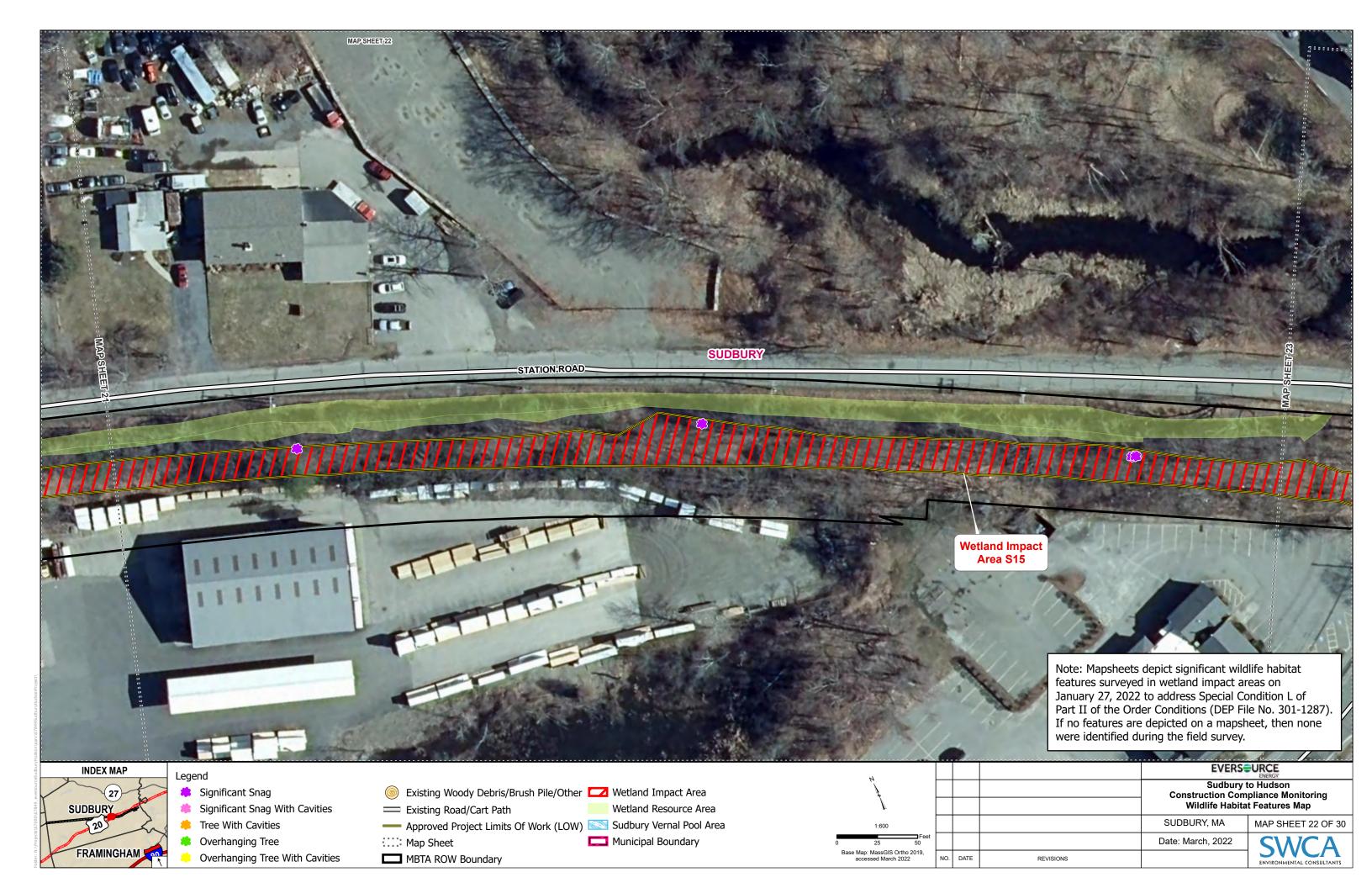


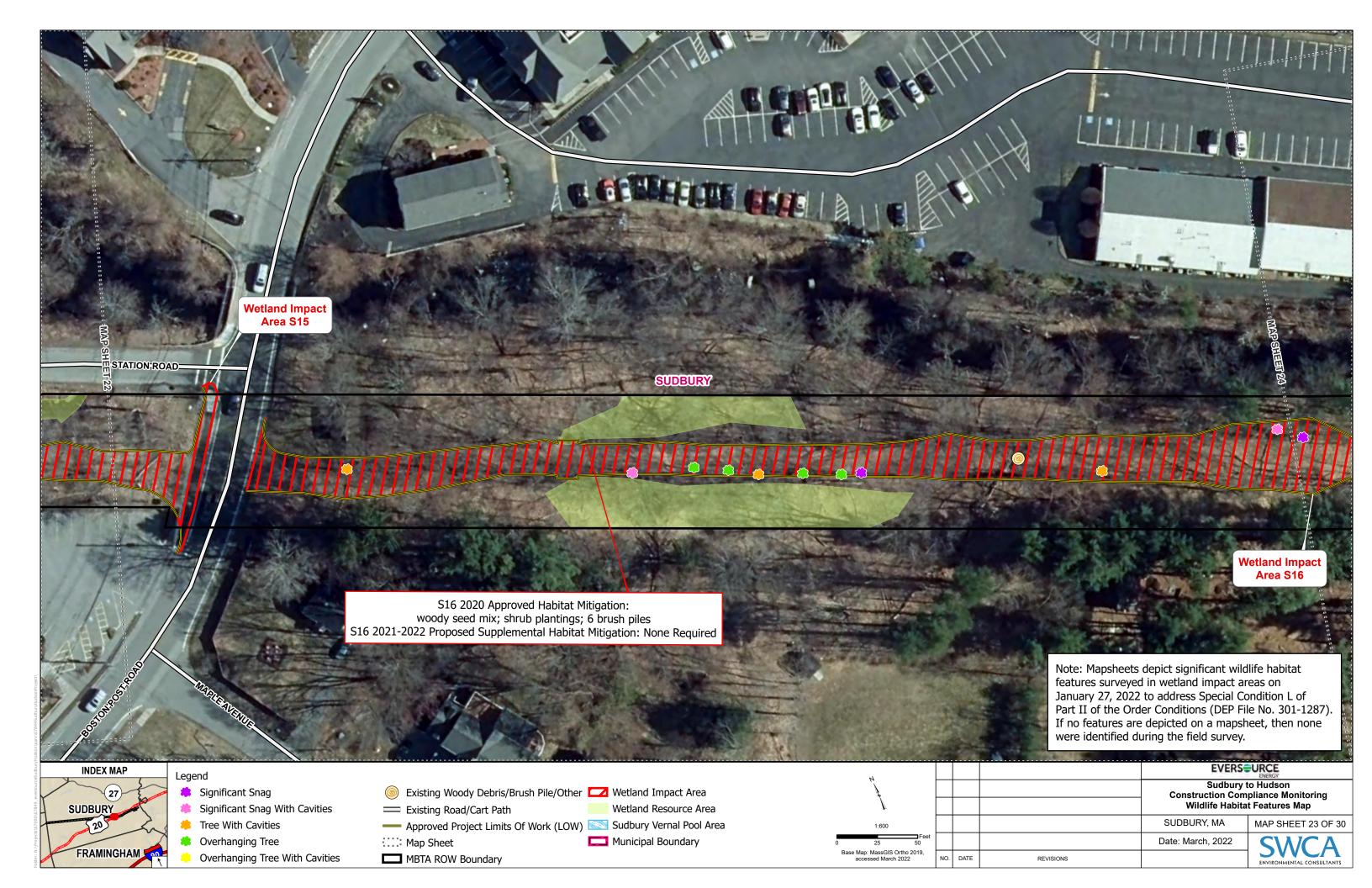


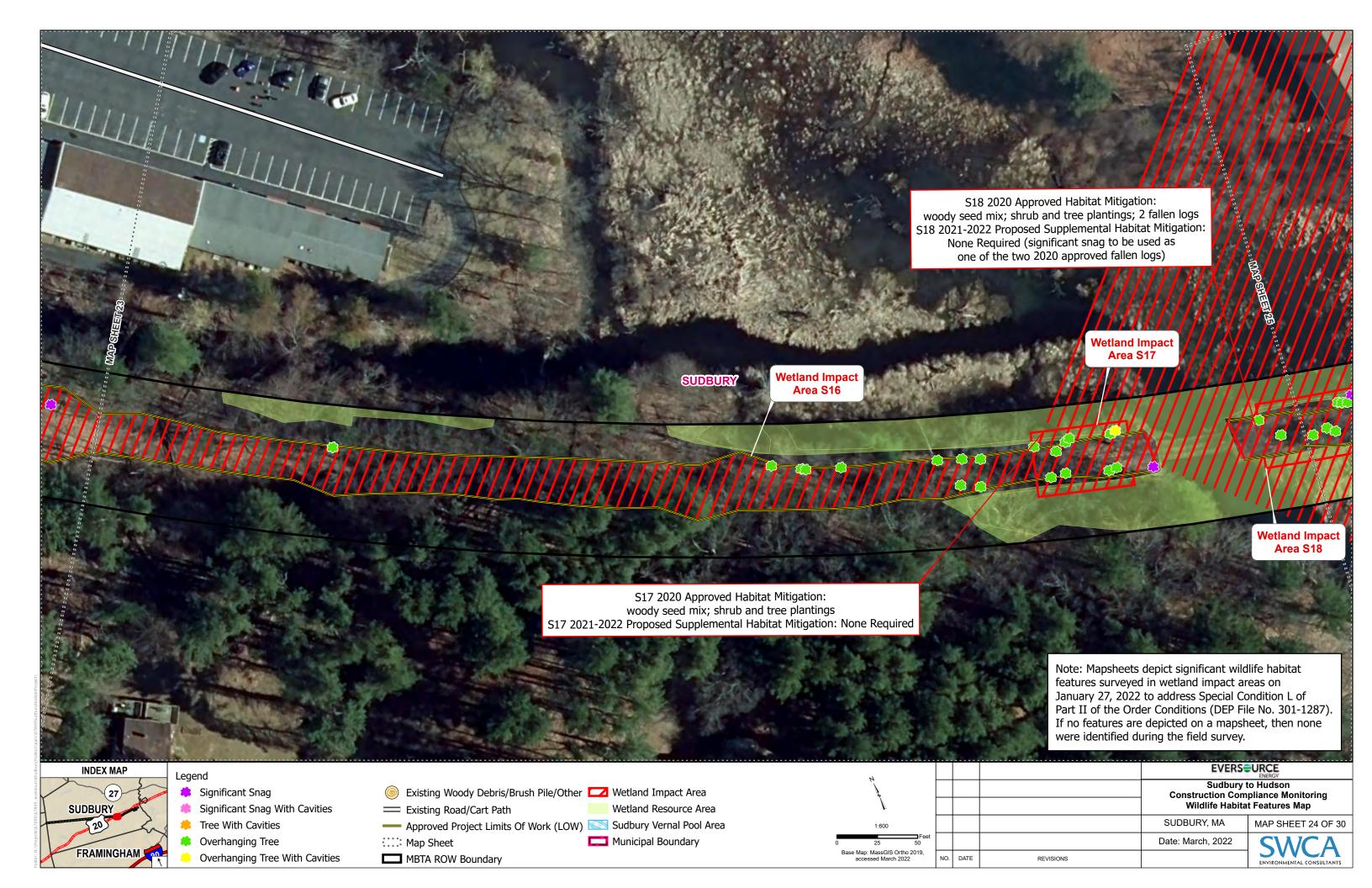




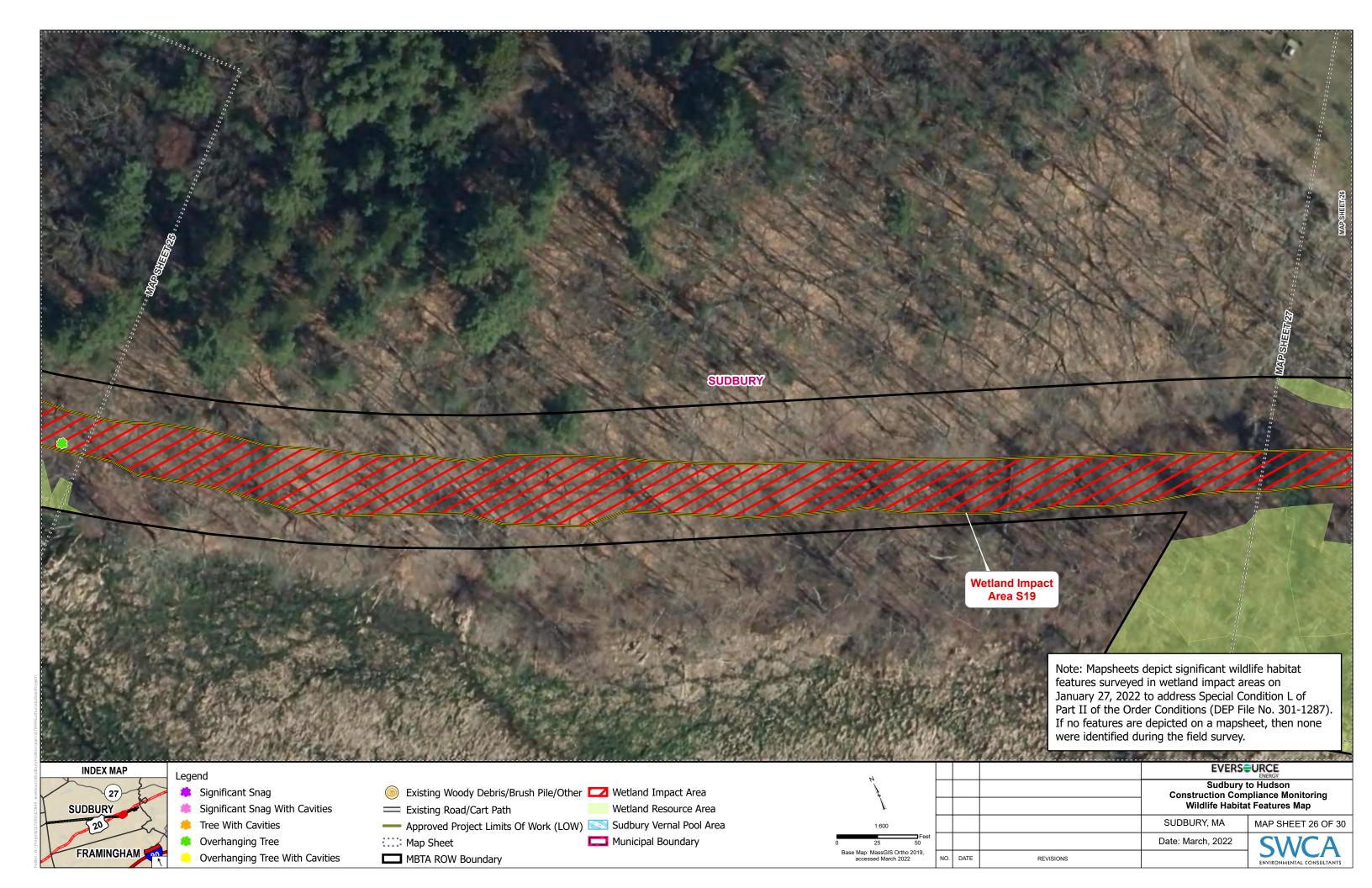


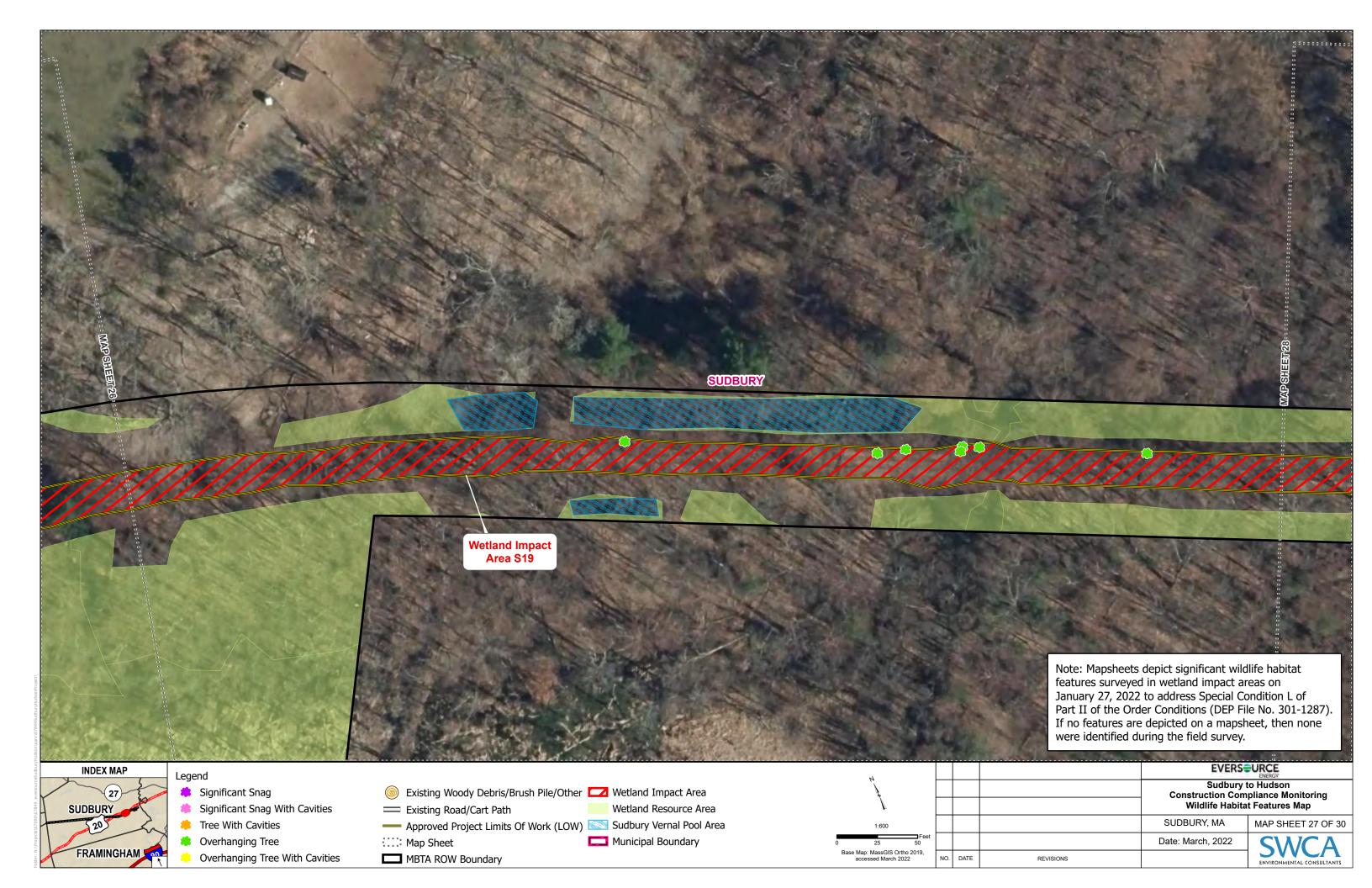


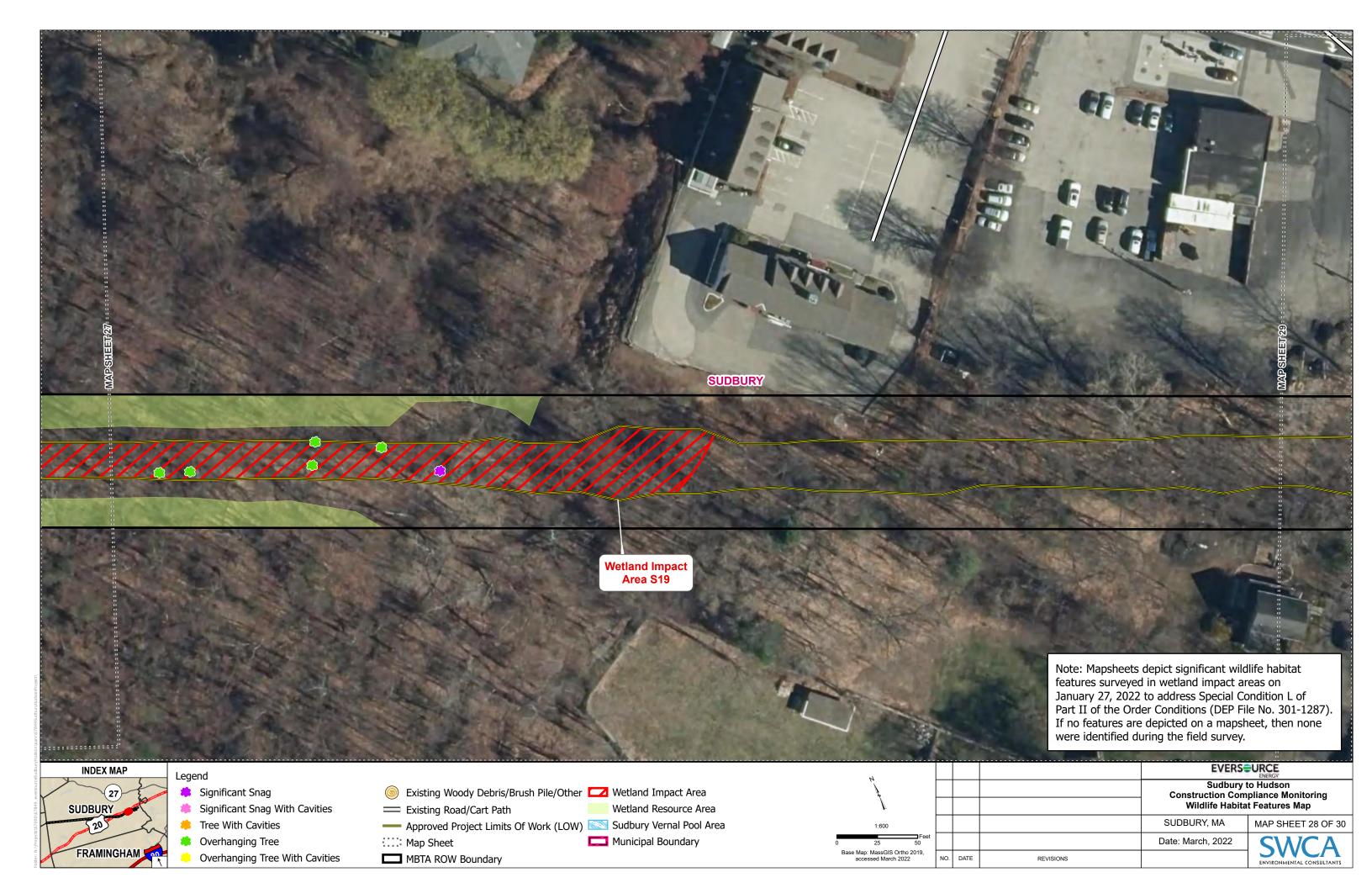


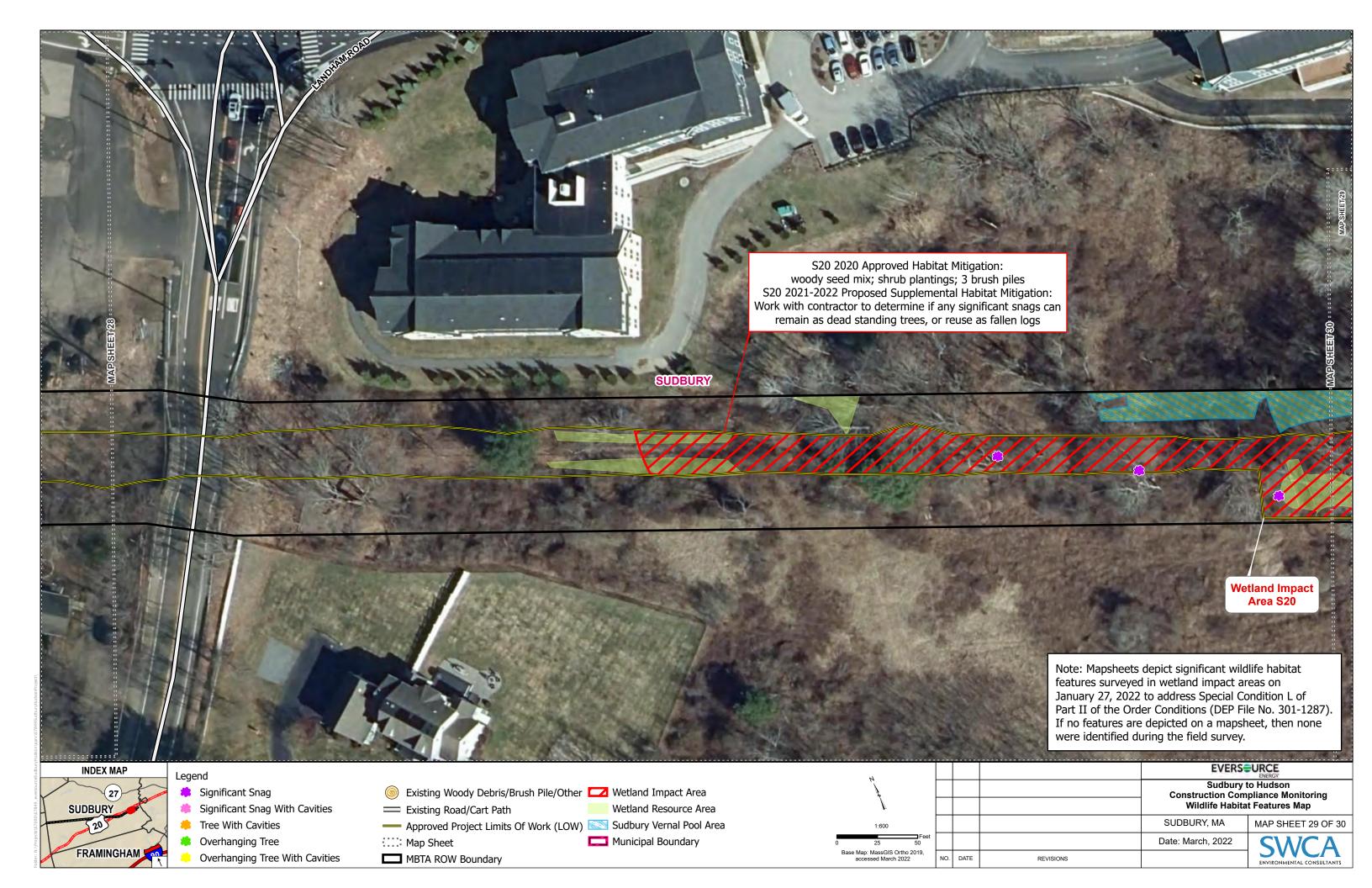


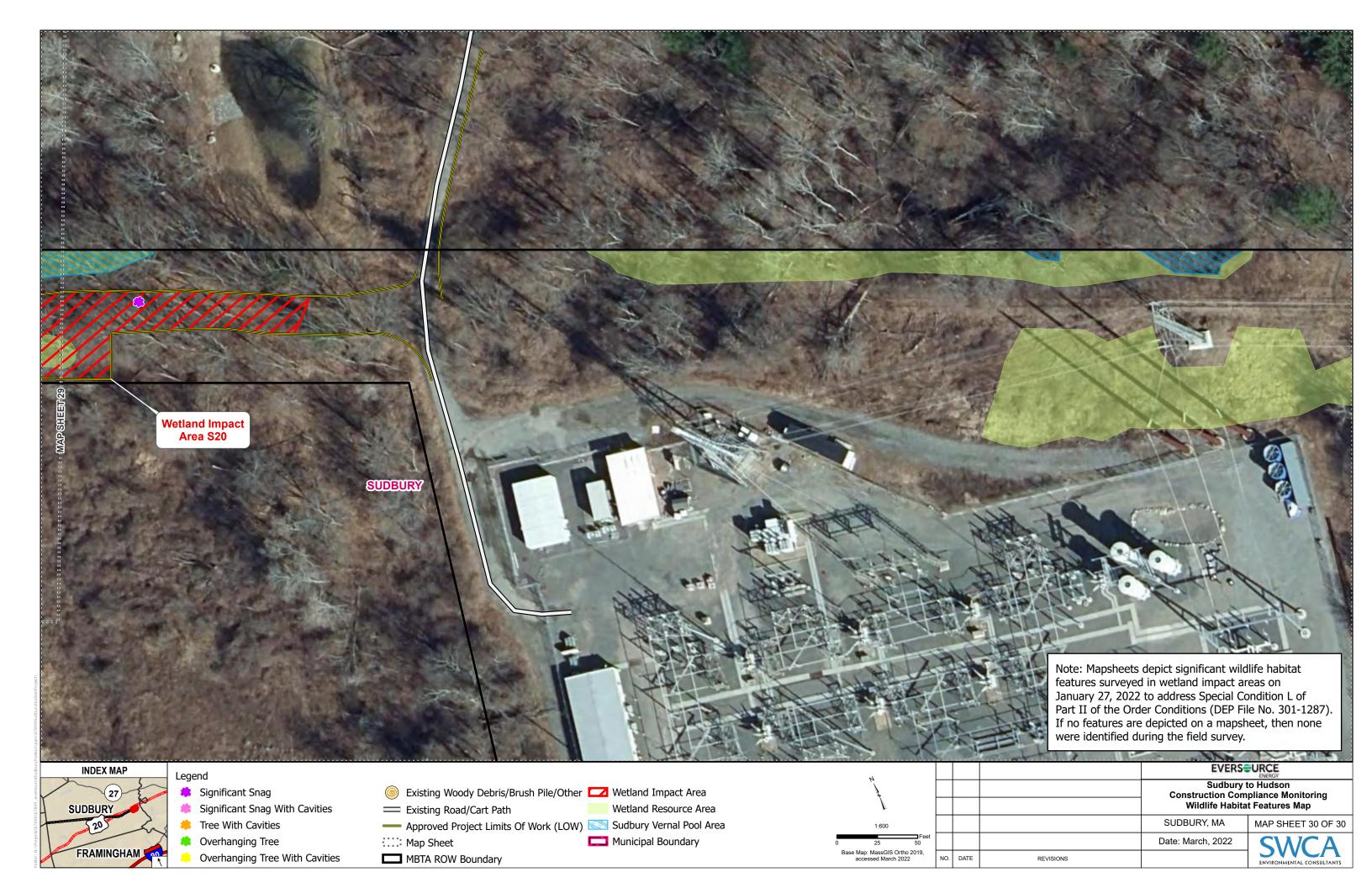












## ATTACHMENT C HABITAT FEATURES PHOTOGRAPHS





**Photo #1**: View of two significant snags located within Wetland Impact Area 5. Both snags are located near the southern bank of Hop Brook. Considering the diameter of the tree, the height, and location, these snags were identified as significant. *Facing southeast and southwest*.



**Photo #2:** View of snag located within Wetland Impact Area 20. There are four dead trunks connected at one base and therefore identified on the map as one significant snag. Each of the trunks is approximately 10" dbh or greater and contains woodpecker holes. The snags are very tall and located near a wetland area. *Facing west*.



**Photo #3**: View of snag located within Wetland Impact Area 6. The snag is tall and shows signs of bird use. Facing west.



**Photo #4**: View of snag located within Wetland Impact Area 3. Snag is a pine growing along the Rail Road bed. *Facing west*.



**Photo #5:** View of snag located within Wetland Impact Area 15. Snag is estimated to be greater than 10" dbh, has at least two visible cavities and a nest at the top of the tree. Asian bittersweet has engulfed the snag. *Facing northeast*.



**Photo** #6: View of a snag near edge of the water within Wetland Impact Area 17. Snag has branches that are overlooking the water. Eversource will work with the contractor to determine if the snag at the edge of the impact area can remain. *Facing northwest*.



**Photo #7:** View of snags located outside the Wetland Impact Area 17 and 18, at the Hop Brook crossing. Many snags are available within the resource area that are more suitable for perching and nesting, due to their location. These snags will not be impacted by the project. *Facing south*.



**Photo** #8: View of overhanging tree examples in Wetland Impact Area 4. Tree or tree limbs that overhang a wetland or waterbody have been identified. *Facing northwest*.



**Photo #9:** View of overhanging tree located just on the edge of Wetland Impact Area 19. Tree has branches overhanging a wetland (located downgradient on the left). Eversource will work with the contractor to determine if overhanging trees at the edge of the impact area can remain. *Facing west.* 



**Photo** #10: View of large woody debris/ brush pile located within Wetland Impact Area 16. *Facing northeast*.



**Photo #11:** View of large woody debris/ brush pile located within Wetland Impact Area 19. The brush pile appears to consist of a downed pine tree that was cut up and left in pace. *Facing east*.



**Photo** #12: View of brush pile located outside Wetland Impact Area 8. Brush pile will remain and continue to provide wildlife habitat value. *Facing east*.



**Photo** #13: View of cavity in a live tree located along the southern side of Wetland Impact Area 11, within the Wetland Impact Area. Eversource will work with the contractor to determine if trees at the edge of the impact area can remain. *Facing north*.



**Photo #14**: View of cavity in a snag within the Wetland Impact Area 9. Facing north.



**Photo #15:** View of cavity at the base of a live standing tree in Wetland Impact Area 16. Facing north.



**Photo #16**: View of small mammal burrow located within Wetland Impact Area 18. Facing west.



**Photo #17:** View of small mammal burrow within Wetland Impact Area 18 near the bank. Facing west.



**Photo #18**: View of small mammal burrow located within Wetland Impact Area 19. Facing west.



**Photo #19:** View of small mammal burrow within Wetland Impact Area 16 at the base of a live tree trunk. This particular tree also contained several small cavities that could potentially be used by small mammals. Facing north.