

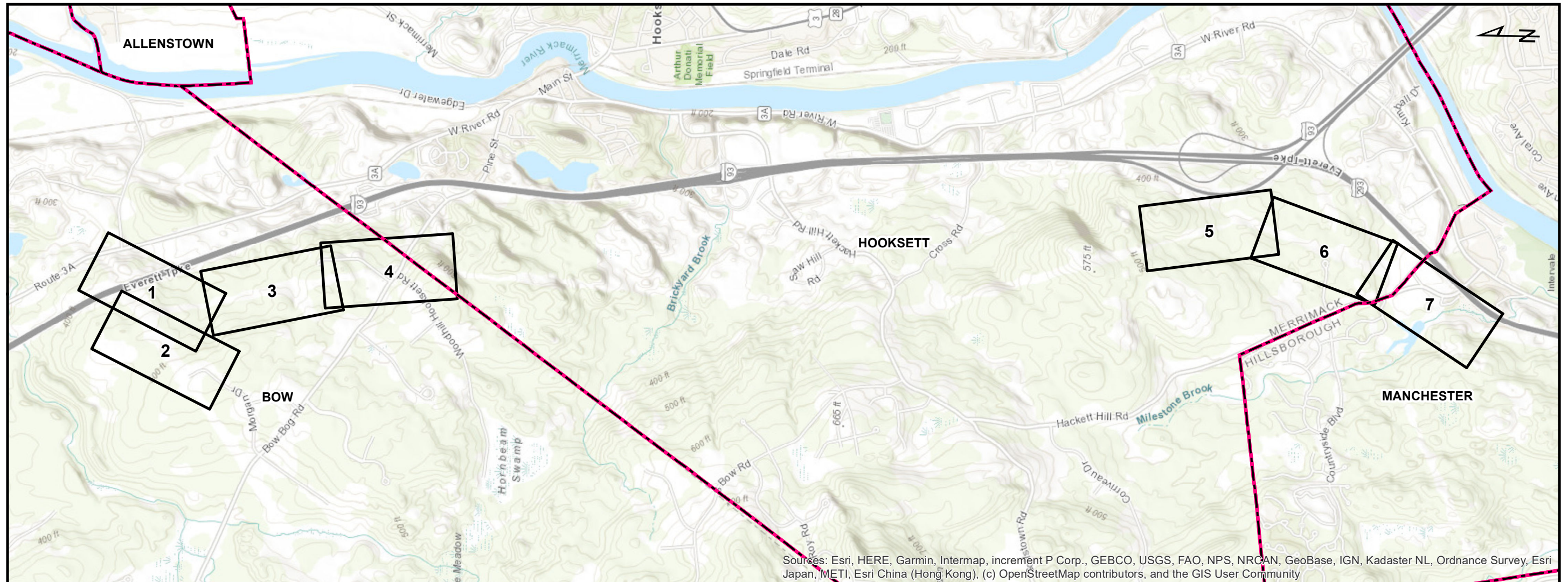
# D121 TRANSMISSION LINE OPGW AND STRUCTURE REPLACEMENT PROJECT

## SURFACE WATER AND GROUNDWATER OVERLAY PLANS

BOW AND HOOKSETT

NEW HAMPSHIRE

8/18/2021



PREPARED FOR



### INDEX OF FIGURES

1 inch = 2,500 feet

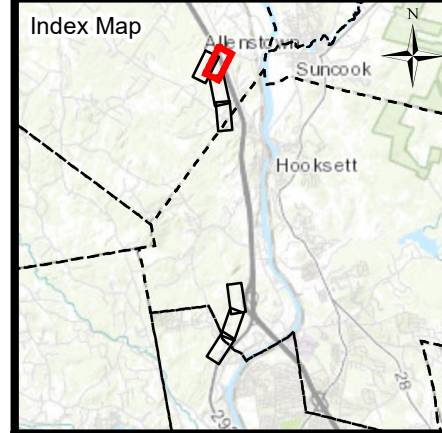
- T1: TITLE SHEET
- 1-7: MAP SHEETS
- S1: NOTES
- S2: DETAILS
- S3: DETAILS (CONTINUED)
- S4: WILDLIFE NOTES
- S5: WILDLIFE NOTES (CONTINUED)

PREPARED BY



**GZA GeoEnvironmental, Inc.**  
*Engineers and Scientists*  
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Bow		Manchester	
● EXISTING STRUCTURE	● EXISTING STRUCTURE TO BE REPLACED	■ TEMPORARY WETLAND IMPACTS	■ STRAW WATTLE
— APPROXIMATE ROW	— DESIGNATED RIVER QUARTER MILE BUFFER (NONE PRESENT)	— 2FT ELEVATION CONTOUR	— DELINEATED WETLAND
— GROUNDWATER CLASSIFICATION AREAS GA1 (NONE)	— GROUNDWATER CLASSIFICATION AREAS GA2 (NONE)	— PARCEL BOUNDARY	— EVERSOURCE OWNED PARCEL
— GROUNDWATER CLASSIFICATION AREAS GAA (NONE)	— OUTSTANDING RESOURCE WATER WATERSHED (NONE PRESENT)	— STATE OWNED PARCEL	— NHD FLOWLINE
— WATER SUPPLY INTAKE PROTECTION AREAS (NONE)	— FEMA SPECIAL FLOOD HAZARD AREA (NONE)	— TOWN BOUNDARY	— NHDOT ROADS
— CLASS A SURFACE WATERS RSA 485A9 (NONE)	— ALL LAKES WITH A QUARTER MILE BUFFER (NONE)	— STONEWALL	— TRANSMISSION LINE
— SURFACE WATERS WITH IMPAIRMENTS 2016 WITH QUARTER MILE BUFFER (NONE PRESENT)	— WATERSHEDS WITH CHLORIDE IMPAIRMENTS 2016 (NONE PRESENT)	— DISTRICTION LINE	— AOT DISTURBANCE
— WELLHEAD PROTECTION AREAS (NONE)	— LOCAL POTENTIAL CONTAMINATION SOURCES (NONE PRESENT)	— POTENTIAL VERNAL POOL	— PERIMETER BARRIER WITH GROUND CONTACT
		— SILT FENCE	

**Current Town: Bow**

**Manchester**

NOTES:  
 1. BASEMAP IMAGERY - ESRI WORLD IMAGERY (CLARITY)  
 2. TRANSMISSION LINE AND TRANSMISSION STRUCTURES WERE PROVIDED BY EVERSOURCE ENERGY.  
 3. RAILROAD, NHDOT ROADS, NHD FLOWLINES, PARCEL BOUNDARIES AND TOWN BOUNDARY WERE OBTAINED FROM NH GRANIT CLEARINGHOUSE.  
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0 100 200 400 Feet

**D121 TRANSMISSION LINE**  
**OPGW AND STR REPLACEMENT PROJECT**

SURFACE AND GROUNDWATER  
 OVERLAY PLANS  
 AUGUST 18, 2021

BOW AND HOOKSETT  
 NEW HAMPSHIRE  
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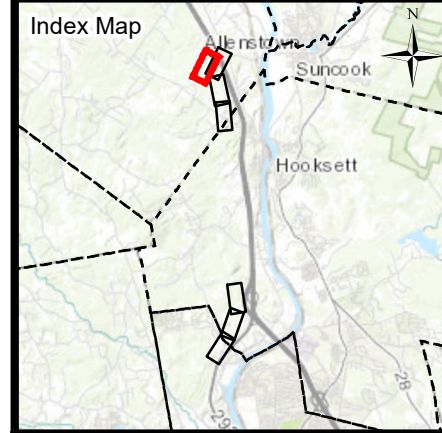
Project No.: 04.0190999.38

1 inch = 200 feet

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Bow		Current Town: Bow		Manchester	
●	EXISTING STRUCTURE	■	TEMPORARY WETLAND IMPACTS	→	MANCHESTER
●	EXISTING STRUCTURE TO BE REPLACED	■	STRAW WATTLE	←	BOW
—	APPROXIMATE ROW	—	2FT ELEVATION CONTOUR		
—	DESIGNATED RIVER QUARTER MILE BUFFER (NONE PRESENT)	■	DELINEATED WETLAND		
■	GROUNDWATER CLASSIFICATION AREAS GA1 (NONE)	■	PARCEL BOUNDARY		
■	GROUNDWATER CLASSIFICATION AREAS GA2 (NONE)	■	EVERSOURCE OWNED PARCEL		
■	GROUNDWATER CLASSIFICATION AREAS GAA (NONE)	■	STATE OWNED PARCEL		
■	OUTSTANDING RESOURCE WATER WATERSHED (NONE PRESENT)	—	NHD FLOWLINE		
■	WATER SUPPLY INTAKE PROTECTION AREAS (NONE)	■	TOWN BOUNDARY		
■	FEMA SPECIAL FLOOD HAZARD AREA (NONE)	—	NHDOT ROADS		
■	CLASS A SURFACE WATERS RSA 485A9 (NONE)	○	STONEWALL		
■	ALL LAKES WITH A QUARTER MILE BUFFER (NONE)	—	TRANSMISSION LINE		
■	SURFACE WATERS WITH IMPAIRMENTS 2016 WITH QUARTER MILE BUFFER (NONE PRESENT)	—	DISTRIBUTION LINE		
■	WATERSHEDS WITH CHLORIDE IMPAIRMENTS 2016 (NONE PRESENT)	■	AOT DISTURBANCE		
■	WELLHEAD PROTECTION AREAS (NONE)	■	POTENTIAL VERNAL POOL		
▲	LOCAL POTENTIAL CONTAMINATION SOURCES (NONE PRESENT)	■	PERIMETER BARRIER WITH GROUND CONTACT		
		■	SILT FENCE		

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OVERLAY PLANS  
AUGUST 18, 2021

BOW AND HOOKSETT  
NEW HAMPSHIRE  
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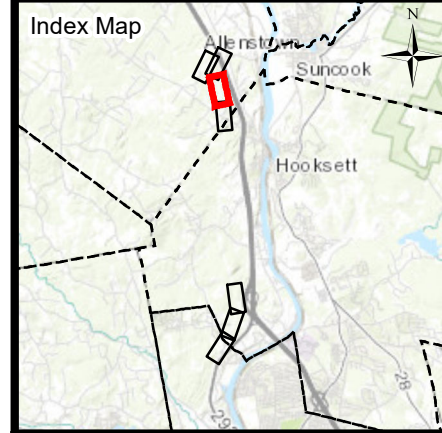
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1 inch = 200 feet





Bow		Current Town: Bow		Manchester	
●	EXISTING STRUCTURE	■	TEMPORARY WETLAND IMPACTS	○	STONEWALL
●	EXISTING STRUCTURE TO BE REPLACED	■	STRAW WATTLE	—	TRANSMISSION LINE
—	APPROXIMATE ROW	—	2FT ELEVATION CONTOUR	—	DISTRIBUTION LINE
—	DESIGNATED RIVER QUARTER MILE BUFFER (NONE PRESENT)	■	DELINEATED WETLAND	■	AOT DISTURBANCE
■	GROUNDWATER CLASSIFICATION AREAS GA1 (NONE)	■	PARCEL BOUNDARY	■	POTENTIAL VERNAL POOL
■	GROUNDWATER CLASSIFICATION AREAS GA2 (NONE)	■	EVERSOURCE OWNED PARCEL	■	PERIMETER BARRIER WITH GROUND CONTACT
■	GROUNDWATER CLASSIFICATION AREAS GAA (NONE)	■	STATE OWNED PARCEL	■	SILT FENCE
■	OUTSTANDING RESOURCE WATER WATERSHED (NONE PRESENT)	—	NHD FLOWLINE		
■	WATER SUPPLY INTAKE PROTECTION AREAS (NONE)	—	TOWN BOUNDARY		
■	FEMA SPECIAL FLOOD HAZARD AREA (NONE)	—	NHDOT ROADS		
■	CLASS A SURFACE WATERS RSA 485A9 (NONE)				
■	ALL LAKES WITH A QUARTER MILE BUFFER (NONE)				
■	SURFACE WATERS WITH IMPAIRMENTS 2016 WITH QUARTER MILE BUFFER (NONE PRESENT)				
■	WATERSHEDS WITH CHLORIDE IMPAIRMENTS 2016 (NONE PRESENT)				
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▲	LOCAL POTENTIAL CONTAMINATION SOURCES (NONE PRESENT)				

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0 100 200 400 Feet

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AUGUST 18, 2021

BOW AND HOOKSETT  
NEW HAMPSHIRE  
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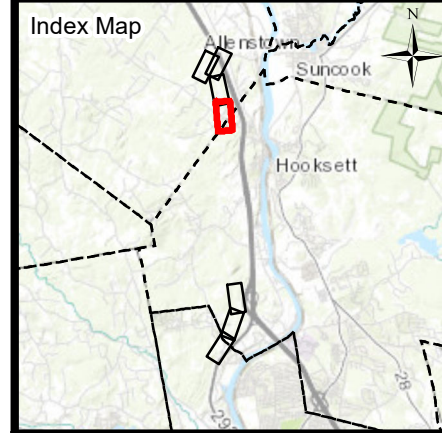
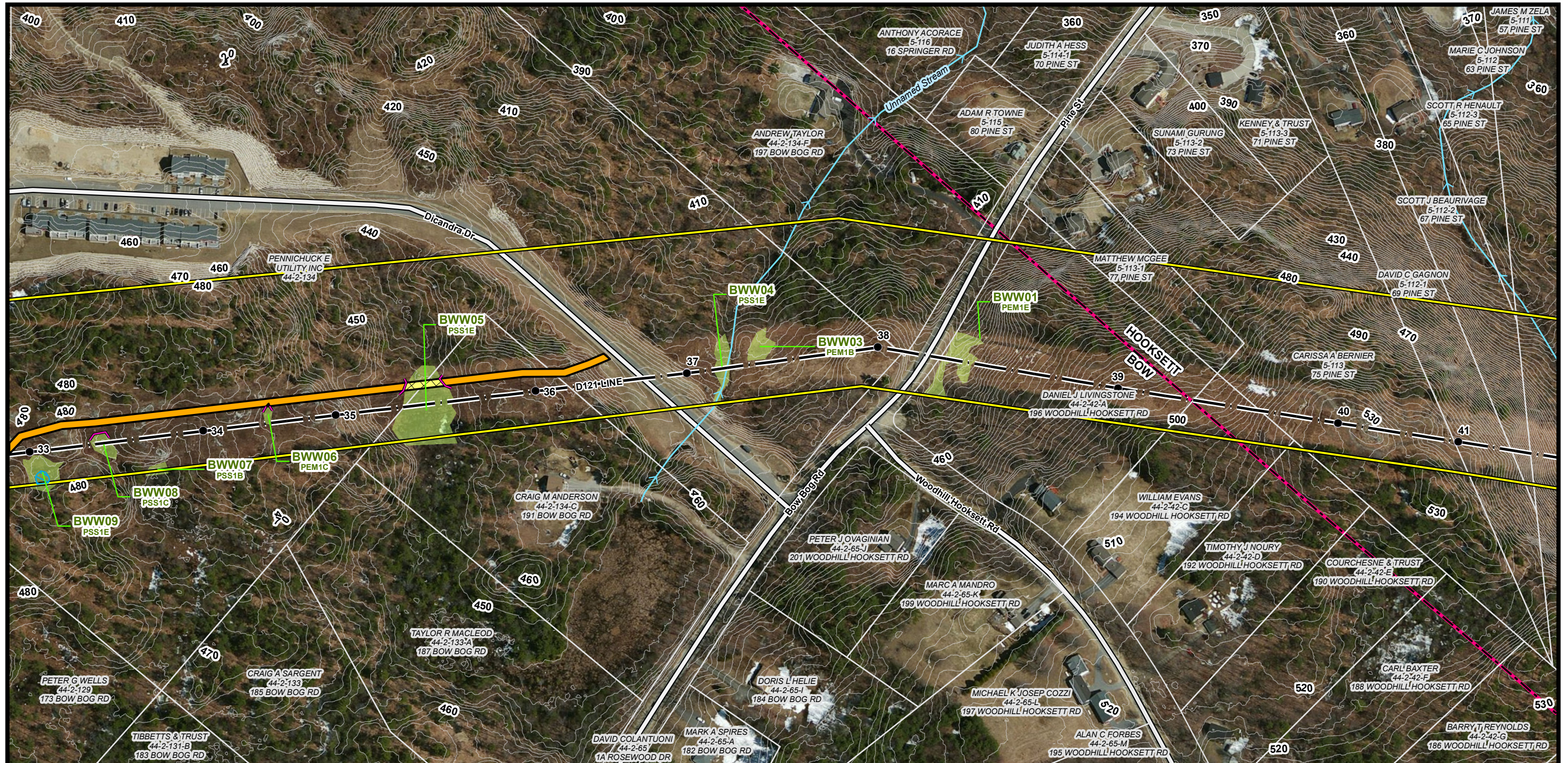
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1 inch = 200 feet





**Current Town: Bow/Hooksett**

<p><b>Bow</b></p> <ul style="list-style-type: none"> <li>● EXISTING STRUCTURE</li> <li>● EXISTING STRUCTURE TO BE REPLACED</li> <li>— APPROXIMATE ROW</li> <li>— DESIGNATED RIVER QUARTER MILE BUFFER (NONE PRESENT)</li> <li>— GROUNDWATER CLASSIFICATION AREAS GA1 (NONE)</li> <li>— GROUNDWATER CLASSIFICATION AREAS GA2 (NONE)</li> <li>— GROUNDWATER CLASSIFICATION AREAS GAA (NONE)</li> <li>— OUTSTANDING RESOURCE WATER WATERSHED (NONE PRESENT)</li> <li>— WATER SUPPLY INTAKE PROTECTION AREAS (NONE)</li> <li>— FEMA SPECIAL FLOOD HAZARD AREA (NONE)</li> <li>— CLASS A SURFACE WATERS RSA 485A9 (NONE)</li> <li>— ALL LAKES WITH A QUARTER MILE BUFFER (NONE)</li> <li>— SURFACE WATERS WITH IMPAIRMENTS 2016 WITH QUARTER MILE BUFFER (NONE PRESENT)</li> <li>— WATERSHEDS WITH CHLORIDE IMPAIRMENTS 2016 (NONE PRESENT)</li> <li>— WELLHEAD PROTECTION AREAS (NONE)</li> <li>▲ LOCAL POTENTIAL CONTAMINATION SOURCES (NONE PRESENT)</li> </ul>	<p><b>Manchester</b></p> <ul style="list-style-type: none"> <li>— TEMPORARY WETLAND IMPACTS</li> <li>— STRAW WATTLE</li> <li>— 2FT ELEVATION CONTOUR</li> <li>— DELINEATED WETLAND</li> <li>— PARCEL BOUNDARY</li> <li>— EVERSOURCE OWNED PARCEL</li> <li>— STATE OWNED PARCEL</li> <li>— NHD FLOWLINE</li> <li>— TOWN BOUNDARY</li> <li>— NHDOT ROADS</li> <li>— STONEWALL</li> <li>— TRANSMISSION LINE</li> <li>— DISTRIBUTION LINE</li> <li>— AOT DISTURBANCE</li> <li>— POTENTIAL VERNAL POOL</li> <li>— PERIMETER BARRIER WITH GROUND CONTACT</li> <li>— SILT FENCE</li> </ul>
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AUGUST 18, 2021

BOW AND HOOKSETT  
NEW HAMPSHIRE  
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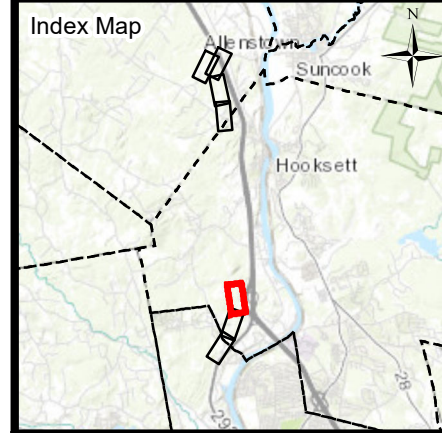
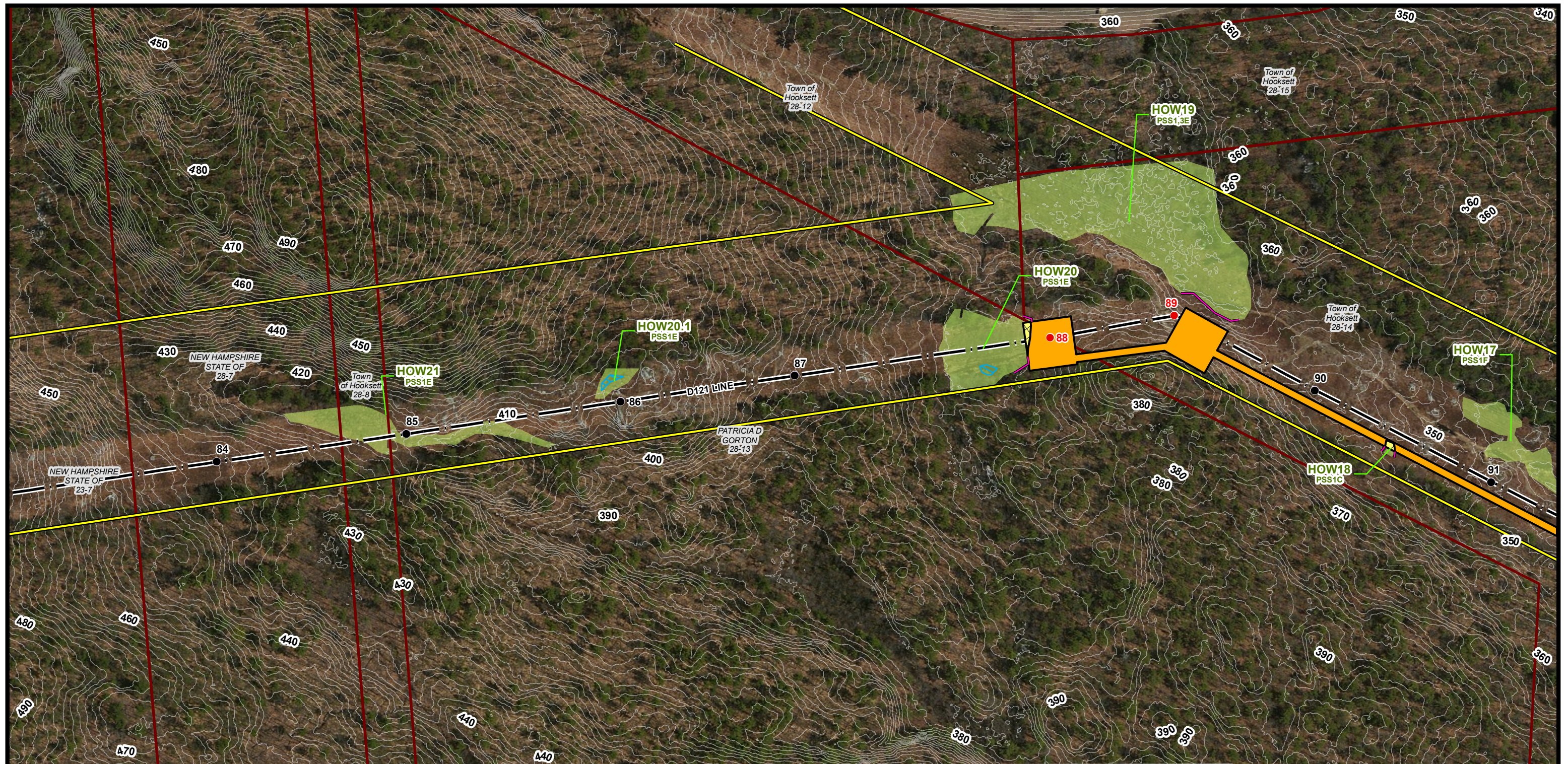
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Bow ←		Current Town: Hooksett		→ Manchester	
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●	EXISTING STRUCTURE TO BE REPLACED	■	STRAW WATTLE		
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—	OUTSTANDING RESOURCE WATER WATERSHED (NONE PRESENT)	—	NHD FLOWLINE		
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—	FEMA SPECIAL FLOOD HAZARD AREA (NONE)	—	NHDOT ROADS		
—	CLASS A SURFACE WATERS RSA 485A9 (NONE)	—	STONEWALL		
—	ALL LAKES WITH A QUARTER MILE BUFFER (NONE)	—	TRANSMISSION LINE		
—	SURFACE WATERS WITH IMPAIRMENTS 2016 WITH QUARTER MILE BUFFER (NONE PRESENT)	—	DISTRIBUTION LINE		
—	WATERSHEDS WITH CHLORIDE IMPAIRMENTS 2016 (NONE PRESENT)	—	AOT DISTURBANCE		
—	WELLHEAD PROTECTION AREAS (NONE)	—	POTENTIAL VERNAL POOL		
▲	LOCAL POTENTIAL CONTAMINATION SOURCES (NONE PRESENT)	—	PERIMETER BARRIER WITH GROUND CONTACT		
		—	SILT FENCE		

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AUGUST 18, 2021

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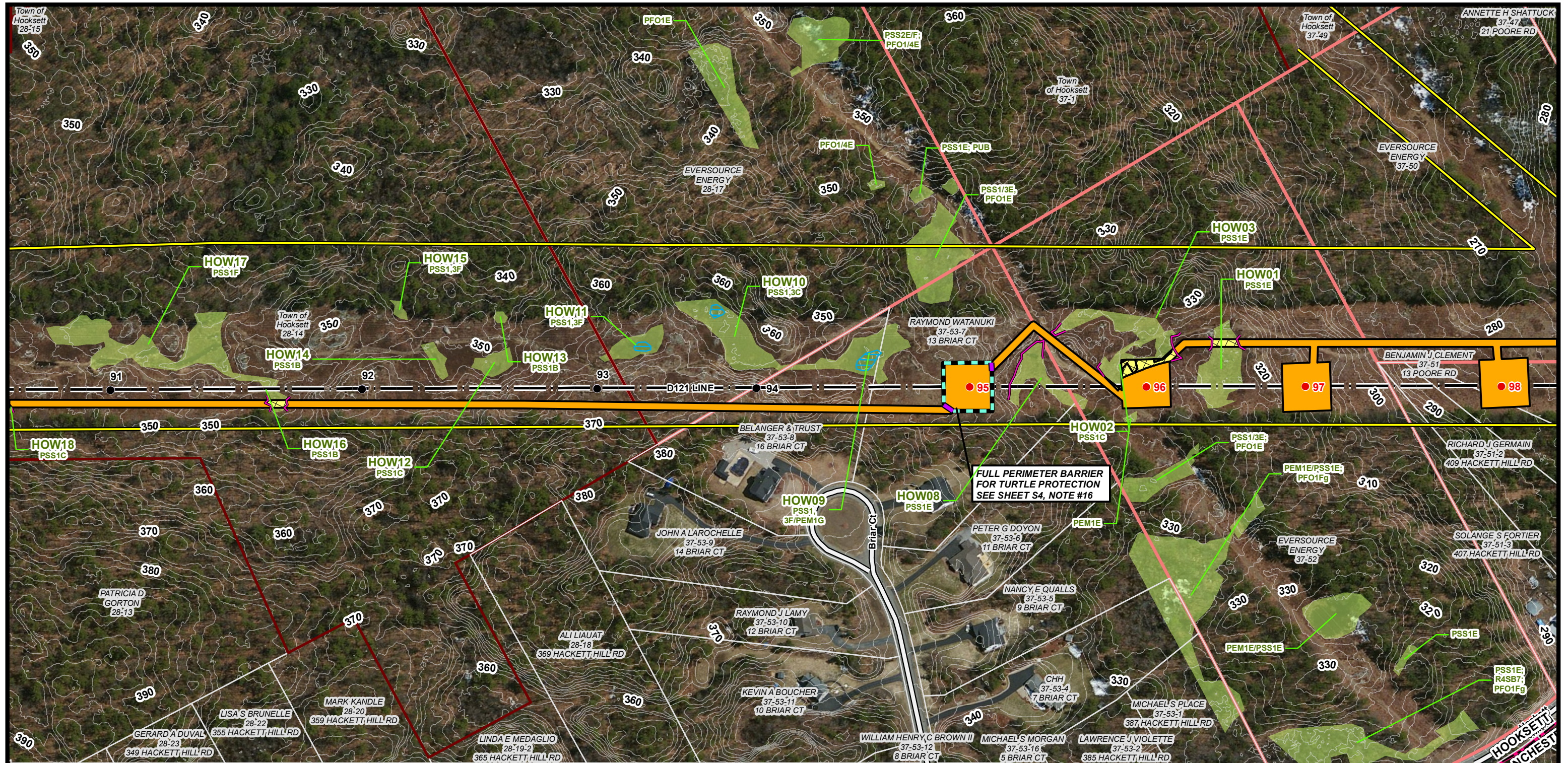
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1 inch = 200 feet





Bow		Current Town: Hooksett		Manchester	
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●	EXISTING STRUCTURE TO BE REPLACED	—	2FT ELEVATION CONTOUR	—	DELINEATED WETLAND
—	APPROXIMATE ROW	—	PARCEL BOUNDARY	—	EVERSOURCE OWNED PARCEL
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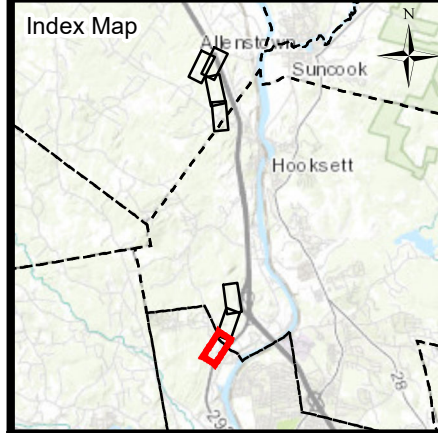
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**CONSTRUCTION SEQUENCE:**

1. WETLAND BOUNDARIES TO BE CLEARLY MARKED PRIOR TO THE START OF CONSTRUCTION.
2. SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAIL PROVIDED, AS NECESSARY.
3. WETLAND IMPACTS ASSOCIATED WITH WETLAND CROSSINGS ARE REQUIRED FOR ACCESS BETWEEN STRUCTURES WITHIN THE RIGHT OF WAY.
4. ADEQUATE PRECAUTION SHALL BE EXERCISED TO AVOID SPILLAGE OF FUEL OILS, CHEMICALS, OR SIMILAR SUBSTANCES; NO FUELS, LUBRICANTS, CHEMICALS OR SIMILAR SUBSTANCES SHALL BE STORED BENEATH TREES OR IN THE VICINITY OF ANY WETLANDS, RIVER, STREAM OR OTHER BODY OF WATER; OR IN THE VICINITY OF NATURAL OR MAN-MADE CHANNELS LEADING THERETO. NO POWER EQUIPMENT SHALL BE STORED, MAINTAINED, OR FUELED IN ANY AREA ADJACENT TO A WETLAND, RIVER, STREAM OR OTHER BODY OF WATER.
5. REMOVE COMPLETELY ALL CONTAMINATION FROM ANY SPILLAGE OF CHEMICALS OR PETROLEUM PRODUCT WITH COMPLETE REHABILITATION OF THE AFFECTED AREA.
6. ACCESS ROUTES HAVE BEEN SELECTED TO PREVENT DEGRADATION OF THE RIGHT-OF-WAY AND MINIMIZE ENVIRONMENTAL IMPACT. OPERATIONS SHALL BE CONFINED TO THE SPECIFIED ACCESS ROUTES WITHIN THE PROPOSED WETLAND IMPACT AREA. ACCESS ROUTES SHALL NOT EXCEED A 16 FOOT-WIDTH.
7. IMPACT TO VEGETATION WITHIN WETLANDS WILL BE LIMITED TO THE EXTENT NECESSARY TO PLACE THE TIMBER MATS WHERE REQUIRED.
8. LOW GROWING VARIETIES OF VEGETATION ADJACENT TO WETLANDS SHALL BE PRESERVED TO THE EXTENT POSSIBLE. STUMPS AND ROCKS SHALL NOT BE REMOVED, AND THERE SHALL BE NO EXCAVATIONS, FILLS OR GRADING DONE ADJACENT TO WETLANDS, UNLESS MINOR EXCAVATIONS IS NEEDED FOR ACCESS.
9. TIMBER MATS WILL BE USED ALONG ACCESS ROUTES WITHIN WETLAND AREAS. THESE MATS ARE CONSTRUCTED OF HEAVY TIMBERS OR COMPOSITE MATERIAL, BOLTED TOGETHER, AND ARE PLACED END-TO-END IN THE WETLAND TO SUPPORT HEAVY EQUIPMENT. ALL SWAMP MATS SHALL BE PLACED AND REMOVED SO AS NOT TO CAUSE ANY RUTS, CHANNELS OR DEPRESSIONS, OR OTHERWISE CAUSE ANY UNDUE DISTURBANCE TO WETLANDS.
10. IF TIMBER MAT BMP IS NOT SUFFICIENT DUE TO HIGH WATER, ADDITIONAL BMP'S MAY INCLUDE THE PLACEMENT OF GEOTEXTILE FABRIC, 3"-4" STONE, AND GRAVEL TO PROVIDE A SUITABLE ROAD BED. A TEMPORARY CULVERT MAY BE REQUIRED IN AREAS OF HIGH FLOW TO MAINTAIN HYDROLOGIC CONNECTIVITY. ALL MATERIAL WILL BE REMOVED FROM JURISDICTIONAL AREAS AFTER CONSTRUCTION COMPLETION.
11. NO MATERIAL SHALL BE PLACED IN ANY LOCATION OR IN ANY MANNER SO AS TO IMPAIR SURFACE WATER FLOW INTO, THROUGH OR OUT OF ANY WETLAND AREA. NO INSTALLATION SHALL CREATE AN IMPOUNDMENT THAT WILL IMPEDE THE FLOW OF WATER OR CAUSE FLOODING.
12. NO MATERIAL SHALL BE TAKEN FROM THE WETLANDS AREA EXCEPT THAT WHICH MUST NECESSARILY BE REMOVED FOR THE STRUCTURE OR FOUNDATION PLACEMENT OR STABILIZATION. ALL EXCESS MATERIAL TAKEN FROM THE WETLAND WILL BE REMOVED FROM THE SITE.
13. ANY PROPOSED SUPPORT FILLS SHALL BE CLEAN GRAVEL AND STONE, FREE OF WASTE METAL PRODUCTS, ORGANIC MATERIALS AND SIMILAR DEBRIS AND SHALL NOT EXCEED THE AMOUNT PERMITTED. THIS ALLOWABLE FILL IS THE ONLY FILL THAT MAY REMAIN IN THE WETLAND AFTER CONSTRUCTION. ALL CUT AND FILLS SLOPES SHALL BE SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
14. INSTALL NEW POLES IN THE LOCATIONS DESIGNATED ON THE PERMITTING PLANS.
15. CABLE INSTALLATION WILL BE PERFORMED IN A MANNER SO AS TO AVOID, OR LIMIT TO THE MAXIMUM EXTENT POSSIBLE, TRAVERSING WETLANDS WITH HEAVY EQUIPMENT. IN SOME CASES, A HELICOPTER MAY BE USED DURING THE INSTALLATION TO MINIMIZE IMPACTS.
16. ALL SWAMP MATS, MATERIAL, AND DEBRIS WILL BE REMOVED FROM THE WORK AREA UPON THE COMPLETION OF CONSTRUCTION.
17. UPLAND DISTURBED AREAS SHALL BE RESTORED AND STABILIZED UPON COMPLETION OF CONSTRUCTION. WORK PAD RESTORATION SHOULD INCLUDE REDUCING THE WORK PAD TO A 30 BY 60 FOOT AREA, AND REDUCING SLOPES TO A MAXIMUM OF 25%. STOCKPILED MATERIAL SHOULD BE SPREAD TO REDUCE ANY UNNECESSARY SLOPES. GRAVEL WORK PADS AND SLOPES SHOULD BE SCARIFIED TO A MINIMUM OF 3" BEFORE SPREADING TOPSOIL/LOAM.
18. ALL TEMPORARY WETLAND IMPACTS WILL BE RE-GRADED TO ORIGINAL CONTOURS FOLLOWING CONSTRUCTION. NEW ENGLAND EROSION CONTROL/RESTORATION MIX, AVAILABLE THROUGH NEW ENGLAND WETLAND PLANTS, INC., 820 WEST STREET, AMHERST, MA 01002, 413-548-8000, OR EQUIVALENT SEED MIX SHALL BE APPLIED IN WETLAND AREAS THAT ARE NOT INUNDATED, AS NECESSARY.
19. SEDIMENT AND EROSION CONTROL MEASURES WILL BE EVALUATED AND REMOVED IF NECESSARY UPON THE COMPLETION OF CONSTRUCTION.
20. COMMERCIAL LOAM WILL NOT BE USED AS PART OF RESTORATION. ONLY IN-SITU TOPSOIL WILL BE USED TO RESTORE DISTURBED AREAS.
21. WHERE OPTIMAL TURTLE BREEDING AREAS OVERLAP WITH DISTURBANCE (AS DETERMINED BY AN ENVIRONMENTAL MONITOR), MINERAL SOILS WILL BE SCARIFIED TO ALLEVIATE COMPACTION AND BECOME MORE SUITED FOR TURTLE BREEDING.

**WINTER CONSTRUCTION NOTES**

1. PROPOSED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED. STABILIZATION METHODS SHALL INCLUDE SEEDING AND MULCH, AND INSTALLATION OF EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.
2. DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE TEMPORARILY STABILIZED WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.

3. AFTER NOVEMBER 15TH, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL (NHDOT 304.3).

**GENERAL NOTES:**

OWNER: EVERSOURCE ENERGY  
13 LEGENDS DRIVE  
HOOKSETT, NH 03106

1. BASE PLAN PROVIDED BY EVERSOURCE ENERGY. EVERSOURCE ENERGY PROVIDED THE WETLAND DATA. EVERSOURCE ENERGY PROVIDED THE UTILITY DESIGN.
2. JURISDICTIONAL WETLANDS WERE DELINEATED BY TIGHE AND BOND IN 2018, IN ACCORDANCE WITH THE 1987 U.S. ARMY CORPS OF ENGINEERS' "WETLANDS DELINEATION MANUAL, TECHNICAL REPORT Y-87-1," AND REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTH CENTRAL AND NORTHEAST REGION," JANUARY 2012. WETLANDS WERE REVIEWED BY GZA GEOENVIRONMENTAL, INC. IN JANUARY AND FEBRUARY 2019.
3. GZA PERFORMED A WETLANDS FUNCTION AND VALUES ASSESSMENT IN ACCORDANCE WITH THE ACOE'S "HIGHWAY METHODOLOGY WORKBOOK SUPPLEMENT," SEPTEMBER 1999, IN THE TOWN OF STRAFFORD.
4. SITE PLAN IS FOR PERMITTING PURPOSES ONLY AND DOES NOT REPRESENT A PROPERTY BOUNDARY SURVEY.
5. THE PROJECT WILL BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.
6. IN ACCORDANCE WITH ENV-WQ 1505.02, THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
  - A MINIMUM 85 PERCENT VEGETATED GROWTH HAS BEEN ESTABLISHED
  - A MINIMUM OF 3 INCHES OF NON-EROSIVE MATERIAL HAS BEEN INSTALLED
  - OR, EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

**EROSION CONTROL NOTES:**

1. INSTALLATION OF EROSION CONTROL GRINDINGS AND/OR SILT FENCES SHALL BE COMPLETE PRIOR TO THE START OF WORK IN ANY GIVEN AREA. EROSION CONTROLS SHALL BE USED DURING CONSTRUCTION AND REMOVED WHEN ALL SLOPES HAVE A HEALTHY STAND OF VEGETATION COVER. EROSION CONTROL MEASURES SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER .25" OR GREATER RAINFALL EVENTS.
2. AS REQUIRED, CONSTRUCT TEMPORARY BERMS, SILTATION FENCES, SEDIMENT TRAPS, ETC. TO PREVENT EROSION & SEDIMENTATION OF WETLANDS.
3. THE WORK AREA SHALL BE GRADED AND OTHERWISE SHAPED IN SUCH A MANNER AS TO MINIMIZE SOIL EROSION, SILTATION OF DRAINAGE CHANNELS, DAMAGE TO EXISTING VEGETATION, AND DAMAGE TO PROPERTY OUTSIDE LIMITS OF THE WORK AREA. EROSION CONTROL GRINDINGS WILL BE NECESSARY TO ACCOMPLISH THIS END.
4. ANY STRIPPED TOPSOIL SHALL BE STOCKPILED, WITHOUT COMPACTION, AND STABILIZED AGAINST EROSION, AS NECESSARY.
5. PERMANENT OR TEMPORARY COVER MUST BE IN PLACE BEFORE THE GROWING SEASON ENDS. WHEN SEEDED AREAS ARE NOT MULCHED, PLANTINGS SHOULD BE MADE FROM EARLY SPRING TO MAY 20 OR FROM AUGUST 15 TO SEPTEMBER 15. NO DISTURBED AREA SHALL BE LEFT EXPOSED DURING WINTER MONTHS, PLANT ANNUAL RYEGRASS PRIOR TO OCTOBER 15TH.
6. EROSION CONTROLS SHALL BE INSPECTED WEEKLY AND AFTER EVERY HALF-INCH OF RAINFALL.

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**D121 TRANSMISSION LINE  
OPGW AND STRUCTURE REPLACEMENT PROJECT**  
BOW AND HOOKSETT  
NEW HAMPSHIRE

**NOTES**

PREPARED BY: <b>GZA GeoEnvironmental, Inc.</b> Engineers and Scientists www.gza.com		PREPARED FOR: 	
PROJ MGR: LEW	REVIEWED BY: TLT	CHECKED BY: DMZ	SHEET
DESIGNED BY: MJD	DRAWN BY: MJD	SCALE:	<b>S1</b>
DATE: 08/18/2021	PROJECT NO: 04.0190999.38	REVISION NO.	



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## Best Management Practices (BMP's) for Straw wattles

### Definition and purpose:

Straw wattles are burlap rolls filled with straw that trap sediment and interrupt water flow by reducing slope lengths.

### Applications:

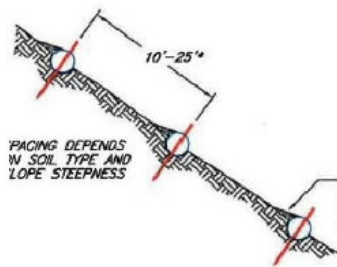
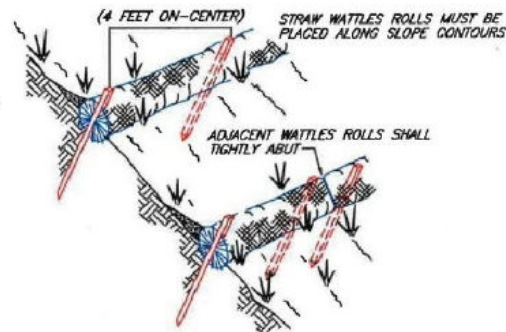
- \* Along erodible or unstabilized slopes
- \* Spread overland waterflow
- \* Trap sediment
- \* Around storm drain inlets to slow water and settle out sediment
- \* Overlap ends approximately 6 inches

### Installation:

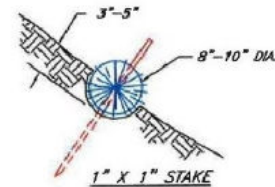
Straw wattles are installed parallel to slope contours and perpendicular to sheet flow.

Spacing\* - Dependent on slope length, soil steepness and soil type (general range 10 - 25').

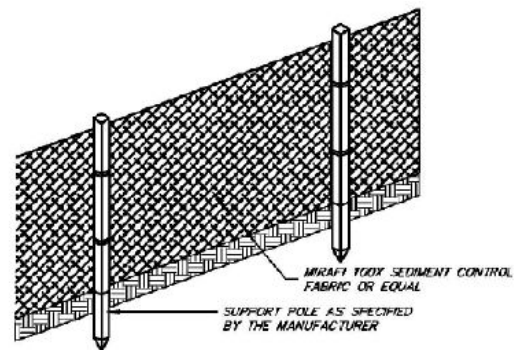
Trenching - 2"-5" inch trench  
Stacking - at each end and four foot on center (i.e. 25 foot wattle uses 6 stacks)



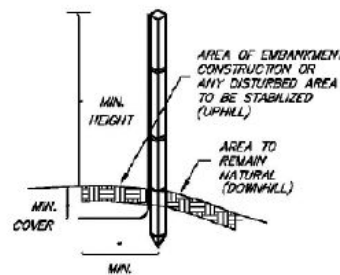
SEDIMENT, ORGANIC MATTER, AND NATIVE SEEDS ARE CAPTURED BEHIND THE WATTLE ROWS.



NOT TO SCALE



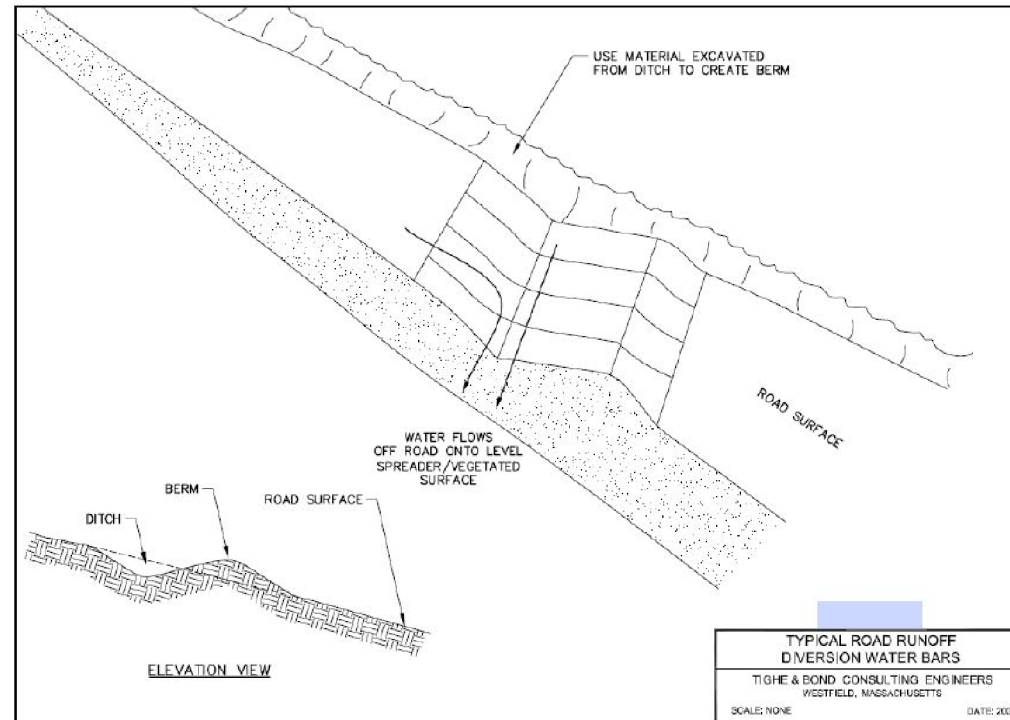
FRONT VIEW



SIDE VIEW

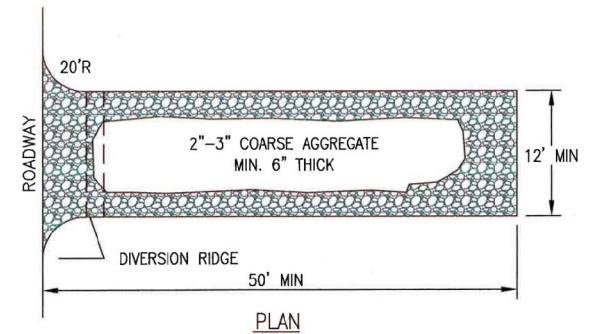
### NOTES (SILT FENCE)

1. THE HEIGHT OF THE BARRIER SHALL NOT EXCEED 36 INCHES.
2. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPliced TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6-INCH OVERLAP, AND SECURELY SEALED. SEE MANUFACTURER'S RECOMMENDATIONS.
3. POSTS SHALL BE PLACED AT A MAXIMUM OF 10 FEET APART AT THE BARRIER LOCATION AND DRIVEN SECURELY INTO THE GROUND (MINIMUM OF 12 INCHES). WHEN EXTRA STRENGTH FABRIC IS USED WITHOUT THE WIRE SUPPORT FENCE, POST SPACING SHALL BE AS MANUFACTURER RECOMMENDS.
4. A TRENCH SHALL BE EXCAVATED APPROXIMATELY 6 INCHES WIDE AND 6 INCHES DEEP ALONG THE LINE OF POSTS AND UPSLOPE OF THE BARRIER IN ACCORDANCE WITH RECOMMENDATIONS
5. THE FABRIC SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE, AND WILL EXTEND A MINIMUM OF 8 INCHES INTO THE TRENCH. FILTER FABRIC SHALL NOT BE STAPLED TO EXISTING TREES.
6. THE TRENCH SHALL BE BACKFILLED AND THE SOIL COMPACTED OVER THE FILTER FABRIC.
7. FABRIC BARRIERS SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.
8. FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST ONCE DAILY DURING PROLONGED RAINFALL AND ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
9. SHOULD THE FABRIC DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL BE NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.
10. SEDIMENT DEPOSITS SHOULD BE REMOVED WHEN THEY REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.
11. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.



ELEVATION VIEW

TYPICAL ROAD RUNOFF DIVERSION WATER BARS  
TIGHE & BOND CONSULTING ENGINEERS  
WESTFIELD, MASSACHUSETTS  
SCALE: NONE DATE: 2007



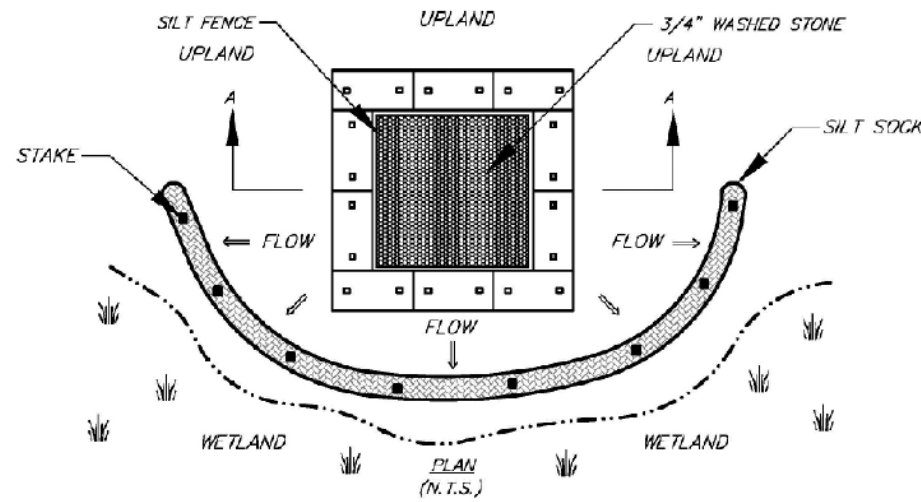
PLAN

### NOTES:

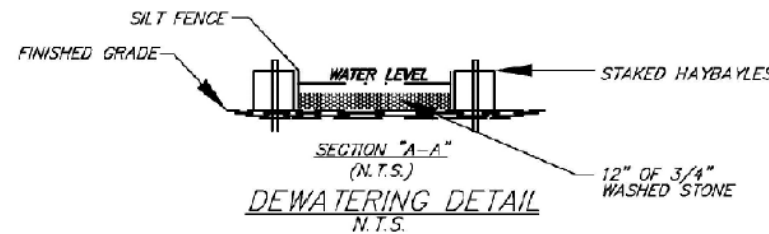
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.

## CONSTRUCTION ENTRANCE

NOT TO SCALE



PLAN (N.T.S.)



SECTION "A-A" (N.T.S.)  
DEWATERING DETAIL  
N.T.S.

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NEW HAMPSHIRE

### BMP DETAILS

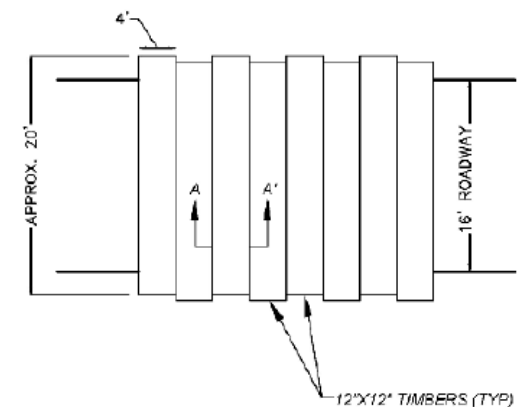
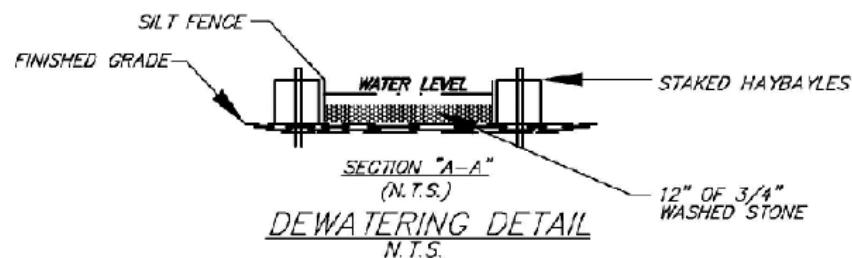
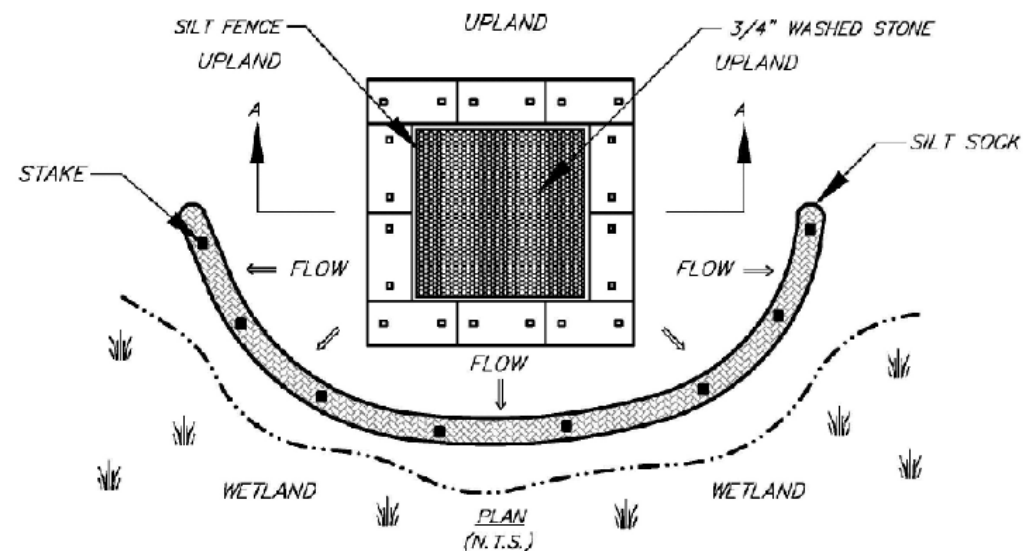
PREPARED BY:  
**GZA** GeoEnvironmental, Inc.  
Engineers and Scientists  
www.gza.com

PREPARED FOR:  
**EVERSOURCE**  
ENERGY

PROJ MGR: LEW	REVIEWED BY: TLT	CHECKED BY: DMZ	SHEET <b>S2</b>
DESIGNED BY: MJD	DRAWN BY: MJD	SCALE:	
DATE: 08/18/2021	PROJECT NO: 04.0190999.38	REVISION NO:	



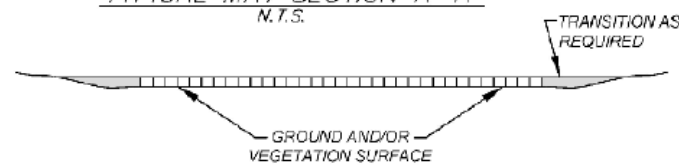
© 2021 - GZA GeoEnvironmental, Inc. P:\04\Jobs\1909099\04.0190999.00 - EE Siting Permitting 2019-2022\04.0190999.38 - D121 Transmission Line Structure Replacement and OPGW Project\Figures\MXD\121 Act\Notesheet 3 10-7.mxd, 8/18/2021, 11:34:33 AM, Lindsey White



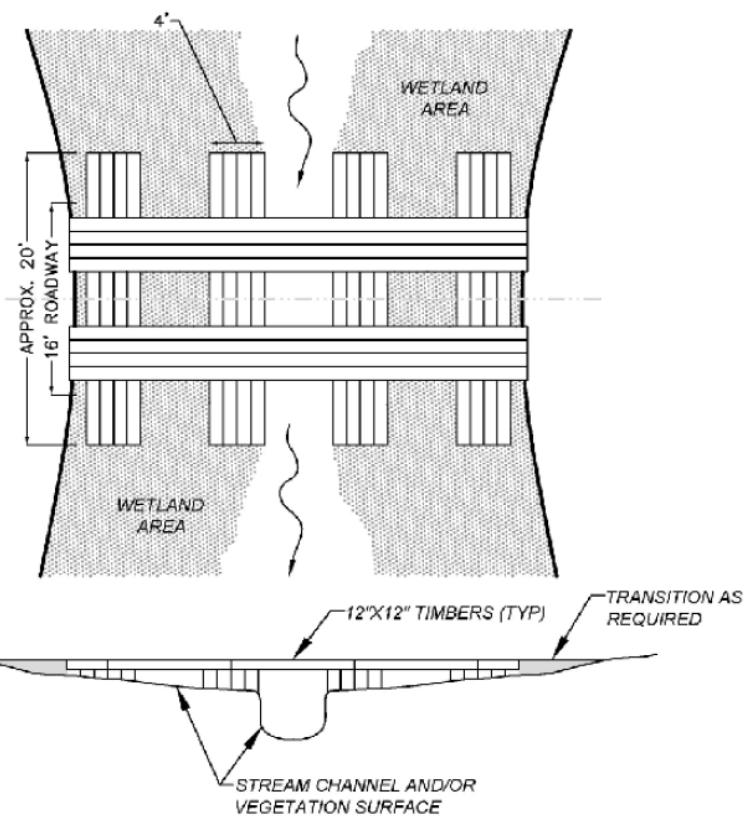
TYPICAL SWAMP MAT PLAN VIEW  
N.T.S.



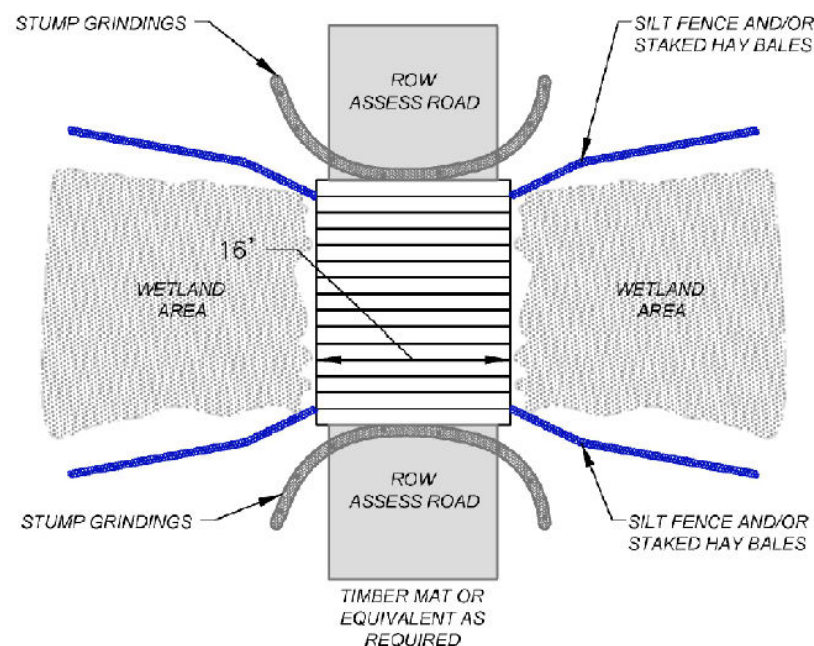
TYPICAL MAT SECTION A-A  
N.T.S.



TYPICAL SWAMP MAT SECTION DETAIL  
N.T.S.



TYPICAL STREAM CROSSING  
N.T.S.



TYPICAL WETLAND CROSSING  
N.T.S.

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**D121 TRANSMISSION LINE  
OPGW AND STRUCTURE REPLACEMENT PROJECT**  
BOW AND HOOKSETT  
NEW HAMPSHIRE

**BMP DETAILS**

PREPARED BY:  
**GZA** GeoEnvironmental, Inc.  
Engineers and Scientists  
www.gza.com

PREPARED FOR:  
**EVERSOURCE**  
ENERGY

PROJ MGR: LEW	REVIEWED BY: TLT	CHECKED BY: DMZ	SHEET <b>S3</b>
DESIGNED BY: MJD	DRAWN BY: MJD	SCALE:	
DATE: 08/18/2021	PROJECT NO: 04.0190999.38	REVISION NO:	



**NOTES**

1. THE NEW HAMPSHIRE FISH AND GAME DEPARTMENT SHALL HAVE ACCESS TO THE PROPERTY DURING THE TERM OF THE PERMIT. SEE PLAN SHEETS 1-9 DATED 8-13-2021.
2. ALL MANUFACTURED EROSION AND SEDIMENT CONTROL PRODUCTS, EXCEPT FOR SILT FENCE INSTALLED IN ACCORDANCE WITH ENV-WQ 1506.04, UTILIZED FOR, BUT NOT LIMITED TO, SLOPE PROTECTION, RUNOFF DIVERSION, SLOPE INTERRUPTION, PERIMETER CONTROL, INLET PROTECTION, CHECK DAMS, AND SEDIMENT TRAPS SHALL NOT CONTAIN WELDED PLASTIC, PLASTIC, OR MULTI-FILAMENT OR MONOFILAMENT POLYPROPYLENE NETTING OR MESH. SEE PLAN SHEET S2 DATED 8-13-2021 FOR SPECS.
3. SITE OPERATORS SHALL BE INFORMED OF THE POTENTIAL PRESENCE OF EASTERN HOGNOSE SNAKES (STATE ENDANGERED), BLACK RACER (STATE THREATENED), BLANDING'S TURTLE (STATE ENDANGERED), SPOTTED TURTLE (STATE THREATENED), AND WOOD TURTLE (STATE SPECIAL CONCERN) AND BE PROVIDED A FLIER THAT HELPS TO IDENTIFY THESE SPECIES. SPECIES INFORMATION ARE IDENTIFIED ON PLAN SHEET S4 DATED 8-13-2021.
4. ALL OBSERVATIONS OF THREATENED OR ENDANGERED SPECIES SHALL BE REPORTED IMMEDIATELY TO THE NEW HAMPSHIRE FISH AND GAME DEPARTMENT NONGAME AND ENDANGERED WILDLIFE ENVIRONMENTAL REVIEW PROGRAM BY PHONE AT 603-271-2461 AND BY EMAIL AT NHFGREVIEW@WILDLIFE.NH.GOV UNLESS AS OTHERWISE SPECIFIED BELOW. EMAIL SUBJECT LINE: NHB21-0607, D121 TRANSMISSION LINE, WILDLIFE SPECIES OBSERVATION. PHOTOGRAPHS SHALL BE PROVIDED FOR VERIFICATION AS FEASIBLE.
5. TURTLE NESTING SEASON EXTENDS FROM LATE MAY THROUGH THE BEGINNING OF JULY AND HATCHLING TURTLES TYPICALLY EMERGE FROM THE GROUND FROM MID-AUGUST THROUGH EARLY OCTOBER. IF WOOD, BLANDING'S, OR SPOTTED TURTLES ARE FOUND LAYING EGGS OR IF HATCHLING TURTLES ARE SEEN IN THE WORK AREA, CONTACT NHFG (MELISSA DOPERALSKI AT 603-271-1738 (O)/ 603-479-1129 (CELL) OR JOSH MEGYESY AT 603-271-1125 (O)/ 978-575-0802 (CELL) FOR FURTHER INSTRUCTIONS.
6. OBSERVATIONS OF NORTHERN BLACK RACER SNAKE SEEN IN ANY AREA FROM THE END OF SEPTEMBER THROUGH THE MONTH OF APRIL MUST BE IMMEDIATELY REPORTED TO THE NHFG DEPARTMENT (BRENDAN CLIFFORD 603-271-0463 (O)/ 603-944-0885 (CELL) OR MELISSA DOPERALSKI AT 603-271-1738 (O)/ 603-479-1129 (CELL)). IF NORTHERN BLACK RACER IS FOUND IN A WORK AREA FROM NOVEMBER THROUGH THE MONTH OF APRIL, WORK SHALL IMMEDIATELY CEASE AND THE OBSERVATION MUST BE REPORTED TO THE NHFG (BRENDAN CLIFFORD OR MELISSA DOPERALSKI) AS THE LOCATION REPRESENTS A POSSIBLE WINTER HIBERNACULUM.
7. ALL OBSERVATIONS OF EASTERN HOGNOSE SNAKE OBSERVED AT ANY TIME MUST BE IMMEDIATELY REPORTED TO NHFG (MELISSA DOPERALSKI AT 603-271-1738 (O)/ 603-479-1129 (CELL)) FOR FURTHER INSTRUCTIONS. OBSERVATIONS OF NEWBORN HOGNOSE SNAKES OBSERVED DURING LATE AUGUST – OCTOBER MAY INDICATE A HATCHING NEST SITE AND LIKELIHOOD OF OTHER SNAKES NEARBY.
8. PRIOR TO DAILY CONSTRUCTION ACTIVITIES, TIMBER MATTING WILL BE SEARCHED FOR SNAKES AND TURTLES. SEE PLAN SHEET S3 DATED 8-13-2021 FOR SPECS.
9. GZA WILL PROVIDE AN ENVIRONMENTAL ADDENDUM TO THE DAILY TAILBOARDS BY THE CONTRACTORS TO INCLUDE GUIDANCE ON PROTOCOLS FOR SNAKES AND PROVIDE IDENTIFICATION FOR SPOTTED TURTLE, WOOD TURTLE, BLANDING'S TURTLE AND NORTHERN BLACK RACER SNAKE.
10. REPTILE "SWEEPS" WILL BE COMPLETED DURING EROSION CONTROL MONITORING. IF PROTECTED REPTILES ARE OBSERVED ON OR NEAR THE SITE DURING CONSTRUCTION, CONTACT NHFG IMMEDIATELY UPON OBSERVATION, AND SAFELY RELOCATE AMPHIBIANS AND REPTILES OUT OF CONSTRUCTION AREAS IF OBSERVED. SEE PLAN SHEET(S) 1-9 DATED 8-13-2021 FOR SPECS.
11. OBSERVED SNAKES AND TURTLES WILL BE MOVED OFF OF CONSTRUCTION ACCESS ROADS TO LIMIT AND PREVENT MORTALITY TO SNAKES AND TURTLES DURING CONSTRUCTION. SEE PLAN SHEET(S) 1-9 DATED 8-13-2021 FOR SPECS.
12. AT THE CONCLUSION OF THE PROJECT, A SUMMARY REPORT OF ANY RARE SPECIES OBSERVATIONS WILL BE PROVIDED TO THE NHFG NONGAME PROGRAM.
13. TEMPORARY OR PERMANENT IMPACTS TO IDENTIFIED POTENTIAL OR SUSPECT VERNAL POOLS ARE PROHIBITED. ANY OBSERVATION OF ANY ADDITIONAL SUSPECT VERNAL POOLS ARE TO BE REPORTED TO NHFG PERSONNEL.
14. WETLAND BOUNDARIES, INCLUDING VERNAL POOLS PROHIBITED FROM IMPACT, WILL BE CLEARLY MARKED PRIOR TO START OF CONSTRUCTION. SEE PLAN SHEET(S) 1-9 DATED 8-13-2021 FOR SPECS.
15. TIMBER MATTING AND EROSION CONTROLS WILL BE USED FOR ALL TEMPORARY WETLAND CROSSINGS TO AVOID PERMANENT WETLAND IMPACTS AND SEDIMENTATION, AS WELL AS TO SPAN STREAM CHANNELS IN WETLANDS BWW12 AND BWW13. SEE PLAN SHEET(S) 3 AND 4 DATED 8-13-2021 AND SHEET S3 FOR SPECS.
16. INSTALL SILT FENCING TO CREATE TEMPORARY FULL PERIMETER BARRIER AT STRUCTURE 95 CONSTRUCTION AREA WHERE SPOTTED TURTLE WAS OBSERVED TO OCCUR TO EXCLUDE TURTLES AND SNAKES FROM ACTIVE CONSTRUCTION AREAS. THE FULL PERIMETER BARRIER SHALL BE MAINTAINED AT ALL TIMES, EXCEPT WHEN PROVIDING A TEMPORARY OPENING FOR ACCESS TO THE WORK AREA. ONCE ACCESS IS ATTAINED, THE PERIMETER BARRIER SHALL BE IMMEDIATELY RESTORED. ANY GATE OR SIMILAR STRUCTURE INSTALLED FOR ACCESS SHALL HAVE FULL CONTACT WITH THE GROUND SURFACE. FENCING WILL BE MAINTAINED BI-WEEKLY AND AFTER MAJOR STORM EVENTS OR AS NEEDED TO FIX ANY GAPS OR FAILURES. SEE PLAN SHEET 8 AND SHEET S2 DATED 8-13-2021 FOR SPECS.

**WOOD TURTLE (GLYPTHEMYS INSCULPTA)**

STATE SPECIES OF SPECIAL CONCERN



**WOOD TURTLE IDENTIFICATION**

1. NECK AND FORELIMBS ARE ORANGE.
2. CHARACTERIZED BY ITS HIGHLY SCULPTED SHELL WITH EACH LARGE SCUTE TAKING ON AN IRREGULAR PYRAMIDAL SHAPE.
3. ADULTS CAN BE 5-8 INCHES LONG.

**SPOTTED TURTLE (CLEMYS GUTTATA)**

STATE THREATENED



**SPOTTED TURTLE IDENTIFICATION**

1. SMALL, MOSTLY AQUATIC WITH BLACK OR DARK BROWN WITH YELLOW SPOTS.
2. FAIRLY FLAT SHELL COMPARED TO BLANDING'S TURTLE.
3. SPOTS VARY IN COLOR AND NUMBER.

**BLANDING'S TURTLE (EMYDOIDEA BLANDINGII)**

STATE ENDANGERED



**BLANDING'S TURTLE IDENTIFICATION**

1. LARGE, DARK/BLACK DOMED SHELL WITH LIGHTER SPECKLES.
2. DISTINCT YELLOW THROAT/CHIN.
3. AQUATIC BUT OFTEN MOVES ON LAND.

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D121 TRANSMISSION LINE  
OPGW AND STRUCTURE REPLACEMENT PROJECT  
BOW AND HOOKSETT  
NEW HAMPSHIRE

**WILDLIFE NOTES**

PREPARED BY: <b>GZA</b> GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: <b>EVERSOURCE</b> ENERGY	
PROJ MGR: LEW	REVIEWED BY: TLT	CHECKED BY: DMZ	SHEET <b>S4</b>
DESIGNED BY: MJD	DRAWN BY: MJD	SCALE:	
DATE: 08/18/2021	PROJECT NO: 04.0190999.38	REVISION NO:	



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**NORTHERN BLACK RACER (COLUBER CONSTRICTOR)**

STATE THREATENED



**NORTHERN BLACK RACER IDENTIFICATION**

1. SOLID BLACK WITH A WHITE THROAT.
2. SLENDER WITH GLOSSY SCLAES.
3. 3-6 FT. LONG.
4. HATCHLINGS ARE VERY SMALL AND PATTERNED.



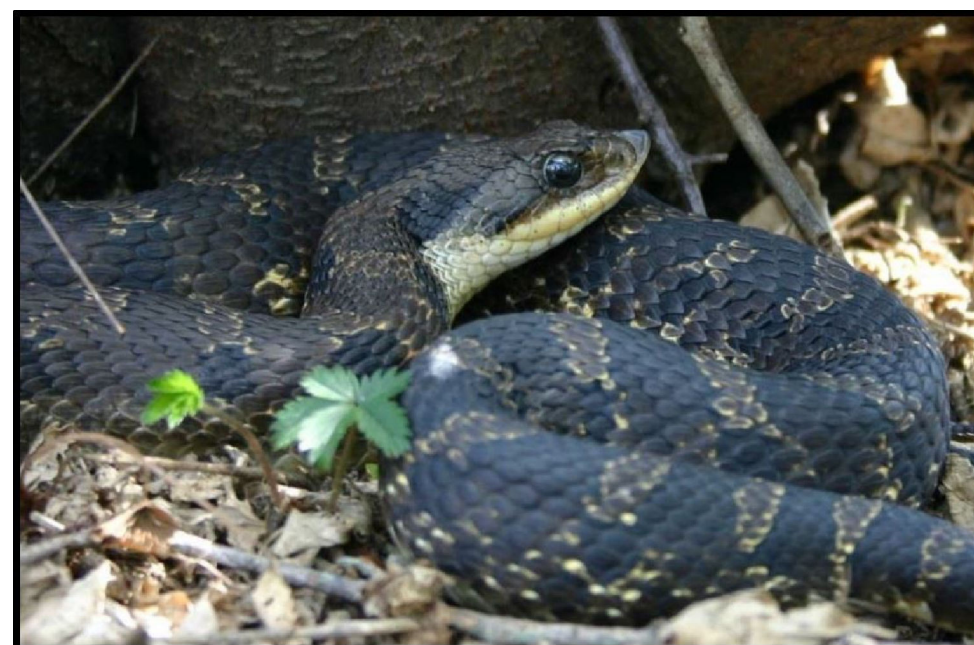
**EASTERN HOGNOSE SNAKE (HETERODON PLATIRHINOS)**

STATE ENDANGERED



**EASTERN HOGNOSE SNAKE IDENTIFICATION**

1. BLACK, GRAY OR PATTERNED APPEARANCE.
2. UPTURNED SNOUT.
3. 2-3 FT. LONG
4. MAY SPREAD NECK OUT OR HISS.



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D121 TRANSMISSION LINE  
OPGW AND STRUCTURE REPLACEMENT PROJECT  
BOW AND HOOKSETT  
NEW HAMPSHIRE

**WILDLIFE NOTES (CONT.)**

PREPARED BY: <b>GZA</b> GeoEnvironmental, Inc. Engineers and Scientists <a href="http://www.gza.com">www.gza.com</a>		PREPARED FOR: 	
PROJ MGR: LEW	REVIEWED BY: TLT	CHECKED BY: DMZ	SHEET
DESIGNED BY: MJD	DRAWN BY: MJD	SCALE:	<b>S5</b>
DATE: 08/18/2021	PROJECT NO: 04.0190999.38	REVISION NO:	

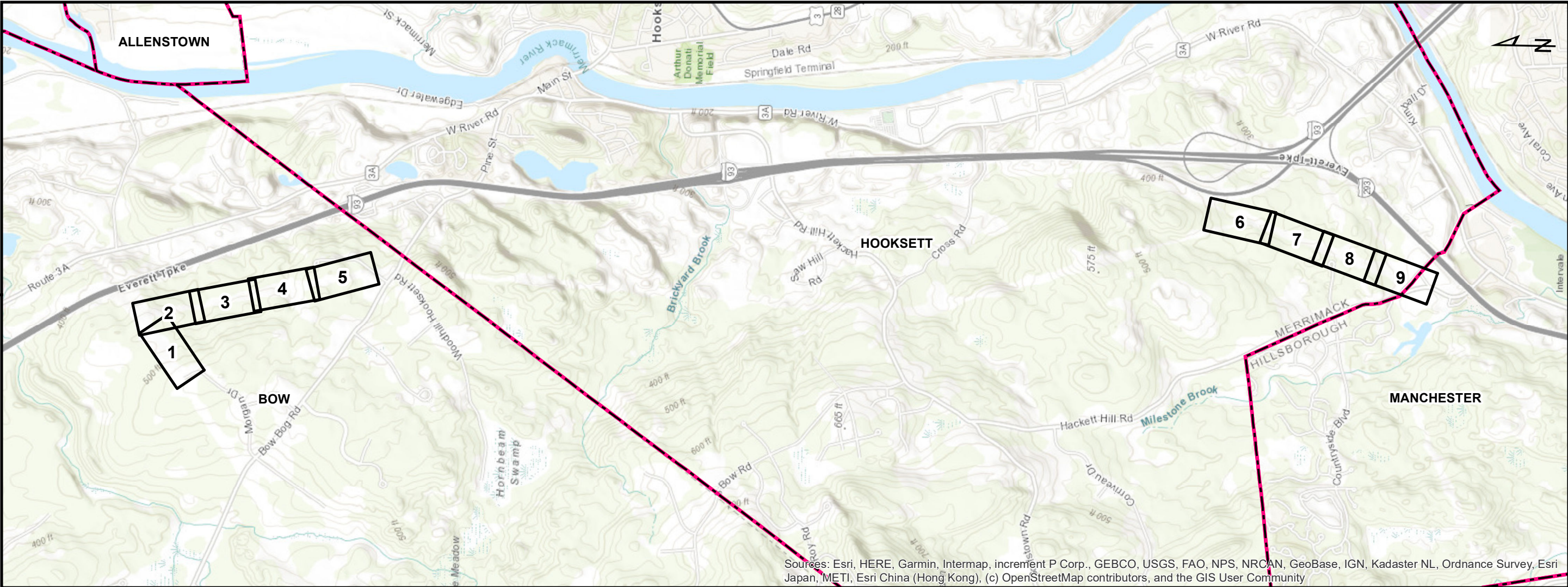
\*ALL PHOTOS AND IDENTIFICATION INFORMATION COURTESY OF NEW HAMPSHIRE FISH AND GAME DEPARTMENT.



# D121 TRANSMISSION LINE OPGW AND STRUCTURE REPLACEMENT PROJECT

## ALTERATION OF TERRAIN PERMITTING PLANS

BOW AND HOOKSETT  
 NEW HAMPSHIRE  
 8/18/2021



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

PREPARED FOR



### INDEX OF FIGURES

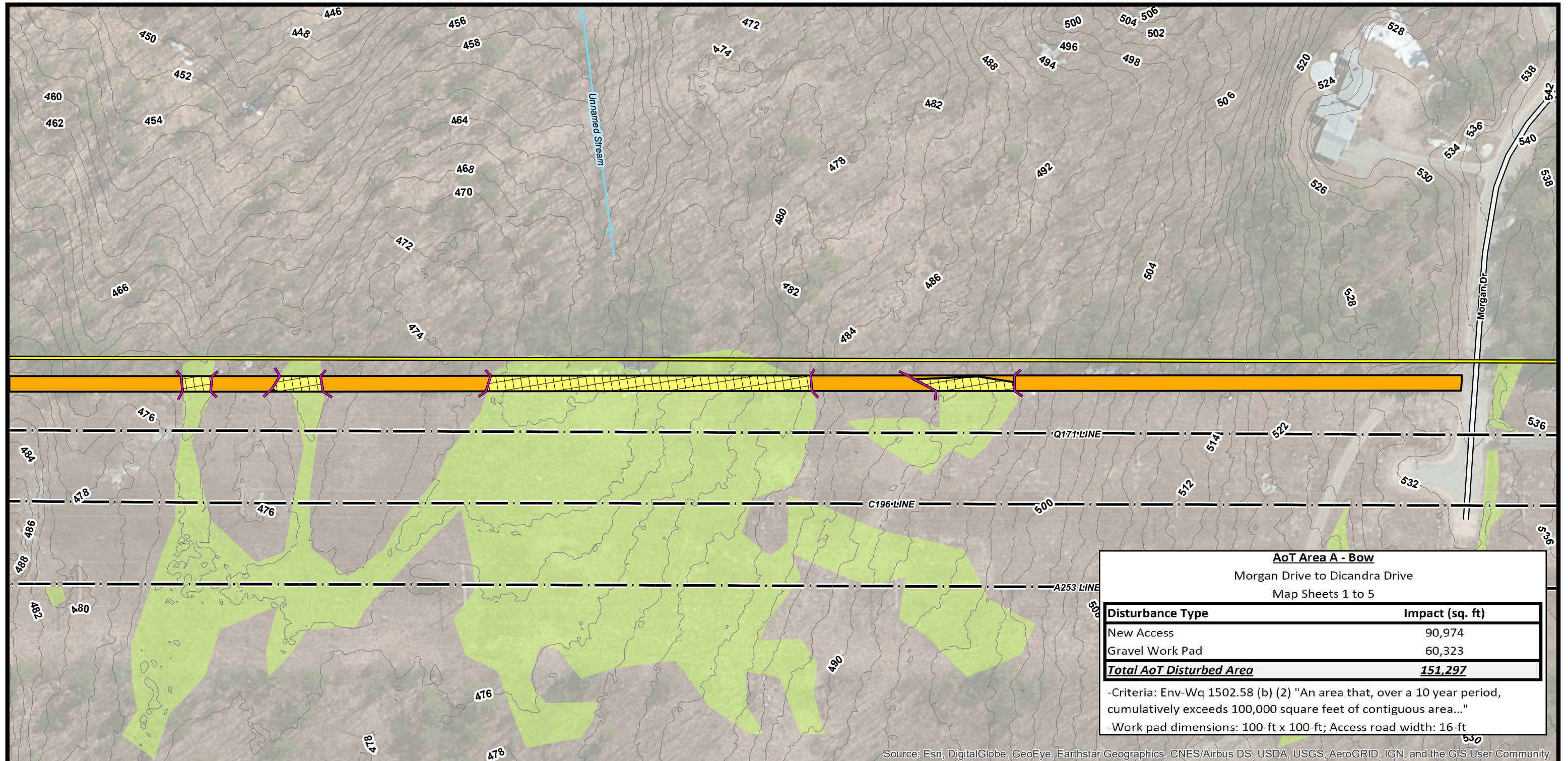
1 inch = 2,500 feet

- T1: TITLE SHEET
- 1-9: MAP SHEETS
- S1: NOTES
- S2: DETAILS
- S3: DETAILS (CONTINUED)
- S4: WILDLIFE NOTES
- S5: WILDLIFE NOTES (CONTINUED)

PREPARED BY





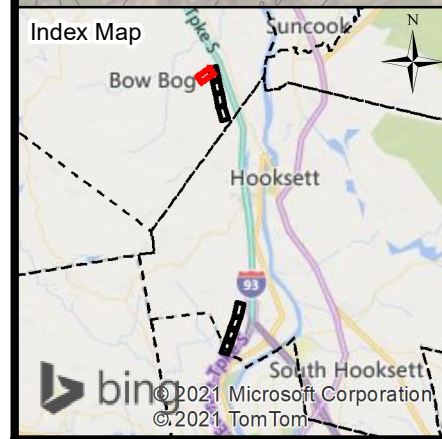


**AoT Area A - Bow**  
Morgan Drive to Dicandra Drive  
Map Sheets 1 to 5

Disturbance Type	Impact (sq. ft)
New Access	90,974
Gravel Work Pad	60,323
<b>Total AoT Disturbed Area</b>	<b>151,297</b>

-Criteria: Env-Wq 1502.58 (b) (2) "An area that, over a 10 year period, cumulatively exceeds 100,000 square feet of contiguous area..."  
-Work pad dimensions: 100-ft x 100-ft; Access road width: 16-ft

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



← **Bow**      **Current Town: Bow**      **Manchester** →

● EXISTING STRUCTURE	▭ TOWN BOUNDARY
● EXISTING STRUCTURE TO BE REPLACED	— NHDOT ROADS
▬ PERIMETER BARRIER WITH GROUND CONTACT	— GATE
▬ SILT FENCE	○ STONEWALL
▬ APPROXIMATE ROW	▨ POTENTIAL VERNAL POOL
▬ TRANSMISSION LINE	→ NHD FLOWLINE
▬ DISTRIBUTION LINE	— 2FT ELEVATION CONTOUR
▬ AOT DISTURBANCE AREA	
▨ TEMPORARY WETLAND IMPACTS	
▬ STRAW WATTLE	
▬ DELINEATED WETLAND	

NOTES:

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0 50 100 200 Feet

**D121 TRANSMISSION LINE**  
**OPGW AND STR REPLACEMENT PROJECT**

ALTERATION OF TERRAIN  
PERMITTING PLANS  
AUGUST 18, 2021

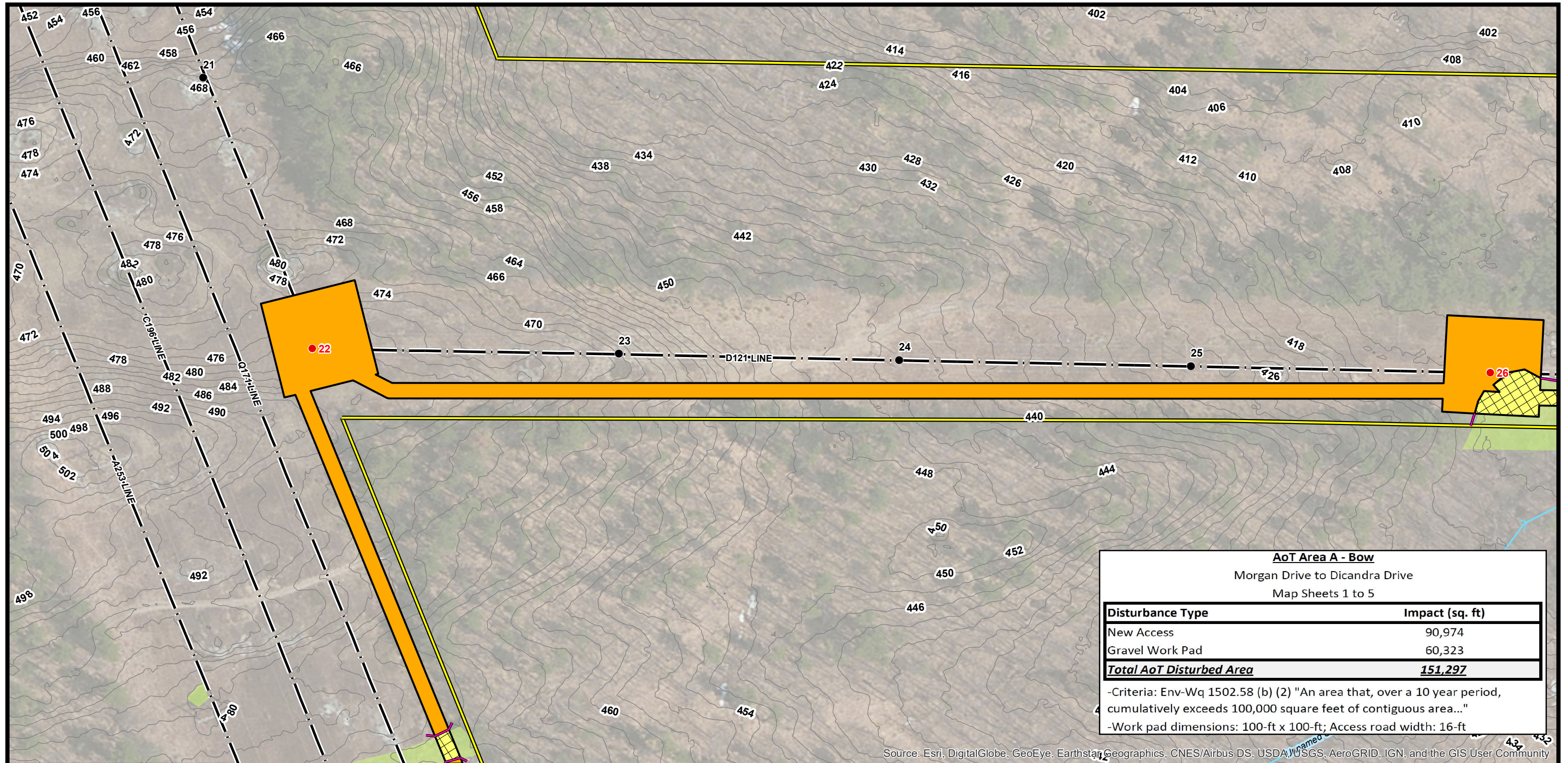
BOW AND HOOKSETT  
NEW HAMPSHIRE  
PAGE 1 OF 9

Project No.: 04.0190999.38      1 inch = 100 feet

**EVERSOURCE**  
ENERGY

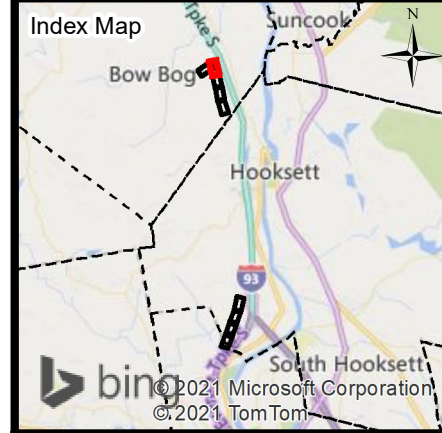
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AoT Area A - Bow	
Morgan Drive to Dicandra Drive	
Map Sheets 1 to 5	
<b>Disturbance Type</b>	<b>Impact (sq. ft)</b>
New Access	90,974
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<b>Total AoT Disturbed Area</b>	<b>151,297</b>
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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



← Bow Current Town: Bow Manchester →

- EXISTING STRUCTURE
- EXISTING STRUCTURE TO BE REPLACED
- ▬ PERIMETER BARRIER WITH GROUND CONTACT
- ▬ SILT FENCE
- ▬ APPROXIMATE ROW
- ▬ TRANSMISSION LINE
- ▬ DISTRIBUTION LINE
- ▬ AOT DISTURBANCE AREA
- ▬ TEMPORARY WETLAND IMPACTS
- ▬ STRAW WATTLE
- ▬ DELINEATED WETLAND
- ▬ TOWN BOUNDARY
- ▬ NHDOT ROADS
- ▬ GATE
- STONEWALL
- ▬ POTENTIAL VERNAL POOL
- ▬ NHD FLOWLINE
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0 50 100 200 Feet

**D121 TRANSMISSION LINE**  
**OPGW AND STR REPLACEMENT PROJECT**

ALTERATION OF TERRAIN  
 PERMITTING PLANS  
 AUGUST 18, 2021

BOW AND HOOKSETT  
 NEW HAMPSHIRE  
 PAGE 2 OF 9

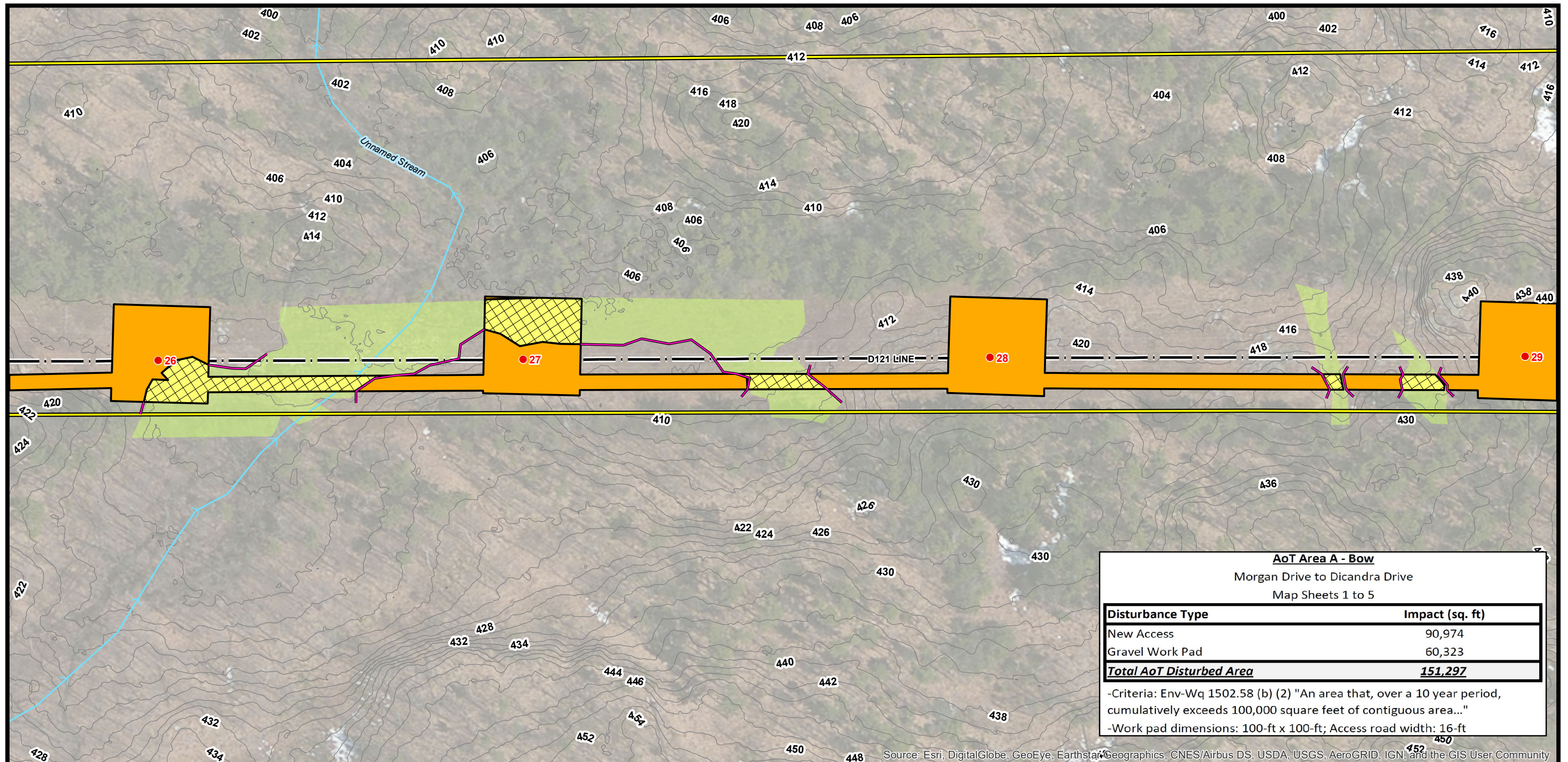
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**EVSOURCE ENERGY**

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1 inch = 100 feet

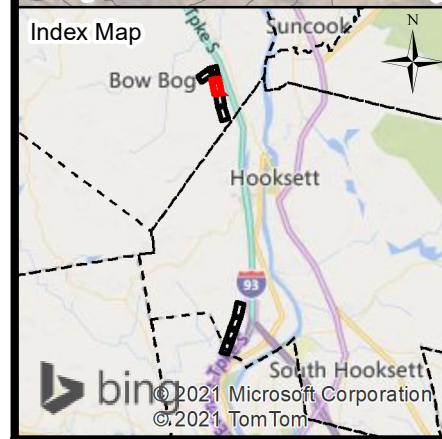




<b>AoT Area A - Bow</b>	
Morgan Drive to Dicandra Drive Map Sheets 1 to 5	
Disturbance Type	Impact (sq. ft)
New Access	90,974
Gravel Work Pad	60,323
<b>Total AoT Disturbed Area</b>	<b>151,297</b>

-Criteria: Env-Wq 1502.58 (b) (2) "An area that, over a 10 year period, cumulatively exceeds 100,000 square feet of contiguous area..."  
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Source: Esri, DigitalGlobe, GeoEye, Earthstar, Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



**Current Town: Bow**

<ul style="list-style-type: none"> <li>● EXISTING STRUCTURE</li> <li>● EXISTING STRUCTURE TO BE REPLACED</li> <li>— PERIMETER BARRIER WITH GROUND CONTACT</li> <li>— SILT FENCE</li> <li>— APPROXIMATE ROW</li> <li>— TRANSMISSION LINE</li> <li>— DISTRIBUTION LINE</li> <li>■ AOT DISTURBANCE AREA</li> <li>■ TEMPORARY WETLAND IMPACTS</li> <li>— STRAW WATTLE</li> <li>■ DELINEATED WETLAND</li> </ul>	<ul style="list-style-type: none"> <li>□ TOWN BOUNDARY</li> <li>— NHDOT ROADS</li> <li>— GATE</li> <li>○ STONEWALL</li> <li>▨ POTENTIAL VERNAL POOL</li> <li>→ NHD FLOWLINE</li> <li>— 2FT ELEVATION CONTOUR</li> </ul>
--	---

**Manchester**

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0 50 100 200 Feet

**D121 TRANSMISSION LINE  
OPGW AND STR REPLACEMENT PROJECT**

ALTERATION OF TERRAIN  
PERMITTING PLANS  
AUGUST 18, 2021

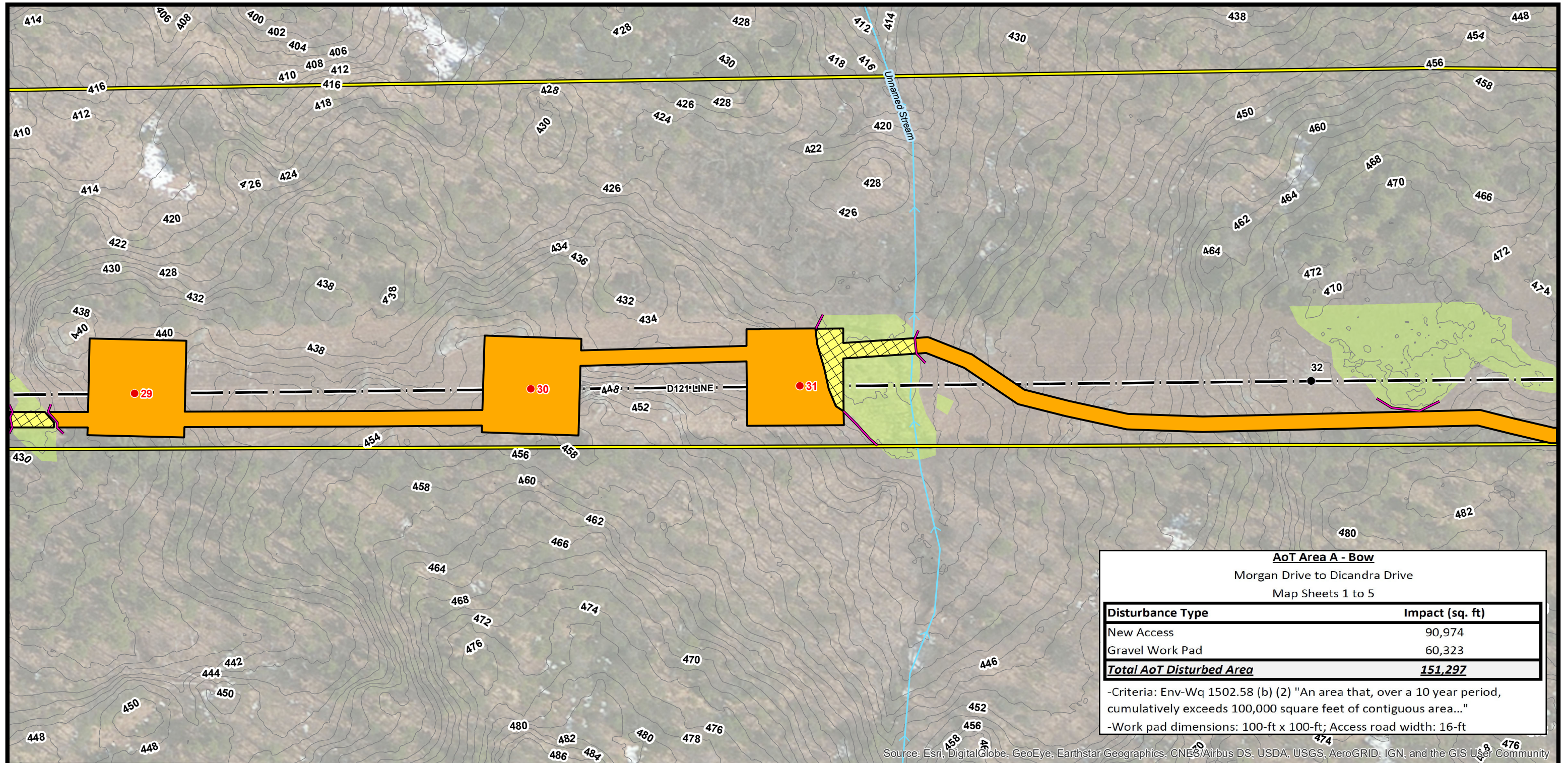
BOW AND HOOKSETT  
NEW HAMPSHIRE  
PAGE 3 OF 9

Project No.: 04.0190999.38 1 inch = 100 feet

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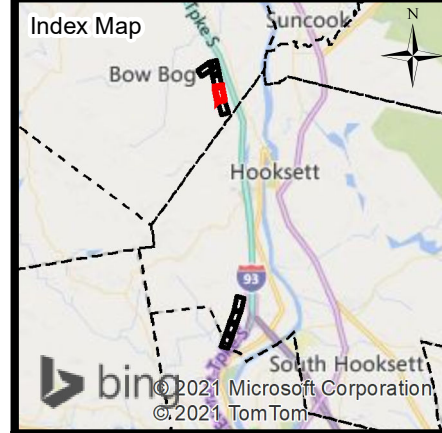


**AoT Area A - Bow**  
Morgan Drive to Dicandra Drive  
Map Sheets 1 to 5

Disturbance Type	Impact (sq. ft)
New Access	90,974
Gravel Work Pad	60,323
<b>Total AoT Disturbed Area</b>	<b>151,297</b>

-Criteria: Env-Wq 1502.58 (b) (2) "An area that, over a 10 year period, cumulatively exceeds 100,000 square feet of contiguous area..."  
-Work pad dimensions: 100-ft x 100-ft; Access road width: 16-ft

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



**Current Town: Bow**

**Bow** ←

- EXISTING STRUCTURE
- EXISTING STRUCTURE TO BE REPLACED
- ▬ PERIMETER BARRIER WITH GROUND CONTACT
- ▬ SILT FENCE
- ▬ APPROXIMATE ROW
- ▬ TRANSMISSION LINE
- ▬ DISTRIBUTION LINE
- ▬ AOT DISTURBANCE AREA
- ▨ TEMPORARY WETLAND IMPACTS
- ▬ STRAW WATTLE
- ▬ DELINEATED WETLAND

- ▭ TOWN BOUNDARY
- ▬ NHDOT ROADS
- ▬ GATE
- STONEWALL
- ▨ POTENTIAL VERNAL POOL
- ▬ NHD FLOWLINE
- ▬ 2FT ELEVATION CONTOUR

**Manchester** →

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0 50 100 200 Feet

**D121 TRANSMISSION LINE**  
**OPGW AND STR REPLACEMENT PROJECT**

ALTERATION OF TERRAIN  
PERMITTING PLANS  
AUGUST 18, 2021

BOW AND HOOKSETT  
NEW HAMPSHIRE  
PAGE 4 OF 9

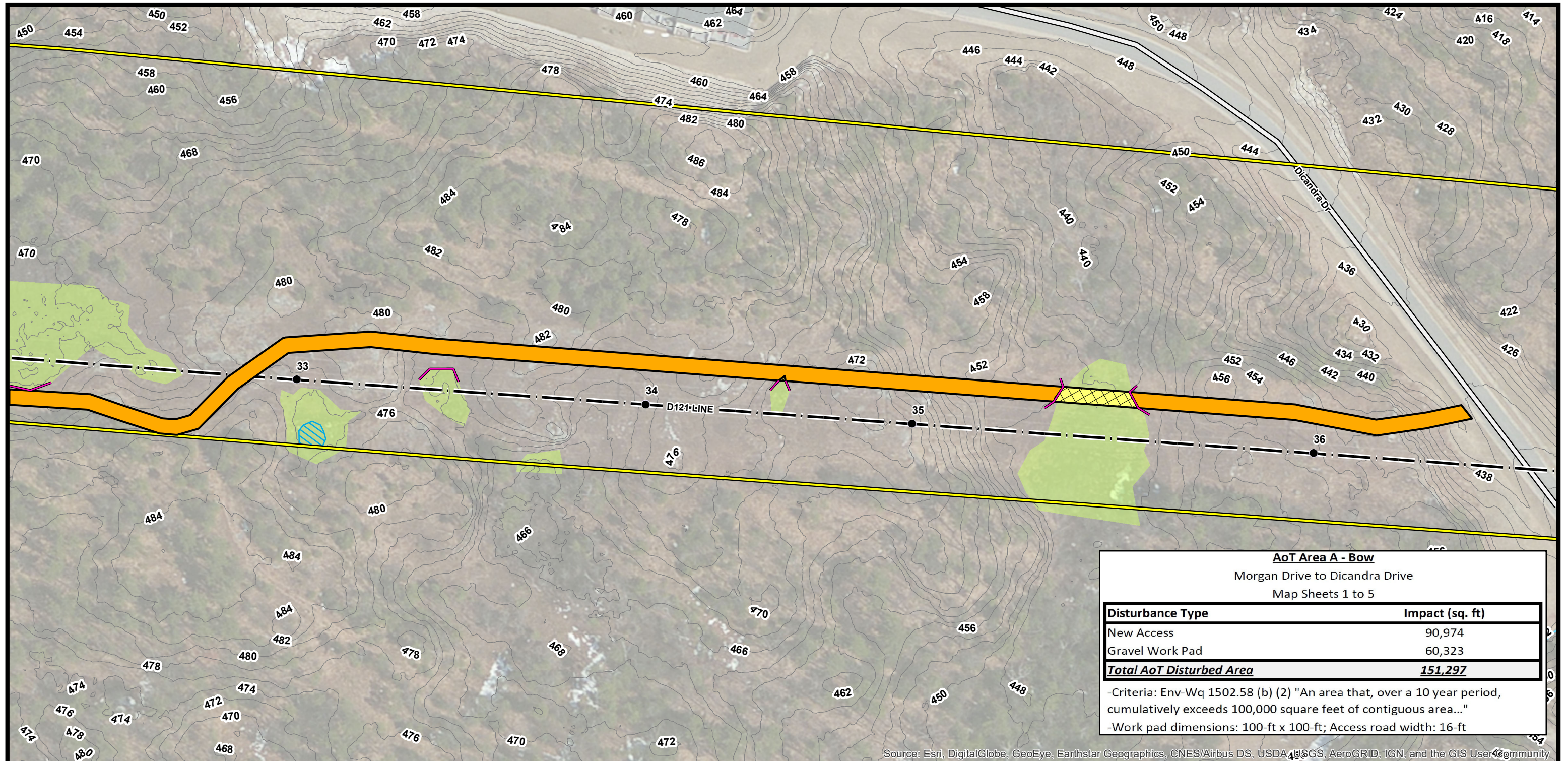
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1 inch = 100 feet



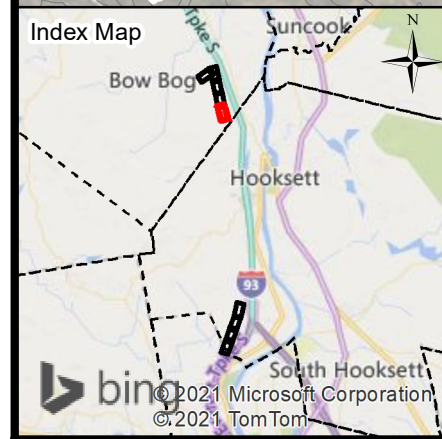


**AoT Area A - Bow**  
Morgan Drive to Dicandra Drive  
Map Sheets 1 to 5

Disturbance Type	Impact (sq. ft)
New Access	90,974
Gravel Work Pad	60,323
<b>Total AoT Disturbed Area</b>	<b>151,297</b>

-Criteria: Env-Wq 1502.58 (b) (2) "An area that, over a 10 year period, cumulatively exceeds 100,000 square feet of contiguous area..."  
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← **Bow**                      **Current Town: Bow**                      **Manchester** →

● EXISTING STRUCTURE	▭ TOWN BOUNDARY
● EXISTING STRUCTURE TO BE REPLACED	— NHDOT ROADS
▬ PERIMETER BARRIER WITH GROUND CONTACT	— GATE
▬ SILT FENCE	○ STONEWALL
▬ APPROXIMATE ROW	▨ POTENTIAL VERNAL POOL
▬ TRANSMISSION LINE	→ NHD FLOWLINE
▬ DISTRIBUTION LINE	— 2FT ELEVATION CONTOUR
▬ AOT DISTURBANCE AREA	
▨ TEMPORARY WETLAND IMPACTS	
▬ STRAW WATTLE	
▬ DELINEATED WETLAND	

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0    50    100    200  
Feet

**D121 TRANSMISSION LINE**  
**OPGW AND STR REPLACEMENT PROJECT**

ALTERATION OF TERRAIN  
PERMITTING PLANS  
AUGUST 18, 2021

BOW AND HOOKSETT  
NEW HAMPSHIRE  
PAGE 5 OF 9

Project No.: 04.0190999.38

**EVSOURCE**  
ENERGY

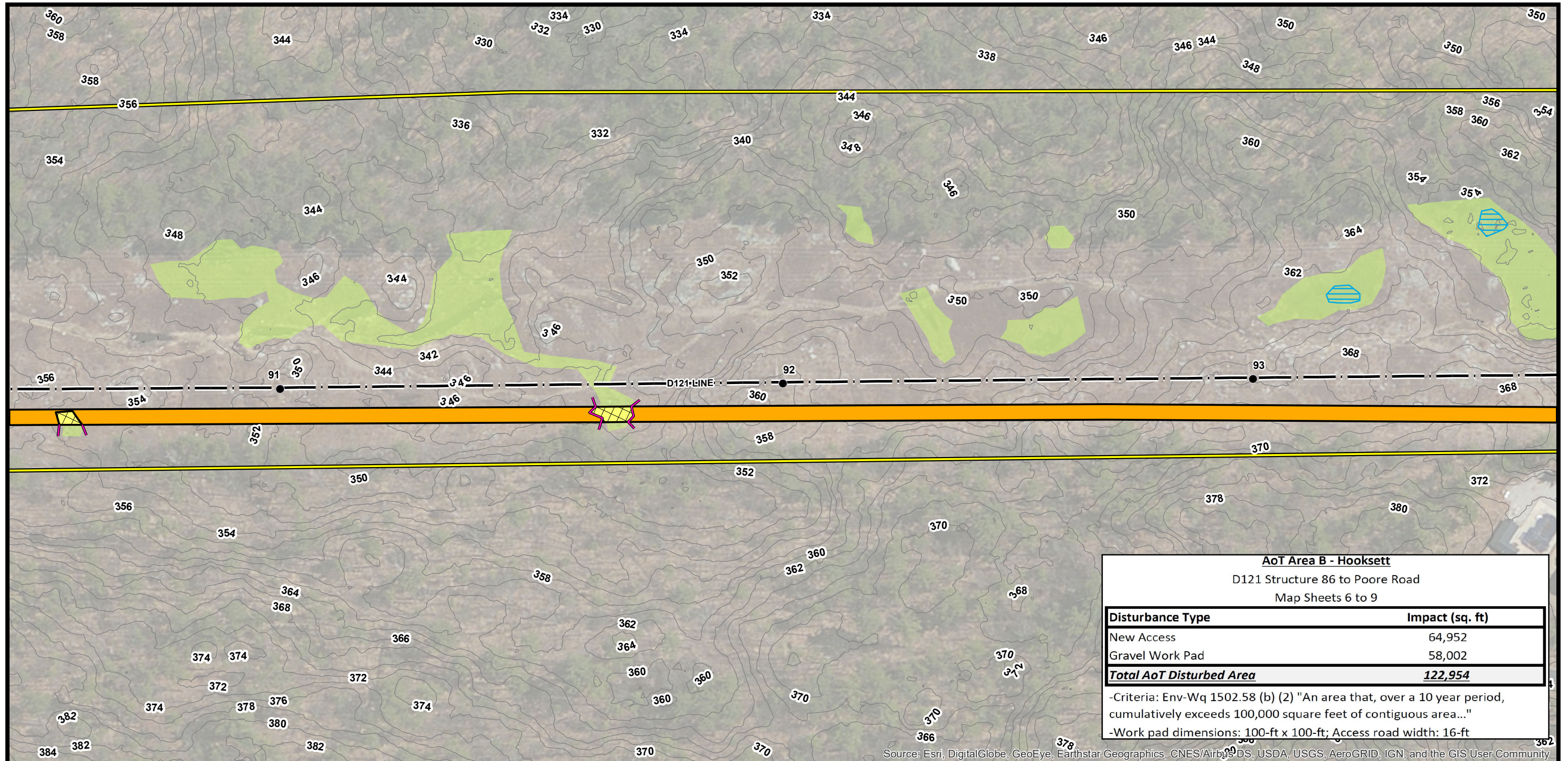
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1 inch = 100 feet



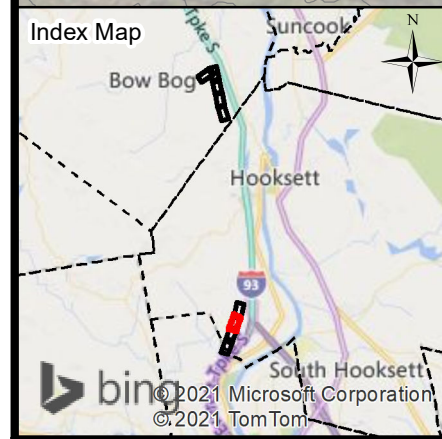






<b>AoT Area B - Hooksett</b>	
D121 Structure 86 to Poore Road Map Sheets 6 to 9	
Disturbance Type	Impact (sq. ft)
New Access	64,952
Gravel Work Pad	58,002
<b>Total AoT Disturbed Area</b>	<b>122,954</b>
-Criteria: Env-Wq 1502.58 (b) (2) "An area that, over a 10 year period, cumulatively exceeds 100,000 square feet of contiguous area..."	
-Work pad dimensions: 100-ft x 100-ft; Access road width: 16-ft	

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



← Bow
Current Town: **Hooksett**
Manchester →

<ul style="list-style-type: none"> <li>● EXISTING STRUCTURE</li> <li>● EXISTING STRUCTURE TO BE REPLACED</li> <li>▬ PERIMETER BARRIER WITH GROUND CONTACT</li> <li>▬ SILT FENCE</li> <li>▬ APPROXIMATE ROW</li> <li>▬ TRANSMISSION LINE</li> <li>▬ DISTRIBUTION LINE</li> <li>▬ AOT DISTURBANCE AREA</li> <li>▬ TEMPORARY WETLAND IMPACTS</li> <li>▬ STRAW WATTLE</li> <li>▬ DELINEATED WETLAND</li> </ul>	<ul style="list-style-type: none"> <li>▭ TOWN BOUNDARY</li> <li>▬ NHDOT ROADS</li> <li>▬ GATE</li> <li>○ STONEWALL</li> <li>▨ POTENTIAL VERNAL POOL</li> <li>▬ NHD FLOWLINE</li> <li>▬ 2FT ELEVATION CONTOUR</li> </ul>
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**D121 TRANSMISSION LINE**  
**OPGW AND STR REPLACEMENT PROJECT**

ALTERATION OF TERRAIN  
 PERMITTING PLANS  
 AUGUST 18, 2021

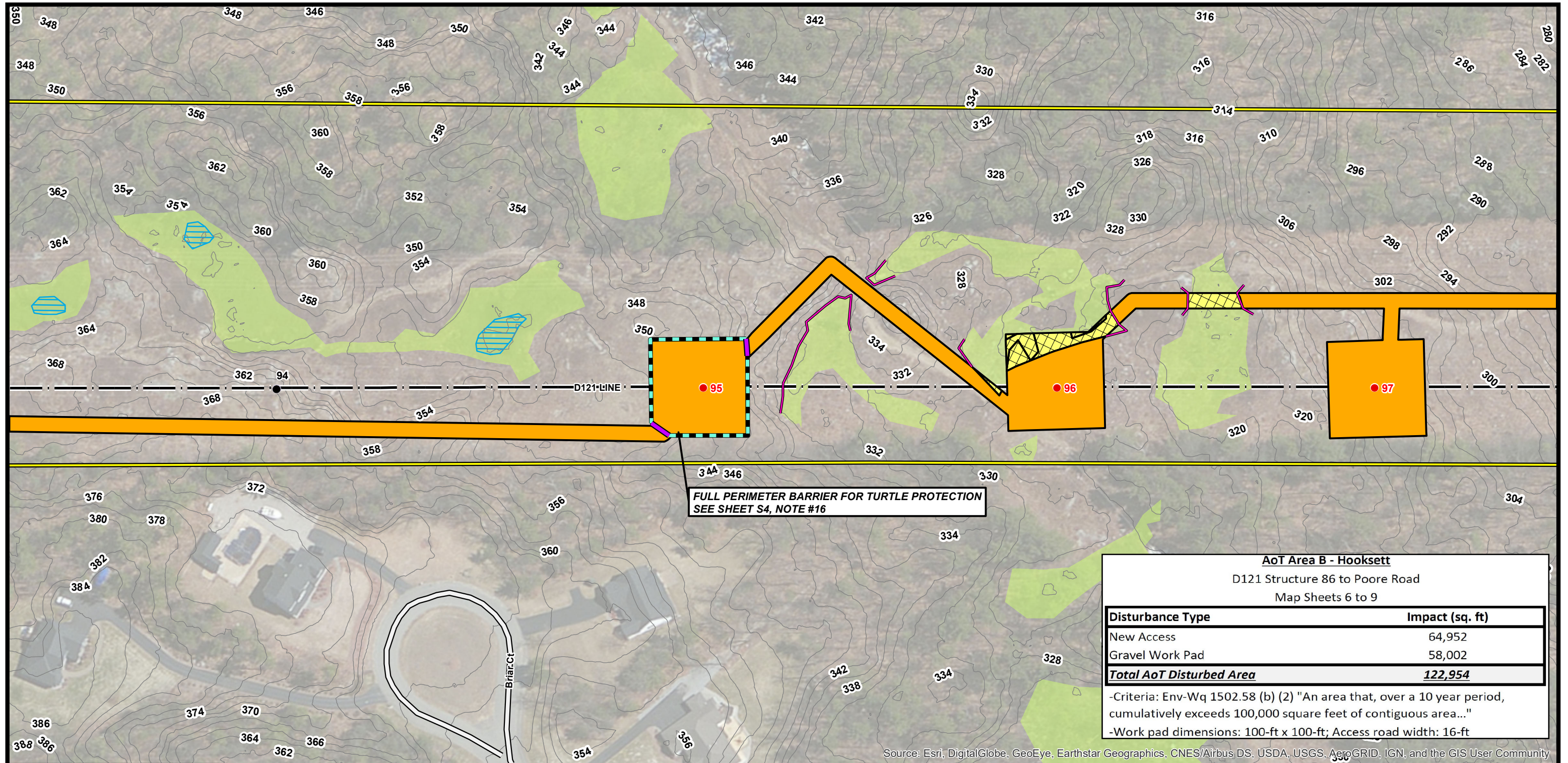
BOW AND HOOKSETT  
 NEW HAMPSHIRE  
 PAGE 7 OF 9

Project No.: 04.0190999.38 1 inch = 100 feet

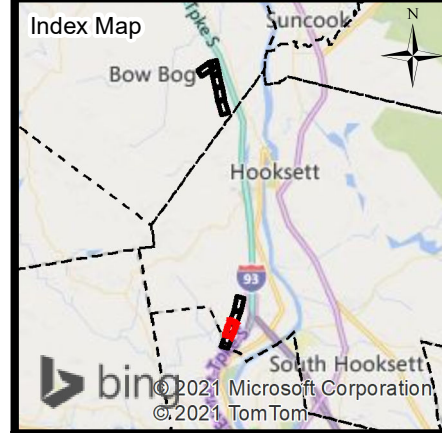
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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



← Bow Current Town: Hooksett Manchester →

- EXISTING STRUCTURE
- EXISTING STRUCTURE TO BE REPLACED
- PERIMETER BARRIER WITH GROUND CONTACT
- SILT FENCE
- APPROXIMATE ROW
- TRANSMISSION LINE
- DISTRIBUTION LINE
- AOT DISTURBANCE AREA
- TEMPORARY WETLAND IMPACTS
- STRAW WATTLE
- DELINEATED WETLAND
- TOWN BOUNDARY
- NHDOT ROADS
- GATE
- STONEWALL
- POTENTIAL VERNAL POOL
- NHD FLOWLINE
- 2FT ELEVATION CONTOUR

NOTES:

1. BASEMAP IMAGERY - ESRI WORLD IMAGERY (CLARITY)
2. TRANSMISSION LINE AND TRANSMISSION STRUCTURES WERE PROVIDED BY EVERSOURCE ENERGY.
3. RAILROAD, NHDOT ROADS, NHD FLOWLINES, PARCEL BOUNDARIES AND TOWN BOUNDARY WERE OBTAINED FROM NH GRANIT CLEARINGHOUSE.
4. APPROXIMATE ROW WAS GENERATED USING MILESHEETS PROVIDED BY EVERSOURCE ENERGY.
5. WETLAND DATA WAS PROVIDED BY EVERSOURCE.
6. 2FT ELEVATION CONTOURS WERE GENERATED USING LIDAR DATA OBTAINED FROM NH GRANIT CLEARINGHOUSE.
7. WETLAND DELINEATION OCCURRED PREDOMINANTLY IN THE MAINTAINED ROW.

0 50 100 200 Feet

**D121 TRANSMISSION LINE  
OPGW AND STR REPLACEMENT PROJECT**

ALTERATION OF TERRAIN  
PERMITTING PLANS  
AUGUST 18, 2021

BOW AND HOOKSETT  
NEW HAMPSHIRE  
PAGE 8 OF 9

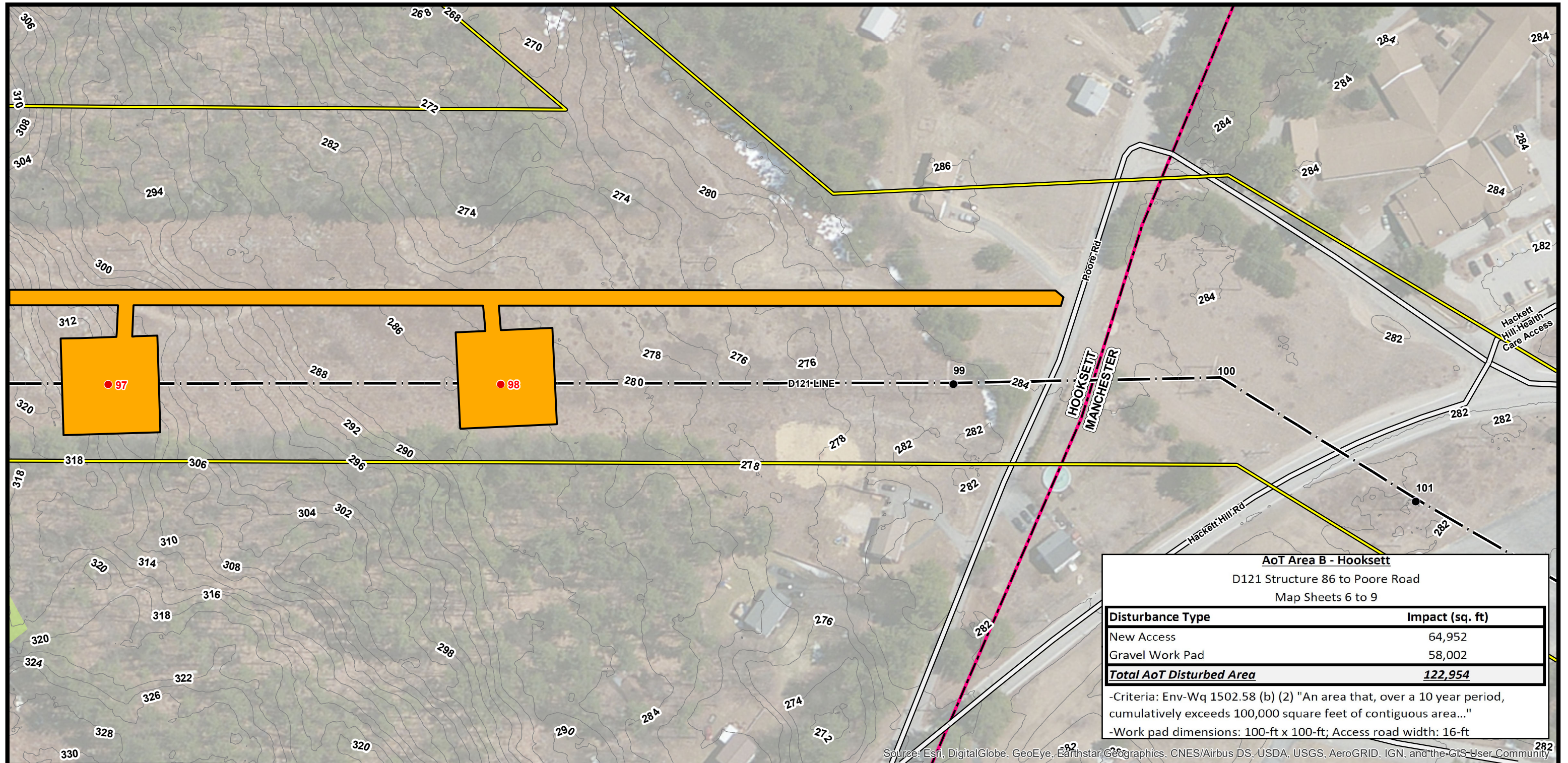
Project No.: 04.0190999.38

**EVERSOURCE ENERGY**

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1 inch = 100 feet



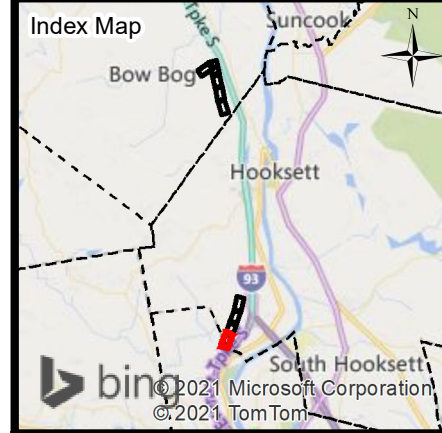


**AoT Area B - Hooksett**  
D121 Structure 86 to Poore Road  
Map Sheets 6 to 9

Disturbance Type	Impact (sq. ft)
New Access	64,952
Gravel Work Pad	58,002
<b>Total AoT Disturbed Area</b>	<b>122,954</b>

-Criteria: Env-Wq 1502.58 (b) (2) "An area that, over a 10 year period, cumulatively exceeds 100,000 square feet of contiguous area..."  
-Work pad dimensions: 100-ft x 100-ft; Access road width: 16-ft

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



← **Bow**      **Current Town: Hooksett**      **Manchester** →

● EXISTING STRUCTURE	▭ TOWN BOUNDARY
● EXISTING STRUCTURE TO BE REPLACED	▬ NHDOT ROADS
▬ PERIMETER BARRIER WITH GROUND CONTACT	▬ GATE
▬ SILT FENCE	○ STONEWALL
▬ APPROXIMATE ROW	▨ POTENTIAL VERNAL POOL
▬ TRANSMISSION LINE	▬ NHD FLOWLINE
▬ DISTRIBUTION LINE	▬ 2FT ELEVATION CONTOUR
▭ AOT DISTURBANCE AREA	
▭ TEMPORARY WETLAND IMPACTS	
▬ STRAW WATTLE	
▭ DELINEATED WETLAND	

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0    50    100    200  
Feet

**D121 TRANSMISSION LINE**  
**OPGW AND STR REPLACEMENT PROJECT**

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PAGE 9 OF 9

Project No.: 04.0190999.38

**EVERSOURCE**  
ENERGY

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1 inch = 100 feet



© 2021 - GZA GeoEnvironmental, Inc. P:\04\Jobs\1090900\04.0190999\00 - EE Stiling Permitting 2019-2022\04.0190999\38 - D121 Transmission Line Structure Replacement and OPGW Project\Figures\MXD\121 Act Note\sheet 1 10-7.mxd, 8/18/2021, 11:34:17 AM, Lindsey White

**CONSTRUCTION SEQUENCE:**

1. WETLAND BOUNDARIES TO BE CLEARLY MARKED PRIOR TO THE START OF CONSTRUCTION.
2. SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAIL PROVIDED, AS NECESSARY.
3. WETLAND IMPACTS ASSOCIATED WITH WETLAND CROSSINGS ARE REQUIRED FOR ACCESS BETWEEN STRUCTURES WITHIN THE RIGHT OF WAY.
4. ADEQUATE PRECAUTION SHALL BE EXERCISED TO AVOID SPILLAGE OF FUEL OILS, CHEMICALS, OR SIMILAR SUBSTANCES; NO FUELS, LUBRICANTS, CHEMICALS OR SIMILAR SUBSTANCES SHALL BE STORED BENEATH TREES OR IN THE VICINITY OF ANY WETLANDS, RIVER, STREAM OR OTHER BODY OF WATER; OR IN THE VICINITY OF NATURAL OR MAN-MADE CHANNELS LEADING THERETO. NO POWER EQUIPMENT SHALL BE STORED, MAINTAINED, OR FUELED IN ANY AREA ADJACENT TO A WETLAND, RIVER, STREAM OR OTHER BODY OF WATER.
5. REMOVE COMPLETELY ALL CONTAMINATION FROM ANY SPILLAGE OF CHEMICALS OR PETROLEUM PRODUCT WITH COMPLETE REHABILITATION OF THE AFFECTED AREA.
6. ACCESS ROUTES HAVE BEEN SELECTED TO PREVENT DEGRADATION OF THE RIGHT-OF-WAY AND MINIMIZE ENVIRONMENTAL IMPACT. OPERATIONS SHALL BE CONFINED TO THE SPECIFIED ACCESS ROUTES WITHIN THE PROPOSED WETLAND IMPACT AREA. ACCESS ROUTES SHALL NOT EXCEED A 16 FOOT-WIDTH.
7. IMPACT TO VEGETATION WITHIN WETLANDS WILL BE LIMITED TO THE EXTENT NECESSARY TO PLACE THE TIMBER MATS WHERE REQUIRED.
8. LOW GROWING VARIETIES OF VEGETATION ADJACENT TO WETLANDS SHALL BE PRESERVED TO THE EXTENT POSSIBLE. STUMPS AND ROCKS SHALL NOT BE REMOVED, AND THERE SHALL BE NO EXCAVATIONS, FILLS OR GRADING DONE ADJACENT TO WETLANDS, UNLESS MINOR EXCAVATIONS IS NEEDED FOR ACCESS.
9. TIMBER MATS WILL BE USED ALONG ACCESS ROUTES WITHIN WETLAND AREAS. THESE MATS ARE CONSTRUCTED OF HEAVY TIMBERS OR COMPOSITE MATERIAL, BOLTED TOGETHER, AND ARE PLACED END-TO-END IN THE WETLAND TO SUPPORT HEAVY EQUIPMENT. ALL SWAMP MATS SHALL BE PLACED AND REMOVED SO AS NOT TO CAUSE ANY RUTS, CHANNELS OR DEPRESSIONS, OR OTHERWISE CAUSE ANY UNDUE DISTURBANCE TO WETLANDS.
10. IF TIMBER MAT BMP IS NOT SUFFICIENT DUE TO HIGH WATER, ADDITIONAL BMP'S MAY INCLUDE THE PLACEMENT OF GEOTEXTILE FABRIC, 3"-4" STONE, AND GRAVEL TO PROVIDE A SUITABLE ROAD BED. A TEMPORARY CULVERT MAY BE REQUIRED IN AREAS OF HIGH FLOW TO MAINTAIN HYDROLOGIC CONNECTIVITY. ALL MATERIAL WILL BE REMOVED FROM JURISDICTIONAL AREAS AFTER CONSTRUCTION COMPLETION.
11. NO MATERIAL SHALL BE PLACED IN ANY LOCATION OR IN ANY MANNER SO AS TO IMPAIR SURFACE WATER FLOW INTO, THROUGH OR OUT OF ANY WETLAND AREA. NO INSTALLATION SHALL CREATE AN IMPOUNDMENT THAT WILL IMPEDE THE FLOW OF WATER OR CAUSE FLOODING.
12. NO MATERIAL SHALL BE TAKEN FROM THE WETLANDS AREA EXCEPT THAT WHICH MUST NECESSARILY BE REMOVED FOR THE STRUCTURE OR FOUNDATION PLACEMENT OR STABILIZATION. ALL EXCESS MATERIAL TAKEN FROM THE WETLAND WILL BE REMOVED FROM THE SITE.
13. ANY PROPOSED SUPPORT FILLS SHALL BE CLEAN GRAVEL AND STONE, FREE OF WASTE METAL PRODUCTS, ORGANIC MATERIALS AND SIMILAR DEBRIS AND SHALL NOT EXCEED THE AMOUNT PERMITTED. THIS ALLOWABLE FILL IS THE ONLY FILL THAT MAY REMAIN IN THE WETLAND AFTER CONSTRUCTION. ALL CUT AND FILLS SLOPES SHALL BE SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
14. INSTALL NEW POLES IN THE LOCATIONS DESIGNATED ON THE PERMITTING PLANS.
15. CABLE INSTALLATION WILL BE PERFORMED IN A MANNER SO AS TO AVOID, OR LIMIT TO THE MAXIMUM EXTENT POSSIBLE, TRAVERSING WETLANDS WITH HEAVY EQUIPMENT. IN SOME CASES, A HELICOPTER MAY BE USED DURING THE INSTALLATION TO MINIMIZE IMPACTS.
16. ALL SWAMP MATS, MATERIAL, AND DEBRIS WILL BE REMOVED FROM THE WORK AREA UPON THE COMPLETION OF CONSTRUCTION.
17. UPLAND DISTURBED AREAS SHALL BE RESTORED AND STABILIZED UPON COMPLETION OF CONSTRUCTION. WORK PAD RESTORATION SHOULD INCLUDE REDUCING THE WORK PAD TO A 30 BY 60 FOOT AREA, AND REDUCING SLOPES TO A MAXIMUM OF 25%. STOCKPILED MATERIAL SHOULD BE SPREAD TO REDUCE ANY UNNECESSARY SLOPES. GRAVEL WORK PADS AND SLOPES SHOULD BE SCARIFIED TO A MINIMUM OF 3" BEFORE SPREADING TOPSOIL/LOAM.
18. ALL TEMPORARY WETLAND IMPACTS WILL BE RE-GRADED TO ORIGINAL CONTOURS FOLLOWING CONSTRUCTION. NEW ENGLAND EROSION CONTROL/RESTORATION MIX, AVAILABLE THROUGH NEW ENGLAND WETLAND PLANTS, INC., 820 WEST STREET, AMHERST, MA 01002, 413-548-8000, OR EQUIVALENT SEED MIX SHALL BE APPLIED IN WETLAND AREAS THAT ARE NOT INUNDATED, AS NECESSARY.
19. SEDIMENT AND EROSION CONTROL MEASURES WILL BE EVALUATED AND REMOVED IF NECESSARY UPON THE COMPLETION OF CONSTRUCTION.
20. COMMERCIAL LOAM WILL NOT BE USED AS PART OF RESTORATION. ONLY IN-SITU TOPSOIL WILL BE USED TO RESTORE DISTURBED AREAS.
21. WHERE OPTIMAL TURTLE BREEDING AREAS OVERLAP WITH DISTURBANCE (AS DETERMINED BY AN ENVIRONMENTAL MONITOR), MINERAL SOILS WILL BE SCARIFIED TO ALLEVIATE COMPACTION AND BECOME MORE SUITED FOR TURTLE BREEDING.

**WINTER CONSTRUCTION NOTES**

1. PROPOSED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED. STABILIZATION METHODS SHALL INCLUDE SEEDING AND MULCH, AND INSTALLATION OF EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.
2. DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE TEMPORARILY STABILIZED WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.

3. AFTER NOVEMBER 15TH, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL (NHDOT 304.3).

**GENERAL NOTES:**

OWNER: EVERSOURCE ENERGY  
13 LEGENDS DRIVE  
HOOKSETT, NH 03106

1. BASE PLAN PROVIDED BY EVERSOURCE ENERGY. EVERSOURCE ENERGY PROVIDED THE WETLAND DATA. EVERSOURCE ENERGY PROVIDED THE UTILITY DESIGN.
2. JURISDICTIONAL WETLANDS WERE DELINEATED BY TIGHE AND BOND IN 2018, IN ACCORDANCE WITH THE 1987 U.S. ARMY CORPS OF ENGINEERS' "WETLANDS DELINEATION MANUAL, TECHNICAL REPORT Y-87-1," AND REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTH CENTRAL AND NORTHEAST REGION," JANUARY 2012. WETLANDS WERE REVIEWED BY GZA GEOENVIRONMENTAL, INC. IN JANUARY AND FEBRUARY 2019.
3. GZA PERFORMED A WETLANDS FUNCTION AND VALUES ASSESSMENT IN ACCORDANCE WITH THE ACOE'S "HIGHWAY METHODOLOGY WORKBOOK SUPPLEMENT," SEPTEMBER 1999, IN THE TOWN OF STRAFFORD.
4. SITE PLAN IS FOR PERMITTING PURPOSES ONLY AND DOES NOT REPRESENT A PROPERTY BOUNDARY SURVEY.
5. THE PROJECT WILL BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.
6. IN ACCORANCE WITH ENV-WQ 1505.02, THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
  - A MINIMUM 85 PERCENT VEGETATED GROWTH HAS BEEN ESTABLISHED
  - A MINIMUM OF 3 INCHES OF NON-EROSIVE MATERIAL HAS BEEN INSTALLED
  - OR, EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

**EROSION CONTROL NOTES:**

1. INSTALLATION OF EROSION CONTROL GRINDINGS AND/OR SILT FENCES SHALL BE COMPLETE PRIOR TO THE START OF WORK IN ANY GIVEN AREA. EROSION CONTROLS SHALL BE USED DURING CONSTRUCTION AND REMOVED WHEN ALL SLOPES HAVE A HEALTHY STAND OF VEGETATION COVER. EROSION CONTROL MEASURES SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER .25" OR GREATER RAINFALL EVENTS.
2. AS REQUIRED, CONSTRUCT TEMPORARY BERMS, SILTATION FENCES, SEDIMENT TRAPS, ETC. TO PREVENT EROSION & SEDIMENTATION OF WETLANDS.
3. THE WORK AREA SHALL BE GRADED AND OTHERWISE SHAPED IN SUCH A MANNER AS TO MINIMIZE SOIL EROSION, SILTATION OF DRAINAGE CHANNELS, DAMAGE TO EXISTING VEGETATION, AND DAMAGE TO PROPERTY OUTSIDE LIMITS OF THE WORK AREA. EROSION CONTROL GRINDINGS WILL BE NECESSARY TO ACCOMPLISH THIS END.
4. ANY STRIPPED TOPSOIL SHALL BE STOCKPILED, WITHOUT COMPACTION, AND STABILIZED AGAINST EROSION, AS NECESSARY.
5. PERMANENT OR TEMPORARY COVER MUST BE IN PLACE BEFORE THE GROWING SEASON ENDS. WHEN SEEDED AREAS ARE NOT MULCHED, PLANTINGS SHOULD BE MADE FROM EARLY SPRING TO MAY 20 OR FROM AUGUST 15 TO SEPTEMBER 15. NO DISTURBED AREA SHALL BE LEFT EXPOSED DURING WINTER MONTHS, PLANT ANNUAL RYEGRASS PRIOR TO OCTOBER 15TH.
6. EROSION CONTROLS SHALL BE INSPECTED WEEKLY AND AFTER EVERY HALF-INCH OF RAINFALL.

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**D121 TRANSMISSION LINE  
OPGW AND STRUCTURE REPLACEMENT PROJECT**  
BOW AND HOOKSETT  
NEW HAMPSHIRE

**NOTES**

PREPARED BY: <b>GZA GeoEnvironmental, Inc.</b> Engineers and Scientists www.gza.com		PREPARED FOR: 	
PROJ MGR: LEW	REVIEWED BY: TLT	CHECKED BY: DMZ	SHEET
DESIGNED BY: MJD	DRAWN BY: MJD	SCALE:	<b>S1</b>
DATE: 08/18/2021	PROJECT NO: 04.0190999.38	REVISION NO.	



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## Best Management Practices (BMP's) for Straw wattles

### Definition and purpose:

Straw wattles are burlap rolls filled with straw that trap sediment and interrupt water flow by reducing slope lengths.

### Applications:

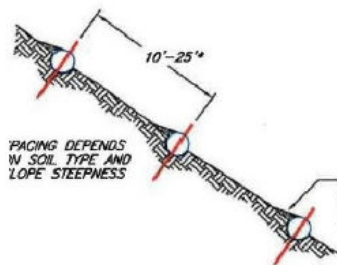
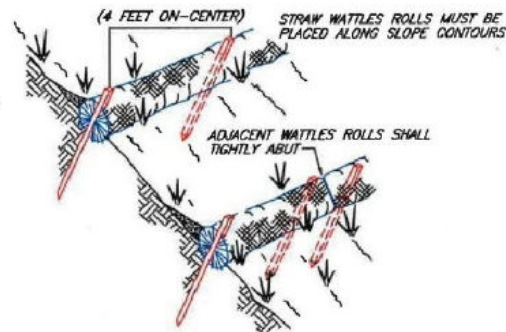
- \* Along erodible or unstabilized slopes
- \* Spread overland waterflow
- \* Trap sediment
- \* Around storm drain inlets to slow water and settle out sediment
- \* Overlap ends approximately 6 inches

### Installation:

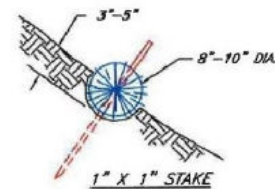
Straw wattles are installed parallel to slope contours and perpendicular to sheet flow.

Spacing\* - Dependent on slope length, soil steepness and soil type (general range 10 - 25').

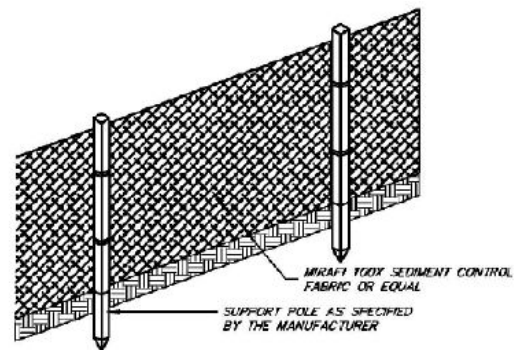
Trenching - 2"-5" inch trench  
Stacking - at each end and four foot on center (i.e. 25 foot wattle uses 6 stacks)



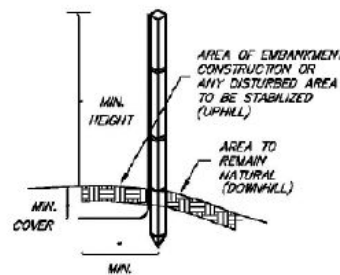
SEDIMENT, ORGANIC MATTER, AND NATIVE SEEDS ARE CAPTURED BEHIND THE WATTLE ROWS.



NOT TO SCALE



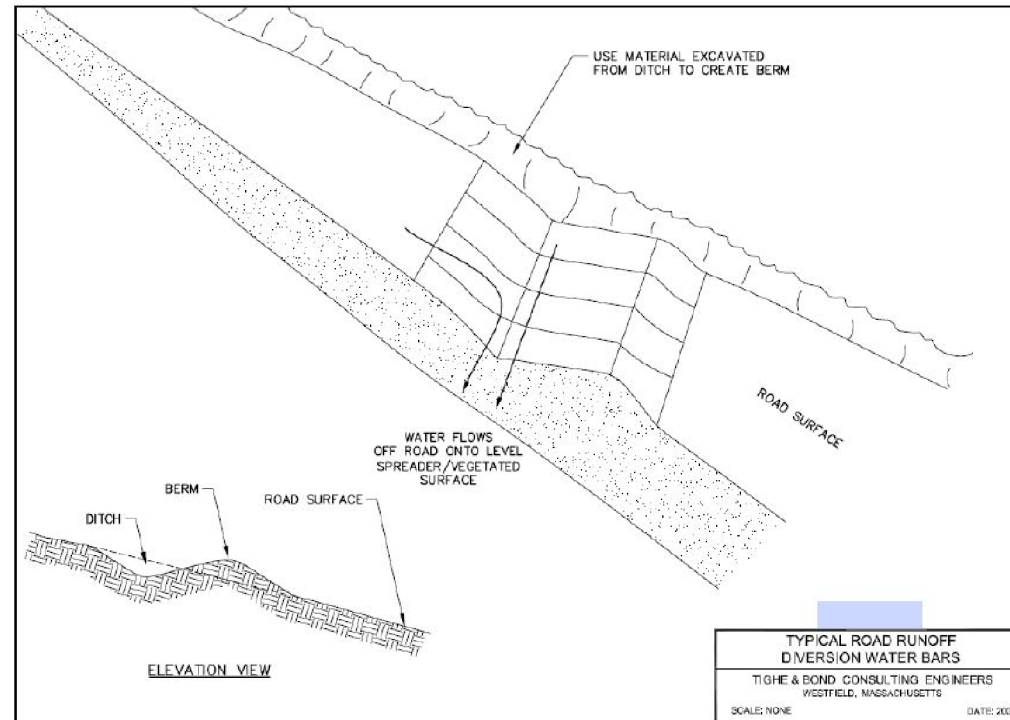
FRONT VIEW



SIDE VIEW

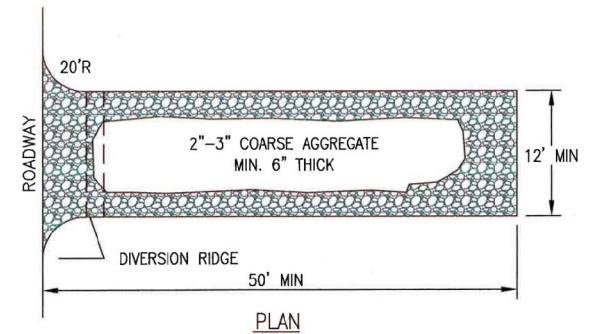
### NOTES (SILT FENCE)

1. THE HEIGHT OF THE BARRIER SHALL NOT EXCEED 36 INCHES.
2. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPliced TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6-INCH OVERLAP, AND SECURELY SEALED. SEE MANUFACTURER'S RECOMMENDATIONS.
3. POSTS SHALL BE PLACED AT A MAXIMUM OF 10 FEET APART AT THE BARRIER LOCATION AND DRIVEN SECURELY INTO THE GROUND (MINIMUM OF 12 INCHES). WHEN EXTRA STRENGTH FABRIC IS USED WITHOUT THE WIRE SUPPORT FENCE, POST SPACING SHALL BE AS MANUFACTURER RECOMMENDS.
4. A TRENCH SHALL BE EXCAVATED APPROXIMATELY 6 INCHES WIDE AND 6 INCHES DEEP ALONG THE LINE OF POSTS AND UPSLOPE OF THE BARRIER IN ACCORDANCE WITH RECOMMENDATIONS
5. THE FABRIC SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE, AND WILL EXTEND A MINIMUM OF 8 INCHES INTO THE TRENCH. FILTER FABRIC SHALL NOT BE STAPLED TO EXISTING TREES.
6. THE TRENCH SHALL BE BACKFILLED AND THE SOIL COMPACTED OVER THE FILTER FABRIC.
7. FABRIC BARRIERS SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.
8. FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST ONCE DAILY DURING PROLONGED RAINFALL AND ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
9. SHOULD THE FABRIC DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL BE NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.
10. SEDIMENT DEPOSITS SHOULD BE REMOVED WHEN THEY REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.
11. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.



ELEVATION VIEW

TYPICAL ROAD RUNOFF DIVERSION WATER BARS  
TIGHE & BOND CONSULTING ENGINEERS  
WESTFIELD, MASSACHUSETTS  
SCALE: NONE DATE: 2007



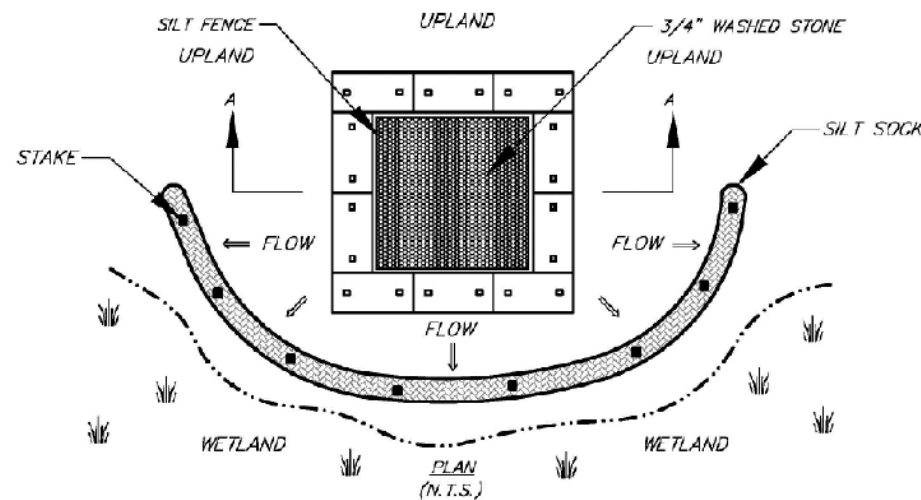
PLAN

### NOTES:

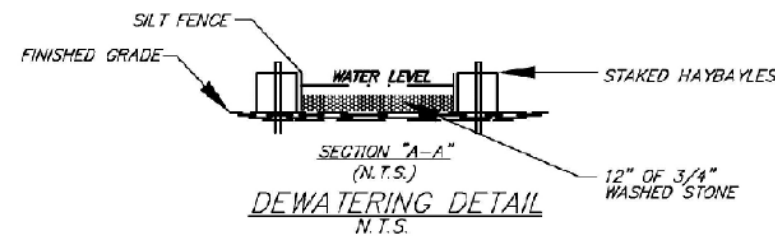
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.

## CONSTRUCTION ENTRANCE

NOT TO SCALE



PLAN (N.T.S.)



SECTION "A-A" (N.T.S.)  
DEWATERING DETAIL  
N.T.S.

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D121 TRANSMISSION LINE  
OPGW AND STRUCTURE REPLACEMENT PROJECT  
BOW AND HOOKSETT  
NEW HAMPSHIRE

## BMP DETAILS

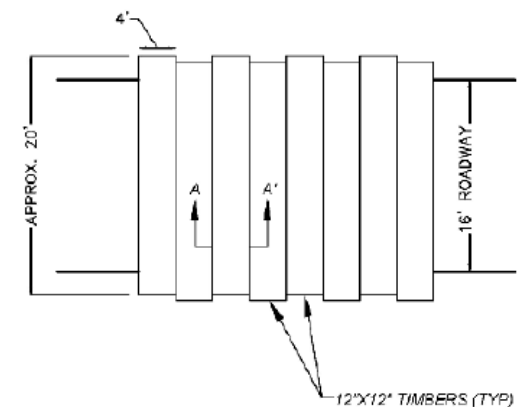
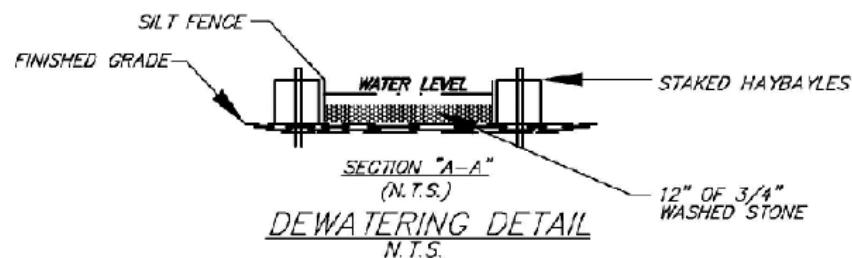
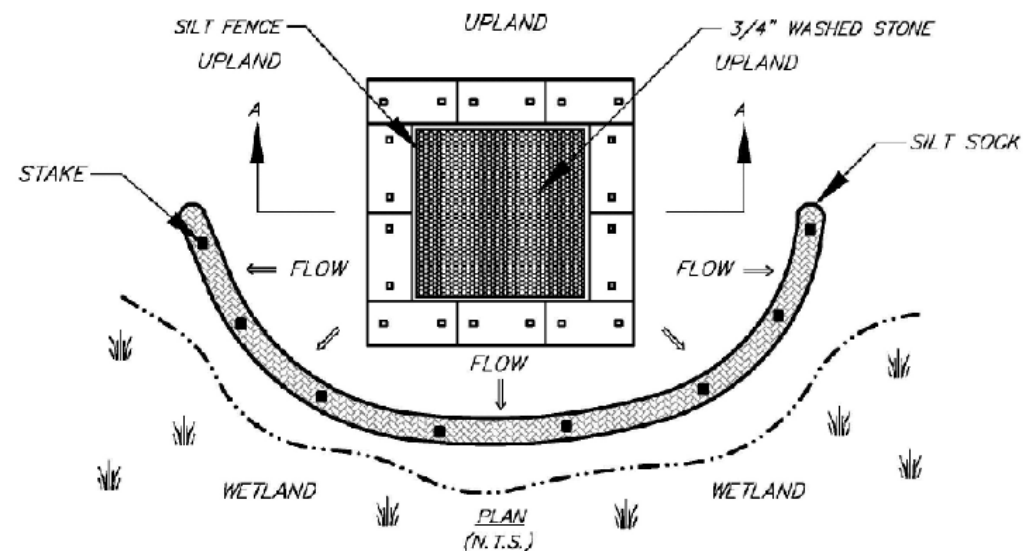
PREPARED BY:  
**GZA** GeoEnvironmental, Inc.  
Engineers and Scientists  
www.gza.com

PREPARED FOR:  
**EVERSOURCE**  
ENERGY

PROJ MGR: LEW	REVIEWED BY: TLT	CHECKED BY: DMZ	SHEET <b>S2</b>
DESIGNED BY: MJD	DRAWN BY: MJD	SCALE:	
DATE: 08/18/2021	PROJECT NO: 04.0190999.38	REVISION NO:	



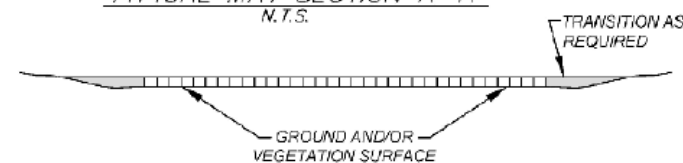
© 2021 - GZA GeoEnvironmental, Inc. P:\04\Jobs\1909099\04.0190999.00 - EE Siting Permitting 2019-2022\04.0190999.38 - D121 Transmission Line Structure Replacement and OPGW Project\Figures\MXD\121 Act\Notesheet 3 10-7.mxd, 8/18/2021, 11:34:33 AM, Lindsey White



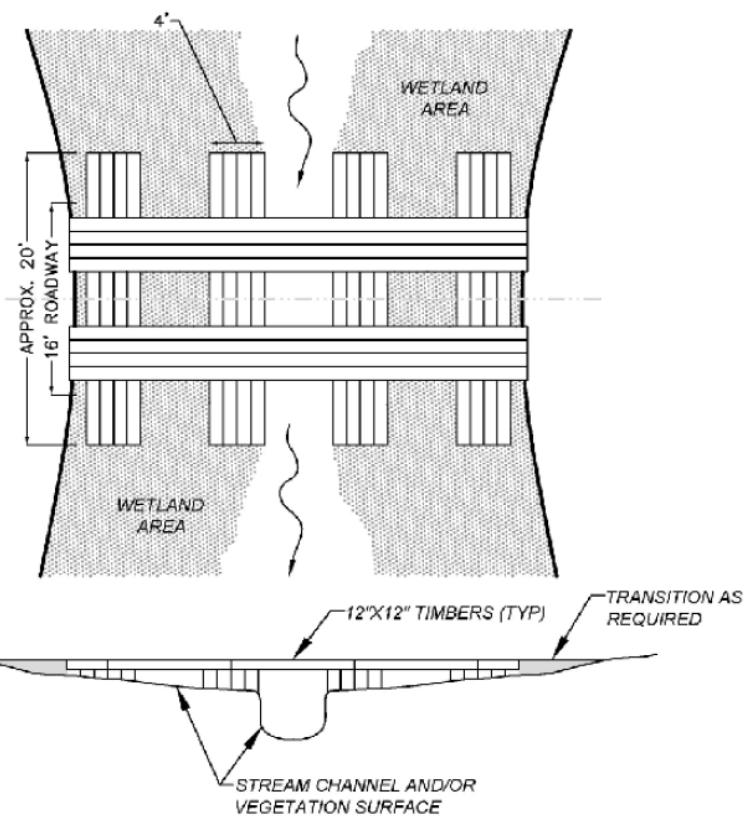
TYPICAL SWAMP MAT PLAN VIEW  
N.T.S.



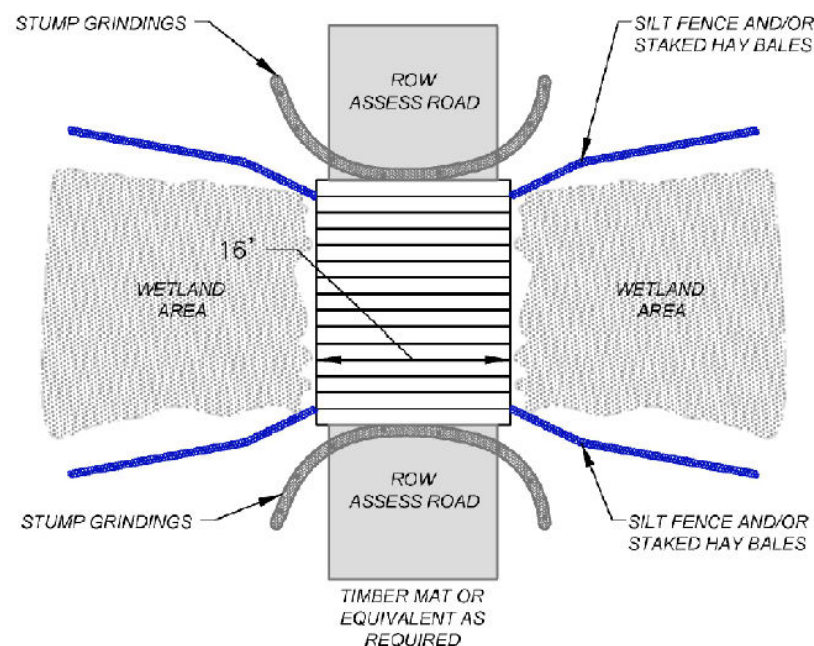
TYPICAL MAT SECTION A-A  
N.T.S.



TYPICAL SWAMP MAT SECTION DETAIL  
N.T.S.



TYPICAL STREAM CROSSING  
N.T.S.



TYPICAL WETLAND CROSSING  
N.T.S.

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**D121 TRANSMISSION LINE  
OPGW AND STRUCTURE REPLACEMENT PROJECT  
BOW AND HOOKSETT  
NEW HAMPSHIRE**

**BMP DETAILS**

PREPARED BY:  
**GZA** GeoEnvironmental, Inc.  
Engineers and Scientists  
www.gza.com

PREPARED FOR:  
**EVERSOURCE**  
ENERGY

PROJ MGR: LEW	REVIEWED BY: TLT	CHECKED BY: DMZ	SHEET <b>S3</b>
DESIGNED BY: MJD	DRAWN BY: MJD	SCALE:	
DATE: 08/18/2021	PROJECT NO: 04.0190999.38	REVISION NO.	



**NOTES**

1. THE NEW HAMPSHIRE FISH AND GAME DEPARTMENT SHALL HAVE ACCESS TO THE PROPERTY DURING THE TERM OF THE PERMIT. SEE PLAN SHEETS 1-9 DATED 8-13-2021.
2. ALL MANUFACTURED EROSION AND SEDIMENT CONTROL PRODUCTS, EXCEPT FOR SILT FENCE INSTALLED IN ACCORDANCE WITH ENV-WQ 1506.04, UTILIZED FOR, BUT NOT LIMITED TO, SLOPE PROTECTION, RUNOFF DIVERSION, SLOPE INTERRUPTION, PERIMETER CONTROL, INLET PROTECTION, CHECK DAMS, AND SEDIMENT TRAPS SHALL NOT CONTAIN WELDED PLASTIC, PLASTIC, OR MULTI-FILAMENT OR MONOFILAMENT POLYPROPYLENE NETTING OR MESH. SEE PLAN SHEET S2 DATED 8-13-2021 FOR SPECS.
3. SITE OPERATORS SHALL BE INFORMED OF THE POTENTIAL PRESENCE OF EASTERN HOGNOSE SNAKES (STATE ENDANGERED), BLACK RACER (STATE THREATENED), BLANDING'S TURTLE (STATE ENDANGERED), SPOTTED TURTLE (STATE THREATENED), AND WOOD TURTLE (STATE SPECIAL CONCERN) AND BE PROVIDED A FLIER THAT HELPS TO IDENTIFY THESE SPECIES. SPECIES INFORMATION ARE IDENTIFIED ON PLAN SHEET S4 DATED 8-13-2021.
4. ALL OBSERVATIONS OF THREATENED OR ENDANGERED SPECIES SHALL BE REPORTED IMMEDIATELY TO THE NEW HAMPSHIRE FISH AND GAME DEPARTMENT NONGAME AND ENDANGERED WILDLIFE ENVIRONMENTAL REVIEW PROGRAM BY PHONE AT 603-271-2461 AND BY EMAIL AT NHFGREVIEW@WILDLIFE.NH.GOV UNLESS AS OTHERWISE SPECIFIED BELOW. EMAIL SUBJECT LINE: NHB21-0607, D121 TRANSMISSION LINE, WILDLIFE SPECIES OBSERVATION. PHOTOGRAPHS SHALL BE PROVIDED FOR VERIFICATION AS FEASIBLE.
5. TURTLE NESTING SEASON EXTENDS FROM LATE MAY THROUGH THE BEGINNING OF JULY AND HATCHLING TURTLES TYPICALLY EMERGE FROM THE GROUND FROM MID-AUGUST THROUGH EARLY OCTOBER. IF WOOD, BLANDING'S, OR SPOTTED TURTLES ARE FOUND LAYING EGGS OR IF HATCHLING TURTLES ARE SEEN IN THE WORK AREA, CONTACT NHFG (MELISSA DOPERALSKI AT 603-271-1738 (O)/ 603-479-1129 (CELL) OR JOSH MEGYESY AT 603-271-1125 (O)/ 978-575-0802 (CELL) FOR FURTHER INSTRUCTIONS.
6. OBSERVATIONS OF NORTHERN BLACK RACER SNAKE SEEN IN ANY AREA FROM THE END OF SEPTEMBER THROUGH THE MONTH OF APRIL MUST BE IMMEDIATELY REPORTED TO THE NHFG DEPARTMENT (BRENDAN CLIFFORD 603-271-0463 (O)/ 603-944-0885 (CELL) OR MELISSA DOPERALSKI AT 603-271-1738 (O)/ 603-479-1129 (CELL)). IF NORTHERN BLACK RACER IS FOUND IN A WORK AREA FROM NOVEMBER THROUGH THE MONTH OF APRIL, WORK SHALL IMMEDIATELY CEASE AND THE OBSERVATION MUST BE REPORTED TO THE NHFG (BRENDAN CLIFFORD OR MELISSA DOPERALSKI) AS THE LOCATION REPRESENTS A POSSIBLE WINTER HIBERNACULUM.
7. ALL OBSERVATIONS OF EASTERN HOGNOSE SNAKE OBSERVED AT ANY TIME MUST BE IMMEDIATELY REPORTED TO NHFG (MELISSA DOPERALSKI AT 603-271-1738 (O)/ 603-479-1129 (CELL)) FOR FURTHER INSTRUCTIONS. OBSERVATIONS OF NEWBORN HOGNOSE SNAKES OBSERVED DURING LATE AUGUST – OCTOBER MAY INDICATE A HATCHING NEST SITE AND LIKELIHOOD OF OTHER SNAKES NEARBY.
8. PRIOR TO DAILY CONSTRUCTION ACTIVITIES, TIMBER MATTING WILL BE SEARCHED FOR SNAKES AND TURTLES. SEE PLAN SHEET S3 DATED 8-13-2021 FOR SPECS.
9. GZA WILL PROVIDE AN ENVIRONMENTAL ADDENDUM TO THE DAILY TAILBOARDS BY THE CONTRACTORS TO INCLUDE GUIDANCE ON PROTOCOLS FOR SNAKES AND PROVIDE IDENTIFICATION FOR SPOTTED TURTLE, WOOD TURTLE, BLANDING'S TURTLE AND NORTHERN BLACK RACER SNAKE.
10. REPTILE "SWEEPS" WILL BE COMPLETED DURING EROSION CONTROL MONITORING. IF PROTECTED REPTILES ARE OBSERVED ON OR NEAR THE SITE DURING CONSTRUCTION, CONTACT NHFG IMMEDIATELY UPON OBSERVATION, AND SAFELY RELOCATE AMPHIBIANS AND REPTILES OUT OF CONSTRUCTION AREAS IF OBSERVED. SEE PLAN SHEET(S) 1-9 DATED 8-13-2021 FOR SPECS.
11. OBSERVED SNAKES AND TURTLES WILL BE MOVED OFF OF CONSTRUCTION ACCESS ROADS TO LIMIT AND PREVENT MORTALITY TO SNAKES AND TURTLES DURING CONSTRUCTION. SEE PLAN SHEET(S) 1-9 DATED 8-13-2021 FOR SPECS.
12. AT THE CONCLUSION OF THE PROJECT, A SUMMARY REPORT OF ANY RARE SPECIES OBSERVATIONS WILL BE PROVIDED TO THE NHFG NONGAME PROGRAM.
13. TEMPORARY OR PERMANENT IMPACTS TO IDENTIFIED POTENTIAL OR SUSPECT VERNAL POOLS ARE PROHIBITED. ANY OBSERVATION OF ANY ADDITIONAL SUSPECT VERNAL POOLS ARE TO BE REPORTED TO NHFG PERSONNEL.
14. WETLAND BOUNDARIES, INCLUDING VERNAL POOLS PROHIBITED FROM IMPACT, WILL BE CLEARLY MARKED PRIOR TO START OF CONSTRUCTION. SEE PLAN SHEET(S) 1-9 DATED 8-13-2021 FOR SPECS.
15. TIMBER MATTING AND EROSION CONTROLS WILL BE USED FOR ALL TEMPORARY WETLAND CROSSINGS TO AVOID PERMANENT WETLAND IMPACTS AND SEDIMENTATION, AS WELL AS TO SPAN STREAM CHANNELS IN WETLANDS BWW12 AND BWW13. SEE PLAN SHEET(S) 3 AND 4 DATED 8-13-2021 AND SHEET S3 FOR SPECS.
16. INSTALL SILT FENCING TO CREATE TEMPORARY FULL PERIMETER BARRIER AT STRUCTURE 95 CONSTRUCTION AREA WHERE SPOTTED TURTLE WAS OBSERVED TO OCCUR TO EXCLUDE TURTLES AND SNAKES FROM ACTIVE CONSTRUCTION AREAS. THE FULL PERIMETER BARRIER SHALL BE MAINTAINED AT ALL TIMES, EXCEPT WHEN PROVIDING A TEMPORARY OPENING FOR ACCESS TO THE WORK AREA. ONCE ACCESS IS ATTAINED, THE PERIMETER BARRIER SHALL BE IMMEDIATELY RESTORED. ANY GATE OR SIMILAR STRUCTURE INSTALLED FOR ACCESS SHALL HAVE FULL CONTACT WITH THE GROUND SURFACE. FENCING WILL BE MAINTAINED BI-WEEKLY AND AFTER MAJOR STORM EVENTS OR AS NEEDED TO FIX ANY GAPS OR FAILURES. SEE PLAN SHEET 8 AND SHEET S2 DATED 8-13-2021 FOR SPECS.

**WOOD TURTLE (GLYPTHEMYS INSCULPTA)**

STATE SPECIES OF SPECIAL CONCERN



**WOOD TURTLE IDENTIFICATION**

1. NECK AND FORELIMBS ARE ORANGE.
2. CHARACTERIZED BY ITS HIGHLY SCULPTED SHELL WITH EACH LARGE SCUTE TAKING ON AN IRREGULAR PYRAMIDAL SHAPE.
3. ADULTS CAN BE 5-8 INCHES LONG.

**SPOTTED TURTLE (CLEMYS GUTTATA)**

STATE THREATENED



**SPOTTED TURTLE IDENTIFICATION**

1. SMALL, MOSTLY AQUATIC WITH BLACK OR DARK BROWN WITH YELLOW SPOTS.
2. FAIRLY FLAT SHELL COMPARED TO BLANDING'S TURTLE.
3. SPOTS VARY IN COLOR AND NUMBER.

**BLANDING'S TURTLE (EMYDOIDEA BLANDINGII)**

STATE ENDANGERED



**BLANDING'S TURTLE IDENTIFICATION**

1. LARGE, DARK/BLACK DOMED SHELL WITH LIGHTER SPECKLES.
2. DISTINCT YELLOW THROAT/CHIN.
3. AQUATIC BUT OFTEN MOVES ON LAND.

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OPGW AND STRUCTURE REPLACEMENT PROJECT  
BOW AND HOOKSETT  
NEW HAMPSHIRE

**WILDLIFE NOTES**

PREPARED BY: <b>GZA</b> GeoEnvironmental, Inc. Engineers and Scientists www.gza.com	PREPARED FOR: <b>EVERSOURCE</b> ENERGY		
PROJ MGR: LEW	REVIEWED BY: TLT	CHECKED BY: DMZ	SHEET <b>S4</b>
DESIGNED BY: MJD	DRAWN BY: MJD	SCALE:	
DATE: 08/18/2021	PROJECT NO: 04.0190999.38	REVISION NO:	



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**NORTHERN BLACK RACER (COLUBER CONSTRICTOR)**

STATE THREATENED



**NORTHERN BLACK RACER IDENTIFICATION**

1. SOLID BLACK WITH A WHITE THROAT.
2. SLENDER WITH GLOSSY SCLAES.
3. 3-6 FT. LONG.
4. HATCHLINGS ARE VERY SMALL AND PATTERNED.



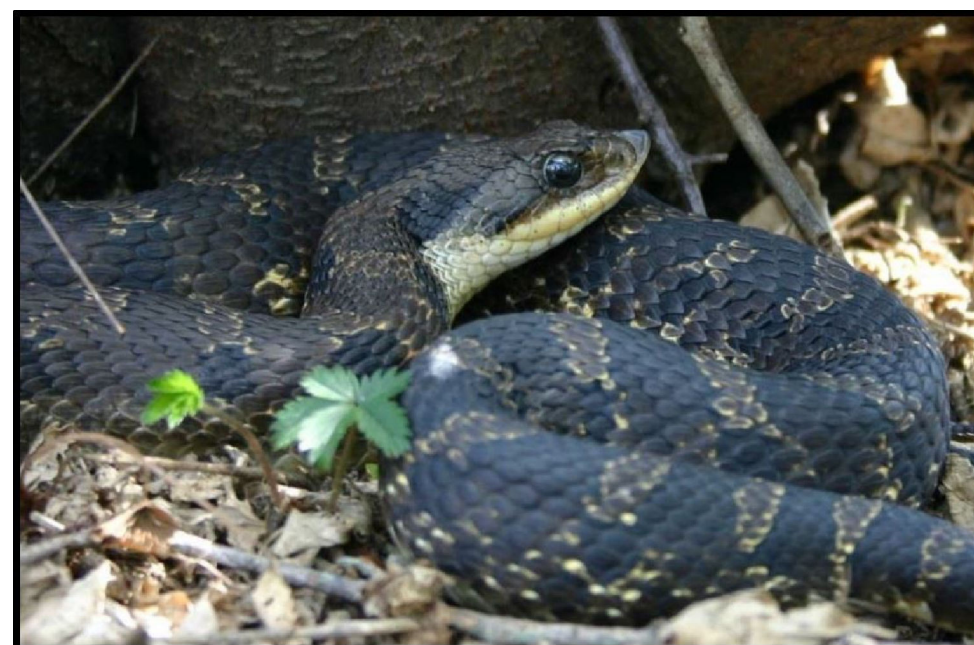
**EASTERN HOGNOSE SNAKE (HETERODON PLATIRHINOS)**

STATE ENDANGERED



**EASTERN HOGNOSE SNAKE IDENTIFICATION**

1. BLACK, GRAY OR PATTERNED APPEARANCE.
2. UPTURNED SNOUT.
3. 2-3 FT. LONG
4. MAY SPREAD NECK OUT OR HISS.



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**WILDLIFE NOTES (CONT.)**

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PROJ MGR: LEW	REVIEWED BY: TLT	CHECKED BY: DMZ	SHEET
DESIGNED BY: MJD	DRAWN BY: MJD	SCALE:	<b>S5</b>
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*\*ALL PHOTOS AND IDENTIFICATION INFORMATION COURTESY OF NEW HAMPSHIRE FISH AND GAME DEPARTMENT.*