



LEBANON CONSERVATION COMMISSION
MARCH 14, 2024 - 6:30 PM
COUNCIL CHAMBERS, CITY HALL OR
REMOTE VIA VIRTUAL PLATFORM
LEBANONNH.GOV/LIVE

1. Call to Order

- A. To participate in this meeting, please [join live via Microsoft Teams](#) or call 929-229-5356 (access code: 395 336 701#). If you have trouble accessing this meeting, please [email mark.goodwin@lebanonnh.gov](mailto:mark.goodwin@lebanonnh.gov)

2. Approval of Minutes

- A. February 8, 2024

3. Open to the Public

4. Permit Review

- A. **City of Lebanon/Department of Public Works** - City Trues Brook Bridge over Bloods Brook: Review and Comment on NHDES Wetland Permit application (major impact) for replacement of the existing bridge. The proposed replacement structure is an 85' long single span bridge, with concrete deck, steel stringers and cast-in-place concrete abutments. The improvements result in approx 8,935 sq ft of wetland impact, 7,391 sq ft of temporary impact and 1,544 sq ft of permanent impact. (NH DES #2024-00345)

5. Study Items

- A. Cicotte Properties, LLC rezoning request (per 01/17/2024 City Council directive) (30 Minutes)
- B. Sachem Village - DHMC connector Concept Update

6. Committee Reports

- A. Biodiversity Group (Invasives)
- B. Stewardship
- Ranger
-Trail Coordinator
-Monitors and Stewards
- C. Wild about Lebanon
- D. Amphibian Crossings
- E. LUCT/Current Use
- F. Other Subcommittees

7. Other Business

- A. FYIs
- B. Follow Up

- C. Workshops and Educational Opportunities
- 8. Future Agenda Items**
- 9. Adjournment**

The order of agenda items is subject to change.

Meetings are open for in-person and remote attendance. Members of the public that wish to attend remotely may do so by going to LebanonNH.gov/Live where you will find instructions on how to enter the meeting. Members of the public will be able to participate and ask questions through the City's virtual platform or by phone. Please note: Should technical difficulties occur during the meeting that disrupts virtual or phone connection(s), the meeting will continue without remote access capabilities.

DRAFT

**LEBANON CONSERVATION COMMISSION
CITY COUNCIL CHAMBERS, CITY HALL OR
REMOTE VIA VIRTUAL PLATFORM
6:30PM THURSDAY FEBRUARY 08, 2024**

MEMBERS PRESENT: Sarah Riley (Chair), Barbara Hirai, Erling Heistad (City Council Rep.), Ernst Oidtmann, Bruce James (Vice Chair), Susan Almy (Alt.)

MEMBERS ABSENT: Donald Lacey, Chris Johnson, Sean Dittrich (Alt.), Brandon Hill (Alt)

STAFF PRESENT: Mark Goodwin (GIS Coordinator)

1. CALL TO ORDER

Chair Riley called the meeting to order at 6:36pm.

2. APPROVAL OF MINUTES January 11, 2024

A MOTION was made by Erling Heistad to approve the January 11, 2024 Meeting Minutes. The Motion was seconded by Ernst Oidtmann.

** The Vote on the MOTION was approved (5-0).*

3. OPEN TO THE PUBLIC

No one from the public spoke.

4. PERMIT REVIEW

None

Chair Riley moved the **Study Item** discussion to the end of the meeting, which is out of the order on the meeting agenda. The group discussed **Other Business / Committee Reports** next.

Dr. Oidtmann said that the CCBA owns 20 acres of land. He said he would talk with the CCBA and Upper Valley Land Trust about possibly making that conservation land.

6. COMMITTEE REPORTS

A. Biodiversity Group (Invasives)

1 Ms. Hirai gave an overview of the Forest Health Group meeting led by Barbara McElroy.
2 She said it was attended by Upper Valley Land Trust and other Upper Valley
3 conservation commissions. She said the group is planning an initial series of workshops,
4 which will include hands-on workshops and field days:

- 5 • Forest Heath in General
- 6 • Understory and Overbrowse
- 7 • Changes to Forests: Invasives Climate Change Insect Damage

9 **B. Stewardship**

10 Chair Riley said she and other members of the Commission walked around Boston Lot
11 Lake with County Forester Jim Frohn.

12 [Ms. Almy arrived at the meeting at 6:45pm.]

13
14 Chair Riley said the key takeaways from the walk were:

- 15 • It is a very even-aged forest
- 16 • There is some regeneration but not as much as he expected
- 17 • There is not a lot of diversity in structure
- 18 • The blowdown in northwestern quadrant will provide diversity in
19 cover/shelter/habitat

20
21 Mr. James noted that there have been a lot of blowdowns and there will be a lot of
22 cleanup to do in the spring.

23
24 Ms. Hirai said during the Point in Time Count on January 25, there were no occupied
25 tents found on Conservation Land.

26
27 Chair Riley said she received a balance for the LOST fund. She said she will share the whole
28 document when she gets a copy. She said about \$30,000 in interest had been earned on the
29 account.

30
31 She reminded the group that she had previously shared (via email) a definition of Environmental
32 Justice by the DEI Environmental Justice Task Force. She also said she shared the activity of the
33 Tree Advisory Board and the draft Tree Ordinance that will be going to the City Council next
34 month.

35
36 Ms. Hirai noted that Chair Riley also emailed a link to the NHACC Zoom workshops. She said
37 the first one was on stewardship for wildlife management. Chair Riley said the series is called,
38 “Taking Action for Wildlife.”

39
40 Dr. Oidtmann said he’s had no contact with the DOT group that is involved in the Exit 18
41 project.

42
43 Ms. Almy said she contacted the state hydrogeologist, Andrew Koff. She said she told him the
44 City sometimes has had trouble locating some of the smaller underground aquifers. She said Mr.

1 Koff said Greg Smtih is contracted by the state for the new well project in Lebanon. She said he
2 said part of the research for that project was a review of the entire City and the location of the
3 aquifers may be included in that documentation. She said perhaps Mr. Smith would share that
4 information with the City.

5
6 **C. Wild About Lebanon**

7 No update

8 **D. Amphibian Crossings**

9 No update

10 **E. LUCT/Current Use**

11 No update

12 **F. Other Subcommittees**

13 No update

14
15 **5. STUDY ITEMS**

16
17 **A. Property Stewardship Discussion**

18
19 Chair Riley shared an outline for the property stewardship discussion. The group discussed how
20 to work with the outline and add goals/action items that can be accomplished this year.

21
22 **Conservation Lands/Trails**

23 Mr. Goodwin said the City owns approximately 21 miles of trails and about 2,000 acres of
24 Conservation properties, (including but not limited to):

- 25 • Farnum Hill
- 26 • Alana Cole
- 27 • Chambers
- 28 • Ticknor
- 29 • Signal Hill
- 30 • Star Hill
- 31 • Trues Brook
- 32 • Mill Parcel
- 33 • Boston Lot

34 He said fall maintenance tasks include:

- 35
- 36 • Blazing boundaries – Mr. Goodwin said it really is reblazing / repainting existing boundaries.
37 He said he maintains a spreadsheet that tracks the blazing schedule for the properties. He said
38 the goal is to reblaze every five years. He said it might take a few days to blaze a whole
39 property.

40
41 Mr. James noted that some property owners want to manage conservation boundaries that
42 abut their properties differently than how the City wants to do it. Chair Riley said
43 conservation outreach should address this issue. Ms. Hirai said walking the boundaries could

1 be done between the blazing schedule, and that could reveal issues with owners that can be
2 addressed.

- 3
- 4 • Monitoring – Mr. Goodwin said most properties are monitored annually by the Upper Valley
5 Land Trust, which includes walking the boundaries. He said the UVLT has easements on
6 most conservation properties, and the City has easements on only three conservation
7 properties near the Lebanon Airport.

8

9 The group discussed the effectiveness of the trail kiosks and other signage ideas, and how
10 they could best be used. Ms. Hirai said the kiosks should explain which trails are connector
11 trails. Mr. James said Ranger John's new signs are excellent. Mr. Goodwin said the signage
12 is important to let people know the land is being monitored and it is not forgotten land. Mr.
13 James suggested signage could include images and information about wildlife in the area,
14 like what is done in the White Mountain trails.

- 15
- 16 • Brush hogging – Mr. Goodwin said Signal Hill, LeBrun Meadow, and Jackson are done
17 every year. The group discussed mowing strategies around trees growing in the meadows and
18 how the different kinds of open space (and their edges) should be mowed/maintained to
19 protect birds and other wildlife. The group also discussed prescribed burns as an option to
20 conservation land management.

21

22 Mr. Goodwin said DPW has not been able to do as much maintenance as it has in the past
23 because of staffing issues. He said the contractor who has done brush hogging in the past
24 hopefully can come back this year.

25

26 The group discussed strategies to control the spread of the buckthorn invasive species, which
27 is seen everywhere around Lebanon. Chair Riley said the City may have to hire a crew to
28 cut/pull large expanses that are overgrown with buckthorn.

29

30 Ms. Hirai noted that only licensed personnel can work on Conservation Lands. She said right
31 now, only Mr. Lacey is licensed, and she suggested the City sponsor licensing for others so
32 they can also work on Conservation Land.

- 33
- 34 • Trail Maintenance – Mr. Goodwin said trail maintenance involves assessment of the
35 condition of the trails and getting drainage up and running for five or six trails.

36 Ms. Hirai suggested "Cleaning up homeless camps" could be another fall maintenance task.

37

38 Mr. Goodwin said he also maintains a list of reported items / miscellaneous maintenance items
39 for each property:

- 40
- 41 • Missing signs / sign suggestions
 - 42 • Downed trees identified
 - 43 • Trail brushing (pushing back growth on trails to clear them)

- 1 • Miscellaneous maintenance (ex: remove broken picnic table)
- 2 • Projects (wish list items)

3 Chair Riley said additional projects not included on Mr. Goodwin's list could be added to the list
4 that was created in 2022.

5
6 Ms. Hirai said she would like the group to discuss the following:

- 7
8 • Effectiveness of Volunteer Recruitment tools – Ms. Hirai said volunteer recruitment tools,
9 such as the link to the Conservation Commission webpage, are not working as well as
10 planned. She said recruitment efforts have fallen off since the pandemic. The group discussed
11 strategies to attract volunteers. Mr. James noted stewards have signed up who have not
12 actually participated. He said it might be a good time to encourage new people to join the
13 stewardship program again. Dr. Oidtmann suggested contacting organizations, such as bike
14 clubs, hiking outfits, the Lions Club, the Rotary Club, Hypertherm, and church organizations,
15 to see if groups might be interested in helping as a social event.

16 Ms. Hirai said personal outreach / contact with volunteers has been effective in the past. Mr.
17 James said specific project events may be easier to recruit volunteer groups from
18 organizations. Mr. Heistad suggested making a list of email addresses for all volunteers to
19 contact for projects.

20
21 The group agreed to keep the current methods for volunteers' recruitment, and to use other
22 methods to attract and coordinate volunteers as well. Mr. Heistad suggested Conservation
23 Commission activities / volunteer opportunities be posted at outdoor gear shops. Mr. James
24 suggested Commission members attend club meetings and give a short talk about the
25 Conservation Commission activities and have a sign-up sheet for volunteers. Ms. Hirai
26 suggested a Wild About Lebanon event on how to be a good steward.

27
28 Mr. Goodwin said if trails are not maintained by the City, people may feel that they will have
29 to clear the trails themselves if they want to use them. The group discussed the possibility of
30 hiring a crew to maintain trails in addition to the work of volunteers and Ranger John.

31
32 Chair Riley suggested an exercise with the Trails for People and Wildlife tool would be
33 helpful. She said an expert can come review all trails in Lebanon and see what the impacts
34 are. She said the City could ultimately decide that some trails should be discontinued. She
35 said Trails for People and Wildlife is a tool designed by UNH and NH Fish & Game.

36
37 Dr. Oidtmann said the Commission needs to document current trails and deal with the
38 "spontaneous trails" that people create without permission. He said they also need to read the
39 easements for each property, which spell out a lot of conditions that they have to adhere to.
40 He read the easement language for the Indian Ridge property.

41
42 Chair Riley gave an update of the status of the transfer of the Indian Ridge easement from
43 Hanover to Lebanon. She said the City Manager said the easement would go to the Planning

1 Department once it is transferred. She said the easement gives Dartmouth College the right to
2 put a road through the area. She said the City may also want to put a road through the area
3 for a third fire station.
4

5 The group discussed how the Commission needs to be more directly involved in what's
6 happening in the Planning Department. Chair Riley said they should meet with the Planning
7 Director to get an update on Indian Ridge and express its concerns about Mink Brook and the
8 wildlife corridor in that area.
9

- 10 • Properties with no Management Plans – continue discussion at a future meeting

11
12 ***A MOTION was made by Erling Heistad to extend the meeting to 9:30pm. The motion was***
13 ***seconded by Sarah Riley.***
14

15 Mr. James suggested the meeting be extended to 9:15pm.
16

17 ***An AMENDED MOTION was made by Erling Heistad to extend the meeting to 9:15pm. The***
18 ***motion was seconded by Sarah Riley.***
19

20 ****The MOTION was approved (6-0).***
21

22 The group decided to continue the discussion about the following topics to the next meeting:
23

- 24 • Invite the Planning Director to the next meeting to discuss Indian Ridge and other connector
25 projects
26 • Properties with no management plans
27 • Stewardship / management plan spreadsheet for each property
28 • Make management plan information more accessible and have a conservation plan that
29 guides what needs to be done
30

31 **8. ADJOURNMENT**

32 The meeting adjourned at 9:15pm.
33

34 Respectfully submitted,

35 Paula Roux

36 Recording Secretary

Replacement of the Trues Brook Road Bridge Over Bloods Brook, Lebanon, NH

New Hampshire Department of
Environmental Services

Wetlands Bureau Permit Application

Hoyle Tanner Project Number: 906414



Prepared By:



 **HOYLE
TANNER**
150 Dow Street
Manchester, NH 03101

January 2024

January 30, 2024

D.E.S. Wetlands Bureau
P.O. Box 95
Concord, NH 03302-0095

Re: Wetlands Permit Application
Replacement of the Trues Brook Road Bridge
Over Bloods Brook, Lebanon, NH
Hoyle, Tanner Project No. 906414

Dear Sir/Madam:

The City of Lebanon is proposing to replace the Trues Brook Road Bridge over Bloods Brook. The existing bridge is a two-span steel stringer bridge with a reinforced concrete pier and a paved concrete deck. The bridge is currently posted with an "E-2" sign, indicating that it cannot safely carry certified loads and is on the NHDOT Municipal Redlist.

The proposed replacement structure is an 85' long single span bridge that will consist of a concrete deck, steel stringers and cast-in-place concrete abutments. The replacement structure will create new streambed via the removal of the center pier, will fully convey the 50-year and 100-year storm events, will not be a barrier to sediment and will improve aquatic organism passage. The proposed method of managing traffic during construction is using a temporary bridge constructed upstream of the existing bridge.

There will be permanent and temporary resource impacts as a result of the project. All areas of temporary disturbance will be re-vegetated and new streambed will be created upon work completion. There will be a total of 49 sf / 25 lf of stream creation as a result of the project. A filing fee of \$3,574.00 is included with the package. All abutters to this project have been notified by certified mail. The current schedule is to construct this project as soon as the required easements are acquired from the affected abutting property owners.

If you require any additional information, please feel free to contact me at your convenience.

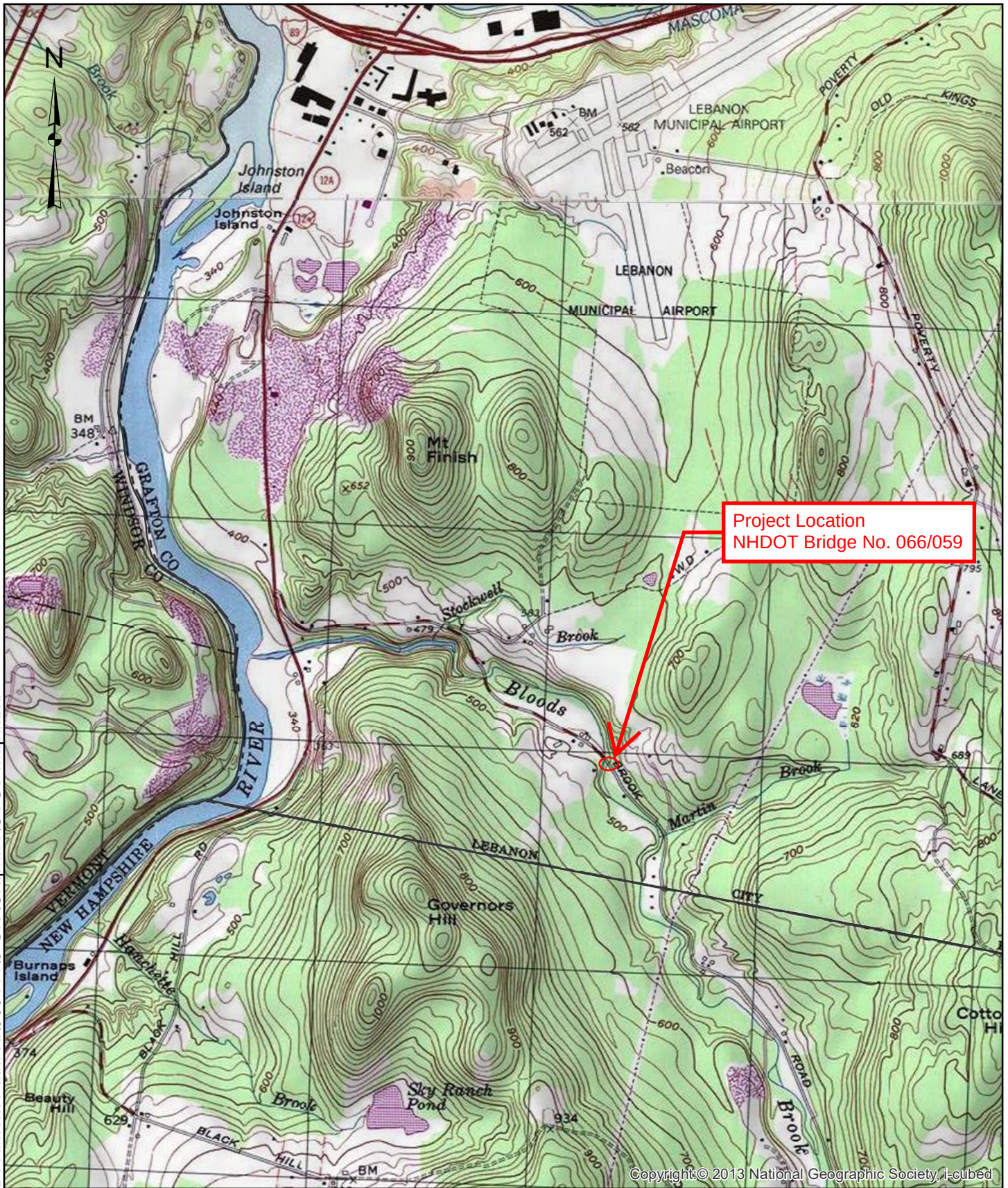
Very truly yours,
HOYLE, TANNER & ASSOCIATES, INC.



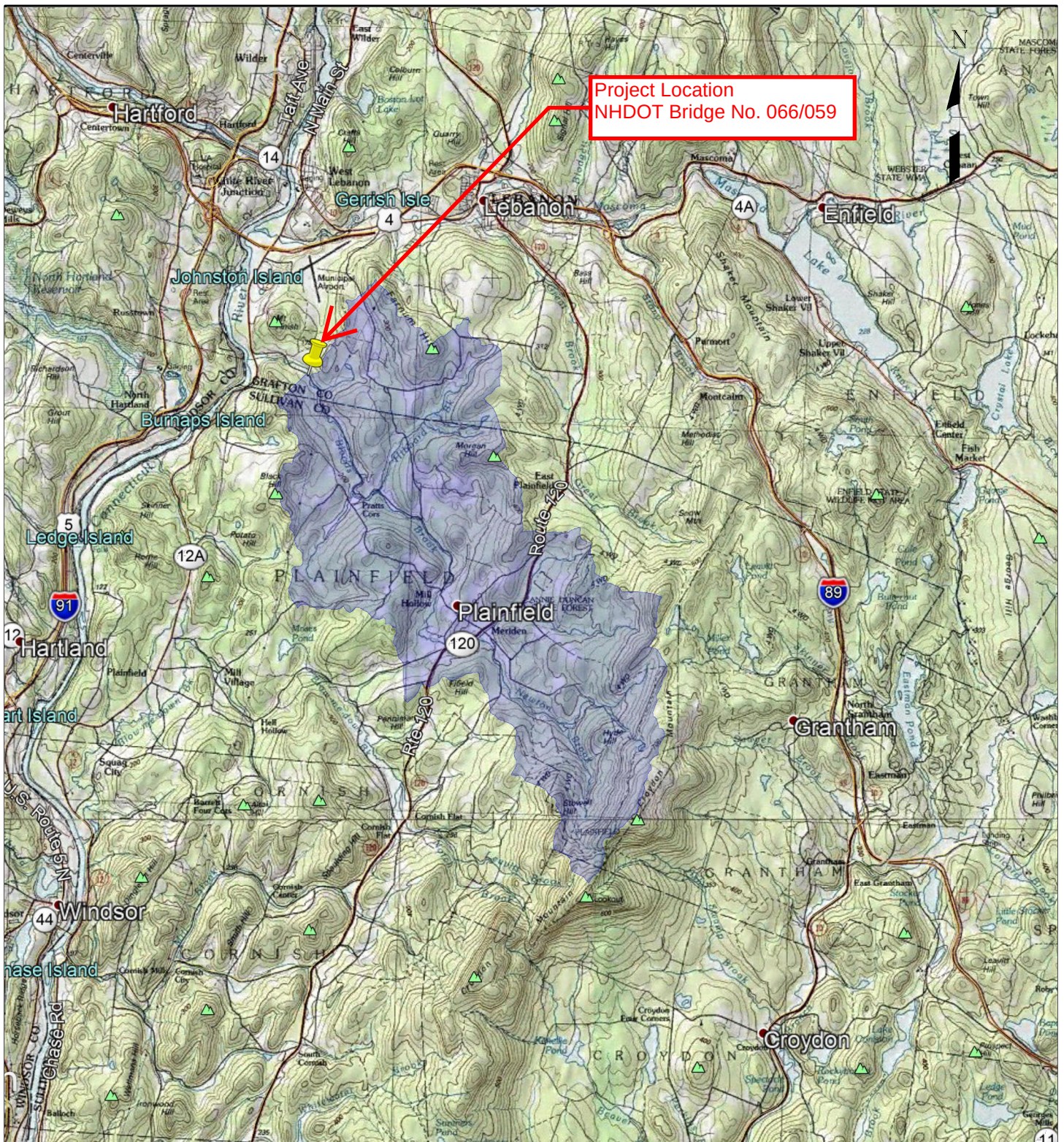
Kimberly R. Peace
Senior Environmental Coordinator

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- **WETLAND DELINEATION REPORT, FUNCTIONAL ASSESSMENT & SITE PHOTOS**
- **TAX MAP**
- **ABUTTERS LIST**
- **SAMPLE NOTICE TO ABUTTERS**
- **NHDOT SPECIFICATIONS SECTION 583 RIPRAP**
- **PROJECT PLANS**



 HOYLE TANNER			150 Dow Street Manchester, NH 03101-1227 Tel 603-669-5555 Fax 603-669-4168 Web Page www.hoyletanner.com	REPLACEMENT OF THE TRUES BROOK ROAD BRIDGE OVER BLOODS BROOK, LEBANON, NH NHDOT PROJECT NO. 24224	EXHIBIT A1
DR. BY dcoon	DATE 5/20/2021	SCALE 1 inch = 2,000 feet	PROJECT LOCATION MAP		



Bloods Brook Contributing Watershed Area: 28.1 Sq. Miles (17,984 AC) / Tier 3 (>640 Acres)
 Watershed Shapefile Obtained from USGS StreamStats

 HOYLE TANNER 150 Dow Street, Manchester, NH 03101-1227 Tel (603) 669-5555 Fax (603) 669-4168 www.hoyletanner.com			TRUES BROOK ROAD OVER BLOODS BROOK LEBANON, NH	APPENDIX A2
DRAWN BY DLC	DATE JUNE 2021	SCALE 1" = 8 MILE	PROJECT WATERSHED MAP	2



**STANDARD DREDGE AND FILL
WETLANDS PERMIT APPLICATION**
Water Division/Land Resources Management
Wetlands Bureau
[Check the Status of your Application](#)



RSA/Rule: RSA 482-A/Env-Wt 100-900

APPLICANT'S NAME: City of Lebanon / Shaun Mullholand, City Manager

TOWN/CITY NAME: Lebanon

Administrative Use Only	Administrative Use Only	Administrative Use Only	File No.:
			Check No.:
			Amount:
			Initials:

A person may request a waiver to the requirements in Rules Env-Wt 100-900 to accommodate situations where strict adherence to the requirements would not be in the best interest of the public or the environment. A person may also request a waiver of the standards for existing dwellings over water pursuant to RSA 482-A:26, III (b). For more information, please consult the [request form](#).

Section 1 - Required Planning for all projects (Env-Wt 306.05; RSA 482-A:3, I(d)(2)) Please use the Wetland Permit Planning Tool (WPPT) , the Natural Heritage Bureau (NHB) DataCheck Tool , the Aquatic Restoration Mapper , or other sources to assist in identifying key features such as: priority resource areas (PRAs) , protected species or habitats , coastal areas, designated rivers, or designated prime wetlands.	
Has the required planning been completed?	☒ Yes ☐ No
Does the property contain a PRA? If yes, provide the following information: • Does the project qualify for an Impact Classification Adjustment (e.g. NH Fish and Game Department (NHF&G) and NHB agreement for a classification downgrade) or a Project-Type Exception (e.g. Maintenance or Statutory Permit-by-Notification (SPN) project)? See Env-Wt 407.02 and Env-Wt 407.04). • Protected species or habitat? ○ If yes, species or habitat name(s): ○ NHB Project ID #: NHB23-3124 • Bog? • Floodplain wetland contiguous to a tier 3 or higher watercourse? • Designated prime wetland or duly-established 100-foot buffer? • Sand dune, tidal wetland, tidal water, or undeveloped tidal buffer zone?	☒ Yes ☒ No ☐ Yes ☒ No ☐ Yes ☒ No ☐ Yes ☒ No ☒ Yes ☐ No ☐ Yes ☒ No ☐ Yes ☒ No
Is the property within a Designated River corridor? If yes, provide the following information: • Name of Local River Management Advisory Committee (LAC): 	☐ Yes ☒ No

lrn@des.nh.gov or (603) 271-2147

NHDES Wetlands Bureau, 29 Hazen Drive, PO Box 95, Concord, NH 03302-0095

www.des.nh.gov

A copy of the application was sent to the LAC on Month: Day: Year:		
For dredging projects, is the subject property contaminated? If yes, list contaminant: N/A		☐ Yes ☒ No
Is there potential to impact impaired waters, class A waters, or outstanding resource waters?		☒ Yes ☐ No
For stream crossing projects, provide watershed size (see Wetland Permit Planning Tool or Stream Stats): 17,984 acres/28.1 sq mi		
Section 2 - PROJECT DESCRIPTION (Env-Wt 311.04(i)) Provide a brief description of the project and the purpose of the project, outlining the scope of work to be performed and whether impacts are temporary or permanent. DO NOT reply "See attached"; please use the space provided below. The City of Lebanon is proposing to replace the Trues Brook Road Bridge over Bloods Brook. The existing bridge is a two-span steel stringer bridge with a reinforced concrete pier and a paved concrete deck. Each span length is 31'-6" and the total span length is 63'-0". The bridge is currently posted with an "E-2" sign, indicating that it cannot safely carry certified loads. The bridge also has a rating of serious condition and is on the NHDOT Municipal Redlist. The proposed replacement structure is an 85' long single span bridge that will consist of a concrete deck, steel stringers and cast-in-place concrete abutments. The replacement structure will create new streambed via the removal of the center pier, fully convey the 50-year and 100-year storm events, will not be a barrier to sediment and will improve aquatic organism passage. The proposed method of managing traffic during construction is using a temporary bridge constructed upstream of the existing bridge. Impacts resulting from the temporary bridge are shown on the plans within this application. There will be 7,391 sq. ft. of temporary impact and 1,544 sq. ft. of permanent impact for a total of 8,935 sq. ft. of impacts as a result of the project. There will be a total of 49 sf / 25 lf of stream creation as a result of the project.		
SECTION 3 - PROJECT LOCATION Separate wetland permit applications must be submitted for each municipality within which wetland impacts occur.		
ADDRESS: Trues Brook Road		
TOWN/CITY: Lebanon		
TAX MAP/BLOCK/LOT/UNIT: Tax Map 186		
US GEOLOGICAL SURVEY (USGS) TOPO MAP WATERBODY NAME: Bloods Brook ☐ N/A		
(Optional) LATITUDE/LONGITUDE in decimal degrees (to five decimal places): 43.601951, -72.307470 <i>*Approximate center location of the project area</i>		
SECTION 4 - APPLICANT (Desired permit holder) INFORMATION (Env-Wt 311.04(a)) If the applicant is a trust or a company, then complete with the trust or company information.		
NAME: City of Lebanon / Shaun Mulholland, City Manager		
MAILING ADDRESS: City Managers Office / 51 N. Park Street		
TOWN/CITY: Lebanon	STATE: NH	ZIP CODE: 03766

EMAIL ADDRESS: shaun.mulholland@lebanonnh.gov

FAX:

PHONE: 603-448-4220

ELECTRONIC COMMUNICATION: By initialing here: LM, I hereby authorize NHDES to communicate all matters relative to this application electronically.

SECTION 5 - AUTHORIZED AGENT INFORMATION (Env-Wt 311.04(c))☐ N/A

LAST NAME, FIRST NAME, M.I.: Peace, Kimberly R.

COMPANY NAME: Hoyle, Tanner & Associates, Inc.

MAILING ADDRESS: 150 Dow Street

TOWN/CITY: Manchester

STATE: NH

ZIP CODE: 03101

EMAIL ADDRESS: kpeace@hoyletanner.com

FAX: 603-669-4168

PHONE: 603-460-5205

ELECTRONIC COMMUNICATION: By initialing here KRP, I hereby authorize NHDES to communicate all matters relative to this application electronically.

SECTION 6 - PROPERTY OWNER INFORMATION (If different than applicant) (Env-Wt 311.04(b))

If the owner is a trust or a company, then complete with the trust or company information.

☒ Same as applicant

NAME:

MAILING ADDRESS:

TOWN/CITY:

STATE:

ZIP CODE:

EMAIL ADDRESS:

FAX:

PHONE:

ELECTRONIC COMMUNICATION: By initialing here _____, I hereby authorize NHDES to communicate all matters relative to this application electronically.

Section 7 - resource-specific criteria established in Env-Wt 400, Env-Wt 500, Env-Wt 600, Env-Wt 700, or Env-Wt 900 have been met (Env-Wt 313.01(a)(3))

In accordance with Env-Wt 400 the jurisdictional areas within the project limits have been delineated by Cynthia Balcius, CWS #061, Stoney Ridge Environmental, LLC. A copy of the Wetland Report is included with this application. The jurisdictional areas are shown on the attached project plans.

The project is a stream crossing and, as such, has been designed in accordance with Env-Wt 900. Project specific information is contained within this permit application.

Section 8 - Avoidance and Minimization

The Avoidance and Minimization Checklist is attached to this permit application.

lrm@des.nh.gov or (603) 271-2147

NHDES Wetlands Bureau, 29 Hazen Drive, PO Box 95, Concord, NH 03302-0095

www.des.nh.gov

SECTION 9 - MITIGATION REQUIREMENT (Env-Wt 311.02)

If unavoidable jurisdictional impacts require mitigation, a mitigation pre-application meeting must occur at least 30 days but not more than 90 days prior to submitting this Standard Dredge and Fill Permit Application.

Mitigation Pre-Application Meeting Date: Month: Day: Year:

(☒ N/A - Mitigation is not required) **The project meets the definition of self-mitigating by improving the hydraulic capacity. Project specific details are included in this application.**

Section 10 - The project MEETS compensatory mitigation requirements (Env-Wt 313.01(a)(1)c)

Confirm that you have submitted a compensatory mitigation proposal that meets the requirements of Env-Wt 800 for all permanent unavoidable impacts that will remain after avoidance and minimization techniques have been exercised to the maximum extent practicable: ☐ I confirm submittal.

(☒ N/A – Compensatory mitigation is not required)

SECTION 11 - IMPACT AREA (Env-Wt 311.04(g))

For each jurisdictional area that will be/has been impacted, provide square feet (SF) and, if applicable, linear feet (LF) of impact, and note whether the impact is after-the-fact (ATF; i.e., work was started or completed without a permit).

For intermittent and ephemeral streams, the linear footage of impact is measured along the thread of the channel. *Please note, installation of a stream crossing in an ephemeral stream may be undertaken without a permit per Rule Env-Wt 309.02(d), however other dredge or fill impacts should be included below.*

For perennial streams/ivers, the linear footage of impact is calculated by summing the lengths of disturbances to the channel and banks.

Permanent impacts are impacts that will remain after the project is complete (e.g., changes in grade or surface materials).

Temporary impacts are impacts not intended to remain (and will be restored to pre-construction conditions) after the project is completed.

JURISDICTIONAL AREA		PERMANENT			TEMPORARY		
		SF	LF	ATF	SF	LF	ATF
Wetlands	Forested Wetland	690		☐	1800		☐
	Scrub-shrub Wetland			☐			☐
	Emergent Wetland			☐			☐
	Wet Meadow			☐			☐
	Vernal Pool			☐			☐
	Designated Prime Wetland			☐			☐
	Duly-established 100-foot Prime Wetland Buffer			☐			☐
Surface Water	Intermittent / Ephemeral Stream			☐			☐
	Perennial Stream or River	631	104	☐	3975	69	☐
	Lake / Pond			☐			☐
	Docking - Lake / Pond			☐			☐
	Docking - River			☐			☐
Banks	Bank - Intermittent Stream			☐			☐
	Bank - Perennial Stream / River	223	67	☐	1616	186	☐
	Bank / Shoreline - Lake / Pond			☐			☐
Tidal	Tidal Waters			☐			☐
	Tidal Marsh			☐			☐
	Sand Dune			☐			☐
	Undeveloped Tidal Buffer Zone (TBZ)			☐			☐
	Previously-developed TBZ			☐			☐
	Docking - Tidal Water			☐			☐
TOTAL		1544	171		7391	255	

lrn@des.nh.gov or (603) 271-2147

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SECTION 12 - APPLICATION FEE (RSA 482-A:3, I)

- ☐ **MINIMUM IMPACT FEE:** Flat fee of \$400.
- ☐ **NON-ENFORCEMENT RELATED, PUBLICLY-FUNDED AND SUPERVISED RESTORATION PROJECTS, REGARDLESS OF IMPACT CLASSIFICATION:** Flat fee of \$400 (refer to RSA 482-A:3, 1(c) for restrictions).

☒ **MINOR OR MAJOR IMPACT FEE:** Calculate using the table below:

Permanent and temporary (non-docking): 8935 SF × \$0.40 = \$ 3,574.00

Seasonal docking structure: SF × \$2.00 = \$

Permanent docking structure: SF × \$4.00 = \$

Projects proposing shoreline structures (including docks) add \$400 = \$

Total = \$ 3,574.00

The application fee for minor or major impact is the above calculated total or \$400, whichever is greater = \$ 3,574.00

SECTION 13 - PROJECT CLASSIFICATION (Env-Wt 306.05)

Indicate the project classification.

☐ Minimum Impact Project

☐ Minor Project

☒ Major Project

SECTION 14 - REQUIRED CERTIFICATIONS (Env-Wt 311.11)

Initial each box below to certify:

Initials: To the best of the signer's knowledge and belief, all required notifications have been provided.

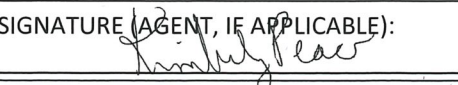
Initials: The information submitted on or with the application is true, complete, and not misleading to the best of the signer's knowledge and belief.

Initials: The signer understands that:

- The submission of false, incomplete, or misleading information constitutes grounds for NHDES to:
 1. Deny the application.
 2. Revoke any approval that is granted based on the information.
 3. If the signer is a certified wetland scientist, licensed surveyor, or professional engineer licensed to practice in New Hampshire, refer the matter to the joint board of licensure and certification established by RSA 310-A:1.

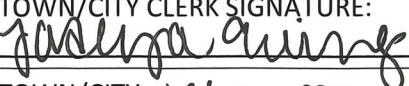
Initials: N/A If the applicant is not the owner of the property, each property owner signature shall constitute certification by the signer that he or she is aware of the application being filed and does not object to the filing.

SECTION 15 - REQUIRED SIGNATUREs (Env-Wt 311.04(d); Env-Wt 311.11)

SIGNATURE (OWNER): 	PRINT NAME LEGIBLY: SHAWN R. MCHOLLAN	DATE: 2/5/24
SIGNATURE (APPLICANT, IF DIFFERENT FROM OWNER): _____	PRINT NAME LEGIBLY:	DATE:
SIGNATURE (AGENT, IF APPLICABLE): 	PRINT NAME LEGIBLY: Kimberly R. Peace	DATE: 1/30/2024

SECTION 16 - TOWN / CITY CLERK SIGNATURE (Env-Wt 311.04(f))

As required by RSA 482-A:3, I(a),(1), I hereby certify that the applicant has filed four application forms, four detailed plans, and four USGS location maps with the town/city indicated below.

TOWN/CITY CLERK SIGNATURE: 	PRINT NAME LEGIBLY: Jaseya Ewing
TOWN/CITY: Lebanon	DATE: 2-5-2024

DIRECTIONS FOR TOWN/CITY CLERK:

Per RSA 482-A:3, I(a)(1)

1. IMMEDIATELY sign the original application form and four copies in the signature space provided above.
2. Return the signed original application form and attachments to the applicant so that the applicant may submit the application form and attachments to NHDES by mail or hand delivery.
3. IMMEDIATELY distribute a copy of the application with one complete set of attachments to each of the following bodies: the municipal Conservation Commission, the local governing body (Board of Selectmen or Town/City Council), and the Planning Board.
4. Retain one copy of the application form and one complete set of attachments and make them reasonably accessible for public review.

DIRECTIONS FOR APPLICANT:

Submit the original permit application form bearing the signature of the Town/City Clerk, additional materials, and the application fee to NHDES by mail or hand delivery at the address at the bottom of this page. Make check or money order payable to "Treasurer – State of NH".



STANDARD DREDGE AND FILL WETLANDS PERMIT APPLICATION ATTACHMENT A: MINOR AND MAJOR PROJECTS



Water Division/Land Resources Management
Wetlands Bureau

[Check the Status of your Application](#)

RSA/ Rule: RSA 482-A/ Env-Wt 311.10; Env-Wt 313.01(a); Env-Wt 313.03

APPLICANT'S NAME: City of Lebanon / Shaun Mullholand, City Manager

TOWN/CITY NAME: Lebanon

Attachment A is required for *all minor and major projects*, and must be completed *in addition* to the [Avoidance and Minimization Narrative](#) or [Checklist](#) that is required by Env-Wt 307.11.

For projects involving construction or modification of non-tidal shoreline structures over areas of surface waters having an absence of wetland vegetation, only Sections I.X through I.XV are required to be completed.

PART I: AVOIDANCE AND MINIMIZATION

In accordance with Env-Wt 313.03(a), the Department shall not approve any alteration of any jurisdictional area unless the applicant demonstrates that the potential impacts to jurisdictional areas have been avoided to the maximum extent practicable and that any unavoidable impacts have been minimized, as described in the [Wetlands Best Management Practice Techniques For Avoidance and Minimization](#).

SECTION I.I - ALTERNATIVES (Env-Wt 313.03(b)(1))

Describe how there is no practicable alternative that would have a less adverse impact on the area and environments under the Department's jurisdiction.

There is no practicable alternative that would have a less adverse impact on the area and environments under the Department's jurisdiction while allowing for safe and efficient travel between one side of the stream to the other. The primary purpose of this project is to allow for safe transport of pedestrians, bicyclists and traffic across Bloods Brook. The Trues Brook Road Bridge over Bloods Brook conveys a well-used roadway and is necessary to remain functional in this location. Alternatives reviewed included a full road closure with an offsite detour, however, the only possible detour route that could accommodate such traffic would be 23 miles long. The closure of the bridge and the implementation of the 23-mile long detour would significantly complicate and impede the efficiency of emergency response aid. Constructing one lane at a time was also considered and dismissed due reduced safety for the traveling public and the construction workers. Utilizing a temporary bridge eliminates a 23-mile detour and moves traffic as far as practicable from the work area, protecting workers from oncoming traffic.

The bridge is in poor condition with substandard railings and a concrete pier supports the superstructure. Due to the deteriorated condition of the bridge the only feasible option is to replace the structure. The extent of repairs necessary to allow the bridge to remain safely functional would cost substantially more than compared to the proposed replacement structure, which ultimately will result in an improved stream crossing in this location by widening the hydraulic opening and removing the pier.

Impacts have been minimized to the extent practicable while increasing the hydraulic opening and adding additional streambed in this location as shown on the attached plans. The temporary bridge will not result in permanent wetland or stream impacts. The project will not cause random or unnecessary destruction of wetlands.

There will be a total of 49 sf / 25 lf of stream creation/restoration as a result of the project. Additionally, because the new bridge abutments will be pulled back from the stream on each side, even though riprap will be installed at the base of each

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abutment, under normal water flows much of this “fill” will be covered by water as shown on the elevation view on sheet 21 of the plans provided. This will result in areas of new streambed that were previously upland that will function similarly to the existing streambed, even though those areas are not accounted for as new streambed.

SECTION I.II - MARSHES (Env-Wt 313.03(b)(2))

Describe how the project avoids and minimizes impacts to tidal marshes and non-tidal marshes where documented to provide sources of nutrients for finfish, crustacean, shellfish, and wildlife of significant value.

N/A – this project is not located within tidal waters or marshes.

SECTION I.III - HYDROLOGIC CONNECTION (Env-Wt 313.03(b)(3))

Describe how the project maintains hydrologic connections between adjacent wetland or stream systems.

The project is intended to replace a failing stream crossing, removal of center pier and will ensure hydrologic connectivity remains in this location. In addition, as evidenced by the slight narrowing of the stream through the existing crossing, the proposed crossing with a wider hydraulic opening will improve/restore hydrologic connectivity of the stream to prior conditions before the bridge was installed.

SECTION I.IV - JURISDICTIONAL IMPACTS (Env-Wt 313.03(b)(4))

Describe how the project avoids and minimizes impacts to wetlands and other areas of jurisdiction under RSA 482-A, especially those in which there are exemplary natural communities, vernal pools, protected species and habitat, documented fisheries, and habitat and reproduction areas for species of concern, or any combination thereof.

Impacts to the stream are necessary to replace a deteriorating bridge and have been minimized to the extent practicable. There are no exemplary natural communities, vernal pools, protected species and habitat, documented fisheries, or habitat and reproduction areas for species of concern that will be affected by the project. Bloods Brook in this location is not a predicted cold water fishery or identified as cold water fish habitat.

SECTION I.V - PUBLIC COMMERCE, NAVIGATION, OR RECREATION (Env-Wt 313.03(b)(5))

Describe how the project avoids and minimizes impacts that eliminate, depreciate or obstruct public commerce, navigation, or recreation.

The project will have a positive effect on public commerce by replacing a deteriorated bridge with substandard railings with a new relatively maintenance-free bridge designed for a minimum service life of 75 years. Replacement will enhance roadway safety for the traveling public as the new bridge will accommodate traffic without a weight restriction and will allow access for emergency response vehicles in this area. The project will have no impact on navigation or recreation.

SECTION I.VI - FLOODPLAIN WETLANDS (Env-Wt 313.03(b)(6))

Describe how the project avoids and minimizes impacts to floodplain wetlands that provide flood storage.

A floodplain wetland on the northwest corner of the bridge, above the Top-of-Bank, will be permanently and temporarily impacted because of the need to raise the road by as much as 17” in order to meet the design speed requirements and make it safer for travelling public; impacts are due to side slope grading.

The road is very narrow in this area and all the necessary roadway widening is being constructed on the south side of the road, in order to minimize impacts to the north side floodplain forested wetland- the proposed edge of pavement is essentially the same as the exiting edge of pavement on the north side.

The temporary wetland impacts are needed to provide access for the contractor to remove the old bridge, construct the new bridge and to set the new poles for the overhead lines. A geotextile fabric will be installed in temporary impact areas, then temporary fill will be placed over the fabric, and removed at the completion of the project. All of these areas will be restored to preconstruction conditions.

SECTION I.VII – RIVERINE FORESTED WETLAND SYSTEMS AND SCRUB-SHRUB – MARSH COMPLEXES (Env-Wt 313.03(b)(7)) Describe how the project avoids and minimizes impacts to natural riverine forested wetland systems and scrub-shrub – marsh complexes of high ecological integrity. Although there are forested wetlands on site, they are isolated and not part of a larger riparian forested wetland system. There are no scrub-shrub marsh complexes of high ecological integrity in the project area.
SECTION I.VIII - DRINKING WATER SUPPLY AND GROUNDWATER AQUIFER LEVELS (Env-Wt 313.03(b)(8)) Describe how the project avoids and minimizes impacts to wetlands that would be detrimental to adjacent drinking water supply and groundwater aquifer levels. N/A
SECTION I.IX - STREAM CHANNELS (Env-Wt 313.03(b)(9)) Describe how the project avoids and minimizes adverse impacts to stream channels and the ability of such channels to handle runoff of waters. Upon completion of the project, the hydraulic opening will be increased and the concrete center pier that supports the existing bridge will be removed. The crossing will provide an open bottom structure and will have mostly temporary impacts on the streambed. The proposed wider opening will allow for creation of new streambed, from the area where the pier will be removed, and bank on either side of the existing opening. It is anticipated there will be no permanent adverse impact to the stream's ability to handle runoff of waters. All impacts have been minimized to the extent practicable.
SECTION I.X - SHORELINE STRUCTURES - CONSTRUCTION SURFACE AREA (Env-Wt 313.03(c)(1)) Describe how the project has been designed to use the minimum construction surface area over surface waters necessary to meet the stated purpose of the structures. N/A – This project does not include any shoreline structures.
SECTION I.XI - SHORELINE STRUCTURES - LEAST INTRUSIVE UPON PUBLIC TRUST (Env-Wt 313.03(c)(2)) Describe how the type of construction proposed is the least intrusive upon the public trust that will ensure safe docking on the frontage. N/A – This project does not include any shoreline structures.
SECTION I.XII - SHORELINE STRUCTURES – ABUTTING PROPERTIES (Env-Wt 313.03(c)(3)) Describe how the structures have been designed to avoid and minimize impacts on ability of abutting owners to use and enjoy their properties. N/A – This project does not include any shoreline structures.
SECTION I.XIII - SHORELINE STRUCTURES – COMMERCE AND RECREATION (Env-Wt 313.03(c)(4)) Describe how the structures have been designed to avoid and minimize impacts to the public's right to navigation, passage, and use of the resource for commerce and recreation. N/A – This project does not include any shoreline structures.

SECTION I.XIV - SHORELINE STRUCTURES – WATER QUALITY, AQUATIC VEGETATION, WILDLIFE AND FINFISH HABITAT (Env-Wt 313.03(c)(5))

Describe how the structures have been designed, located, and configured to avoid impacts to water quality, aquatic vegetation, and wildlife and finfish habitat.

N/A – This project does not include any shoreline structures.

SECTION I.XV - SHORELINE STRUCTURES – VEGETATION REMOVAL, ACCESS POINTS, AND SHORELINE STABILITY (Env-Wt 313.03(c)(6))

Describe how the structures have been designed to avoid and minimize the removal of vegetation, the number of access points through wetlands or over the bank, and activities that may have an adverse effect on shoreline stability.

N/A – This project does not include any shoreline structures.

PART II: FUNCTIONAL ASSESSMENT**REQUIREMENTS**

Ensure that project meets the requirements of Env-Wt 311.10 regarding functional assessment (Env-Wt 311.04(j); Env-Wt 311.10).

FUNCTIONAL ASSESSMENT METHOD USED:

Stoney Ridge Environmental, LLC. prepared a functional assessment using the US Army Corps Highway Methodology guidelines. This assessment is a part of the Wetland Delineation Report included with this application.

NAME OF CERTIFIED WETLAND SCIENTIST (FOR NON-TIDAL PROJECTS) OR QUALIFIED COASTAL PROFESSIONAL (FOR TIDAL PROJECTS) WHO COMPLETED THE ASSESSMENT: CYNTHIA BALCIUS, CWS

DATE OF ASSESSMENT: May 12, 2021

Check this box to confirm that the application includes a NARRATIVE ON FUNCTIONAL ASSESSMENT:



For minor or major projects requiring a standard permit without mitigation, the applicant shall submit a wetland evaluation report that includes completed checklists and information demonstrating the RELATIVE FUNCTIONS AND VALUES OF EACH WETLAND EVALUATED. Check this box to confirm that the application includes this information, if applicable:



Note: The Wetlands Functional Assessment worksheet can be used to compile the information needed to meet functional assessment requirements.



AVOIDANCE AND MINIMIZATION CHECKLIST

Water Division/Land Resources Management

Wetlands Bureau

[Check the Status of your Application](#)



RSA/Rule: RSA 482-A/ Env-Wt 311.07(c)

This checklist can be used in lieu of the written narrative required by Env-Wt 311.07(a) to demonstrate compliance with requirements for Avoidance and Minimization (A/M), pursuant to RSA 482-A:1 and Env-Wt 311.07(c).

For construction or modification of non-tidal shoreline structures over areas of surface waters having an absence of wetland vegetation, complete only Sections 1, 2, and 4 only (or the applicable sections in [Attachment A: Minor and Major Projects \(NHDES-W-06-013\)](#)).

"A/M BMPs" stands for [Wetlands Best Management Practice Techniques for Avoidance and Minimization](#) dated 2019, published by the New England Interstate Water Pollution Control Commission (Env-Wt 102.18).

"Practicable" means available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes (Env-Wt 103.62).

SECTION 1 - CONTACT/LOCATION INFORMATION		
APPLICANT LAST NAME, FIRST NAME, M.I.: City of Lebanon / Shaun Mullholand, City Manager		
PROJECT STREET ADDRESS: TRUES BROOK ROAD		PROJECT TOWN: LEBANON
TAX MAP/LOT NUMBER: MAP 186		
SECTION 2 - PRIMARY PURPOSE OF THE PROJECT		
Env-Wt 311.07(b)(1)	Indicate whether the primary purpose of the project is to construct a water-access structure or requires access through wetlands to reach a buildable lot or the buildable portion thereof.	☐ Yes ☒ No
If you answered "no" to this question, describe the purpose of the "non-access" project type you have proposed. The purpose of the proposed non-access project is to replace the Trues Brook Road Bridge over Bloods Brook. The existing bridge is a two-span steel stringer bridge with a reinforced concrete pier and a paved concrete deck. The bridge is currently posted with an "E-2" sign, indicating that it cannot safely carry certified loads and is on the NHDOT Municipal Redlist. The proposed replacement structure is an 85' long single span bridge that will consist of a concrete deck, steel stringers and cast-in-place concrete abutments. The replacement structure will create new streambed where none exists via the removal of the center pier, fully convey the 50-year and 100-year storm events, will not be a barrier to sediment and will improve aquatic organism passage. The proposed method of managing traffic during construction is using a temporary bridge constructed upstream of the existing bridge.		

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SECTION 3 - AVOIDANCE & MINIMIZATION PROJECT DESIGN TECHNIQUES

Check the appropriate boxes below in order to demonstrate that these items have been considered in the planning of the project. Use N/A (not applicable) for each technique that is not applicable to your project.

Env-Wt 311.07(b)(2)	For any project that proposes permanent impacts of more than one acre or that proposes permanent impacts to a Priority Resource Area (PRA), or both, whether any other properties reasonably available to the applicant, whether already owned or controlled by the applicant or not, could be used to achieve the project's purpose without altering the functions and values of any jurisdictional area, in particular wetlands, streams, and PRAs.	☒ Check ☐ N/A
Env-Wt 311.07(b)(3)	Whether alternative designs or techniques, such as different layouts, construction sequencing, or alternative technologies could be used to avoid impacts to jurisdictional areas or their functions and values.	☒ Check ☐ N/A
Env-Wt 311.07(b)(4) Env-Wt 311.10(c)(1) Env-Wt 311.10(c)(2)	The results of the functional assessment required by Env-Wt 311.03(b)(10) were used to select a location, and design for the proposed project that has the least impact to wetland functions.	☒ Check ☐ N/A
Env-Wt 311.07(b)(4) Env-Wt 311.10(c)(3)	Where impact to wetland functions is unavoidable, the proposed impacts are limited to the wetlands with the least valuable functions on the site while avoiding and minimizing impacts to the wetlands with the highest and most valuable functions.	☒ Check ☐ N/A
Env-Wt 313.01(c)(1) Env-Wt 313.01(c)(2) Env-Wt 313.03(b)(1)	No practicable alternative would reduce adverse impact on the area and environments under the department's jurisdiction and the project will not cause random or unnecessary destruction of wetlands.	☒ Check ☐ N/A
Env-Wt 313.01(c)(3)	The project would not cause or contribute to the significant degradation of waters of the state or the loss of any PRAs.	☒ Check ☐ N/A
Env-Wt 313.03(b)(3) Env-Wt 904.07(c)(8)	The project maintains hydrologic connectivity between adjacent wetlands or stream systems.	☒ Check ☐ N/A
Env-Wt 311.10 A/M BMPs	Buildings and/or access are positioned away from high function wetlands or surface waters to avoid impact.	☐ Check ☒ N/A
Env-Wt 311.10 A/M BMPs	The project clusters structures to avoid wetland impacts.	☐ Check ☒ N/A
Env-Wt 311.10 A/M BMPs	The placement of roads and utility corridors avoids wetlands and their associated streams.	☐ Check ☒ N/A
A/M BMPs	The width of access roads or driveways is reduced to avoid and minimize impacts. Pullouts are incorporated in the design as needed.	☐ Check ☒ N/A
A/M BMPs	The project proposes bridges or spans instead of roads/driveways/trails with culverts.	☒ Check ☐ N/A

A/M BMPs	The project is designed to minimize the number and size of crossings, and crossings cross wetlands and/or streams at the narrowest point.	☐ Check ☒ N/A
Env-Wt 500 Env-Wt 600 Env-Wt 900	Wetland and stream crossings include features that accommodate aquatic organism passage and wildlife passage.	☒ Check ☐ N/A
Env-Wt 900	Stream crossings are sized to address hydraulic capacity and geomorphic compatibility.	☒ Check ☐ N/A
A/M BMPs	Disturbed areas are used for crossings wherever practicable, including existing roadways, paths, or trails upgraded with new culverts or bridges.	☒ Check ☐ N/A
SECTION 4 - NON-TIDAL SHORELINE STRUCTURES		
Env-Wt 313.03(c)(1)	The non-tidal shoreline structure has been designed to use the minimum construction surface area over surfaces waters necessary to meet the stated purpose of the structure.	☐ Check ☒ N/A
Env-Wt 313.03(c)(2)	The type of construction proposed for the non-tidal shoreline structure is the least intrusive upon the public trust that will ensure safe docking on the frontage.	☐ Check ☒ N/A
Env-Wt 313.03(c)(3)	The non-tidal shoreline structure has been designed to avoid and minimize impacts on the ability of abutting owners to use and enjoy their properties.	☐ Check ☒ N/A
Env-Wt 313.03(c)(4)	The non-tidal shoreline structure has been designed to avoid and minimize impacts to the public's right to navigation, passage, and use of the resource for commerce and recreation.	☐ Check ☒ N/A
Env-Wt 313.03(c)(5)	The non-tidal shoreline structure has been designed, located, and configured to avoid impacts to water quality, aquatic vegetation, and wildlife and finfish habitat.	☐ Check ☒ N/A
Env-Wt 313.03(c)(6)	The non-tidal shoreline structure has been designed to avoid and minimize the removal of vegetation, the number of access points through wetlands or over the bank, and activities that may have an adverse effect on shoreline stability.	☐ Check ☒ N/A

NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES
WETLAND PERMIT APPLICATION
for
Replacement of the Trues Brook Road Bridge over Bloods Brook
Lebanon, NH

Supplemental Narrative

The following information is offered as a supplement to the information provided in the Wetland Permit Application and Plans.

Explanation as to methods, timing, and manner as to how the project will meet applicable standard permit conditions required in Env-Wt 307 (Env-Wt 311.03(b)(7))

Env-Wt 307.02 (US Army Corps of Engineers (USACE) Conditions). Appendix B is attached to this permit application. The City of Lebanon seeks and requests to receive review and approval by the Army Corps of Engineers through their General Permit and via submittal of this State wetlands permit application to NHDES.

Env-Wt 307.03 (Protection of Water Quality Required). The contractor shall be responsible for implementing Erosion and Sediment control measures in accordance with the "New Hampshire Stormwater Manual, Volume 3 Erosion and Sediment Controls during Construction" by NHDES. Erosion and siltation control measures will be installed by the Contractor prior to the start of any work and will be maintained during the duration of the construction activities. It is the Contractor's responsibility to not cause violations of surface water quality standards. Upon completion of the project, the project will cause no adverse effects on the quality or quantity of surface or groundwater entering or exiting the project site.

Env-Wt 307.05 (Protection Against Invasive Species Required) Stoney Ridge Environmental, LLC. performed a Wetland Delineation of the project area and noted the following species present within the study area: *Frangula alnus* (glossy buckthorn) and *Lonicera japonica* (Japanese honeysuckle). The project contractor will be aware of and conform with the requirements in Env-Wt 307.05 and will be required to prepare an Invasive Species Management Plan to be submitted to the Contract Engineer for review and approval.

Env-Wt 307.06 (Protection of Rare, Threatened or Endangered Species and Critical Habitat) The NH Natural Heritage Bureau was contacted regarding the proposed project (see attached letter NHB23-2124, dated 10/27/2023). The database check resulted in no recorded occurrences for sensitive species near the project area.

An official Federally-listed species list was obtained from the US Fish and Wildlife Service (USFWS) using the Information for Planning and Conservation (IPAC) online tool. The species identified were the Federally-endangered Northern Long-eared Bat (*Myotis septentrionalis*; NLEB) and the Monarch Butterfly (*Danaus plexippus*) was identified as a candidate species. The project was reviewed within the IPaC System utilizing the FHWA, FRA, FTA Programmatic Consultation for Transportation Projects affecting NLEB or Indiana Bat Determination Key. A Consistency Letter was generated with a determination of "no effect"

Env-Wt 307.10 (Dredging Activity Conditions) Perimeter controls will be installed prior to earth moving operations in the approximate locations shown on the attached plans and will remain in place until completion of the project and restoration of the site.

Env-Wt 307.07 (Consistency Required with Shoreland Water Quality Protection Act). Bloods Brook is subject to the Shoreland Water Quality Protection Act (SWQPA) (NH RSA 483-B) in this location. A Shoreland Permit by Notification will be submitted to NHDES for this project.

Env-Wt 307.11 (Filling Activity Conditions). All fill material shall conform to the requirements listed in 307.11.

Env-Wt 307.12 (Restoring Temporary Impacts: Site Stabilization) Upon completion of the project all temporary impact areas will be restored to pre-construction condition per the requirements listed in Env-Wt 307.12.

Env-Wt 307.13 (Property Line Setbacks). Permission letters have been requested from the abutters where the project limits are within 10' of their property. The City is working directly with these property owners as easements will be required to install the temporary bridge and replace the crossing. The project is receiving federal funding and therefore needs to go through a formal right-of-way process. As a result of this, easements are not expected to be obtained prior to the issuance of the permit. Therefore, the City of Lebanon requests that submitting the easements to NHDES be made a condition of the permit.

Env-Wt 307.15 (Use of Heavy Equipment in Wetlands) There will be no heavy equipment in the wetlands for construction of this project. All heavy equipment will be located on the road or sideslopes adjacent to the bridge.

Env-Wt 307.16 (Adherence to Approved Plans Required) All work shall be in accordance with the plans prepared by Hoyle Tanner and approved by NHDES.

Construction Sequence and Timing

1. Install traffic control signage as needed for construction of temporary bridge and approaches or as directed by the Engineer.
2. Install temporary erosion control measures as detailed in the Stormwater Pollution Prevention Plan.
3. Modify traffic to one-way alternating traffic utilizing the existing westbound lane.
4. Construct temporary bridge and approaches for traffic detour.
5. Modify traffic control signage as needed for construction of new bridge or as directed by the Engineer.
6. Shift traffic to temporary bridge utilizing one-way alternating traffic.
7. Install contractor detailed debris containment system(s) to prevent materials from falling into the brook.
8. Remove the existing superstructure (railing, deck, and girders) in its entirety.
9. Remove contractor detailed debris containment system(s) if no longer necessary.
10. Construct Water Diversion Structure(s) as necessary for Abutment A and pier removal work while allowing the brook to flow through the bridge opening at all times.
11. Remove Abutment A, wingwalls, and northwest masonry wall as necessary to facilitate access for pier removal and cofferdam installation.
12. Install contractor detailed construction access way) for pier removal.

13. Construct level working area between Abutment A and the pier for pier removal.
14. Remove the pier to the mudline.
15. Relocate Water Diversion Structure(s) around Abutment A as necessary to complete removal of existing structure and construction of proposed structure.
16. Perform overhead utility relocation work. Note: The Contractor is responsible for coordination for final utility relocation that considers means and methods and the plan for demolition.
17. Install contractor detailed cofferdams around Abutment A.
18. If needed, finish removal of Abutment A, wingwalls, and northwest masonry wall. Excavate to the limits and elevations shown on the plans or as directed by the Engineer to construct the proposed substructure.
19. Install contractor detailed cofferdams and Water Diversion Structure(s) (Item 503.1) around Abutment B as necessary to remove existing substructure and construct proposed substructure.
20. Remove Abutment B, wingwalls, and the southeast masonry wall (if not previously removed for installation of temporary bridge and approach work). Excavate to the limits and elevations shown on the plans or as directed by the Engineer to construct the proposed substructure.
21. Construct the proposed substructures and backfill.
22. Install Item 593.411 Geotextile; Perm Control CL. 1, Non-woven and Item 583.3 Riprap, Class V scour countermeasures in the dry to the limits shown on the plans in accessible areas.
23. Remove contractor detailed cofferdams.
24. Install steel girders as shown on the plans.
25. Construct the reinforced concrete deck, bridge rail, and bridge approach rail.
26. Construct approach slabs and roadway approaches.
27. Modify traffic control signage as needed for removal of temporary bridge and approaches or as directed by the Engineer.
28. Shift traffic to one-way alternating traffic utilizing the newly constructed westbound lane.
29. Modify Water Diversion Structure(s) as necessary to remove the temporary bridge and approaches and install remaining scour countermeasures.
30. Remove temporary bridge and approaches and return the disturbed areas as near as practicable to the preconstruction condition and as directed by the Engineer.
31. Install Item 593.411 Geotextile; Perm Control CL. 1, Non-woven and Item 583.3 Riprap, Class V scour countermeasures in the dry to the limits shown on the plans in areas that were previously inaccessible.
32. Stabilize disturbed areas and roadway slopes.
33. Construct guardrail and signing per plan.
34. Remove temporary erosion control measures.
35. Remove traffic control signage.

Construction is expected to take place as soon as the required easements have been received from the abutting property owners.

Statement of whether the applicant has received comments from the local conservation commission and, if so, how the applicant has addressed the comments (Env-Wt 311.06(h))

A copy of this wetland permit application was submitted to the City of Lebanon for distribution to the Lebanon Conservation Commission concurrent with submittal of the application to DES. Comments will be forwarded to DES should they be received.

Federal Agency Coordination

A USACE General Permit will be required for this project. Pre-application coordination with USACE was not completed during application development, as the GP conditions will be met. See section below for Appendix B and Checklist answers. Coordination with the US Fish and Wildlife Service (USFWS) was not required as the project was cleared using the online IPAC system to generate a Verification letter for the crossing regarding the potential to impact northern long-eared bats.

Slope Stabilization and Riprap Installation

The area shown as permanent impact for riprap installation is necessary for protection of the newly installed infrastructure and is based on the hydraulic and hydrologic analysis developed for the project and included below.

Please refer to the attached NHDOT riprap specifications for sizing information of Class V riprap.

Mitigation

Per Env-Wt 313.04(a)(3)(a), and Env-Wt 904.05(f)(1)(b), mitigation is not required for the proposed project because: the permanent impacts proposed are necessary to stabilize the bank and protect the infrastructure; the project will meet the general design criteria in Env-Wt 904.01 and the tier specific design criteria in Env-Wt 904.07; the project meets the definition of self-mitigating by improving the hydraulic capacity; and will improve aquatic organism passage, connectivity and hydraulics by removing the center pier and restoring the natural streambed in this area.

Erosion and Stability Narrative/Hydraulic Analysis to address Env-Wt 903.05

Hydrologic and hydraulic analyses were performed on the Trues Brook Road stream crossing at Bloods Brook by Hoyle Tanner.

The NHDOT requires the 50-year design flood flow (Q_{50}) and elevation to be determined. The Q_{50} design flood event has a 2% chance of being met or exceeded each year. The mean annual flood (2.33), 50- and 100-year flood flows were predicted in the hydraulic analysis using three methods – the USGS Streamstats program, the Federal Highway Administration (FHWA) 7-Parameter method and the New England Hill and Lowland Method (N.E.H.L.). The FHWA 7-Parameter Method was used since the stream is fragmented (i.e. more than one main channel) and the N.E.H.L Method was used as a check. Both of these methods yielded similar flows with a difference of approximately 0.5%. The USGS Streamstats program yielded flows that were 40% lower than the other two methods. For the purpose of checking the existing opening and sizing the new bridge span, the FHWA 7-Parameter Method flows were utilized.

A summary of the existing 50- and 100-year flood flows is provided below. The results indicate that the existing bridge is unable to pass the Q_{50} and Q_{100} flood events. The Q_{50} and Q_{100} flood events do not overtop the roadway but inundate the steel beams by approximately 1.29' and 2.71', respectively. Debris was

observed during a site visit at the top of concrete pier and abutment seats, further confirming the results of the hydrologic and hydraulic analysis.

Existing Hydraulic Data:

50-Year and 100-Year Storms

	50-Year	100-Year
Drainage Area:	28.12 square miles	28.12 square miles
Flood Elevation:	487.09 feet	488.51 feet
Flood Flow:	4,391 cfs	5,173 cfs
Flood Velocity:	14.5 fps	15.3 fps
Bridge Opening:	441.5 sf	441.5 sf
Bridge Waterway Opening Below		
The Design Flood Elevation:	441.5 sf	441.5 sf
% Opening Full During the Design Flood:	100%	100%

The proposed bridge opening for replacement was sized based on the Stream Crossing Guidelines. These guidelines suggest a minimum stream crossing of 1.2 times the bankfull width plus two feet. The bankfull width was measured in the field to be about 60' which results in a minimum clear span length of at least 74', measured perpendicular to the centerline of Bloods Brook. Additional Stream Crossing Guidelines suggest a superstructure span length equal the embankment ratio times the bankfull width. As noted on the attached stream crossing worksheet, Bloods Brook at the Trues Brook Road crossing is likely a B-Type Stream with an average entrenchment ratio of 1.68. Therefore, in order to meet this requirement, the replacement alternative would require a 100' hydraulic opening measured perpendicular to the centerline of Bloods Brook. Based on hydraulic modeling and cost restrictions of the project, a replacement bridge with a span length of 85' and a clear hydraulic opening measured perpendicular to the abutments of 75' is being proposed. The Q_{50} and Q_{100} flood events provide 1.4' and 7" of freeboard, respectively, to the bottom of the superstructure. As shown below, the proposed replacement will pass the 50-year flood flow with over 1' of freeboard and accommodate the 100-year flood flow without creating a backwater condition.

Proposed Hydraulic Data:

50-Year and 100-Year - Full Bridge Replacement with Rolled Steel Beams

	50-Year	100-Year
Drainage Area:	28.12 square miles	28.12 square miles
Flood Elevation:	483.67 feet	484.48 feet
Flood Flow:	4,391 cfs	5,173 cfs
Flood Velocity:	12.3 fps	13.0 fps
Bridge Opening:	621 sf	621 sf
Bridge Waterway Opening Below		
The Design Flood Elevation:	500 sf	578 sf
% Opening Full During the Design Flood:	81%	93%

NHDES Rule Env-Wt 904.09 enables a pathway for Tier 3 replacements without having to meet Rule Env-Wt 904.07, including the Stream Crossing Guidelines. The proposed replacement will be an improvement over the existing conditions and meets all the requirements per Rule Env-Wt 904.09, therefore the crossing does not need an Alternative Design Request pursuant to Rule Env-Wt 904.10.

**Stream Crossing Requirements
Replacement of the Trues Brook Road Bridge over Bloods Brook
Lebanon, NH**

Env-Wt 904.01 General Design Considerations

(a) All stream crossings, whether over tidal or non-tidal waters, shall be designed and constructed so as to:

(1) Not be a barrier to sediment transport;

The proposed bridge has been designed to improve sediment transport in this location.

(2) Not restrict high flows and maintain existing low flows;

The proposed bridge will not restrict high flows and will maintain existing low flows.

(3) Not obstruct or otherwise substantially disrupt the movement of aquatic organisms indigenous to the waterbody beyond the actual duration of construction;

The proposed replacement contains a larger hydraulic opening and will remove a pier from the streambed, which will allow for improved passage by aquatic organisms.

(4) Not cause an increase in the frequency of flooding or overtopping of banks;

The hydraulic opening of the proposed bridge is larger than that of the existing bridge which will decrease the flood elevations during peak discharge events. This in turn will result in a decrease in the frequency of flooding or overtopping of banks.

(5) Maintain or enhance geomorphic compatibility by:

a. Minimizing the potential for inlet obstruction by sediment, wood, or debris; and

The increased hydraulic opening and removal of the pier reduces the potential for obstruction caused by sediment, wood or debris.

b. Preserving the natural alignment of the stream channel;

The new structure is being installed within the existing alignment of the stream.

(6) Preserve watercourse connectivity where it currently exists;

The replacement structure is being installed in the same location as the existing structure, as dictated by the road location. This will not change the existing stream alignment upstream, downstream or through the crossing.

(7) Restore watercourse connectivity where:

Not Applicable

- a. Connectivity previously was disrupted as a result of human activity(ies); and
- b. Restoration of connectivity will benefit aquatic organisms upstream or downstream of the crossing, or both;

(8) Not cause erosion, aggradation, or scouring upstream or downstream of the crossing; and

The proposed project includes riprap installation that is necessary for protection of the substructure and prevention of erosion, aggradation or scouring upstream or downstream of the crossing.

(9) Not cause water quality degradation.

The proposed project will not cause water quality degradation with the exception of temporary sediment movement that will be contained using perimeter controls and standard best management practices during construction.

(b) For stream crossings over tidal waters, the stream crossing shall be designed to:

Not Applicable

- (1) Match the velocity, depth, cross-sectional area, and substrate of the natural stream; and
- (2) Be of sufficient size to not restrict bi-directional tidal flow over the natural tide range above, below, and through the crossing.

Env-Wt 904.09 Repair, Rehabilitation, or Replacement of Tier 3 and Tier 4 Existing Legal Crossings.

(a) The repair, rehabilitation, or replacement of tier 3 stream crossings shall be limited to existing legal crossings where the tier classification is based only on the size of the contributing watershed.

The existing bridge is a legal crossing.

(b) Rehabilitation of a culvert or other closed-bottom stream crossing structure pursuant to this section may be accomplished by concrete repair, slip lining, cured-in place lining, or concrete invert lining, or any combination thereof, except that slip lining shall not occur more than once.

Not Applicable

(c) A project shall qualify under this section only if a professional engineer certifies, and provides supporting analyses to show, that:

(1) The existing crossing does not have a history of causing or contributing to flooding that damages the crossing or other human infrastructure or protected species habitat; and

Refer to the hydrologic and hydraulic analysis data provided in this application. The project plans included in this application have been stamped/certified by the professional engineer who designed the replacement.

(2) The proposed stream crossing will:

- a. Meet the general criteria specified in Env-Wt 904.01;
- b. Maintain or enhance the hydraulic capacity of the crossing;
- c. Maintain or enhance the capacity of the crossing to accommodate aquatic organism passage;
- d. Maintain or enhance the connectivity of the stream reaches upstream or downstream of the crossing; and
- e. Not cause or contribute to the increase in the frequency of flooding or overtopping of the banks upstream or downstream of the crossing.

See Answers provided above, Section Env-Wt 904.01 General Design Considerations.

(d) Repair, rehabilitation, or replacement of a tier 4 stream crossing shall comply with Env-Wt 904.07(d).:

Not Applicable



WETLANDS PERMIT APPLICATION STREAM CROSSING WORKSHEET

Water Division/Land Resources Management
Wetlands Bureau



RSA/Rule RSA 482-A/ Env-Wt-900

This worksheet can be used to accompany Wetlands Permit Applications when proposing stream crossings.

SECTION 1 - TIER CLASSIFICATIONS

Determine the contributing watershed size at [USGS StreamStats](#).

Note: Plans for tier 2 and 3 crossings shall be designed and stamped by a professional engineer who is licensed under RSA 310-A to practice in New Hampshire.

Size of contributing watershed at the crossing location: 17,984 acres

- ☐ **Tier 1:** A tier 1 stream crossing is a crossing located on a watercourse where the contributing watershed size is less than or equal to 200 acres.
- ☐ **Tier 2:** A tier 2 stream crossing is a crossing located on a watercourse where the contributing watershed size is greater than 200 acres and less than 640 acres.
- ☒ **Tier 3:** A tier 3 stream crossing is a crossing that meets **any** of the following criteria:
- ☒ On a watercourse where the contributing watershed is more than 640 acres.
 - ☐ Within a [designated river corridor](#) unless:
 - a. The crossing would be a tier 1 stream based on contributing watershed size, or
 - b. The structure does not create a direct surface water connection to the designated river as depicted on the national hydrography dataset as found on GRANIT.
 - ☐ Within a [100-year floodplain](#) (see Section 2 below).
 - ☐ In a jurisdictional area having any protected species or habitat ([NHB DataCheck](#)).
 - ☐ In a prime wetland or within a duly-established 100-foot buffer, unless a waiver has been granted pursuant to RSA 482-A:11, IV(b) and Env-Wt 706. Review the [Wetlands Permit Planning Tool \(WPPT\)](#) for town prime wetland and prime wetland buffer maps to determine if your project is within these areas.
- ☐ **Tier 4:** A tier 4 stream crossing is a crossing located on a tidal watercourse.

SECTION 2 - 100-YEAR FLOODPLAIN

Use the [FEMA Map Service Center](#) to determine if the crossing is located within a 100-year floodplain. Please answer the questions below:

- ☒ **No:** The proposed stream crossing *is not* within the FEMA 100-year floodplain.
- ☐ **Yes:** The proposed project *is* within the FEMA 100-year floodplain. Zone =
Elevation of the 100-year floodplain at the inlet: feet (FEMA El. or Modeled El.)

SECTION 3 - CALCULATING PEAK DISCHARGE

Existing 100-year peak discharge (Q) calculated in cubic feet per second (CFS): 5,173 CFS

Calculation method: FHWA 7-Parameter

Estimated bankfull discharge at the crossing location: 1,198 CFS

Calculation method: Q2.33 FHWA 7-Para

lrn@des.nh.gov or (603) 271-2147

NHDES Wetlands Bureau, 29 Hazen Drive, PO Box 95, Concord, NH 03302-0095

www.des.nh.gov

➡ **Note: If tier 1, then skip to Section 10** ⬅

SECTION 4 - PREDICTED CHANNEL GEOMETRY BASED ON REGIONAL HYDRAULIC CURVES

For **tier 2**, **tier 3** and **tier 4** crossings only.

Bankfull Width: 60 feet Mean Bankfull Depth: 4.4 feet

Bankfull Cross Sectional Area: 264 square feet (SF)

SECTION 5 - CROSS SECTIONAL CHANNEL GEOMETRY: MEASUREMENTS OF THE EXISTING STREAM WITHIN A REFERENCE REACH

For **tier 2**, **tier 3** and **tier 4** crossings only.

Describe the reference reach location: Upstream and downstream of crossing

Reference reach watershed size: 17,984 acres

Parameter	Cross Section 1 Describe bed form Riffle (e.g. pool, riffle, glide)	Cross Section 2 Describe bed form Glide (e.g. pool, riffle, glide)	Cross Section 3 Describe bed form (e.g. pool, riffle, glide)	Range
Bankfull Width	59.0 feet	63.5 feet	feet	59 to 63.5 feet
Bankfull Cross Sectional Area	263 SF	267 SF	SF	263 to 267 SF
Mean Bankfull Depth	4.5 feet	4.2 feet	feet	4.2 to 4.5 feet
Width to Depth Ratio	13.2	15.2		13.2 to 15.2
Max Bankfull Depth	4.5 feet	4.2 feet	feet	4.2 to 4.5 feet
Flood Prone Width	86.2 feet	119.8 feet	feet	86.2 to 119.8 feet
Entrenchment Ratio	1.46	1.89		1.46 to 1.89

Use **Figure 1** below to determine the measurements of the Reference Reach Attributes

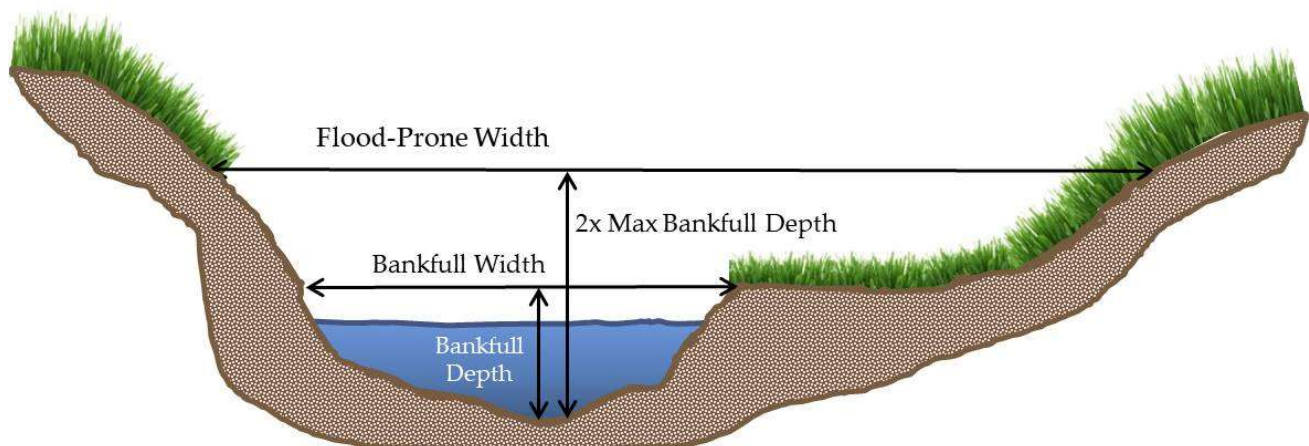


Figure 1: Determining the Reference Reach Attributes.

SECTION 6 - LONGITUDINAL PARAMETERS OF THE REFERENCE REACH AND CROSSING LOCATION

For **tier 2**, **tier 3** and **tier 4** crossings only.

Average Channel Slope of the Reference Reach: 0.0190 ft/ft

Average Channel Slope at the Crossing Location: 0.0123 ft/ft

SECTION 7 - PLAN VIEW GEOMETRY

Note: Sinuosity is measured a distance of at least 20 times bankfull width, or 2 meander belt widths.

For **tier 2**, **tier 3** and **tier 4** crossings only.

Sinuosity of the Reference Reach: 1.28

Sinuosity of the Crossing Location: 1.27

SECTION 8 - SUBSTRATE CLASSIFICATION BASED ON FIELD OBSERVATIONS

For **tier 2**, **tier 3** and **tier 4** crossings only.

% of reach that is bedrock: 5 %

% of reach that is boulder: 0 %

% of reach that is cobble: 50 %

% of reach that is gravel: 30 %

% of reach that is sand: 15 %

% of reach that is silt: 0 %

SECTION 9 - STREAM TYPE OF REFERENCE REACH

For **tier 2**, **tier 3** and **tier 4** crossings only.

Stream Type of Reference Reach: B3c

Refer to Rosgen Classification Chart (**Figure 2**) below:

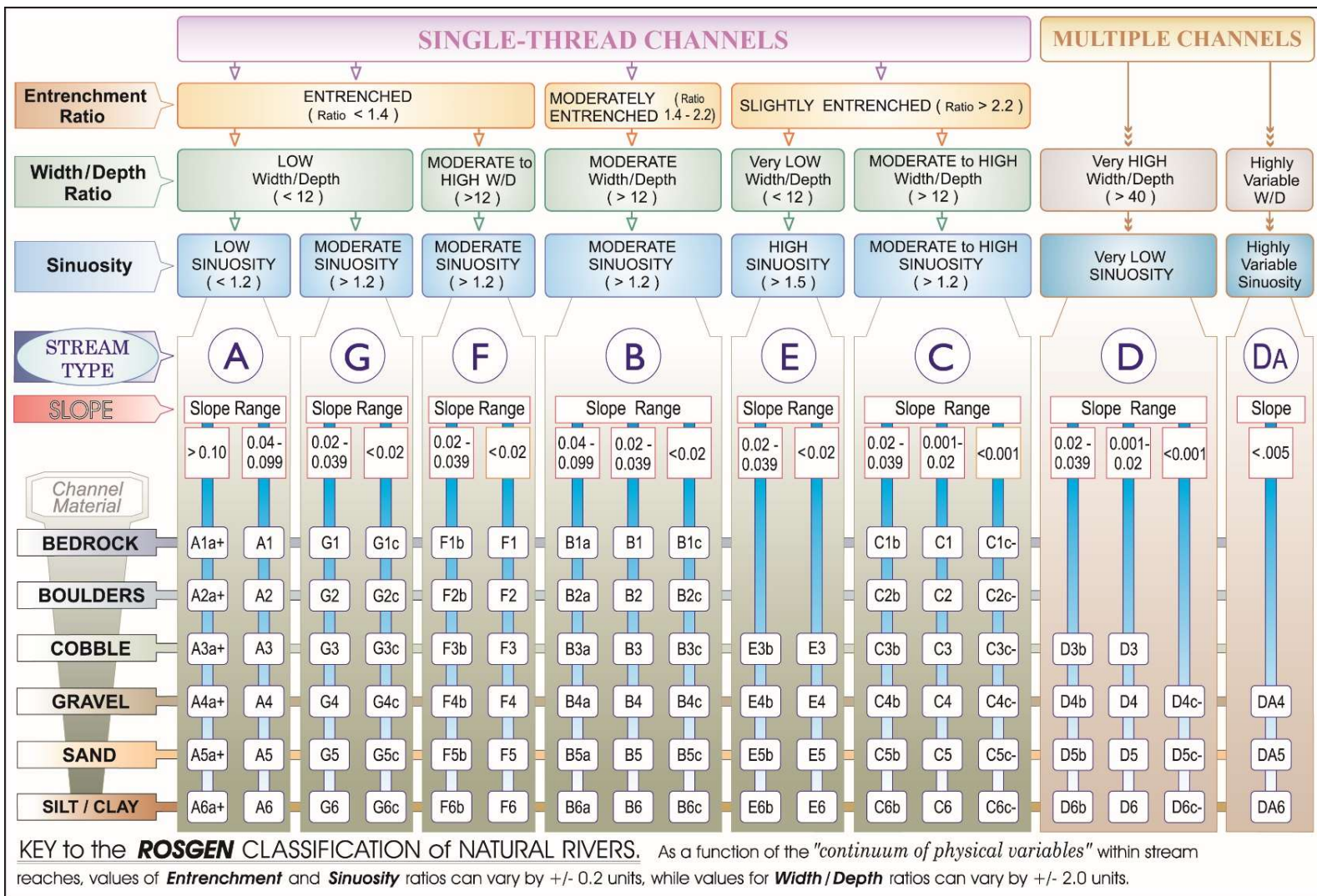


Figure 2: Reference from Applied River Morphology, Rosgen, 1996.

SECTION 10 - CROSSING STRUCTURE METRICS						
Existing Conditions	Existing Structure Type:		☒ Bridge span ☐ Pipe arch ☐ Open-bottom culvert ☐ Closed-bottom culvert ☐ Closed-bottom culvert with stream simulation ☐ Other:			
	Existing Crossing Span: (perpendicular to flow)		63 feet	Culvert Diameter: feet		
	Existing Crossing Length: (parallel to flow)		22 feet	Inlet Elevation: El. feet		
Proposed Conditions	Existing Crossing Length: (parallel to flow)		22 feet	Outlet Elevation: El. feet		
	Culvert Slope:					
	Proposed Structure Type:		Tier 1	Tier 2	Tier 3	Alternative Design
	Bridge Span		☐	☐	☒	☐
	Pipe Arch		☐	☐		☐
	Closed-bottom Culvert		☐	☐		☐
Open-bottom Culvert		☐	☐	☐	☐	
Closed-bottom Culvert with stream simulation		☐	☐	☐	☐	
Proposed Structure Span:		75 feet	Culvert Diameter:		feet	

(perpendicular to flow)	Inlet Elevation: El. feet
Proposed Structure Length: 35 feet	Outlet Elevation: El. feet
(parallel to flow)	Culvert Slope:
Proposed Entrenchment Ratio* 1.68 For Tier 2, Tier 3 and Tier 4 Crossings Only. To accommodate the entrenchment ratio, floodplain drainage structures may be utilized.	

* Note: Proposed Entrenchment Ratio must meet the minimum ratio for each stream type listed in **Figure 3**, otherwise the applicant must address the Alternative Design criteria listed in Env-Wt 904.10.

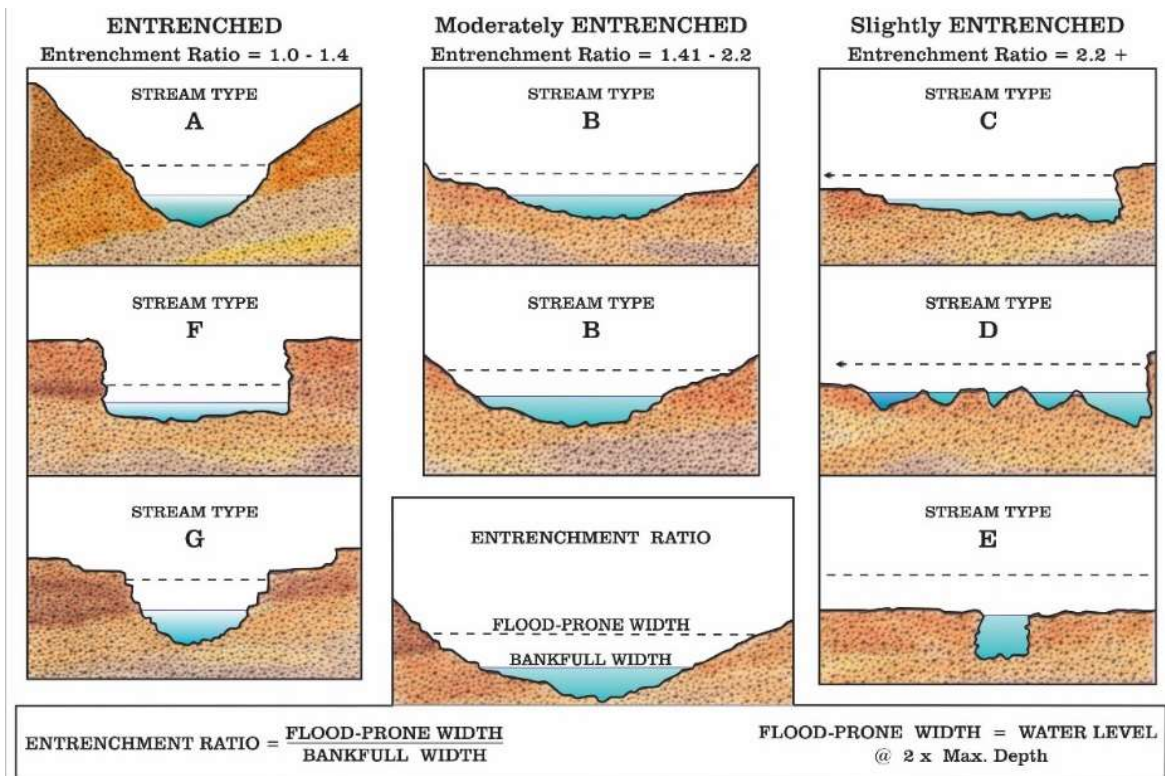


Figure 3: Reference from Applied River Morphology, Rosgen, 1996.

SECTION 11 - CROSSING STRUCTURE HYDRAULICS		
	Existing	Proposed
100 year flood stage elevation at inlet:	488.5	484.5
Flow velocity at outlet in feet per second (FPS):	15.3	13.0
Calculated 100 year peak discharge (Q) for the <i>proposed</i> structure in CFS:		5,173
Calculated 50 year peak discharge (Q) for the <i>proposed</i> structure in CFS:		4,391
SECTION 12 - CROSSING STRUCTURE OPENNESS RATIO		
For tier 2, tier 3 and tier 4 crossings only.		
Crossing Structure Openness Ratio* = 18.7 * Openness box culvert = (height x width)/length Openness round culvert = (3.14 x radius ²)/length		

SECTION 13 - GENERAL DESIGN CONSIDERATIONS

Env-Wt 904.01 requires all stream crossings to be designed and constructed according to the following requirements. Check each box if the project meets these general design considerations.

All stream crossings shall be designed and constructed so as to:

- ☒ Not be a barrier to sediment transport.
- ☒ Prevent the restriction of high flows and maintain existing low flows.
- ☒ Not obstruct or otherwise substantially disrupt the movement of aquatic life indigenous to the waterbody beyond the actual duration of construction.
- ☒ Not cause an increase in the frequency of flooding or overtopping of banks.
- ☒ Maintain or enhance geomorphic compatibility by:
 - a. Minimizing the potential for inlet obstruction by sediment, wood, or debris, and
 - b. Preserving the natural alignment of the stream channel.
- ☒ Preserve watercourse connectivity where it currently exists.
- ☐ Restore watercourse connectivity where:
 - a. Connectivity previously was disrupted as a result of human activity(ies), and
 - b. Restoration of connectivity will benefit aquatic life upstream or downstream of the crossing, or both.
- ☒ Not cause erosion, aggradation, or scouring upstream or downstream of the crossing.
- ☒ Not cause water quality degradation.

SECTION 14 - TIER-SPECIFIC DESIGN CRITERIA

Stream crossings must be designed in accordance with the tier specific design criteria listed in Part Env-Wt 904.

- ☒ The proposed project meets the tier specific design criteria listed in Part Env-Wt 904 and each requirement has been addressed in the plans and as part of the wetland application.

SECTION 15 - ALTERNATIVE DESIGN

NOTE: If the proposed crossing does not meet all of the general design considerations, the tier specific design criteria, or the minimum entrenchment ratio for each given stream type listed in **Figure 3**, then an alternative design plan and associated requirements must be addressed pursuant to Env-Wt 904.10.

- ☐ I have submitted an alternative design and addressed each requirement listed in Env-Wt 904.10.



**US Army Corps
of Engineers**®
New England District

Appendix B
New Hampshire General Permits
Required Information and USACE Section 404 Checklist USACE

Section 404 Checklist

1. Attach any explanations to this checklist. Lack of information could delay a USACE permit determination.
2. All references to “work” include all work associated with the project construction and operation. Work includes filling, clearing, flooding, draining, excavation, dozing, stumping, etc.
3. See GC 3 for information on single and complete projects.
4. Contact USACE at (978) 318-8832 with any questions.
5. The information requested below is generally required in the NHDES Wetland Application. See page 61 for NHDES references and Admin Rules as they relate to the information below.

1. Impaired Waters	Yes	No
1.1 Will any work occur within 1 mile upstream in the watershed of an impaired water? See the following to determine if there is an impaired water in the vicinity of your work area. * https://nhdes-surface-water-quality-assessment-site-nhdes.hub.arcgis.com/ https://www.des.nh.gov/water/rivers-and-lakes/water-quality-assessment https://www4.des.state.nh.us/onestopdatamapper/onestopmapper.aspx	X	
2. Wetlands	Yes	No
2.1 Are there are streams, brooks, rivers, ponds, or lakes within 200 feet of any proposed work?	X	
2.2 Are there proposed impacts to tidal SAS, prime wetlands, or priority resource areas? Applicants may obtain information from the NH Department of Resources and Economic Development Natural Heritage Bureau (NHB) DataCheck Tool for information about resources located on the property at https://www4.des.state.nh.us/NHB-DataCheck/ .	X	
2.3 If wetland crossings are proposed, are they adequately designed to maintain hydrology, sediment transport & wildlife passage?	X	
2.4 Would the project remove part or all of a riparian buffer? (Riparian buffers are lands adjacent to streams where vegetation is strongly influenced by the presence of water. They are often thin lines of vegetation containing native grasses, flowers, shrubs and/or trees that line the stream banks. They are also called vegetated buffer zones.)	X	
2.5 The overall project site is more than 40 acres?		X
2.6 What is the area of the previously filled wetlands?	N/A	
2.7 What is the area of the proposed fill in wetlands?	631 SF	
2.8 What % of the overall project site will be previously and proposed filled wetlands?	N/A	
3. Wildlife	Yes	No
3.1 Has the NHB & USFWS determined that there are known occurrences of rare species, exemplary natural communities, Federal and State threatened and endangered species and habitat, in the vicinity of the proposed project? (All projects require an NHB ID number & a USFWS IPAC determination.) NHB DataCheck Tool: https://www4.des.state.nh.us/NHB-DataCheck/ . USFWS IPAC website: https://ipac.ecosphere.fws.gov/	X	

3.2 Would work occur in any area identified as either “Highest Ranked Habitat in N.H.” or “Highest Ranked Habitat in Ecological Region”? (These areas are colored magenta and green, respectively, on NH Fish and Game’s map, “2010 Highest Ranked Wildlife Habitat by Ecological Condition.”) Map information can be found at: • PDF: https://wildlife.state.nh.us/wildlife/wap-high-rank.html. • Data Mapper: www.granit.unh.edu. • GIS: www.granit.unh.edu/data/downloadfreedata/category/databycategory.html.	X	
3.3 Would the project impact more than 20 acres of an undeveloped land block (upland, wetland/waterway) on the entire project site and/or on an adjoining property(s)?		X
3.4 Does the project propose more than a 10-lot residential subdivision, or a commercial or industrial development?		X
3.5 Are stream crossings designed in accordance with the GC 31?	X	
4. Flooding/Floodplain Values	Yes	No
4.1 Is the proposed project within the 100-year floodplain of an adjacent river or stream?	X	
4.2 If 4.1 is yes, will compensatory flood storage be provided if the project results in a loss of flood storage?		X
5. Historic/Archaeological Resources		
For a minimum, minor or major impact project - a copy of the RPR Form (www.nh.gov/nhdhr/review) with your DES file number shall be sent to the NH Division of Historical Resources as required on Page 37 GC 14(d) of the GP document**	X	
6. Minimal Impact Determination (for projects that exceed 1 acre of permanent impact)	Yes	No
Projects with greater than 1 acre of permanent impact must include the following: • Functional assessment for aquatic resources in the project area. • On and off-site alternative analysis. • Provide additional information and description for how the below criteria are met.		
6.1 Will there be complete loss of aquatic resources on site?		
6.2 Have the impacts to the aquatic resources been avoided and minimized to the greatest extent practicable?		
6.3 Will all aquatic resource function be lost?		
6.4 Does the aquatic resource (s) have regional significance (watershed or ecoregion)?		
6.5 Is there an on-site alternative with less impact?		
6.6 Is there an off-site alternative with less impact?		
6.7 Will there be a loss to a resource dependent species?		
6.8 Are indirect impacts greater than 1 acre within and adjacent to the project area?		
6.9 Does the proposed mitigation replace aquatic resource function for direct, indirect, and cumulative impacts?		

*Although this checklist utilizes state information, its submittal to USACE is a federal requirement.

** If your project is not within Federal jurisdiction, coordination with NH DHR is not required under Federal law.

**U.S. Army Corps of Engineers
New Hampshire Programmatic General Permit (PGP)
Appendix B
Required Information and USACE Section 404 Checklist**

**Replacement of the Trues Brook Road Bridge over Bloods Brook
Lebanon, NH
Explanations for Checklist Answers**

- 1.1 Bloods Brook is marginally impaired for fish consumption due to mercury according to the 2020/2023 305(b)/303(d) list. The proposed project will not add to these impairments.
- 2.1 & 2.3 The project is to replace a deteriorating bridge with a new structure that will safely carry statutory loads and meet the UNH stream crossing guidelines to the extent practicable. The stream will be temporarily affected by the project but the increase in hydraulic opening will enhance hydrology, sediment transport and wildlife passage.
- 2.2 There is a floodplain wetland in the northwest portion of the site that is contiguous with Blood Brook that will be permanently impacted, this impact cannot be avoided in order to raise the road elevation to allow for the new structure to be installed.
- 2.4 There are thin edges of riparian buffer along each quadrant of the stream crossing that will be affected by the project as required in order to replace the deteriorating bridge; however, these impacts have been minimized to the extent practicable. Temporary impact areas will be restored upon completion of construction.
- 3.1 The NH Natural Heritage Inventory was contacted regarding this project. The database report, NHB23-3124, indicates there are no recorded occurrences for sensitive species near the project area. A copy of this report is included with this application.

A review for Federally-listed species was conducted utilizing the US Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPAC) online tool. The species identified were the Federally-endangered Northern Long-eared Bat (*Myotis septentrionalis*; NLEB) and the Monarch Butterfly (*Danaus plexippus*) was identified as a candidate species. The project was reviewed within the IPaC System utilizing the FHWA, FRA, FTA Programmatic Consultation for Transportation Projects affecting NLEB Determination Key. A Consistency Letter was generated with a determination of “no effect”. A copy of the species list and consistency letter is included with this application.

- 3.2 The project is located in a Highest Ranked Habitat in New Hampshire; however, the project is not expected to cause impacts that would alter this designation.
5. A Request for Project Review (RPR) was submitted in March 2013 and a supplemental RPR was submitted in November 2023 to the New Hampshire Division of Historic Resources (NHDHR). The supplemental RPR contained updated information about impacts of the proposed project and requested a review of the need for IIF's for two >50-year-old properties identified in 2013. A response was received that stated if the Owners of 133 or 136 Trues Brook Road have concerns about the project then IIF's should be performed. Numerous meetings with the owners of these two properties have occurred, neither have concerns with the project as proposed. An Effect Memo with a finding of “No Effect/Adverse Effect on Historic or Archaeological Properties or Resources” has been prepared and submitted to NHDHR. Once a signed copy of memo is received it will be forwarded to USACE.

Natural Heritage Bureau (NHB) Review

New Hampshire Natural Heritage Bureau NHB DataCheck Results Letter

To: Deb Coon, Hoyle Tanner & Associates, Inc.
150 Dow Street
Manchester, NH 03101

From: NH Natural Heritage Bureau

Date: 10/27/2023 (This letter is valid through 10/27/2024)

Re: Review by NH Natural Heritage Bureau of request dated 10/27/2023

Permit Types: General Permit
Wetland Standard Dredge & Fill - Major
Federal: NEPA Review

NHB ID: NHB23-3124

Applicant: Deb Coon, Hoyle Tanner & Associates, Inc.

Location: Lebanon
Tax Map: 186, Tax Lot: N/A
Address: Trues Brook Road

Proj. Description: The City of Lebanon is proposing to replace the Trues Brook Road Bridge over Bloods Brook. The bridge has an overall serious condition rating due to its deteriorated deck condition and is on the NHDOT Municipal Redlist. The proposed replacement structure is an 85' long single span bridge that will consist of a concrete deck, steel stringers and cast-in-place concrete abutments. The removal of the center pier will create new streambed where none exists. The new bridge will fully convey the 50-year and 100-year storm events, will not be a barrier to sediment and will improve aquatic organism passage. The proposed method of managing traffic during construction is using a temporary bridge constructed upstream of the existing bridge.

The NH Natural Heritage database has been checked for records of rare species and exemplary natural communities near the area mapped below. The species considered include those listed as Threatened or Endangered by either the state of New Hampshire or the federal government. We currently have no recorded occurrences for sensitive species near this project area.

A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. An on-site survey would provide better information on what species and communities are indeed present.

Based on the information submitted, no further consultation with the NH Fish and Game Department pursuant to Fis 1004 is required.

New Hampshire Natural Heritage Bureau
NHB DataCheck Results Letter

MAP OF PROJECT BOUNDARIES FOR: NHB23-3124



US Fish and Wildlife (USF&W) IPaC Results & Consistency Letter



United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104



In Reply Refer To:

October 27, 2023

Project Code: 2024-0009851

Project Name: Replacement of the Trues Brook Road Bridge over Bloods Brook, Lebanon, NH

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

Updated 4/12/2023 - Please review this letter each time you request an Official Species List, we will continue to update it with additional information and links to websites may change.

About Official Species Lists

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Federal and non-Federal project proponents have responsibilities under the Act to consider effects on listed species.

The enclosed species list identifies threatened, endangered, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested by returning to an existing project's page in IPaC.

Endangered Species Act Project Review

Please visit the “**New England Field Office Endangered Species Project Review and Consultation**” website for step-by-step instructions on how to consider effects on listed

species and prepare and submit a project review package if necessary:

<https://www.fws.gov/office/new-england-ecological-services/endangered-species-project-review>

NOTE Please do not use the **Consultation Package Builder** tool in IPaC except in specific situations following coordination with our office. Please follow the project review guidance on our website instead and reference your **Project Code** in all correspondence.

Northern Long-eared Bat - (Updated 4/12/2023) The Service published a final rule to reclassify the northern long-eared bat (NLEB) as endangered on November 30, 2022. The final rule went into effect on March 31, 2023. You may utilize the **Northern Long-eared Bat Rangewide Determination Key** available in IPaC. More information about this Determination Key and the Interim Consultation Framework are available on the northern long-eared bat species page:

<https://www.fws.gov/species/northern-long-eared-bat-myotis-septentrionalis>

For projects that previously utilized the 4(d) Determination Key, the change in the species' status may trigger the need to re-initiate consultation for any actions that are not completed and for which the Federal action agency retains discretion once the new listing determination becomes effective. If your project was not completed by March 31, 2023, and may result in incidental take of NLEB, please reach out to our office at newengland@fws.gov to see if reinitiation is necessary.

Additional Info About Section 7 of the Act

Under section 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to determine whether projects may affect threatened and endangered species and/or designated critical habitat. If a Federal agency, or its non-Federal representative, determines that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Federal agency also may need to consider proposed species and proposed critical habitat in the consultation. 50 CFR 402.14(c)(1) specifies the information required for consultation under the Act regardless of the format of the evaluation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<https://www.fws.gov/service/section-7-consultations>

In addition to consultation requirements under Section 7(a)(2) of the ESA, please note that under sections 7(a)(1) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species. Please contact NEFO if you would like more information.

Candidate species that appear on the enclosed species list have no current protections under the ESA. The species' occurrence on an official species list does not convey a requirement to

consider impacts to this species as you would a proposed, threatened, or endangered species. The ESA does not provide for interagency consultations on candidate species under section 7, however, the Service recommends that all project proponents incorporate measures into projects to benefit candidate species and their habitats wherever possible.

Migratory Birds

In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see:

<https://www.fws.gov/program/migratory-bird-permit>

<https://www.fws.gov/library/collections/bald-and-golden-eagle-management>

Please feel free to contact us at **newengland@fws.gov** with your **Project Code** in the subject line if you need more information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat.

Attachment(s): Official Species List

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office

70 Commercial Street, Suite 300

Concord, NH 03301-5094

(603) 223-2541

PROJECT SUMMARY

Project Code: 2024-0009851

Project Name: Replacement of the Trues Brook Road Bridge over Bloods Brook, Lebanon, NH

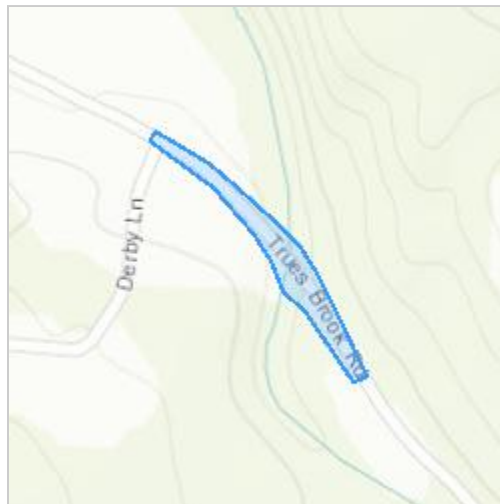
Project Type: Bridge - Replacement

Project Description: The City of Lebanon is proposing to replace the Trues Brook Road Bridge over Bloods Brook. The existing bridge is a two-span steel stringer bridge with a reinforced concrete pier and a paved concrete deck. Each span length is 31'-6" and the total span length is 63'-0". The bridge is currently posted with an "E-2" sign, indicating that it cannot safely carry certified loads. The bridge also has a rating of serious condition and is on the NHDOT Municipal Redlist.

The proposed replacement structure is a 75' clear span bridge that will consist of a concrete deck, steel stringers and cast-in-place concrete abutments. The replacement structure will create new streambed where none exists via the removal of the center pier, will fully convey the 50-year and 100-year storm events, will not be a barrier to sediment and will improve aquatic organism passage. The proposed method of managing traffic during construction is using a temporary bridge constructed upstream of the existing bridge.

Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@43.6020178,-72.30749228760433,14z>



Counties: Grafton County, New Hampshire

ENDANGERED SPECIES ACT SPECIES

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered

INSECTS

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Hoyle, Tanner & Associates, Inc.

Name: Deb Coon

Address: 150 Dow Street

City: Manchester

State: NH

Zip: 03101

Email: dcoon@hoyletanner.com

Phone: 6034605154

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Federal Highway Administration



United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104



In Reply Refer To:

October 27, 2023

Project code: 2024-0009851

Project Name: Replacement of the Trues Brook Road Bridge over Bloods Brook, Lebanon, NH

Subject: Consistency letter for the 'Replacement of the Trues Brook Road Bridge over Bloods Brook, Lebanon, NH' project under the amended February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion (dated March 23, 2023) for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat (NLEB).

To whom it may concern:

The U.S. Fish and Wildlife Service (Service) has received your request dated October 27, 2023 to verify that the **Replacement of the Trues Brook Road Bridge over Bloods Brook, Lebanon, NH** (Proposed Action) may rely on the amended February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion (dated March 23, 2023) for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat (PBO) to satisfy requirements under section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 *et seq.*).

Based on the information you provided (Project Description shown below), you have determined that the Proposed Action will have no effect on the endangered Indiana bat (*Myotis sodalis*) or the endangered northern long-eared bat (*Myotis septentrionalis*). If the Proposed Action is not modified, **no consultation is required for these two species**. If the Proposed Action is modified, or new information reveals that it may affect the Indiana bat and/or northern long-eared bat in a manner or to an extent not considered in the PBO, further review to conclude the requirements of ESA section 7(a)(2) may be required.

For Proposed Actions that include bridge/culvert or structure removal, replacement, and/or maintenance activities:

If your initial bridge/culvert or structure assessment failed to detect Indiana bats and/or NLEBs use or occupancy, yet later detected prior to, or during construction, please submit the Post Assessment Discovery of Bats at Bridge/Culvert or Structure Form (User Guide Appendix E) to this Service Office within 2 working days of the incident. In these instances, potential incidental take of Indiana bats and/or NLEBs may be exempted provided that the take is reported to the Service.

If the Proposed Action may affect any other federally-listed or proposed species and/or designated critical habitat, additional consultation between the lead Federal action agency and this Service Office is required. If the proposed action has the potential to take bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act may also be required. In either of these circumstances, please advise the lead Federal action agency accordingly.

The following species may occur in your project area and **are not** covered by this determination:

- Monarch Butterfly *Danaus plexippus* Candidate

PROJECT DESCRIPTION

The following project name and description was collected in IPaC as part of the endangered species review process.

NAME

Replacement of the Trues Brook Road Bridge over Bloods Brook, Lebanon, NH

DESCRIPTION

The City of Lebanon is proposing to replace the Trues Brook Road Bridge over Bloods Brook. The existing bridge is a two-span steel stringer bridge with a reinforced concrete pier and a paved concrete deck. Each span length is 31'-6" and the total span length is 63'-0". The bridge is currently posted with an "E-2" sign, indicating that it cannot safely carry certified loads. The bridge also has a rating of serious condition and is on the NHDOT Municipal Redlist.

The proposed replacement structure is a 75' clear span bridge that will consist of a concrete deck, steel stringers and cast-in-place concrete abutments. The replacement structure will create new streambed where none exists via the removal of the center pier, will fully convey the 50-year and 100-year storm events, will not be a barrier to sediment and will improve aquatic organism passage. The proposed method of managing traffic during construction is using a temporary bridge constructed upstream of the existing bridge.

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@43.6020178,-72.30749228760433,14z>



DETERMINATION KEY RESULT

Based on the information you provided, you have determined that the Proposed Action will have no effect on the endangered Indiana bat and/or the endangered northern long-eared bat.

Therefore, no consultation with the U.S. Fish and Wildlife Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended 16 U.S.C. 1531 *et seq.*) is required for these two species.

QUALIFICATION INTERVIEW

1. Is the project within the range of the Indiana bat^[1]?

[1] See [Indiana bat species profile](#)

Automatically answered

No

2. Is the project within the range of the northern long-eared bat^[1]?

[1] See [northern long-eared bat species profile](#)

Automatically answered

Yes

3. [Semantic] Does your proposed action intersect an area where Indiana bats and northern long-eared bats are not likely to occur?

Automatically answered

Yes

DETERMINATION KEY DESCRIPTION: FHWA, FRA, FTA PROGRAMMATIC CONSULTATION FOR TRANSPORTATION PROJECTS AFFECTING NLEB OR INDIANA BAT

This key was last updated in IPaC on October 10, 2023. Keys are subject to periodic revision.

This decision key is intended for projects/activities funded or authorized by the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), and/or Federal Transit Administration (FTA), which may require consultation with the U.S. Fish and Wildlife Service (Service) under Section 7 of the Endangered Species Act (ESA) for the endangered **Indiana bat** (*Myotis sodalis*) and the endangered **northern long-eared bat** (NLEB) (*Myotis septentrionalis*).

This decision key should only be used to verify project applicability with the Service's [amended February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion \(dated March 23, 2023\) for Transportation Projects](#). The programmatic biological opinion covers limited transportation activities that may affect either bat species, and addresses situations that are both likely and not likely to adversely affect either bat species. This decision key will assist in identifying the effect of a specific project/activity and applicability of the programmatic consultation. The programmatic biological opinion is not intended to cover all types of transportation actions. Activities outside the scope of the programmatic biological opinion, or that may affect ESA-listed species other than the Indiana bat or NLEB, or any designated critical habitat, may require additional ESA Section 7 consultation.

IPAC USER CONTACT INFORMATION

Agency: Hoyle, Tanner & Associates, Inc.

Name: Deb Coon

Address: 150 Dow Street

City: Manchester

State: NH

Zip: 03101

Email: dcoon@hoyletanner.com

Phone: 6034605154

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Federal Highway Administration

Wetland Delineation Report, Functional Assessment & Site Photos

Wetland Delineation, Vernal Pool Assessment & Invasive Plant Species Report

**HOYLE, TANNER & ASSOCIATES, INC.
TRUES BROOK ROAD - NH DOT BRIDGE 066/059
LEBANON, NEW HAMPSHIRE**

Prepared For:

Hoyle, Tanner & Associates, Inc.
150 Dow Street
Manchester, NH 03101



Prepared By:



233 Prospect Mountain Road
Alton, New Hampshire 03809
Phone: (603) 776-5825 Fax: (603) 776-5826

May 2021

SRE #21-054

Final Wetland Delineation, Vernal Pool Assessment & Invasive Plant Species Report

Introduction

Site Description:

On May 12, 2021, Stoney Ridge Environmental, LLC. (SRE) conducted a wetland delineation, vernal pool assessment and invasive species work as requested by Hoyle, Tanner & Associates, Inc (HTA) for the NH DOT Bridge Project located on Trues Brook Road over Bloods Brook (bridge 066/059) in Lebanon, NH (N 43.60198, W -72.30742). This report provides a wetland assessment, potential vernal pool assessment and invasive plant species assessment for above referenced project. Trues Brook Road is a paved two lane road running generally northwest to southeast at the project location. This area in Lebanon, NH is generally rural residential.

Looking at southeast at the bridge crossing.



Methods

The field work done at the Trues Brook Road bridge over Bloods Brook was completed utilizing the current NH DES delineation standards in addition to the following standards:

- 1) United States Department of Agriculture, Natural Resources Conservation Service. 2016. *Field Indicators of Hydric Soils in the United States*, Version 8.0. L.M. Vasilas, G.W. Hurt, and J.F. Berkowitz (eds.). USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils.
- 2) *Field Indicators for Identifying Hydric Soils In New England*. Version 4. April 2019. New England Hydric Soils Technical Committee.
- 3) *North American Digital Flora: National Wetland Plant List, version 2.1.0* (http://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill.
- 4) *The National Wetland Plant List: 2016 wetland ratings*. Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. *Phytoneuron* 2016-30: 1-17. Published 28 April 2016. ISSN 2153 733X.
- 5) *Corps of Engineers Wetlands Delineation Manual*. January 1987. Wetlands Research Program Technical Report Y-87-1.
- 6) *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region*. January 2012, version 2. U.S. Army Corps of Engineers. Environmental Laboratory ERDC/EL TR-12-1.
- 7) *Classification of Wetlands and Deepwater Habitats of the United States*. December 1979. L. Cowardin, V. Carter, F. Golet, and E. LaRoe. US Department of the Interior. Fish and Wildlife Service. FWS/OBS-79/31.
- 8) *The Highway Methodology Workbook Supplemental*. US Army Corps of Engineers New England Division. USACE 1999.
- 9) *Best Management Practices for the Control of Invasive and Noxious Plant Species*: 2018. New Hampshire Department of Transportation.
- 10) New Hampshire Department of Environmental Services, *Wetlands Permit Planning Tool* (WPPT), http://des3.sr.unh.edu/Html5Viewer/Index.html?configBase=http://jointagencyvm.sr.unh.edu/Geocortex/Essentials/des3.sr.unh.edu/REST/sites/Tom_Scratch_Site/viewers/Scratch/virtualdirectory/Resources/Config/Default.
- 11) *Natural History and Conservation*. Colburn, E. A. 2004. Vernal Pools: The McDonald and Woodward Publishing Company, Blacksburg, Virginia.

- 12) *A Field Guide to the Animals of Vernal Pools*. Kenny, L. P & Burne, M. R 2001. Massachusetts Division of Fisheries & Wildlife Natural Heritage & Vernal Pool Association.
- 13) *Flora of the Northeast: A Manual of the Vascular Flora of New England and Adjacent New York*. Magee, D. W. and Ahles, H. E. 1999. University of Massachusetts Press, Amherst.
- 14) *Identification and Documentation of Vernal Pools in New Hampshire, 3rd edition*. Marchand, M. ed. 2016. New Hampshire Fish and Game Department, Nongame and Endangered Wildlife Program, Concord, New Hampshire.
- 15) NH DES ENV-Wt Rules, October 23, 2020.
- 16) *Key to New Hampshire Amphibian Larvae in Biological Survey of the Connecticut Watershed*. Orton, G. 1939. Warfel H. E., ed. New Hampshire Fish and Game Department, Concord, New Hampshire.

During the site work, SRE delineated and marked wetlands, ordinary high water (OHW), top of bank (TOB) and survey located invasive plant species for the above referenced area along Bloods Brook in accordance with the NH State statute and the NH DES Wetlands Bureau's rules. Additionally, SRE reviewed the project area for potential vernal pools. Arctic pink flagging was utilized to demarcate wetlands in the field and were hung at appropriate distances as necessary to clearly define the edge of wetland. Red and white striped flagging was used to demarcate the TOB location and white with blue polka dot flagging was used to demarcate the OHW location. In addition to the stream and wetland delineation, SRE also GPS located invasive plants and hung pink flags labeled 'Invasive Plant' where applicable. The invasive plant list utilized for this project can be found in the 2018 version of the NH DOT 'Best Management Practices for the Control of Invasive and Noxious Plant Species.' A discussion of the invasive plant species follows and the GPS locations are included on attached Wetland Delineation & Invasive Plant Species Plan.

Potential Vernal Pool Assessment

In addition to delineating jurisdictional areas SRE also conducted a review of the proposed project area for potential vernal pools. Combined, the NH DES Env-Wt 104.44, 103.64 and 104.15 rules define a vernal pool with the following characteristics:

1. Physical Characteristics

- (a) Forms in a shallow depression or basin.

2. Hydrological Characteristics

- (a) Cycles annually from flooded to dry conditions;
- (b) Has no permanently flowing outlet; and
- (c) Holds water for at least 2 continuous months following spring ice-out.

3. Biological Characteristics

- (a) Lacks a viable fish population;

- (b) Supports one or more primary vernal pool indicator species, or three or more secondary vernal pool indicator species;

(1) Primary vernal pool indicators include the presence or evidence of breeding of:

- wood frogs; or
- fairy shrimp; or
- (marbled, spotted, or jefferson-blue spotted) salamanders

(2) Secondary vernal pool indicators include, but are not limited to, the physical presence of:

- caddisfly, aquatic beetle, dragonfly, damselfly, truefly
- spire-shaped snails, flat spire snails, fingernail clams
- clam shrimp

By the definitions in the NH DES Rules no vernal pools, nor potential vernal pools are located within the project area.

SRE GPS located all flagging using a LT400 Handheld GPS & A110G External Receiver, Serial Number 420059 & 12060752. This GPS unit has sub-meter resolution.

Discussion

Wetland A Description

According to the NH DES WPPT Wetland A has no floodplain wetlands associated with Bloods Brook; however, SRE did delineate and survey locate wetlands within the floodplain of Bloods Brook. The delineated wetlands are on the plan included with this report. According to the USGS StreamStats Bloods Brook at the proposed project location is a Tier 3 stream with 17,478 acres of land draining to that location. The surrounding uplands are forested with *Tsuga canadensis* (eastern hemlock), *Quercus rubra* (northern red oak) and scattered herbaceous plants, primarily *Maianthemum canadense* (Canada mayflower). Soils within the wetland are poorly drained. Wetland hydrology is driven by hillside seeps and seasonal flooding of Bloods Brook. The wetland types within the project area are Palustrine Forested Seasonally Broad-Leaved Deciduous Seasonally Flooded/Saturated (PFO1E), Palustrine Forested Seasonally Broad-Leaved Deciduous/Needle-leaved Evergreen Seasonally Flooded/Saturated (PFO1/4E) and a narrow strip of Palustrine Scrub-Shrub Seasonally Flooded/Saturated (PSS1E) along the southwest side of the proposed work area as shown on the included plan.

The portion of the wetland located in the southwest corner of the project area is a narrow forested wetland drainage that drains north and into Bloods Brook. This wetland has a permanent outlet into Bloods Brook (see photos 5 & 6 in the photo log).

The general function of the wetlands associated with project area and Bloods Brook is groundwater discharge. Due to the small size of the wetlands, floodflow alteration is low. Additional photos are included in the photo log.



General view of Wetland A looking downstream (north) at proposed project location.

Invasive Plant Species

During the course of site work, SRE observed two invasive plant species within the project area that were comprised of *Frangula alnus* (glossy buckthorn) and *Lonicera japonica* (Japanese honeysuckle). SRE GPS located the boundaries of the invasive plant species and hung pink "Invasive Plant" flagging accordingly to demarcate their locations. No other invasive plant species were observed during the course of site work. Hatched polygons on the included Wetland Delineation & Invasive Plant Species Plan show the areas where the invasive plant species were observed. Photos of the observed invasives are included in the photo log. The NH DOT Best Management Practices for Roadside Invasive Plant Species handbook details procedures to follow when invasive plant species are encountered during site work.

Conclusion

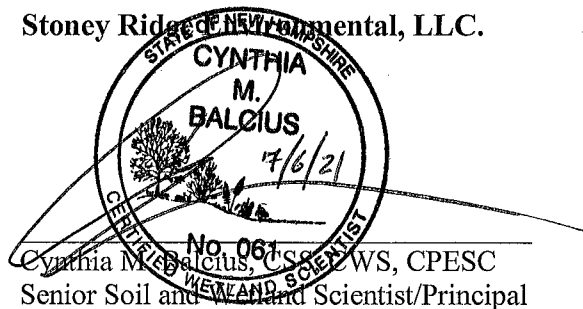
On May 12, 2021 SRE delineated the edge of jurisdictional wetlands as well as the ordinary high water mark and top of bank along Bloods Brook in accordance with the current NH DES rules. SRE also delineated the extent of invasive plant species observed on site for the NH DOT Project located on Trues Brook Road at the crossing with Bloods Brook in Lebanon, NH (see included Wetland

Delineation & Invasive Plant Species Plan). SRE reviewed the project area for potential vernal pools and no vernal pools were observed. All flags/points were GPS located by SRE and were imported into AutoCAD and ArcGIS. The included Wetland Delineation & Invasive Plant Species Plan was created depicting each of the delineated lines. The Cowardian wetland classifications of each wetland and the location of observed invasive species are also included on the plan.

This completes the delineation, vernal pool assessment and invasive plant species report for the project area located along Trues Brook Road in Lebanon, NH. Please feel free to contact our office at 603-776-5825 with any questions.

Sincerely,

Stoney Ridge Environmental, LLC.



Cynthia M. Balcius, CSS, CWS, CPESC
Senior Soil and Wetland Scientist/Principal

A handwritten signature in black ink, appearing to read "Michael S. Waterhouse".

Michael S. Waterhouse
Senior Wetland Scientist/Project Manager

PHOTO LOG
NH DOT Bridge 066/059
Trues Brook Road
Lebanon, New Hampshire

SRE # 21-054

May 2021

PHOTO 1:

Looking west at the proposed project area.



PHOTO 2:

A general view looking downstream along Bloods Brook east of the bridge.



PHOTO LOG
NH DOT Bridge 066/059
Trues Brook Road
Lebanon, New Hampshire

SRE # 21-054

May 2021

PHOTO 3:

Looking east at the wetland near the northeast corner of the project area, includes glossy buckthorn.



PHOTO 4:

A general view of glossy buckthorn and Japanese honeysuckle near Derby Lane.



PHOTO LOG
NH DOT Bridge 066/059
Trues Brook Road
Lebanon, New Hampshire

SRE # 21-054

May 2021

PHOTO 5:

Looking north at the wetland drainage swale near the southwest corner of the project area.



PHOTO 6:

Looking at the wetland drainage swale outlet into Bloods Brook near the southwest corner of the project area.



PHOTO LOG
NH DOT Bridge 066/059
Trues Brook Road
Lebanon, New Hampshire

SRE # 21-054

May 2021

PHOTO 7:

Looking at wetland soils within the wetland near the northeast corner of the project area.



PHOTO 8:

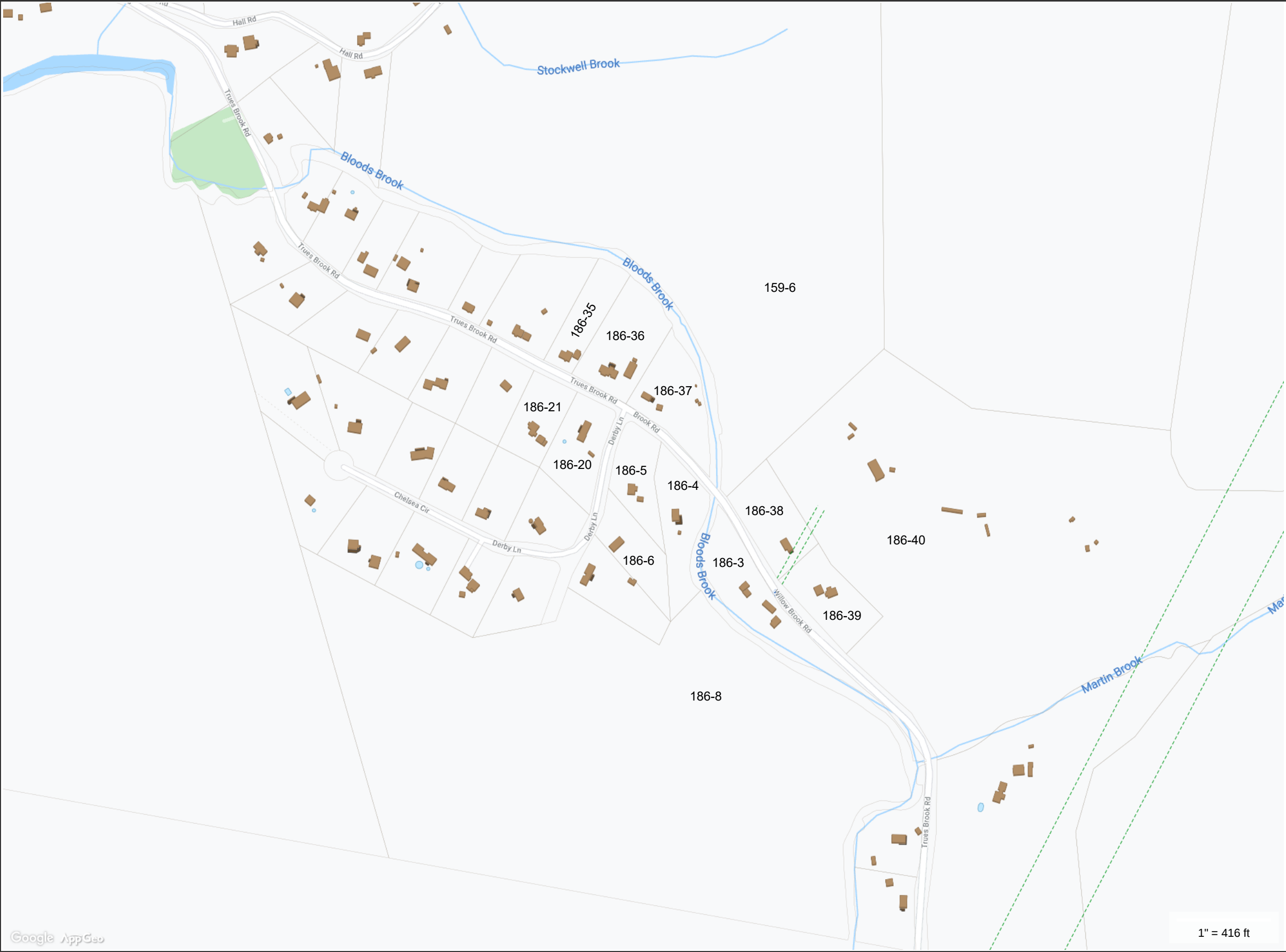
Looking east at the proposed work area. Note the floodplain in the lower left portion of this picture.





Tax Map

Tax Map for Trues Brook Road over Bloods Brook, Lebanon, NH



MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

City of Lebanon, NH makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 10/23/2018
Data updated 11/18/2018

Print map scale is approximate. Critical layout or measurement activities should not be done using this resource.

Abutters List

Abutters List
New Hampshire Department of Environmental Services
WETLAND PERMIT APPLICATION

Replacement of the Trues Brook Road Bridge over Bloods Brook
Lebanon, NH

Map/Lot	Owner	Property Address	Mailing Address
159-6	Margery Reed	Hall Road West Lebanon, NH 03784	71 Buttonwood Lane Charlestown, NH 03603
186-3	Cole Ward Jasmin Johnson	136 Trues Brook Road West Lebanon, NH 03784	136 Trues Brook Road West Lebanon, NH 03784
186-4	Matthew & Sarah Braley	124 Trues Brook Road West Lebanon, NH 03784	124 Trues Brook Road West Lebanon, NH 03784
186-5	Susan Harrington	3 Derby Lane West Lebanon, NH 03784	3 Derby Lane West Lebanon, NH 03784
186-8	BP & Margolis Iskandar, TTEES Bonnie Iskandar Rev Trust	Derby Lane West Lebanon, NH 03784	P.O. Box 734 West Lebanon, NH 03784
186-36	Jeremy Wade Jill Perkins	113 Trues Brook Road West Lebanon, NH 03784	113 Trues Brook Road West Lebanon, NH 03784
186-37	Thelma Mossey Robert Labine	117 Trues Brook Road West Lebanon, NH 03784	117 Trues Brook Road West Lebanon, NH 03784
186-38	Sean & Donna Houston	133 Trues Brook Road West Lebanon, NH 03784	456 Willow Brook Road Plainfield, NH 03781
186-39	Jeffrey & Heidi Bellimer	137 Trues Brook Road West Lebanon, NH 03784	137 Trues Brook Road West Lebanon, NH 03784
186-40	Grafton County Fish & Game Assoc.	153 Trues Brook Road West Lebanon, NH 03784	P.O. Box 5029 West Lebanon, NH 03784

Sample Notice to Abutters



VIA CERTIFIED MAIL

January 29, 2024

Abutter's Name
Mailing Address
City, State, Zip Code

Re: Wetlands Permit Application
Replacement of the Trues Brook Road Bridge over Bloods Brook, Lebanon, NH
Hoyle, Tanner Project No. 906414
Abutter Map X/Lot X

The City of Lebanon will be submitting an application for a Wetlands Permit from the New Hampshire Department of Environmental Services (NHDES) Wetlands Bureau for the proposed Trues Brook Road bridge replacement project. Under state law RSA 482-A:3 I (d)(1), we are required to notify you about the application, which proposes work abutting your property.

Due to the bridge's deteriorated condition the City of Lebanon is proposing to replace the bridge with 85' long single span bridge that will consist of a concrete deck, steel beams and cast-in-place concrete abutments. The new bridge will safely carry statutory loads and provide a 75-year service life.

A copy of the wetlands permit application, including the proposed plans, will be available for viewing in the near future at the City of Lebanon, City Clerk's Office during normal business hours or at the NHDES offices by scheduling a file review by calling (603) 271-2919.

If you have any questions about this notice, please contact me at jbicja@hoyletanner.com or (603) 460-5147.

Sincerely,
Hoyle, Tanner & Associates, Inc.

Josif Bicja, PE
Project Manager

NHDOT Specifications

Section 583 Riprap

DIVISION 300 -- BASE COURSES

SECTION 304 -- AGGREGATE BASE COURSE

Description

1.1 This work shall consist of furnishing and placing base courses on a previously prepared subgrade or course as shown on the plans or as ordered.

1.2 This work shall also include raising the grade of the edge of the roadway shoulders with crushed aggregate as shown on the plans or as ordered to match the grade of the pavement course placed on the shoulders or to provide a base for shoulder pavement.

Materials

2.1 General.

2.1.1 The materials shall consist of hard, durable particles or fragments of stone or gravel. Materials that break up when alternately frozen and thawed or wetted and dried shall not be used for aggregate base course materials. Fine particles shall consist of natural or processed sand. The materials shall be free of harmful amounts of organic material. Unless otherwise specified, the percent wear of base course material shall not exceed 50 percent as determined by AASHTO T 96, Grading A.

2.1.2 Crushed stone shall be processed material obtained from a source that has been stripped of all overburden. The processed material shall consist of clean, durable fragments of ledge rock of uniform quality and reasonably free of thin or elongated pieces.

2.1.3 Materials for glass cullet shall either be separated/recyclables received from a recycling facility permitted (pursuant to RSA 149-M:10) by the Waste Management Division of the Department of Environmental Services and/or materials certified for Direct Re-Use in accordance with Env-Sw 1500.

2.1.3.1 Glass cullet shall meet the requirements of AASHTO M318.

2.2 Gradation. The required gradation of base course material shall conform to [Table 304-1](#).

2.3 Sand. The maximum size of any stone or fragment shall not exceed three-fourths of the compacted depth of the layer being placed but in no case larger than 6".

2.4 Gravel. The maximum size of stone particles shall not exceed three-fourths of the compacted thickness of the layer being placed but in no case larger than 6".

2.5 Crushed gravel. At least 50 percent of the material retained on the 1" sieve shall have a fractured face.

2.6 Crushed gravel for shoulder leveling. This material shall consist either of a crushed aggregate, or a blend of crushed aggregate and reclaimed asphalt or concrete materials. Reclaimed Asphalt Pavement (RAP) and/or Reclaimed Concrete Aggregate (RCA) may be blended up to 75% by volume with the crushed aggregate. The crushed aggregate shall meet the gradation requirements of Item 304.32 in [Table 304-1](#) prior to blending with reclaimed materials. The reclaimed materials shall meet the requirements of 2.6.1 or 2.6.2 as applicable prior to blending with crushed aggregate.

2.6.1 RAP for this purpose shall be processed by either crushing or screening such that 100% of the material passes the 1" sieve. Screening will only be allowed if the source of the RAP is pavement millings from cold planning bituminous surfaces.

2.6.2 RCA shall meet the requirements of AASHTO M 319, except for its gradation requirements. 100% of the material shall pass the 1" sieve.

2.7 Crushed aggregate for shoulders. This material shall meet the gradation requirements of [Table 304-1](#).

2.8 Gravel for drives. The material shall meet the requirements of gravel as shown in [Table 304-1](#).

2.9 Crushed gravel for drives. The material shall meet the gradation requirements of either crushed gravel or crushed stone (fine) as shown in [Table 304-1](#).

2.10 Crushed stone base course (fine gradation). Acceptable sand may be blended as necessary to obtain the proper gradation for the fine aggregate portion.

Table 304-1 - Base Course Materials Required Gradation

Item No.	304.1	304.2	304.3	304.32	304.33	304.4	304.5	304.6
Item	Sand	Gravel	Crushed Gravel	Crushed Gravel for Shoulder Leveling	Crushed Aggregate for Shoulders	Crushed Stone (Fine)	Crushed Stone (Coarse)	Crushed Stone (Very Coarse)
Sieve Size	Percent Passing By Weight							
6"	100	100	---	---	---	---	---	100
5"	---	---	---	---	---	---	---	---
4"	---	---	---	---	---	---	---	---
3 1/2"	---	---	---	---	---	---	100	---
3"	---	---	100	---	---	---	85 – 100	60-90
2 1/2"	---	---	---	---	---	---	---	---
2"	---	---	95 – 100	---	---	100	---	---
1 1/2"	---	---	---	100	100	85 – 100	60 – 90	45-75
1"	---	---	55 – 85	90-100	90 – 100	---	---	---
3/4"	---	---	---	---	---	45 – 75	40 – 70	35-65
1/2"	---	---	---	65-90	---	---	---	---
#4	70 – 100	25 – 70	27 – 52	30-55	30 – 65	10 – 45	15 – 40	15-40
# 200 (In Sand Portion)*	0 – 12	0 – 12	0 – 12	---	---	---	---	---
# 200 (In Total Sample)	---	---	---	0-10	0 – 10	0 – 5	0 – 5	0-5

* Fraction passing the # 4 sieve

2.11 Crushed stone base course (coarse gradation). Acceptable sand may be blended as necessary to obtain the proper gradation for the fine aggregate portion.

2.11.1 The substitution of crushed stone meeting the requirements of crushed stone base course (fine gradation) for all or part of this item will be permitted.

Construction Requirements

3.1 General.

3.1.1 Upon approval, base course materials found within the project limits may be used under the specific item in accordance with 104.04.

3.1.2 Gravel or approved substitution for gravel may be substituted for any sand course. Crushed gravel may be substituted for gravel. Substitutions must be made across the entire section and will not be allowed for short or discontinuous segments.

3.1.3 Crushed stone (fine gradation) may be substituted for crushed gravel provided there is a minimum of 1 ft. of free draining material (sand, gravel, crushed stone coarse, or crushed stone very coarse) below the crushed stone. The substitution must be made across the entire section at a constant depth and will not be allowed for short or discontinuous segments.

3.1.4 Permission may be granted to use the following recycled materials in lieu of crushed gravel or crushed stone (fine gradation) provided the following requirements are met:

- (a) Free draining material exists below the replacement material as described in 3.1.3.
- (b) Substituted materials must come from a homogenous stockpile that meets the gradation requirements of the material being replaced.
- (c) Transitions between replacement material and crushed gravel or crushed stone (fine gradation) shall be made using a 50 ft. taper.
- (d) The material shall be placed directly under the proposed pavement.

3.1.4.1 Reclaimed asphalt pavement, blended with granular material, shall be tested in accordance with NHDOT test method S1.

3.1.4.2 Reclaimed concrete aggregate shall also meet the requirements of AASHTO M 319, except for the gradation requirements. The material shall contain no more than 5 percent reclaimed asphalt pavement.

3.1.5 Crushed stone (coarse or very coarse) may be substituted for gravel provided that all crushed gravel above the crushed stone is replaced with a combination of crushed stone coarse and fine with the top layer consisting of a minimum of 6" of crushed stone fine. The substitution must be made across the entire section and will not be allowed for short or discontinuous segments.

3.1.6 Crushed aggregate base course materials shall be produced and placed in their final location with as little segregation as possible.

3.1.7 Excess reclaimed stabilized base material substantially meeting the requirements of 2.7 may be substituted for the crushed aggregate for shoulders in 2.6. Reclaimed stabilized base material shall be mixed with loam as specified in 2.6.

3.1.7.1 Reclaimed stabilized base material shall not be substituted for crushed aggregate for shoulders in areas contiguous to residences and other existing landscaped areas where the growth of grass is desired.

3.2 Aggregate Crushing Plant.

3.2.1 The equipment for producing crushed gravel shall be of adequate size and with sufficient adjustments to produce the required materials without unnecessary waste. The plant shall be capable of removing excess fines.

3.2.2 The equipment for producing crushed stone shall consist of sufficient units with sufficient adjustments to produce the required material. The plant shall be capable of removing undesirable material and excess fines. In order to meet the required gradation, the Contractor may produce acceptable material in one operation or combine coarse and fine piles through a proportioning hopper to create a combined stockpile.

3.2.3 Glass Cullet Crushing Plant. The glass cullet crushing plant shall be capable of producing a product meeting the gradation requirements of AASHTO M 318.

3.2.3.1 Glass cullet shall be thoroughly mixed with other base course materials to produce a homogeneous blend prior to being placed on the roadway. In-place field blending of glass cullet with other base course materials will not be permitted, unless otherwise permitted.

3.3 Stockpile Construction.

3.3.1 All crushed aggregate base course materials shall be stockpiled. The Contractor shall give the Engineer advance notification of when the manufacturing and stockpiling are to begin.

3.3.2 A stockpile of acceptable material, as described in 3.5, equal to at least 20 percent of the bid quantity or 5,000 cy, whichever is less, shall be constructed before the hauling and placing phase of the work begins. The stockpile shall be maintained until approximately 80 percent of the quantity has been placed.

3.3.3 Stockpiles shall be constructed in layers that minimize segregation. The desired optimum thickness of layers is 6 ft. and in no instance shall the layer be more than 10 ft. Each layer shall be completed before the next layer is started. Construction of stockpiles by direct use of a fixed conveyor belt system or by dumping over a bank will not be permitted.

3.4 Placing.

3.4.1 The subgrade or preceding course shall be shaped to the specified crown and grade and maintained in a smooth condition free of holes and ruts. If the hauling equipment causes ruts in the subgrade or previously placed base course, the equipment shall be operated only on the course being placed, behind the spreading equipment.

3.4.2 Care shall be taken to avoid segregation during placement. Base course material shall be dumped on the course being placed and spread at once onto the previously placed layer. If spreading equipment is not available, dumping will not be permitted. Any segregation that occurs shall be remedied or the materials removed and replaced at no additional cost to the Department.

3.4.3 The Contractor's method of operation shall be such that oversized stones will not be delivered to the project.

3.4.4 When the base course is to be surface-treated and no pavement is to be placed upon it, stones having any dimension greater than 3" shall be removed from the upper 4" of the top layer.

3.4.5 Prior to fine grading, hard spots in the surface of the top layer shall be eliminated by scarifying the top 4" .

3.4.6 Crushed gravel for shoulder leveling shall be spread uniformly along the area adjoining the edge of the pavement. The material shall be spread along both sides and under guardrail where there is no curb.

3.4.6.1 Reclaimed stabilized base material utilized in shoulders greater than 1-1/2", in any direction, shall not be exposed after placement.

SECTION 304

3.4.7 To prevent segregation of crushed aggregate during spreading and to assist in obtaining the required density of the mixture, water may be added to the crushed aggregate prior to performing the grading operations. The course shall be maintained in the moist condition during grading operations.

3.4.8 Crushed aggregate shall be hauled from an approved stockpile. Material obtained directly from a conveyor shall not be placed on the roadway without first stockpiling.

3.4.9 The base course material shall be spread in the amount necessary for proper consolidation and shall be shaped true to grade and cross-section by means of power graders or other approved equipment.

3.4.10 Surface voids in crushed stone base course (fine gradation) shall be eliminated by the addition of filler material to just fill the voids. Any surplus filler material shall be removed. The finished surface shall be uniform, true to grade, and free from segregation. The Contractor shall furnish and place filler material to correct any visible segregation prior to paving. The filler material shall be spread, scarified, if required, into the course, and recompact to the required density. Filler material shall meet the gradation requirements of sand. The final gradation of crushed stone base course (fine gradation) shall meet the requirements of Table 304-1.

3.5 Testing For Gradation.

3.5.1 Sampling procedure shall conform to AASHTO T 2. Testing procedures shall be in accordance with AASHTO T 27.

3.5.1.1 When reclaimed asphalt pavement is blended with granular material to be used in lieu of crushed gravel or crushed stone base course (fine gradation) the method used to determine the amount of coarse material shall be determined according to NHDOT S-1.

3.5.2 The amount of material finer than the No. 200 sieve shall be determined according to AASHTO T 11, which specifies dry sieving after washing.

3.5.2.1 When reclaimed asphalt pavement is blended with granular material to be used in lieu of crushed gravel or crushed stone base course (fine gradation) the method used to determine the amount of material finer than the No. 200 sieve shall be determined according to NHDOT S-1.

3.5.3 For a preliminary determination of compliance with the specification for gradation, samples of sand and gravel may be taken from the pit, and samples of crushed gravel and crushed aggregate may be taken from the stockpile or from the final phase of the crushing operation. Materials not meeting the gradation requirements shall not be placed on the roadway

3.5.4 Samples for acceptance testing of the material in place will be taken from each lift. Sampling for acceptance testing will not be done until the material has been graded and compacted.

3.5.5 Previously tested and accepted material contaminated by earthen, organic, or other foreign matter or degraded by hauling equipment to such an extent that the material no longer meets the gradation requirements shall be removed and replaced or otherwise made acceptable at the Contractor's expense.

3.6 Compaction.

3.6.1 Unless shown on the plans or ordered otherwise, the compacted depth of sand courses shall not exceed 12". The compacted depth of any layer of gravel, crushed gravel, or crushed stone placed shall not exceed 8".

3.6.2 Compaction of base course material shall be done with a method and adequate water to meet the requirements of 3.7. Rolling and shaping shall continue until the required density is attained.

3.6.3 Rolling and shaping patterns shall begin on the lower side and progress to the higher side of the course while lapping the roller passes parallel to the centerline. Rolling and shaping shall continue until each layer conforms to the required grade and cross-section and the surface is smooth and uniform.

3.6.4 Water shall be uniformly applied over the base course materials during compaction in the amount necessary for proper consolidation.

3.6.5 When vibratory equipment is being operated, the amplitude of vibrations, the compaction process shall be adjusted as necessary to avoid causing damage or vibration complaints to adjacent buildings and property.

3.6.6 Except at inaccessible locations, such as near guardrail, material used for shoulder leveling shall be set with a pneumatic-tired roller.

3.7 Density Testing.

3.7.1 The density of sand courses shall be determined by AASHTO T 191 (Sand-Cone Method), AASHTO T 204 (Dry-Cylinder Method), or AASHTO T 310 (Nuclear Methods). The density shall not be less than 95 percent of the maximum density determined in accordance with AASHTO T 99 (Standard Proctor Test) or a control strip per 3.8.

3.7.2 The density of gravel and crushed gravel courses shall be determined by AASHTO T 191 (Sand-Cone Method) or AASHTO T 310 (Nuclear Methods). The density of crushed stone base courses shall be determined by AASHTO T 310 (Nuclear Methods). The density shall not be less than 95 percent of the maximum density as determined by AASHTO T 99 (Standard Proctor Test) or a control strip per 3.8.

3.8 Control Strip Procedure.

3.8.1 At the beginning of the compaction operation a control strip of at least 100 linear ft. in length and spanning the width of the section being placed shall be constructed. The density requirement shall be determined by compacting the control strip at a suitable moisture content until no further increase in density can be measured. The remainder of the course shall be compacted to a density not less than 95 percent of the maximum control strip density, as measured by the nuclear density testing equipment. A new control strip will be required when there is a significant change in the gradation of the material being placed or a change in compaction equipment. Compaction of the control strip shall be done with approved vibratory rollers or compactors capable of producing a dynamic force of at least 27,000 lb.

3.8.2 Crushed gravel for roundabout truck apron curb shall be compacted to a density not less than 98 percent of the maximum control strip density, as measured by the nuclear density testing equipment.

3.9 Winter Construction.

3.9.1 Base course materials shall not be placed on or above frozen material if the depth from the top of the contemplated course to the bottom of the frozen material exceeds 2-1/2 ft.

3.9.2 If the density requirements are not attained for any layer before the material freezes, no further material shall be placed on that layer.

3.10 Maintenance of Traffic. Glass cullet base course blends shall be capped with standard specification base course materials before the traveling public is allowed to drive over the material.

Method of Measurement

4.1 Roadbed base course materials of sand, gravel, crushed gravel, crushed aggregate for shoulders, crushed stone (fine gradation), and crushed stone (coarse gradation) will not be measured, but shall be the cubic yard final pay quantity in accordance with 109.11 of compacted material required within the lines shown on the plans.

4.2 Applicable provisions as stated in 106.02 shall apply to base course materials.

4.3 Crushed gravel for shoulder leveling will be measured by the ton in accordance with 109.01.

4.3.1 Reclaimed stabilized base material used for crushed gravel for shoulder leveling shall be measured by the cubic yard using average lengths, widths and depths of the area to be filled or as provided in 4.3 as determined by the Engineer.

4.4 Gravel and crushed gravel for drives will be measured by the cubic yard of compacted materials placed within the limits shown on the plans.

Basis of Payment

5.1 Roadbed base course materials of sand, gravel, crushed gravel, crushed stone (fine gradation), and crushed stone (coarse gradation) are final pay quantities and will be paid for at the Contract unit price per cubic yard in accordance with 109.11.

5.1.1 Reclaimed stabilized base authorized for use in lieu of crushed gravel or crushed stone (fine gradation) will be paid for as provided in 5.1.

5.2 Filler material used to eliminate voids in crushed stone base course (fine gradation) will be subsidiary.

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5.3 The accepted quantity of gravel, crushed aggregate for shoulders or crushed gravel for drives will be paid for at the Contract unit price per cubic yard complete in place. The accepted quantity of crushed gravel for shoulder leveling will be paid for at the Contract unit price per ton delivered and used on the project.

Pay items and units:

304.1	Sand (F)	Cubic Yard
304.2	Gravel (F)	Cubic Yard
304.25	Gravel for Drives	Cubic Yard
304.3	Crushed Gravel (F)	Cubic Yard
304.32	Crushed Gravel for Shoulder Leveling	Ton
304.33	Crushed Aggregate for Shoulders	Cubic Yard
304.35	Crushed Gravel for Drives	Cubic Yard
304.4	Crushed Stone (Fine Gradation) (F)	Cubic Yard
304.5	Crushed Stone (Coarse Gradation) (F)	Cubic Yard
304.6	Crushed Stone (Very Coarse)	Cubic Yard

SECTION 583 -- RIPRAP**Description**

1.1 This work shall consist of furnishing and placing riprap as shown on the plans or ordered. Riprap is typically required for erosion protection of bridge structures in waterways, for active waterway channel slopes and bottoms, and for intermittent waterway channels where the Engineer determines riprap protection is required to resist expected high water flow velocities.

Materials

2.1 Riprap shall be quarry stone of approved quality, hard, durable, sub-angular to angular in shape, resistant to weathering and free from structural defects such as weak seams and cracks.

2.1.1 The suitable shape of the individual stones shall be angular, meeting the gradation in 2.1.1.2 to create interlocking riprap to provide stability of the slope or channel. Round, thin and platy, elongated or needle-like shapes shall not be used.

2.1.1.1 The suitable riprap stone shape is determined by the Length to Thickness ratio, where Length is the longest dimension and Thickness is the shortest dimension, measured in perpendicular axes to each other. The suitable riprap stone shape shall have a length to thickness ratio of no greater than 3.

2.1.1.2 The gradation requirements of the riprap classes in Table 583-1 are based on the stone size Width, the largest dimension perpendicular to the Length and Thickness, and the distribution of stone sizes by volume. The volume distribution requires that 15 percent of the stone in the mass shall be no larger than the volume shown in the table (< 15% column), and 15 percent of the stone in the mass shall be no smaller than the volume shown in the table (> 85% column). The remaining 70 percent of the stone in the mass shall have a volume between these requirements, averaging to the volume shown in the table (15% - 85% column). None of the stones in the mass shall exceed the maximum volume shown in the table (Maximum column).

Table 583-1

Riprap Classes and Sizes			Percentage Distribution of Particle Sizes by Volume (cubic feet)			
Class	Nominal Size (in)	Maximum Size (in)	< 15%	15% – 85%	> 85%	Maximum
I	6	12	0.05	0.14	0.31	1.0
III	12	24	0.4	1.0	2.5	6.5
V	18	36	1.3	3.5	8.5	22
VII	24	48	3	8	19	53
IX	36	72	10	27	65	179

Note: Nominal Size and Maximum Size are based on the Width dimension of the stone. The riprap classes conform to the standard classes described in the FHWA HEC-23 publication.

2.1.2 The sources from which the stone is obtained shall be selected well in advance of the time when the material will be required in the field. The acceptability of the riprap stone shape and grading will be determined by the Engineer.

2.1.3 Control of the gradation will be completed by visual inspection approval by the Engineer of a stockpile at the quarry or other agreed site. Mechanical equipment as needed to assist in checking the stockpile gradation shall be provided by the Contractor. Stockpile replenishment will require re-approval.

2.2 Gravel blanket material shall conform to [209.2.1.2](#).

2.3 Geotextile shall conform to [593.2](#).

Construction Requirements

3.1 Preparation of slopes. Slopes that will be covered by riprap shall be free of brush, trees, stumps, and other organic material and shall be graded to a smooth surface. All soft material shall be removed to the depth shown on the plans or as directed and replaced with approved material per 203.3.6. It is the Contractor's responsibility to protect embankments and excavated slopes from erosion during construction of the riprap covered slope.

3.2 Gravel blanket construction. When called for on the plans, the gravel blanket shall be placed on the prepared area to the specified thickness in one operation, using methods which will not cause segregation of particle sizes within the layer. The surface of the finished layer shall be even and free from mounds or windrows.

3.3 Geotextile placement. Geotextile shall be placed in accordance with [593.3](#).

3.4 Riprap placement. Riprap shall be constructed to the dimensions shown on the plans or as directed by the Engineer.

3.4.1 Placement of riprap shall be conducted as soon as possible after gravel blanket or geotextile placement.

3.4.2 Placement of the riprap shall be started at the toe (key trench) and progress up the slope. The key trench at the bottom of the riprap shall be constructed as shown on the plans. If bedrock is encountered at the key trench it shall be brought to the attention of the Engineer to determine if modification to the riprap installation is needed.

3.4.3 Riprap shall be placed over geotextile by methods that do not stretch, tear, puncture or reposition the fabric. Riprap smaller than 1.5 cu. ft. in volume shall be placed with drop heights of less than 3 ft. to the placement surface. Riprap greater than 1.5 cu. ft. in volume shall be placed with no free fall height.

3.4.4 Equipment such as a clamshell, orange-peel bucket, skip or hydraulic excavator shall be used to place the riprap so it is well distributed and there are no large accumulations of either the larger or smaller sizes of stone. Dump trucks or front-end loaders tracked or wheeled vehicles shall not be used since they can destroy the interlocking integrity of the stone when driven over previously placed riprap. Placing the riprap by end dumping on the slopes will cause segregation and will not be permitted.

3.4.5 The riprap shall be placed in a manner which produces a well-graded mass. The larger stones shall be well distributed and the entire mass of riprap shall conform approximately to the gradation specified. Hand placing or rearranging of individual stones by mechanical equipment may be required to the extent necessary to secure the uniformity of gradation and surface specified. Fill voids between larger stones with small stones to ensure interlocking between the riprap.

3.4.6 After the riprap is in place, it shall be compacted by impacting (ramming) the exposed surface to produce a tight, locked surface, not varying more than 6" from the elevations shown on the plans.

3.4.7 Riprap placed in water requires close observation and increased quality control to ensure the required thickness, gradation and coverage is achieved.

Method of Measurement

4.1 Riprap will be measured by the cubic yard.

4.1.1 If the Engineer determines that in-place measurement is impracticable, the quantity for payment will be determined by loose measure in the hauling vehicle on the basis that 1 cubic yard vehicle measure is equivalent to 0.7 cubic yard in place.

Basis of Payment

5.1 The accepted quantity of riprap will be paid for at the Contract unit price per cubic yard (cubic meter) complete in place.

5.1.1 Only when the stone is examined in accordance with 2.1 and examination proves the gradation to be acceptable will payment be made as provided in [109.04](#).

5.1.2 Gravel blanket material specified or ordered will be paid for under [Section 209](#).

5.1.3 Geotextile specified or ordered will be paid for under [Section 593](#).

5.1.4 The accepted quantity of excavation required for placing riprap and for placing any underlying gravel blanket will be paid for under the item of excavation being performed. Excavation above refers only to excavation of original ground or to material ordered removed not shown on the plans.

5.1.5 Free borrow will not be required to replace the accepted quantity of stone obtained from the excavation. However, when the plans do not call for borrow but the quantity of material removed from excavation for use under this item requires the Contractor to furnish borrow to complete the work, such borrow will be subsidiary.

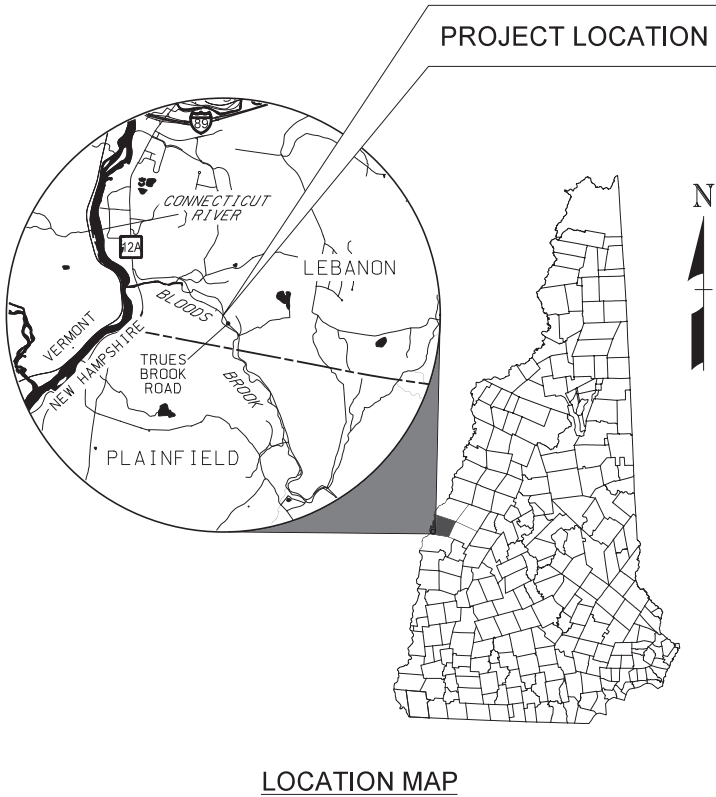
5.1.6 Replacement slope material resulting from the requirements of 3.1 will be paid in accordance with [203.5.1.9](#).

Pay item and unit:

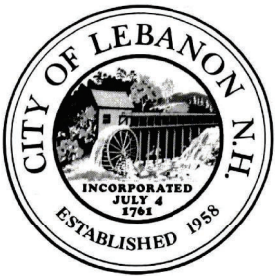
583.1	Riprap, Class I	Cubic Yard
583.3	Riprap, Class III	Cubic Yard
583.5	Riprap, Class V	Cubic Yard
583.7	Riprap, Class VII	Cubic Yard
583.9	Riprap, Class IX	Cubic Yard

Project Plans

1/17/2024 4:54:16 PM K:\PROJECTS\Lebanon-NH\21_906414_00-Trues-Brook-Rd-Bloods-Brook\2-CADD\Plt\FromSheets\906414Title.dgn



CITY OF LEBANON
GRAFTON COUNTY
NEW HAMPSHIRE



PLANS OF PROPOSED BRIDGE REPLACEMENT
TRUES BROOK ROAD BRIDGE
OVER BLOODS BROOK
NHDOT BRIDGE NO. 066/059
NHDOT PROJECT NO. 24221
JANUARY 2024



DRAWING SIZES HAVE BEEN REDUCED
DO NOT SCALE, USE DIMENSIONS GIVEN

INDEX OF SHEETS

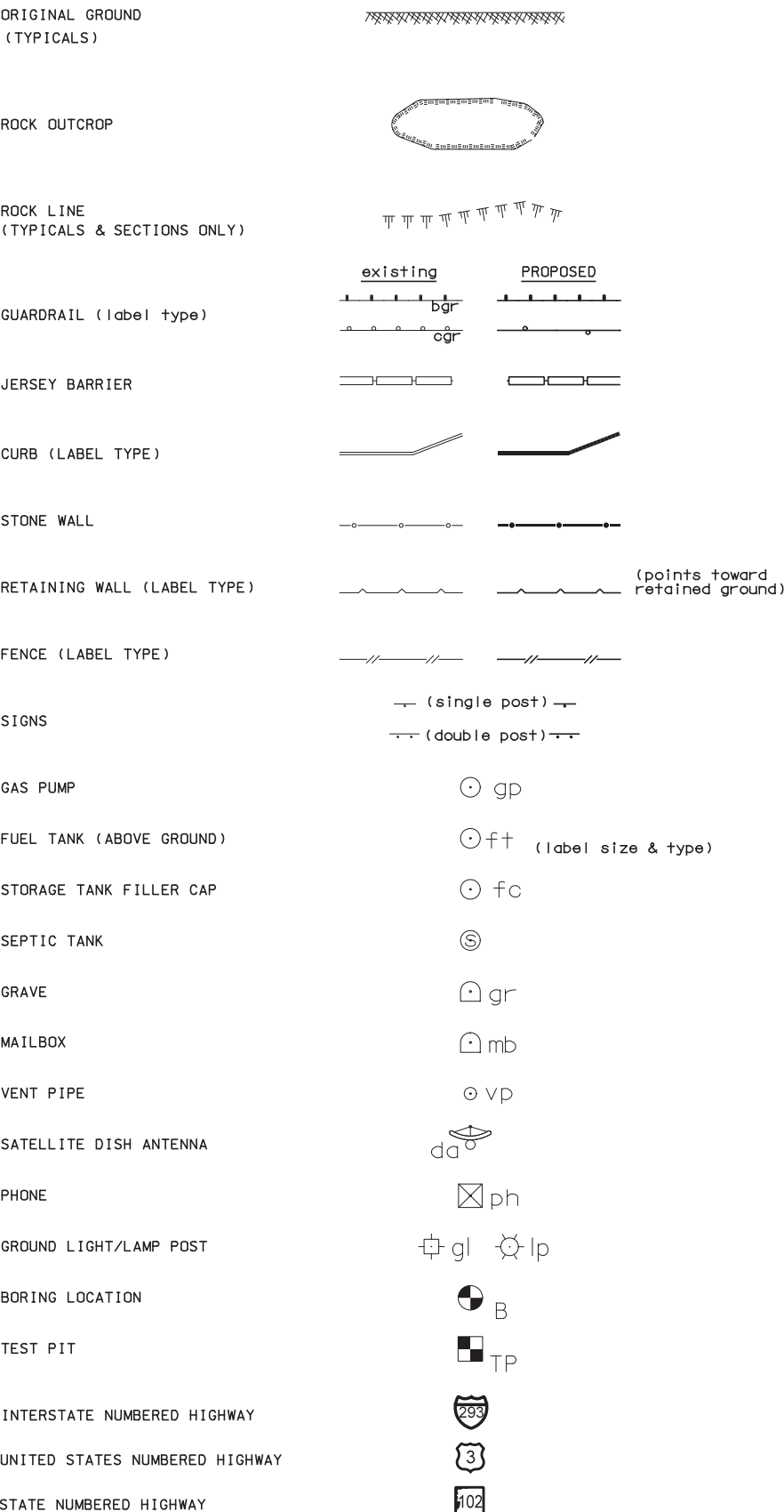
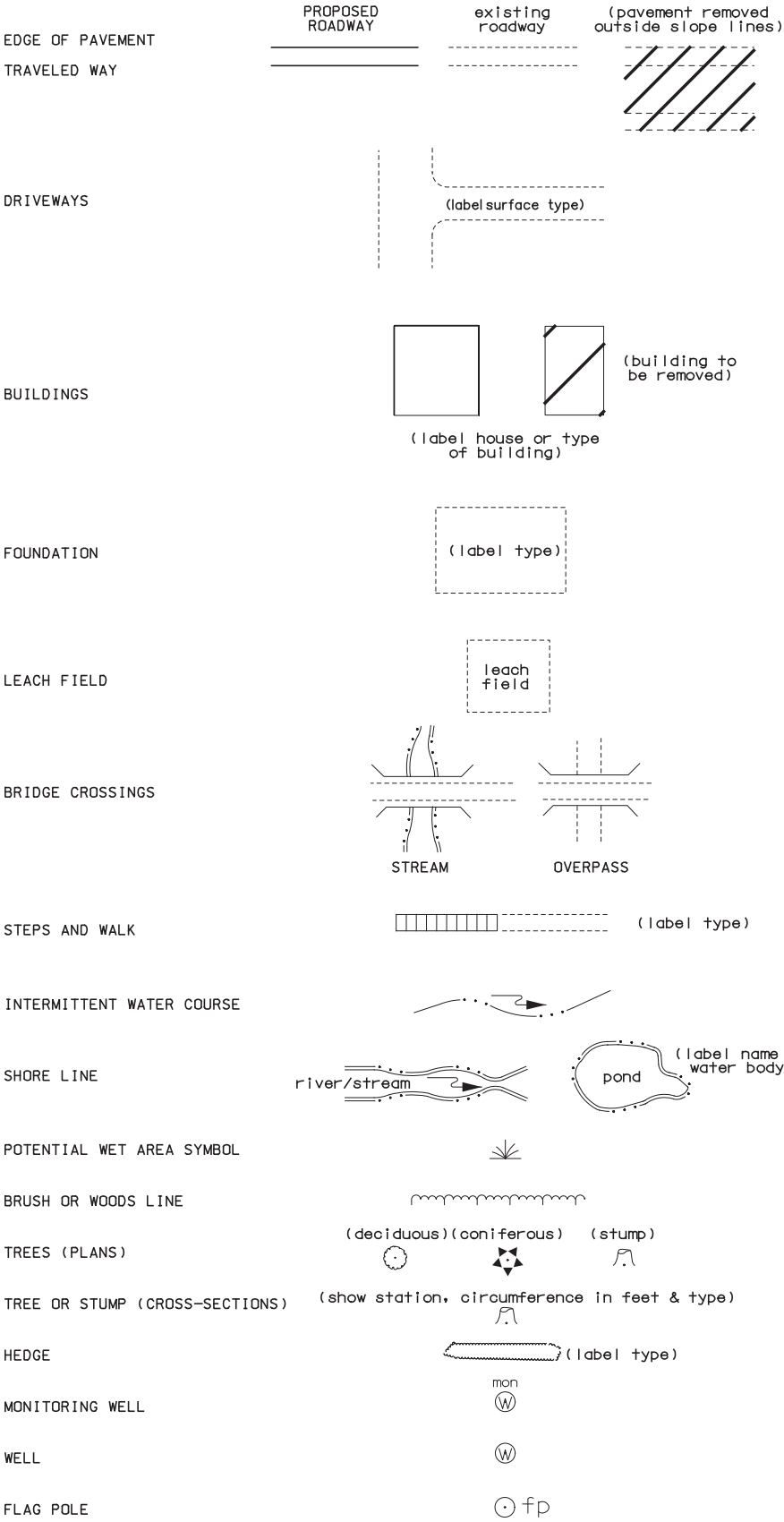
SHEET NO	DESCRIPTION
1	TITLE SHEET
2	STANDARD SYMBOLS (1 OF 2)
3	STANDARD SYMBOLS (2 OF 2)
4	PROJECT NOTES (1 OF 2)
5	PROJECT NOTES (2 OF 2)
6	PROJECT NOTES AND SUMMARY OF QUANTITIES
7	EXISTING CONDITIONS PLAN
8	ROADWAY TYPICAL SECTIONS
* 9	ROADWAY TYPICAL DETAILS
* 10	BORING LOCATION PLAN
* 11	BORING LOGS (1 OF 2)
* 12	BORING LOGS (2 OF 2)
13	DETOUR PLAN (1 OF 2)
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23	WETLAND IMPACTS PLAN
24	SHORELAND IMPACTS PLAN (1 OF 2)
25	SHORELAND IMPACTS PLAN (2 OF 2)
26	BRIDGE LAYOUT PLAN
27	ABUTMENT A MASONRY
28	ABUTMENT B MASONRY
29	SUBSTRUCTURE DETAILS (1 OF 2)
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* 31	WINGWALL MASONRY AND REINFORCEMENT
* 32	FRAMING PLAN AND GIRDER ELEVATION
* 33	SUPERSTRUCTURE DETAILS
34	DECK SECTION AND DETAILS
* 35	DECK REINFORCEMENT
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44	TRUES BROOK ROAD CROSS SECTIONS (6 OF 7)
45	TRUES BROOK ROAD CROSS SECTIONS (7 OF 7)

* INDICATES SHEETS NOT INCLUDED IN THIS SUBMISSION

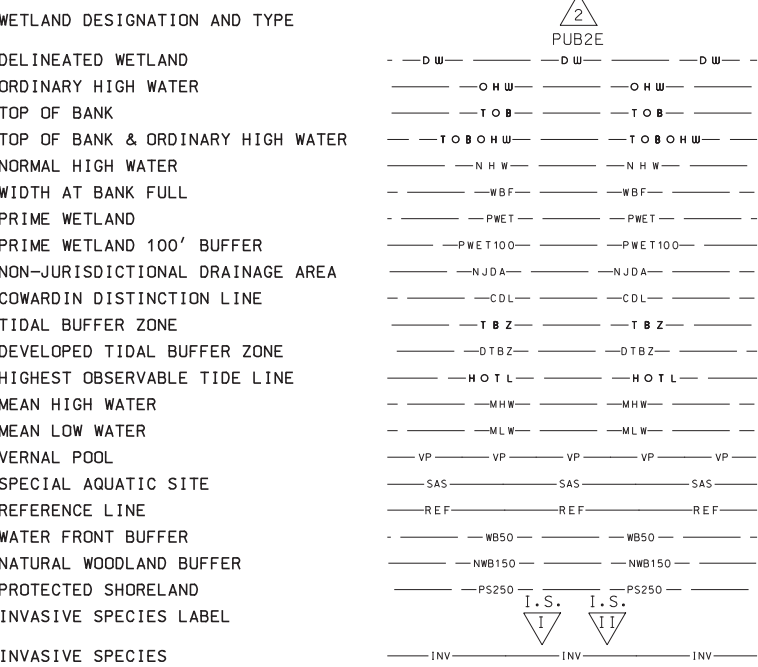
PROJECT NO.	21.906414.00	SHEET NO.	1	SHEET 1 OF 45	DATE	REV.	DESCRIPTION	DRAWN BY	CHECKED BY	DATE	This document is prepared as an instrument of service and shall remain the property of Hoyle Tanner. It may not be used, reproduced, disseminated or transferred in any manner, including electronically, for any other purpose than the project, without the written permission of Hoyle Tanner.
CITY OF LEBANON LEBANON, NEW HAMPSHIRE TRUES BROOK ROAD OVER BLOODS BROOK HOYLE TANNER 150 Dow Street • Manchester, NH 03301 (603) 669-5555 • www.hoyletanner.com TITLE SHEET											

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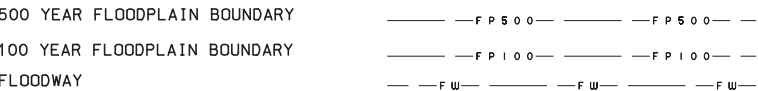
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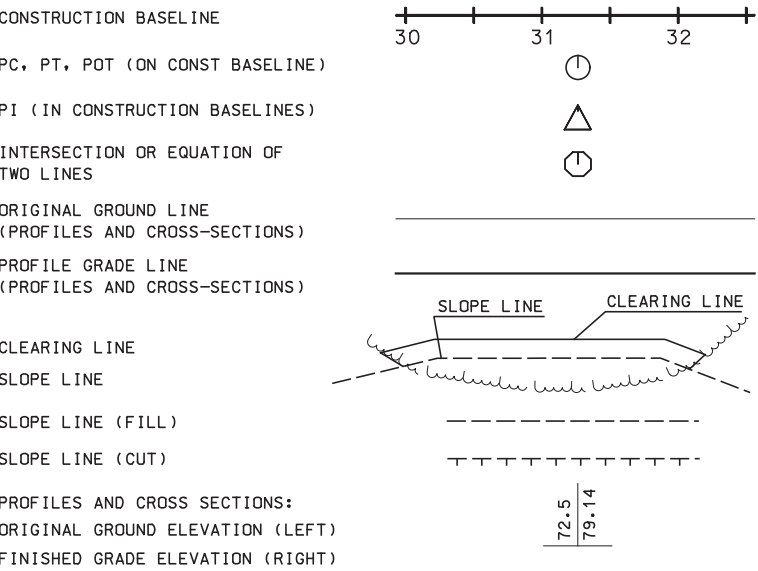
SHORELAND - WETLAND



FLOODPLAIN / FLOODWAY



ENGINEERING



NOTE

1. INFORMATION ON THIS SHEET TAKEN FROM NHDOT STANDARD SYMBOL SHEET, DATED 11-21-2014, AND HAS NOT BEEN ALTERED.



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STANDARD SYMBOLS SHEET (1 OF 2)

PROJECT NO. 21.906414.00

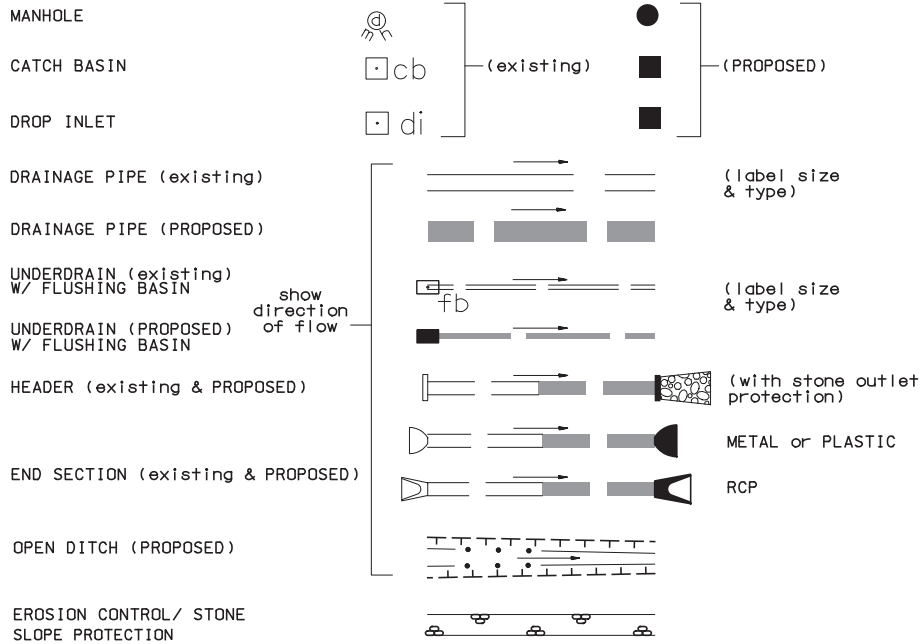
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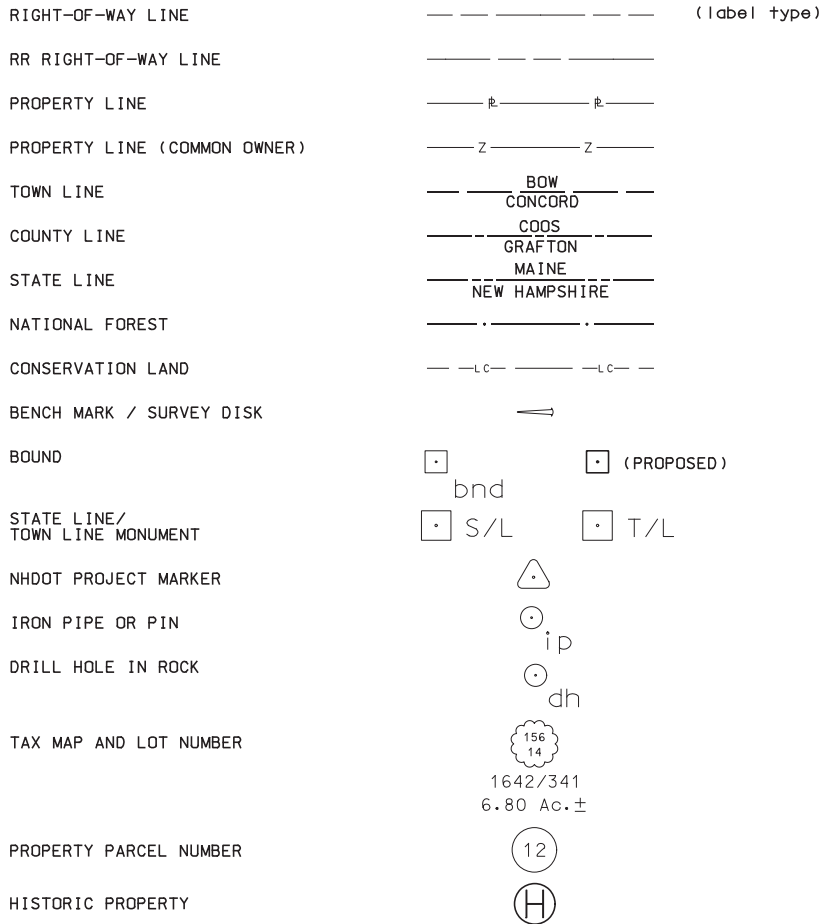
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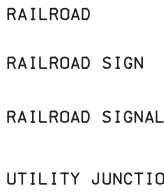
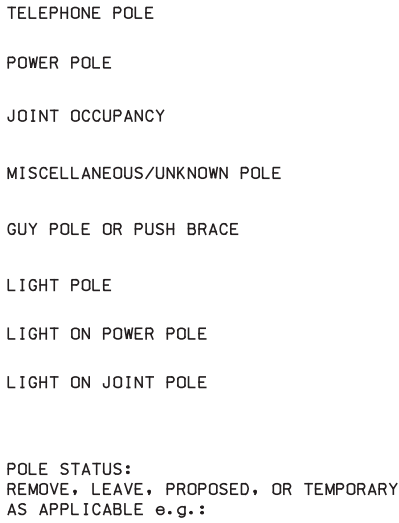
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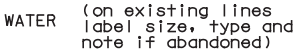
BOUNDARIES / RIGHT-OF-WAY



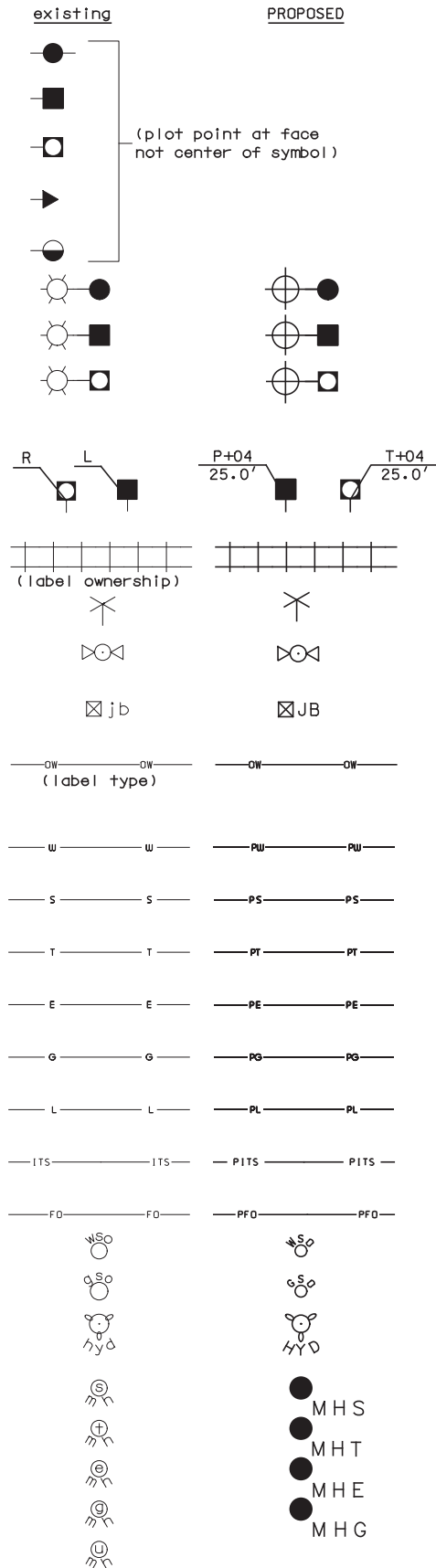
UTILITIES



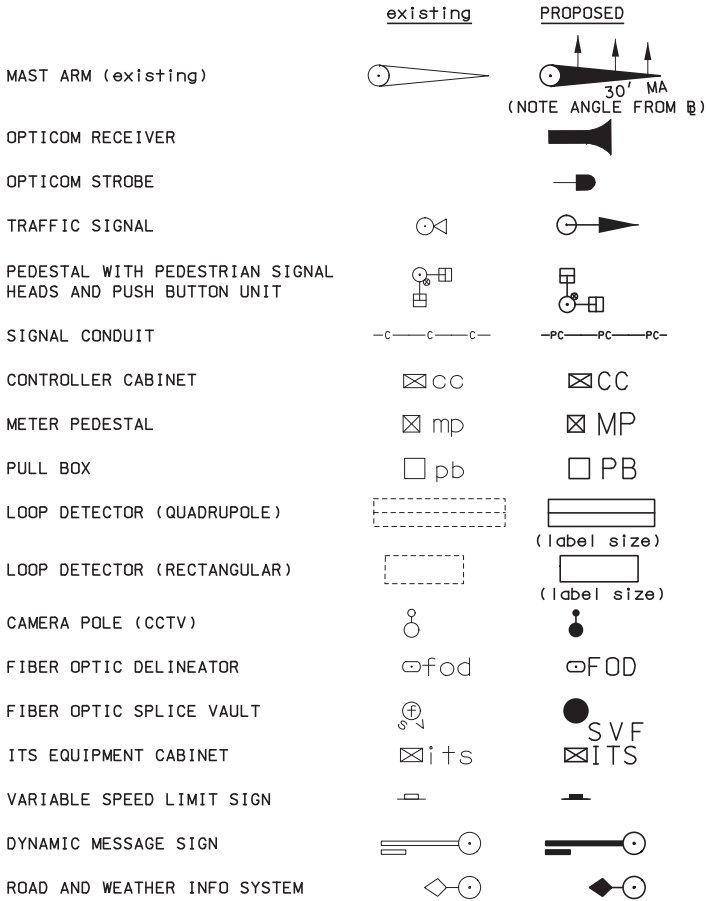
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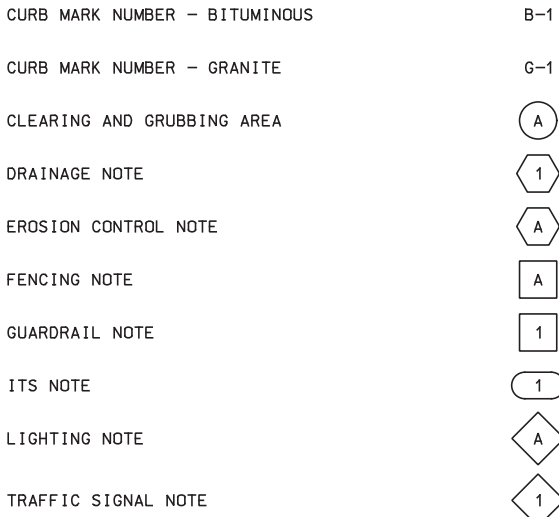
MANHOLES



TRAFFIC SIGNALS / ITS



CONSTRUCTION NOTES



NOTE

1. INFORMATION ON THIS SHEET TAKEN FROM NHDOT STANDARD SYMBOL SHEET, DATED 9-1-2016, AND HAS NOT BEEN ALTERED.

REV.	DESCRIPTION	DATE

NHDOT BRIDGE NO.	DESIGNED	DRAWN	CHECKED	DATE

**HOYLE
TANNER**

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CITY OF LEBANON LEBANON, NEW HAMPSHIRE	TRUES BROOK ROAD OVER BLOODS BROOK	STANDARD SYMBOLS SHEET (2 OF 2)
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PROJECT NO. 21.906414.00
SHEET NO. 3
SHEET 3 OF 45

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GENERAL NOTES

1.

ALL WORK SHALL CONFORM TO ALL FEDERAL, STATE AND LOCAL CODES, REGULATIONS AND STANDARDS AND THE MORE STRINGENT SHALL GOVERN.
2.

THE GENERAL CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS AND COORDINATION OF OTHER TRADES.
3.

THESE DOCUMENTS DO NOT INCLUDE THE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. CARE OF ADJACENT PROPERTIES DURING CONSTRUCTION AND COMPLIANCE WITH STATE AND FEDERAL REGULATIONS REGARDING SITE SAFETY SHALL SOLELY BE THE CONTRACTOR'S RESPONSIBILITY.
4.

ALL DIMENSIONS, ELEVATIONS AND CONDITIONS MUST BE VERIFIED BY THE GENERAL CONTRACTOR OR RESPONSIBLE TRADES PRIOR TO COMMENCING WITH THE WORK, FABRICATION OR ORDERING MATERIALS. DO NOT SCALE DRAWINGS, USE DIMENSIONS SHOWN.
5.

ANY DISCREPANCIES BETWEEN THESE DRAWINGS AND EXISTING CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY, BEFORE PROCEEDING WITH THE WORK.
6.

THE INFORMATION SHOWN ON THESE PLANS CONCERNING THE TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL-INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING DETERMINATIONS AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. ALL COSTS FOR DETERMINING UNDERGROUND UTILITY TYPES AND LOCATIONS SHALL BE SUBSIDIARY TO THE CONTRACT. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION SHALL BE AGREED TO BY THE ENGINEER AND UTILITY OWNERS BEFORE PROCEEDING WITH THE WORK.
7.

ALL APPLICABLE UTILITY DEPARTMENTS AND COMPANIES SHALL BE NOTIFIED BEFORE EXCAVATION IS STARTED. UTILITIES WITHIN 50 FEET OF AN EXCAVATION SHALL BE MARKED IN THE FIELD.
8.

IN THE PREPARATION OF THESE DRAWINGS, HOYLE TANNER HAS RELIED UPON INFORMATION OBTAINED FROM THE FOLLOWING REPORTS, DRAWINGS, TEST DATA/RESULTS OR OTHER DOCUMENTATION AS FOLLOWS:

TEST BORING LOGS BY MILLER ENGINEERING & TESTING, INC., DATED SEPTEMBER 8-10, 2021
GEOLOGIC LOGS BY MILLER ENGINEERING & TESTING, INC., DATED SEPTEMBER 8-10, 2021
EXISTING BRIDGE PLANS, DATED SEPTEMBER 1952

THIS INFORMATION IS INCLUDED IN CONTRACT SPECIFICATIONS, APPENDIX X.
9.

HOYLE TANNER WAIVES ANY AND ALL RESPONSIBILITY AND LIABILITY FOR PROBLEMS THAT ARISE DUE TO THE FAILURE OF THE CONTRACTOR:
 - TO FOLLOW THESE DRAWINGS AND SPECIFICATIONS AND THE DESIGN INTENT THEY CONVEY.
 - TO NOTIFY HOYLE TANNER OF ANY DISCREPANCIES, ERRORS, OMISSIONS OR CONFLICTS AND OBTAIN THEIR GUIDANCE TO RESOLVE.
10.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGNING, INSTALLATION AND REMOVAL OF ALL TEMPORARY SHORING AND BRACING REQUIRED DURING CONSTRUCTION.
11.

THE CONTRACTOR SHOULD NOTE THAT THE NHDOT "STANDARD PLANS FOR ROAD AND BRIDGE CONSTRUCTION" ARE MADE A PART OF THIS PROJECT AND ALL APPLICABLE DETAILS, STANDARDS AND SPECIFICATIONS SHALL APPLY. THIS PROJECT SHALL INCLUDE, BUT IS NOT LIMITED TO, THE FOLLOWING STANDARD PLANS:
 - CR-1 -GRANITE CURB DETAILS
 - DL-1 -ROADSIDE DELINEATION
 - DR-1 -GRATE AND FRAME DETAILS
 - DR-2 -GRATE AND FRAME, M.H.COVER AND PAVEMENT DEPRESSION DETAILS
 - DR-4 -DI-DB, UNDERDRAIN FLUSHING BASIN AND POLYETHYLENE LINER DETAILS
 - DR-5 -PRECAST REINFORCED CONCRETE C.B., D.I. AND M.H.
 - ES-1 -END SECTIONS FOR CORRUGATED STEEL AND REINFORCED CONCRETE PIPES
 - FN-1 -WOVEN WIRE FENCE
 - GR-1 -31" MID-SPLICE BEAM GUARDRAIL STANDARD SECTION - STEEL POSTS AND HARDWARE DETAILS
 - GR-24 -PORTABLE CONCRETE BARRIER (1 OF 2) (12.5 FT MASH)
 - GR-25 -PORTABLE CONCRETE BARRIER (2 OF 2) (15.5 FT-MASH)
 - MB-1 -MAILBOX DETAILS
 - PM-1 -LAYOUT DETAILS
 - PM-2 -TOLERANCES FOR PAYMENT MARKING LINES
 - PS-3 -ALUMINIM SHEET DETAILS FOR TUBING & U-CHANNEL POSTS
 - TC-1 -AMENDMENTS TO PART VI MUTCD (2009)
 - TC-2 -UNIFORMED OFFICERS AND FLAGGERS GUIDELINES
12.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING EROSION AND SEDIMENT CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3 EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION" BY THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES.
13.

THIS PROJECT SHALL BE SUBJECT TO AVOIDANCE AND MINIMIZATION MEASURES TO PROTECT THE HABITAT OF THE NORTHERN LONG-EARED BAT. MEASURES APPLICABLE TO THIS PROJECT INCLUDE TIME-OF-YEAR (TOY) RESTRICTIONS FOR TREES ≥ 3" DIAMETER BREAST HEIGHT (DBH). THE CONTRACTOR SHALL NOT CONDUCT ANY TREE CUTTING AND CLEARING ACTIVITIES FROM JUNE 1 THROUGH JULY 31.

GENERAL CONSTRUCTION NOTES

1.

FOR WORKING POINT LAYOUT SEE SHEET 26.
2.

THE BRIDGE WILL BE CLOSED DURING CONSTRUCTION AND TRAFFIC WILL BE MAINTAINED VIA A TEMPORARY BRIDGE (ITEM 501.2).
3.

DIMENSIONS, ANGLES, BEARINGS AND ELEVATIONS SHOWN ON THESE CONTRACT PLANS HAVE BEEN OBTAINED FROM EXISTING PLANS, LIMITED FIELD INVESTIGATIONS, AND SURVEY, AND MAY NOT ACCURATELY REFLECT ACTUAL FIELD CONDITIONS. ACCORDINGLY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING FIELD MEASUREMENTS OF ALL EXISTING STRUCTURE COMPONENTS IMPACTED BY THE PROPOSED WORK TO ASSURE CONSISTENCY WITH THE PROPOSED MODIFICATIONS. ANY DISCREPANCIES IN DIMENSIONS, CHARACTER OR EXTENT OF THE EXISTING FEATURES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE ADVANCING THE WORK.
4.

THE CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION.
5.

WATER LEVEL MAY VARY FROM THAT SHOWN.

6.

CONCRETE TIES AND ANCHORAGES FOR USE IN FORMS ABOVE THE TOP OF FOOTINGS SHALL BE FABRICATED SO AS TO BE REMOVED TO A MINIMUM DEPTH OF 2" WITHOUT INJURY TO THE CONCRETE. HOLES SHALL BE PLUGGED WITH A MORTAR MATCHING THE COLOR OF ADJACENT CONCRETE FOR EXPOSED CONCRETE SURFACES.
7.

IF CONCRETE FORMS ARE TO BE TREATED WITH FORM RELEASE COMPOUND, THIS WORK SHALL BE DONE PRIOR TO THE ERECTION OF THE FORMS. THE REINFORCING STEEL, AT THE TIME CONCRETE IS PLACED, SHALL BE FREE OF DIRT, PAINT, OIL, FORM RELEASE COMPOUND, OR OTHER ORGANIC MATERIALS THAT MAY ADVERSELY AFFECT OR REDUCE BOND.
8.

ALL BACKFILL MATERIAL (EXCEPT SUITABLE FILL) SHALL NOT EXCEED THE OPTIMUM MOISTURE CONTENT BY MORE THAN 2 PERCENTAGE POINTS. THE MATERIAL SHALL BE PLACED IN LAYERS NOT MORE THAN 12" LOOSE DEPTH, UNLESS OTHERWISE NOTED. FOR EARTH MATERIALS UNDER APPROACH SLABS AND FOR EARTH MATERIALS WITHIN 10' OF THE BACK OF STRUCTURES NOT HAVING APPROACH SLABS, AT LEAST 98 PERCENT OF MAXIMUM DENSITY SHALL BE OBTAINED. ALL OTHER BACKFILL MATERIAL SHALL BE COMPACTED TO NOT LESS THAN 95 PERCENT OF MAXIMUM DENSITY. THE COMPACTION WILL BE TESTED AT FREQUENCIES DETERMINED IN THE FIELD BY THE ENGINEER.

DESIGN LOADS, MATERIALS AND SPECIFICATIONS

1.

DESIGN LOADING:

HL-93
2.

DESIGN SPEED:

35 MPH
3.

DESIGN METHOD:

LOAD AND RESISTANCE FACTOR DESIGN METHOD (LRFD)
4.

SPECIFICATIONS:

AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 9TH EDITION.

NHDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION 2016 WITH CURRENT ADDITIONS AND MODIFICATIONS AS OF THE BID OPENING DATE.

WELDING PER ANSI/AASHTO/AWS D1.5-2020 (INCLUDING ALL REVISIONS PUBLISHED BY AASHTO AS OF THE BID OPENING DATE)
5.

FOUNDATION DATA:

SEMI-INTEGRAL ABUTMENTS: SPREAD FOOTINGS ON BEDROCK WITH A NOMINAL BEARING CAPACITY OF 12.0 TSF IN COMBINATION WITH A RESISTANCE FACTOR OF 0.45 FOR STRENGTH I, AND A NOMINAL BEARING CAPACITY OF 10.0 TSF FOR SERVICE I.
6.

REINFORCING STEEL:

AASHTO M 31 (ASTM A615) GRADE 60
AASHTO M 284 (ASTM A775) GRADE 60 EPOXY COATED (WHERE INDICATED)
AASHTO MP 18M/MP 18-15 (ASTM A955) GRADE 60 STAINLESS STEEL (WHERE INDICATED)
7.

STRUCTURAL STEEL:

AASHTO M 270, GRADE 50 (ASTM A709, GRADE 50), UNLESS OTHERWISE NOTED.
8.

CONCRETE:

DECK, CONCRETE END-DIAPHRAGMS, & BRUSH CURBS:
ITEM 520.7, CONCRETE BRIDGE DECK (F)
4,000 PSI (AT 28 DAYS)

APPROACH SLABS:
ITEM 520.03, CONCRETE CLASS AA, APPROACH SLABS (F)
4,000 PSI (AT 28 DAYS)

ABUTMENTS & WINGWALLS:
ITEM 520.12, CONCRETE CLASS A, ABOVE FOOTINGS (F)
3,000 PSI (AT 28 DAYS)

FOOTINGS (ABUTMENTS & WINGWALLS):
ITEM 520.211, CONCRETE CLASS B, FOOTINGS (ON ROCK)
3,000 PSI (AT 28 DAYS)

FOUNDATION SEAL:
ITEM 520.6, CONCRETE CLASS T, FOUNDATION SEAL
3,000 PSI (AT 28 DAYS)
9.

SEISMIC:

PEAK GROUND ACCELERATION (PGA) = 0.08
SITE CLASS = D
ZONE = 1

HYDRAULIC DATA NOTES

1.

DRAINAGE AREA:

28.1 SQUARE MILES
2.

DESIGN FLOOD:

Q50
3.

Q50 VELOCITY:
Q100 VELOCITY:

12.3 FPS
13.0 FPS
4.

Q50 FLOOD ELEVATION:
Q100 FLOOD ELEVATION:

483.7 FT
484.5 FT
5.

Q50 FLOOD FLOW:
Q100 FLOOD FLOW:

4,391 CFS
5,173 CFS
6.

BRIDGE WATERWAY OPENING:

621 SF
7.

BRIDGE WATERWAY OPENING BELOW THE DESIGN FLOOD ELEVATION:

500 SF

TOPOGRAPHIC SURVEY NOTES

1.

THE SURVEY FOR THIS PROJECT WAS COMPLETED BY:
SANDFORD SURVEYING AND ENGINEERING
597 NEW BOSTON ROAD, BEDFORD, NH 03110-4111
(603) 472-2265
EARL J. SANDFORD, LLS NO. 700
2.

THE SURVEY CONSISTED OF ONE SHEET TITLED:
EXISTING CONDITIONS PLAN, TRUES BROOK ROAD OVER BLOODS BROOK DATED: DECEMBER 6, 2012
3.

WETLAND RESOURCES WITHIN THE SURVEY AREA WERE DELINEATED BY:
CHRISTOPHER K. DANFORTH, C.W.S. #77
4.

DATUM USED FOR THESE DRAWINGS IS AS FOLLOWS:
VERTICAL – NAVD 88
HORIZONTAL – NAD 83/86

WORK AREA NOTES

1.

PRIOR TO COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR SHALL LAYOUT LIMITS OF ALL EASEMENTS AND CITY'S RIGHT-OF-WAY WITHIN THE PROJECT LIMITS. COST IS INCLUDED UNDER ITEM 692, MOBILIZATION. LAYOUT SHALL BE PERFORMED BY A LAND SURVEYOR LICENSED IN THE STATE OF NEW HAMPSHIRE. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
2.

TEMPORARY AND PERMANENT EASEMENTS WILL BE OBTAINED BY THE OWNER.
3.

CONSTRUCTION ACCESS SHALL BE LIMITED TO WITHIN THE CITY'S RIGHT-OF-WAY AND EASEMENT LIMITS SHOWN IN THESE PLANS, UNLESS NOTED OTHERWISE. ADDITIONAL AREAS REQUIRED BY THE CONTRACTOR SHALL BE AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL COORDINATE WITH AFFECTED PROPERTY OWNERS AND OBTAIN TEMPORARY USE RIGHTS FOR SUCH AREAS.

EXISTING BRIDGE REMOVAL NOTES

1.

THE CONTRACTOR'S METHOD OF REMOVAL OF THE EXISTING BRIDGE SUPERSTRUCTURE, ABUTMENTS, WINGWALLS, PIER, AND RETAINING WALLS SHALL BE SUBMITTED IN ACCORDANCE WITH SPECIFICATION SECTION 01300 OF THE CONTRACT DOCUMENTS TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO THE COMMENCEMENT OF ANY REMOVAL OPERATIONS.
2.

REMOVAL OF EXISTING BRIDGE STRUCTURE, ITEM 502., SHALL INCLUDE REMOVAL OF THE EXISTING SUPERSTRUCTURE, SUBSTRUCTURE, AND RETAINING WALLS TO THE LIMITS SHOWN ON THESE PLANS.
3.

ITEM 207.3, UNCLASSIFIED CHANNEL EXCAVATION SHALL INCLUDE NECESSARY EXCAVATION OF EXISTING SOIL REQUIRED TO INSTALL RIPRAP IN FRONT OF THE WINGWALLS.
4.

THE CONTRACTOR SHALL TAKE SPECIAL CARE TO ENSURE THAT NO DEBRIS FALLS INTO BLOODS BROOK DURING CONSTRUCTION OPERATIONS. THE ERECTION, MAINTENANCE AND REMOVAL OF TEMPORARY STRUCTURES OR OTHER METHODS TO PREVENT DEBRIS FROM FALLING INTO THE RIVER, AND THE CONTRACTOR'S METHOD OF REMOVAL SHALL BE SUBMITTED IN ACCORDANCE WITH SECTION 01300 TO THE ENGINEER FOR REVIEW AND APPROVAL. ALL COSTS SHALL BE INCLUDED IN ITEM 502.

TEMPORARY BRIDGE NOTES

1.

VEHICLE TRAFFIC WILL BE MAINTAINED DURING CONSTRUCTION ON A TEMPORARY BRIDGE, ITEM 501.2. SEE ROADWAY PLANS FOR THE HORIZONTAL AND VERTICAL ALIGNMENT OF THE TEMPORARY DIVERSION.
2.

THE MINIMUM CLEAR ROADWAY WIDTH OF THE TEMPORARY BRIDGE SHALL BE 12 FEET MEASURED FACE TO FACE OF RAIL. THE MINIMUM CLEAR SPAN LENGTH OF THE TEMPORARY BRIDGE SHALL BE 50 FEET, BETWEEN ABUTMENT FACES MEASURED NORMAL TO THE ROADWAY OR FEATURE CROSSED, OR AS SHOWN ON THE PLANS.
3.

THE TEMPORARY BRIDGE SHALL BE SIZED TO PROVIDE A WATERWAY AREA BELOW ELEVATION OF 484 FEET AND NOT LESS THAN 365 SQUARE FEET. PLACEMENT OF THE TEMPORARY BRIDGE SHALL BE WITHIN THE WETLAND IMPACT AREAS SHOWN ON THE PLANS. FILLS FOR TEMPORARY DIVERSION NOT INCLUDED IN THE PROPOSED ROADWAY EMBANKMENTS SHALL BE REMOVED OR RECONSTRUCTED AS DETAILED IN THE PLANS. SEE ROADWAY PLANS AND CROSS SECTIONS.
4.

SHOP DRAWINGS AND DESIGN CALCULATIONS FOR THE TEMPORARY BRIDGE SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER IN THE STATE OF NEW HAMPSHIRE AND SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS.
5.

ADEQUATE CONNECTION AND TRANSITION SHALL BE PROVIDED FOR TEMPORARY APPROACH RAIL IN THE ROADWAY TEMPORARY DIVERSION.
6.

ALL COSTS ASSOCIATED WITH THE DESIGN, CONSTRUCTION, MAINTENANCE, AND REMOVAL OF THE TEMPORARY BRIDGE, TEMPORARY ABUTMENTS, TEMPORARY BRIDGE RAIL TRANSITIONS, TEMPORARY BRIDGE RAIL, AND TEMPORARY APPROACHES SHALL BE PAID FOR UNDER ITEM 501.2, TEMPORARY BRIDGE INCLUDING APPROACHES.

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CITY OF LEBANON
LEBANON, NEW HAMPSHIRE
TRUES BROOK ROAD OVER BLOODS BROOK
PROJECT NOTES (1 OF 2)

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REINFORCEMENT NOTES

1.

ALL REINFORCING STEEL SHALL HAVE 2 ½” MINIMUM CLEAR COVER UNLESS OTHERWISE NOTED.
2.

PLACE REINFORCING STEEL TO AVOID WEEPERS AND, RAIL POST ANCHOR ASSEMBLIES.
3.

REINFORCING LEGEND:

SP = SPACE

NS = NEAR SIDE

EQ = EQUAL

SPL = SPLICE

BOT = BOTTOM

ALT = ALTERNATING

FS = FAR SIDE

MID = MIDDLE

DOW = DOWELS
4.

REINFORCING BAR MARKS WITH AN (E) REFERENCE, INDICATE EPOXY COATING.
5.

ANY EPOXY COATED REBARs CUT TO FIT SHALL BE TOUCHED UP WITH AN APPROVED EPOXY COATING MATERIAL. ALL COSTS SHALL BE INCLUDED IN ITEM 544.31.
6.

REINFORCING BAR MARKS WITH AN (SS) REFERENCE, INDICATE SOLID STAINLESS STEEL BARS.
7.

STAINLESS STEEL REINFORCING SHALL NOT BE “HOT” BENT OR “HEAT STRAIGHTENED”.
8.

DO NOT USE GRINDING TOOLS OR ABRASIVE CUT-OFF DISCS ON STAINLESS STEEL REINFORCING IF SUCH EQUIPMENT HAS BEEN PREVIOUSLY USED ON CARBON STEEL.
9.

STAINLESS STEEL REINFORCING SHALL BE SUPPORTED AND SPACED WITH PLASTIC CHAIRS AND SPACERS.
10.

TIE WIRE FOR STAINLESS STEEL REINFORCING SHALL BE STAINLESS STEEL WITH A LEVEL OF CORROSION RESISTANCE EQUIVALENT TO THE STAINLESS STEEL REINFORCEMENT.
11.

STAINLESS STEEL COUPLERS SHALL BE USED WHEN CONNECTING STAINLESS STEEL WITH A MECHANICAL CONNECTION.

WATER DIVERSION NOTES

1.

ONE OR MORE TEMPORARY WATER DIVERSION STRUCTURSE WILL BE REQUIRED. WATER DIVERSION STRUCTURES SHALL BE DESIGNED TO ACCOMMODATE THE STORM EVENT DISCHARGE AS DETERMINED BY THE CONTRACTOR. MEASURES SUCH AS CLEAN STONE FILL SHALL BE PROVIDED AT THE INLET AND OUTLET ENDS TO PROTECT AGAINST EROSION, SCOUR AND SILTATION OF BLOODS BROOK. SEE ADDITIONAL NOTES ON SHEET 6 FOR SUGGESTED SEQUENCE OF WATER DIVERSION. THE CONTRACTOR'S METHOD OF WATER DIVERSION SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO THE START OF WORK.
2.

TURBIDITY CURTAIN SHALL BE INSTALLED DOWNSTREAM OF THE WATER DIVERSION STRUCTURE OR INSTALLED AS PART OF THE WATER DIVERSION STRUCTURE, PRIOR TO ANY EXCAVATION IN BLOODS BROOK, TO PREVENT SILTATION OF BLOODS BROOK OUTSIDE THE PROJECT LIMITS. ALL COSTS FOR SUCH WORK SHALL BE INCLUDED IN ITEM 503.101, WATER DIVERSION STRUCTURE.
3.

ALL COSTS FOR THE INSTALLATION, MAINTENANCE AND REMOVAL OF THE WATER DIVERSION STRUCTURE WILL BE PAID FOR UNDER ITEM 503.101, WATER DIVERSION STRUCTURE.
4.

FOR ANY WORK ASSOCIATED WITH ITEM 699, MISCELLANEOUS TEMPORARY EROSION AND SEDIMENT CONTROL, DETAILED ESTIMATES FOR THE WORK SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO START OF THE WORK.
5.

DEWATERING SHALL BE REQUIRED IN THE CHANNEL TO CONTROL THE WATER INFLOW AND ADEQUATELY DEWATER THE CHANNEL EXCAVATION. SUMP PUMPING AREAS AROUND THE ENTIRE PERIMETER MAY BE REQUIRED TO ADEQUATELY CONTROL THE GROUNDWATER WITHIN THE EXCAVATION AREAS. DEWATERING SHALL BE CONTINUOUS UNTIL THE NEW ABJTMENTS ARE CAST AND STONE FILL WORK IS COMPLETED TO THE ELEVATION OF THE SURROUNDING WATER TABLE, UNLESS OTHERWISE REQUESTED. ALL COSTS FOR DEWATERING SHALL BE INCLUDED IN ITEM 503.101, WATER DIVERSION STRUCTURE.
6.

WATER PUMPED FROM DEWATERING LOCATIONS SHALL BE FILTERED ADEQUATELY TO REMOVE FINE MATERIALS PRIOR TO RETURNING THE WATER TO BLOODS BROOK. ALL COSTS FOR CONSTRUCTION AND MAINTENANCE OF SEDIMENTATION BASIN OR OTHER METHODS TO CONTROL WATER POLLUTION SHALL BE INCLUDED IN ITEM 645.0002, SEDIMENTATION BASIN. ACTUAL LOCATION OF SEDIMENTATION BASIN TO BE DETERMINED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.

COFFERDAM NOTES

1.

SHOP DRAWINGS AND DESIGN CALCULATIONS FOR THE COFFERDAMS SHALL BE SEALED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW HAMPSHIRE AND SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS.
2.

THE COFFERDAMS SHOWN ARE CONCEPTUAL AND SCHEMATIC ONLY AND ARE NOT INTENDED TO SHOW REQUIRED OR PREFERRED METHODS OF CONSTRUCTION. IT IS ANTICIPATED THAT THE COFFERDAM SYSTEM WILL NEED TO BE INTERNALLY BRACED AND/OR REQUIRE ROCK ANCHORS TO STABILIZE THE COFFERDAM SYSTEM TO BEDROCK.
3.

COFFERDAMS SHALL BE DESIGNED IN ACCORDANCE WITH THE AASHTO GUIDE DESIGN SPECIFICATIONS FOR BRIDGE TEMPORARY WORKS, 2ND EDITION WITH 2020 INTERIM REVISIONS.
4.

COFFERDAMS SHALL BE REQUIRED AT EACH FOUNDATION LOCATION TO CONTROL THE WATER INFLOW AND ADEQUATELY DEWATER THE FOOTING EXCAVATION AREA. SUMP PUMPING AREAS AROUND THE ENTIRE PERIMETER WILL BE REQUIRED TO ADEQUATELY CONTROL THE GROUNDWATER WITHIN THE FOOTING EXCAVATION. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER DRAWINGS, SHOWING THE PROPOSED METHOD OF DEWATERING AND HANDLING THE WATER FROM THE EXCAVATION, FOR REVIEW AND APPROVAL PRIOR TO BEGINNING EXCAVATION. ALL COSTS (MATERIALS AND LABOR REQUIRED) SHALL BE INCLUDED IN THE APPROPRIATE 503 ITEMS.
5.

COFFERDAMS SHALL BE REMOVED AFTER THE COMPLETION OF WORK, WITH CARE BEING TAKEN TO NOT DISTURB THE SURROUNDING SOIL OR THE FINISHED WORK.
6.

IT SHOULD BE NOTED THAT IN SOME LOCATIONS PRE-EXCAVATION OF COBBLES AND BOULDERS MAY BE REQUIRED PRIOR TO PLACING STEEL SHEETING. DURING EXCAVATION THE CONTRACTOR SHALL DISTURB THE AREA AS LITTLE AS POSSIBLE AND USE NECESSARY PRECAUTIONS TO MINIMIZE THE IMPACTS TO THE RIVER. ALL COSTS INCLUDED IN ITEM 503.201 AND 503.202.
7.

THE CONTRACTOR SHALL PLACE SUBSTRUCTURE CONCRETE IN THE DRY.
8.

DEWATERING SHALL BE CONTINUOUS UNTIL SUBSTRUCTURES ARE BACKFILLED TO THE ELEVATIONS OF THE SURROUNDING WATER TABLE, UNLESS OTHERWISE REQUESTED.

9.

WATER PUMPED FROM DEWATERING LOCATIONS SHALL BE FILTERED ADEQUATELY TO REMOVE FINE MATERIALS PRIOR TO RETURNING THE WATER TO THE RIVER. ALL COSTS FOR CONSTRUCTION AND MAINTENANCE OF SEDIMENTATION BASIN OR OTHER METHODS TO CONTROL WATER POLLUTION SHALL BE INCLUDED IN ITEM 645.0002, SEDIMENTATION BASIN. ACTUAL LOCATION OF SEDIMENTATION BASIN TO BE DETERMINED BY CONTRACTOR AND APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.
10.

ALL MEANS AND METHODS ASSOCIATED WITH HANDLING WATER DURING CONSTRUCTION OF FOUNDATIONS SHALL BE LOCATED WITHIN THE LIMITS OF WORK SHOWN ON THE WETLANDS PERMIT APPROVED FOR THE PROJECT.
11.

DESIGNS OF STEEL SHEETING COFFERDAMS UTILIZED FOR TEMPORARY BRIDGES OR AS PART OF AN EROSION AND SETTLEMENT AND STORMWATER MANAGEMENT PLAN (ITEM 645.7) SHALL BE SEALED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW HAMPSHIRE AND SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS.
12.

THE COFFERDAM SHALL PROVIDE SUPPORT OF EXCAVATION AND A STREAM DIVERSION STRUCTURE. REGARDLESS OF WHAT MATERIAL IS USED (I.E. LARGE SANDBAGS, STEEL SHEETING, OR A COMBINATION OF BOTH), ALL COSTS FOR DESIGN, INSTALLATION (INCLUDING INTERNAL BRACING AND/OR ROCK ANCHORS), MAINTENANCE, STREAM DIVERSION MEASURES, SANDBAGS, RELATED MATERIALS AND REMOVAL OF THE COFFERDAM SYSTEM SHALL BE INCLUDED IN ITEM 503.201 OR 503.202.

ABUTMENT AND WINGWALL NOTES

1.

ITEM 534.3, WATER REPELLENT (SILANE/SILOXANE) SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES ON ABUTMENTS (INCLUDING BRIDGE SEATS), END DIAPHRAGMS, AND ALL WINGWALLS TO 1'-0" BELOW THE FILL LINES.
2.

ITEM 538.2, BARRIER MEMBRANE, PEEL AND STICK - VERTICAL SURFACES (F), 2'-0" WIDE WITH PROTECTION BOARD (SUBSIDIARY), SHALL BE PLACED CENTERED OVER THE VERTICAL CONSTRUCTION JOINTS.
3.

WEEPERS SHALL BE PLACED SYMMETRICALLY 10'-0" APART AND CENTERED AT 12" ABOVE THE NORMAL HIGH WATER ELEVATION. WEEPERS SHALL BE 4" IN DIAMETER AND SLOPED TO DRAIN WITH A 12:1 SLOPE. ALL COSTS SHALL BE SUBSIDIARY TO ITEM 520.12.
4.

ITEM 583.5, RIPRAP CLASS V, SHALL BE 3'-0' THICK, UNLESS OTHERWISE NOTED.
5.

ABUTMENTS SHALL BE BACKFILLED TO THE LEVEL OF THE BRIDGE SEAT ELEVATION PRIOR TO ERECTING THE GIRDERS.
6.

ALL ANCHOR BOLTS AT THE ABUTMENT SHALL BE CAST-IN-PLACE OR CORED DRILLED, USING A TEMPLATE. ROCK DRILLING IS NOT ALLOWED.
7.

ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED ¾”.

FOUNDATION AND FOOTING NOTES

1.

ANY UNSUITABLE MATERIALS SUCH AS BOULDERS, ROOTS, ORGANIC SOILS, LOOSE OR WEATHERED BEDROCK OR SILT/CLAY ENCOUNTERED AT THE PROPOSED BOTTOM OF EXCAVATION ELEVATION SHALL BE REMOVED AND REPLACED WITH ITEM 520.211, CONCRETE CLASS B, FOOTINGS (ON ROCK) AS REQUESTED BY THE ENGINEER.
2.

FOR LOCATIONS REQUIRING ROCK REMOVAL, THE REQUIRED ELEVATION FOR ROCK REMOVAL SHALL BE 1 FOOT BELOW THE TOP OF THE LEVELING PAD. ANY ROCK REMOVED BELOW AN ELEVATION 1 FOOT LOWER THAN THE REQUIRED ELEVATION WILL BE CONSIDERED AS EXCESS REMOVAL AND WILL NOT BE PAID. NO PAYMENT WILL BE MADE FOR GRANULAR BACKFILL THAT IS REQUIRED TO REPLACE EXCESS ROCK REMOVAL.
3.

THE FINAL BEDROCK SURFACE SHALL BE NO STEEPER THAN 5H:1V AND FREE OF ANY SHARP PROTRUSIONS. TRANSVERSE AND LONGITUDINAL BEDROCK SLOPES STEEPER THAN 5H:1V SHALL BE STEPPED IN LEVEL INCREMENTS WITH A MINIMUM HORIZONTAL STEP LENGTH OF 2 FEET OR AS DIRECTED.
4.

ROCK BRIDGE EXCAVATION MAY USE EITHER DRILLING AND BLASTING METHODS OR MECHANICAL METHODS AND WILL BE PAID FOR UNDER ITEM 504.2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE OR REPAIRS, AT NO COST TO THE OWNER, TO THE COFFERDAM THAT RESULT FROM BLASTING.
5.

A CONCRETE SUBFOOTING SHALL BE USED ONLY WHERE THE EXISTING BEDROCK LINE IS MORE THAN 4'-0" BELOW TOP OF FOOTING. NO PAYMENT SHALL BE MADE FOR CONCRETE SUBFOOTING WHERE THE CONTRACTOR HAS REMOVED ROCK BELOW THE PAY LIMITS FOR ITEM 504.2, ROCK BRIDGE EXCAVATION EXCEPT WHERE BEDROCK HAS BEEN REMOVED TO MINIMIZE STEEP SLOPES AS DESCRIBED IN FOUNDATION AND FOOTING NOTE 3. THE CONCRETE SUBFOOTING, IF NECESSARY, SHALL BE PAID AS ITEM 520.211. MINIMUM SUBFOOTING DEPTH SHALL BE 1'-0".
6.

THE TOP OF CONCRETE SUBFOOTINGS WHICH ARE TO BE IN CONTACT WITH FOOTINGS SHALL HAVE A ROUGHENED SURFACE.
7.

THE FOOTING THICKNESS MAY VARY FROM 2'-0" MIN. TO 3'-0" MAX. WITH THE TOP OF FOOTING AT THE ELEVATION AS DETAILED ON THE PLANS. FOOTING DESIGN IS BASED ON A 2'-0" THICKNESS AND REINFORCEMENT SHALL BE PLACED AS SHOWN IN THE PLANS.
8.

ALL SUBFOOTING AND FOOTING CONCRETE SHALL BE PLACED IN THE DRY.
9.

PRIOR TO PLACEMENT OF CONCRETE, THE BEDROCK SURFACE SHALL BE COMPLETELY CLEANED OF LOOSE BEDROCK AND DEBRIS. ANY OPEN JOINTS OR SEAMS SHALL BE CLEARED AND GROUTED IN ACCORDANCE WITH SECTION 504. SUBSIDIARY TO ITEM 504.2.
10.

ALL FOOTING CONCRETE SHALL BE PAID AS ITEM 520.211, CONCRETE CLASS B. FOOTINGS (ON ROCK).

PAVING NOTES

1.

ALL PAVING OPERATIONS SHALL BE PERFORMED BY A SUBCONTRACTOR THAT IS LISTED ON THE NHDOT PREQUALIFIED CONTRACTORS LIST IN THE CATEGORY OF PAVING.
2.

THE BITUMINOUS MIXTURE SHALL BE THOROUGHLY COMPACTED BY ROLLING. THE INITIAL ROLLING SHALL BE DONE WITH A STATIC OR VIBRATORY STEEL-DRUM ROLLER. INTERMEDIATE ROLLING SHALL BE DONE BY A PNEUMATIC-TIRED ROLLER. FINAL ROLLING SHALL BE DONE WITH A STATIC-DRUM ROLLER. THE MINIMUM WEIGHT OF STATIC ROLLER SHALL BE 8 TONS.
3.

SUBMIT PAVEMENT MIX DESIGN TO ENGINEER FOR APPROVAL PRIOR TO PAVING. SEE SECTION 401 OF THE NHDOT STANDARD SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
4.

THE GRADE OF ASPHALT CEMENT SHALL BE PG 58-28.

SUPERSTRUCTURE NOTES

1.

ALL STRUCTURAL STEEL SHALL BE PAID UNDER ITEM 550.1, STRUCTURAL STEEL (F), INCLUDING THE BEAMS, DIAPHRAGMS, CONNECTION PLATES, STIFFENERS AND FASTENERS.
2.

THE ENGINEER WILL INSPECT THE SHOP FABRICATION OF THE STRUCTURAL STEEL.
3.

NOTCH TOUGHNESS REQUIREMENTS SHALL BE IN ACCORDANCE WITH NHDOT STANDARD SPECIFICATIONS SECTION 550.2.3.
4.

ALL BOLTED CONNECTIONS SHALL BE SLIP CRITICAL (CLASS B) MADE WITH 7/8"-DIAMETER HIGH-STRENGTH BOLTS IN 15/16"-DIAMETER HOLES. ALL FASTENERS SHALL CONFORM TO AASHTO M164 (ASTM A325) TYPE 1 GALVANIZED.
5.

DIRECT TENSION INDICATOR WASHERS SHALL BE INSTALLED WITH HIGH STRENGTH BOLTS.
6.

THE STRUCTURAL STEEL FABRICATOR SHALL ARRANGE FOR NON-DESTRUCTIVE TESTING OF THE WELDS. ALL COSTS TO BE INCLUDED IN ITEM 550.1.
7.

SHOP DRAWINGS SHALL INCICATE THE METHOD AND SEQUENCE TO FOLLOWED IN WELDING THE GIRDER COMPONENTS.
8.

ALL STRUCTURAL STEEL, INCLUDING STEEL ENCASED IN CONCRETE, SHALL BE METALIZED AND SEAL COATED.
9.

THE TOP OF THE TOP FLANGE SHALL BE PAINTED WITH A LIGHT RUST PROTECTIVE COAT OF PRIMER, ONLY IN THE LOCATIONS WHERE THE WEB AND BOTTOM FLANGE ARE METALIZED (I.E. FULL LENGTH OF THE TOP FLANGE). ALL COSTS INCLUDED IN ITEM 550.1, STRUCTURAL STEEL (F).
10.

THE BEAMS SHALL BE CAMBERED TO FULL DEAD LOAD DEFLECTION ACCORDING TO THE DIMENSIONS SHOWN ON BRIDGE SHEET XX. CAMBER TOLERANCE IS +15/16", -0.
11.

INTENDED FINAL ERECTED POSITION OF I-GIRDER WEBS SHALL BE VERTICAL OR PLUMB. THIS SHALL BE ACHIEVED BY DETAILING FOR 'FULL DEAD LOAD FIT CONDITCN' FOR STRAIGHT I-GIRDERS WITH A SKEW.
12.

BEARING STIFFENERS AND EAM ENDS SHALL BE VERTICAL UNDER FULL DEAD LOAD DEFLECTION.
13.

ANY SHOP OR FIELD WELDING OF ATTACHMENTS TO ANY PORTION OF THE BEAMS FOR CONSTRUCTION PURPOSES WILL NOT BE PERMITTED, UNLESS APPROVED BY THE ENGINEER.
14.

THE CONTRACTOR SHALL SLBMIT A HANDLING AND ERECTION PROCEDURE TO THE ENGINEER PRIOR TO HANDLING THE STRUCTURAL STEEL IN ACCORDANCE WITH SECTIONS 550.3.14 AND 550.3.15. THE ERECTION PROCEDURE SHALL INDICATE THE LOCATION AND NUMBER OF LIFTING POINTS AS DETERMINED BY CHECKING THE L/B RATIOS IN ACCORDANCE WITH SECTION 550.3.14.2.4 TO GUARD AGAINST LATERAL BUCKLING OF THE GIRDERS. THESE DRAWINGS SHALL SUBMITTED FOR REVIEW AND APPROVAL BEFORE ERECTION STARTS.
15.

ALL SHEAR CONNECTORS SHALL BE FIELD WELDED TO THE TOP FLANGE WITH AUTOMATICALLY TIMED STUD WELDING EQUIPMENT.
16.

ALL REINFORCING STEEL IN THE BRIDGE DECK AND CURBS SHALL BE STAINLESS STEEL AND SHALL BE PAID AS ITEM 544.51, REINFORCING STEEL, STAINLESS (CONTRACTOR DETAILED).
17.

SCREED RAIL SUPPORTS REQUIRED FOR THE PLACEMENT OF THE DECK SLAB CONCRETE SHALL BE LOCATED AT THE CENTERLINE OF BEAMS.
18.

ALL WELDING AND FABRICATION SHALL BE PERFORMED IN CONFORMANCE WITH NHDOT STANDARD SPECIFICATION SECTION 550.
19.

THE BRIDGE DECK POURING SEQUENCE SHALL BE SUBMITTED IN ACCORDANCE WITH SECTION 105.02 AND SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER. BRIDGE DECK CONCRETE SHALL REMAIN PLASTIC THROUGHOUT THE ENTIRE POURING SEQUENCE.
20.

THE CONTRACTOR SHALL SEAL ALL CONCRETE BRIDGE DECK CRACKS AS DIRECTED AS REQUESTED BY THE RESIDENT PROJECT REPRESENTATIVE. (SUBSIDIARY TO ITEM 520.7).
21.

TRAFFIC SHALL NOT BE ALLOWED ON THE CONCRETE BRIDGE DECK UNTIL ITEM 534.3, WATER REPELLENT (SILANE/SILOXANE) HAS BEEN APPLIED.
22.

STEEL ERECTION SHALL NOT BE PERMITTED UNTIL THE ABUTMENTS HAVE BEEN BACKFILLED TO THE LEVEL OF THE BRIDGE SEATS.
23.

THE CONCRETE IN THE COPING AND BRIDGE DECK SHALL HAVE A CORROSION INHIBITOR THAT IS LISTED ON THE NHDOT QUALIFIED PRODUCTS LIST. DOSAGE SHALL BE PER MANUFACTURER'S RECOMMENDATIONS.
24.

THE CONTRACTOR MAY SUBSTITUTE A WELDED STEEL PLATE GIRDER FOR THE PROPOSED W36X182 ROLLED BEAMS. CONTRACTOR SHALL SUBMIT ALL DESIGN CALCULATIONS AND THE NHDOT FORM 4 TO THE ENGINEER FOR APPROVAL. NO ADDITIONAL COMPENSATION WILL BE MADE FOR THIS SUBSTITUTION.
25.

ALL PLAN DIMENSIONS ARE MEASURED HORIZONTAL AT 450 F WITHOUT ACCOUNT FOR PROFILE GRADE, UNLESS OTHERWISE NOTED.

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CITY OF LEBANON
LEBANON, NEW HAMPSHIRE
TRUES BROOK ROAD OVER BLOODS BROOK
PROJECT NOTES (2 OF 2)

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UTILITY COORDINATION

1.

OVERHEAD UTILITIES ARE PRESENT WITHIN THE PROJECT SITE. THE CONTRACTOR SHALL BE FAMILIAR AND TAKE NECESSARY PRECAUTIONS WITH THESE UTILITIES DURING CONSTRUCTION. CONTRACTOR SHALL COORDINATE TEMPORARY RELOCATIONS; SHIELDING NECESSARY FOR EQUIPMENT MOBILIZATION (SUCH AS CRANE TO INSTALL THE BEAMS) AND TEMPORARY DISCONNECTION OF POWER WITH THE UTILITY OWNERS IF REQUIRED. ALL COST FOR THIS COORDINATION SHALL BE INCLUDED IN ITEM 692, MOBILIZATION. ALL COSTS ASSOCIATED WITH MISCELLANEOUS TREE TRIMMING & CLEARING FOR TEMPORARY UTILITY RELOCATIONS SHALL BE INCLUDED IN ITEM 201.1, CLEARING AND GRUBBING (F).

LIBERTY UTILITIES
CONTACT NAME: RICHARD HUNTLEY
PHONE: (603) 306-6220

CONSOLIDATED COMMUNICATIONS
CONTACT NAME: DANIEL ALBERT
EMAIL: DANIEL.ALBERT@CONSOLIDATED.COM

COMCAST
CONTACT NAME: TIMOTHY DENT
EMAIL: TIMOTHY_DENT@COMCAST.COM
2.

THE CONTRACTOR SHALL COORDINATE THE LOCATION AND SCHEDULE FOR TEMPORARY RELOCATION OF THE OVERHEAD UTILITY WITH LIBERTY UTILITIES. LIBERTY UTILITIES REQUIRES ONE MONTH ADVANCE NOTICE FOR THIS WORK.

STORMWATER POLLUTION PREVENTION NOTES

1.

THE EROSION AND SEDIMENT CONTROLS DETAILED IN THESE PLANS ARE SCHEMATIC ONLY AND ARE NOT INTENDED TO DICTATE CONSTRUCTION MEANS AND METHODS, NOR THE SPECIFIC EROSION AND SEDIMENT CONTROLS NECESSARY TO COMPLETE THE WORK. THE CONTRACTOR SHALL SUBMIT ITEM 645.7, STORMWATER POLLUTICN AND PREVENTION PLAN (SWPPP), FOR REVIEW AND APPROVAL TO THE ENGINEER. UPON APPROVAL BY THE ENGINEER, THE SWPPP WILL BE SENT TO NHDES FOR REVIEW AND APPROVAL PRIOR TO THE START OF WORK IF ANY OF THE PROPOSED EROSION AND SEDIMENT CONTROL MEASURES VARY FROM THOSE SHOWN IN THESE PLANS.
2.

THE EROSION AND SEDIMENT CONTROL MEASURES DETAILED ON THESE PLANS ARE BASED ON THE NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION, DECEMBER 2008.
3.

ALL STORMWATER, EROSION AND SEDIMENT CONTROL MEASURES SHALL BE LOCATED WITHIN THE TEMPORARY AND PERMANENT EASEMENT AREAS SHOWN ON THE EASEMENT PLAN.
4.

FOR ANY WORK ASSOCIATED WITH ITEM 699., MISCELLANEOUS TEMPORARY EROSION AND SEDIMENT CONTROL, DETAILED ESTIMATES FOR THE WORK SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO START OF THE WORK.
5.

PERFORM ALL WORK DURING LOW FLOW PERIODS. ALL WORK SHALL BE PERFORMED WITHIN THE IMPACT AREAS AS PERMITTED BY NHDES.
6.

ALL STORMWATER, EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE CONTRACTOR'S STORM WATER POLLUTION PREVENTION PLAN (ITEM 645.7). SILT FENCE SHALL BE INSTALLED AS SHOWN ON PAGE 96 AND THE DEWATERING BAG SHALL BE INSTALLED AS SHOWN ON PAGE 149 OF NHDES STORMWATER MANUAL, VOLUME 3.

INVASIVE SPECIES NOTES

1.

NO MATERIAL CONTAINING ANY LIVING OR VIABLE PORTION OF PLANTS ON THE NEW HAMPSHIRE PROHIBITED INVASIVE SPECIES LIST (AGR3800 TABLE 3800.01) SHALL BE TRANSPORTED TO OR FROM CONSTRUCTION SITE WITHOUT NOTIFICATION AND APPROVAL FROM THE NEW HAMPSHIRE DEPARTMENT OF AGRICULTURE PER RSA 430:55.
2.

INVASIVE SPECIES HAVE BEEN OBSERVED WITHIN THE PROJECT LIMITS. UPON APPROVAL OF ITEM 697.11, INVASIVE SPECIES CONTROL AND MANAGEMENT PLAN THE CONTRACTOR SHALL PERFORM THE WORK NECESSARY TO REMOVE AND DISPOSE OF THE INVASIVE PLANT SPECIES ENCOUNTERED WITHIN THE PROJECT LIMITS. ALL COSTS (MATERIALS AND LABOR REQUIRED) SHALL BE INCLUDED IN ITEM 201.881, INVASIVE SPECIES CONTROL, TYPE I AS RECOMMENDED IN THE APPROVED PLAN.
3.

WORK SHALL BE DONE IN ACCORDANCE WITH THE NHDOT BEST MANAGEMENT PRACTICES FOR ROADSIDE INVASIVE SPECIES PLANTS HANDBOOK. THE CONTRACTOR IS ADVISED TO REVIEW THE CONTRACT DOCUMENTS FOR ADDITIONAL INFORMATION.

SUGGESTED CONSTRUCTION SEQUENCE

1.

INSTALL TEMPORARY EROSION CONTROL MEASURES AS DETAILED IN THE STORMWATER POLLUTION PREVENTION PLAN.
2.

INSTALL WATER DIVERSION STRUCTURE(S).
3.

CONSTRUCT TEMPCRARY DETOUR AND TEMPORARY BRIDGE.
4.

REMOVE EXISTING ROADWAY MATERIALS AND DEMOLISH EXISTING BRIDGE TO LIMITS SHOWN ON THE PLANS.
5.

EXCAVATE TO THE LIMITS AND ELEVATIONS AS SHOWN ON THE PLANS. CONSTRUCT NEW CONCRETE FOOTINGS, SEMI-INTEGRAL ABUTMENTS, AND WINGWALLS.
6.

BACKFILL BEHIND THE FOOTINGS AND SEMI-INTEGRAL ABUTMENTS AND INSTALL RIPRAP IN FRONT OF THE ABUTMENTS AND WINGWALLS AS SHOWN IN THE PLAN DETAILS.
7.

ERECT STRUCTURAL STEEL AND DIAPHRAGMS. CONSTRUCT CAST-IN-PLACE CONCRETE DECK AND END-DIAPHRAGMS.
8.

BACKFILL BEHIND THE NEW STRUCTURE, CONSTRUCT APPROACH SLABS AND BRUSH CURBS.
9.

COMPLETE ROADWAY RECONSTRUCTION, INSTALL BRIDGE RAIL, BRIDGE APPROACH RAIL, AND GUARDRAIL.
10.

REMOVE TEMPORARY BRIDGE, TEMPORARY DETOUR, AND WATER DIVERSION STRUCTURE. RESTORE ALL DISTURBED AREAS TO PRECONSTRUCTION CONDITIONS WITH TURF ESTABLISHMENT AND SLOPE STABILIZATION.

ACCESS FOR BRIDGE CONSTRUCTION

1.

ITEM 500.02, ACCESS FOR BRIDGE CONSTRUCTION, SHALL CONSIST OF THE DESIGN, CONSTRUCTION, MAINTENANCE, AND REMOVAL OF ANY TEMPORARY ACCESS BY THE CONTRACTOR. THE CONTRACTOR SHALL SUBMIT THE PLAN FOR ACCESS AND WATER CONTROL INCLUDING CLEAN WATER BYPASS FOR REVIEW THREE WEEKS PRIOR TO COMMENCEMENT OF WORK. SEE SPECIAL PROVISIONS FOR ADDITIONAL DETAILS.
2.

ANY CLEARING FOR CONSTRUCTION OF THE ACCESS AREA SHALL BE INCLUDED IN ITEM 500.02; CLEARING AND TREE REMOVAL OUTSIDE OF THE ACCESS ROAD FOR UTILITY RELOCATION OR COUNTERMEASURE INSTALLATION SHALL BE PAID UNDER THE APPROPRIATE ITEM NUMBERS.
3.

TEMPORARY FILLS SHALL REMAIN WITHIN WETLAND IMPACT AREAS SHOWN IN THE WET AND PERMIT. NO MATERIAL OF GRADATION LESS THAN 2" SHALL BE USED. A GEOTEXTILE FABRIC SHALL BE PLACED UNDER ALL TEMPORARY FILLS TO MINIMIZE DISRUPTION OF NATIVE SOILS AND VEGETATION, ALL COSTS SUBSIDIARY TO ITEM 500.02.
4.

THE CONTRACTOR MUST REMAIN WITHIN THE EXISTING RIGHT-OF-WAY AND PROJECT EASEMENTS, AND IMPACTS TO WETLANDS ARE RESTRICTED TO WHAT IS SHOWN. WORK OUTSIDE THE LIMITS SHOWN MAY REQUIRE ADDITIONAL PERMITS AND/OR ROW COORDINATION, WHICH IS THE RESPONSIBILITY OF THE CONTRACTOR; ADDITIONAL COSTS ASSOCIATED WITH THESE EFFORTS SHALL BE AT THE CONTRACTOR'S EXPENSE.
5.

ITEM 646.51, TURF ESTABLISHMENT WITH MULCH, TACKIFIERS AND LOAM SHALL BE USED TO LANDSCAPE AND RESTORE THE AREA DISTURBED BY THE TEMPORARY ACCESS ONCE IT IS REMOVED.

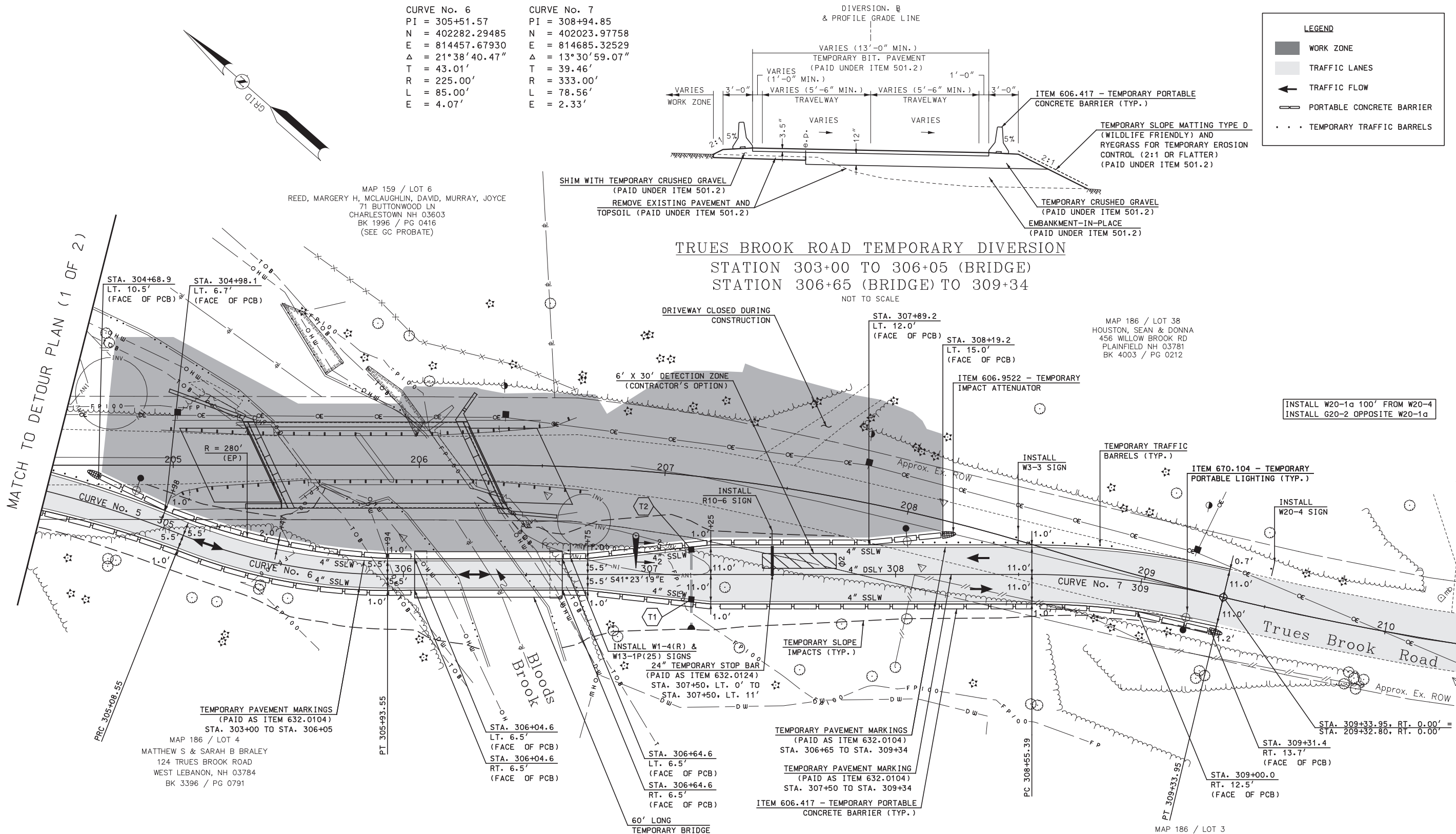
SUMMARY OF QUANTITIES

SUMMARY OF QUANTITIES NOT INCLUDED IN THIS SUBMISSION



PROJECT NO. 21.906414.00		SHEET NO. 6		SHEET 6 OF 45	
CITY OF LEBANON LEBANON, NEW HAMPSHIRE TRUES BROOK ROAD OVER BLOODS BROOK		PROJECT NOTES AND SUMMARY OF QUANTITIES		HOYLE TANNER  150 Dow Street • Manchester, NH 03301 (603) 669-5555 • www.hoyletanner.com	
REV.		DESCRIPTION		DRW, CHKD, BY, DATE	
NHDOT BRIDGE NO.		DESIGNED			
FILENAME		906414P\Notes		KMH	
MODEL NAME		DRAWN			
PBD		CHECKED			
SCALE		AS SHOWN		DATE	
JANUARY 2024					
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CURVE No. 6	CURVE No. 7
PI = 305+51.57	PI = 308+94.85
N = 402282.29485	N = 402023.97758
E = 814457.67930	E = 814685.32529
Δ = 21°38'40.47"	Δ = 13°30'59.07"
T = 43.01'	T = 39.46'
R = 225.00'	R = 333.00'
L = 85.00'	L = 78.56'
E = 4.07'	E = 2.33'

LEGEND	
	WORK ZONE
	TRAFFIC LANES
	TRAFFIC FLOW
	PORTABLE CONCRETE BARRIER
	TEMPORARY TRAFFIC BARRELS

TRUE'S BROOK ROAD TEMPORARY DIVERSION
STATION 303+00 TO 306+05 (BRIDGE)
STATION 306+65 (BRIDGE) TO 309+34
NOT TO SCALE

TEMPORARY DRAINAGE NOTES:

- T1 STA. 307+17.0, RT. 20.5' TO STA. 307+17.0, RT. 10.0'
CONST. 9 LF x 12" TEMPORARY PIPE (ITEM 603.99012)
CONST. 15" STEEL END SECTION @+17.0, RT. 20.5' (ITEM 603.34115)
CONST. TEMPORARY DI-D-B @+17.0, RT. 10.0' (ITEM 604.2249)
CONTRACTOR TO DETERMINE INVERTS IN FIELD
- T2 STA. 307+17.0, RT. 10.0' TO STA. 307+17.0, LT. 10.0'
CONST. 16 LF x 12" TEMPORARY PIPE (ITEM 603.99012)
CONST. TEMPORARY DI-D-B @+17.0, LT. 10.0' (ITEM 604.2249)
CONTRACTOR TO DETERMINE INVERTS IN FIELD

NOTE:
1. MOUNTING HEIGHT OF SIGNS SHALL BE PER THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (LATEST EDITION) (MUTCD) SECTION 2A.18.



REV.	DESCRIPTION	DATE

FILE NAME	DESIGNED	FILE NAME	DESIGNED
006414detPlans	JFMS	006414detPlans	JFMS
MODEL NAME	DET2	MODEL NAME	DET2
SCALE	AS SHOWN	SCALE	AS SHOWN
DATE	JANUARY 2024	DATE	JANUARY 2024

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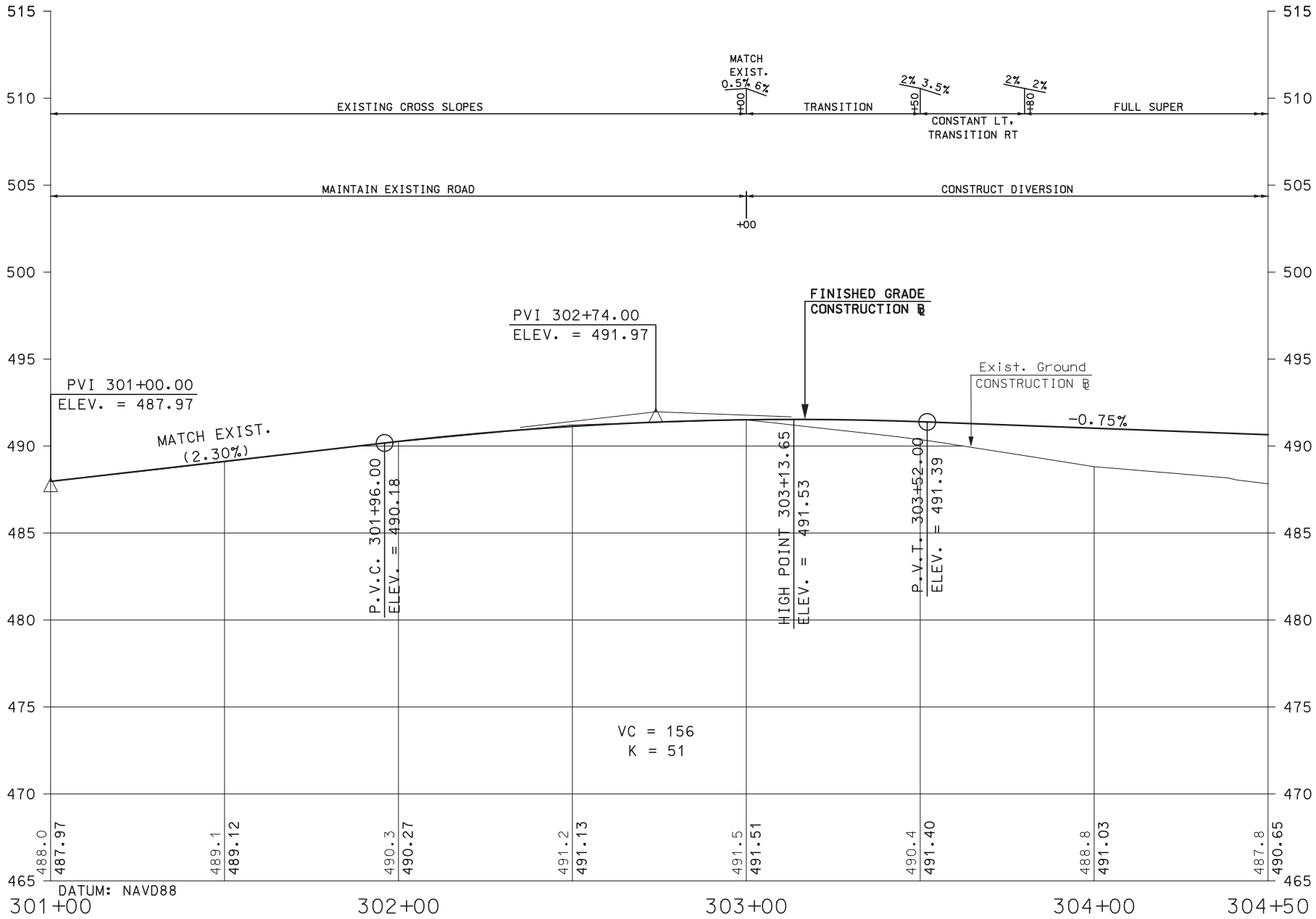
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CITY OF LEBANON
LEBANON, NEW HAMPSHIRE
TRUE'S BROOK ROAD OVER BLOODS BROOK

DETOUR PLAN (2 OF 2)

PROJECT NO. 21.906414.00
SHEET NO. 14
SHEET 14 OF 45

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CITY OF LEBANON
LEBANON, NEW HAMPSHIRE
TRUES BROOK ROAD OVER BLOODS BROOK
DETOUR PROFILE (1 OF 2)

PROJECT NO. 21,906414.00
SHEET NO. 15
SHEET 15 OF 45

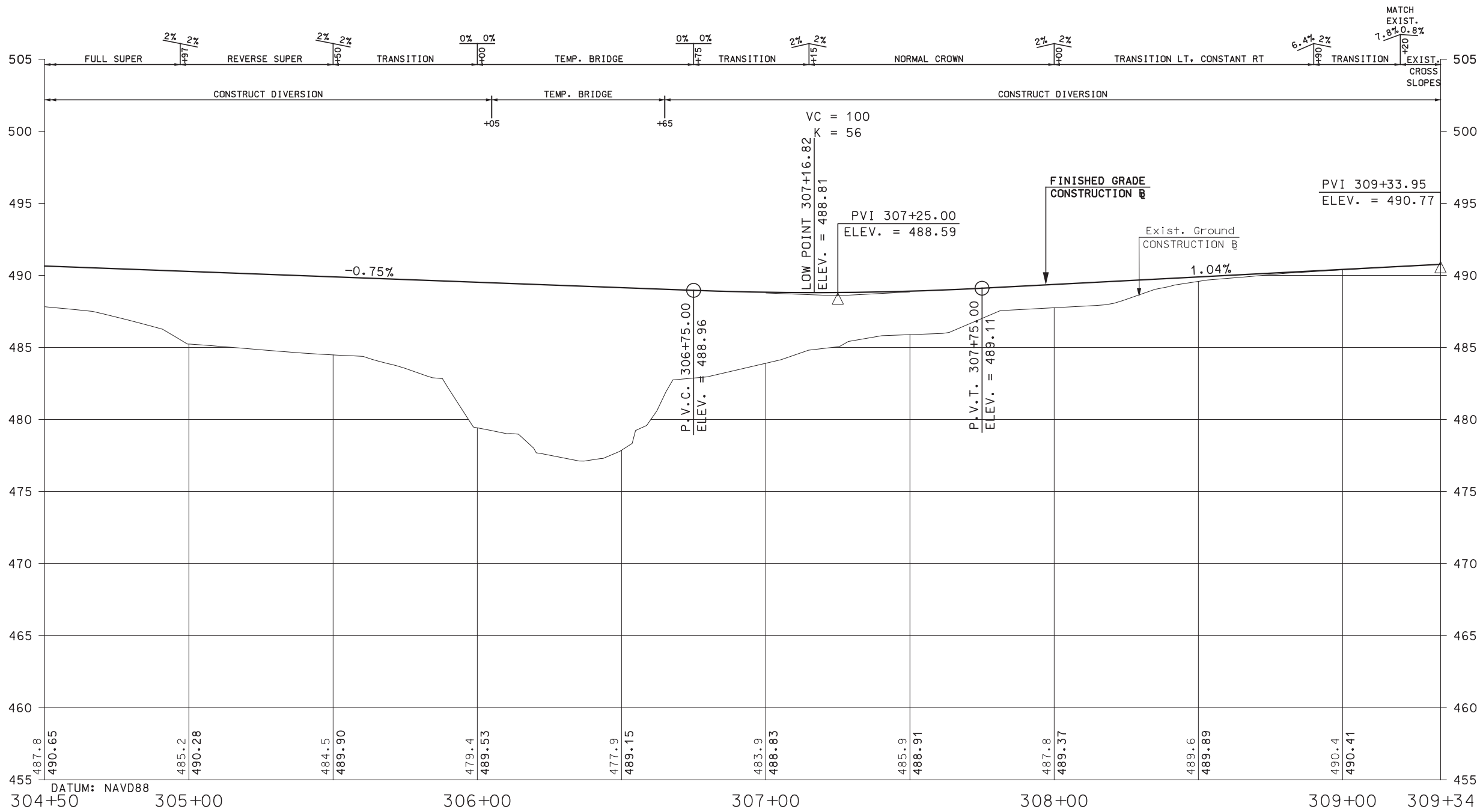
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REV.	DESCRIPTION	DRW	CHKD	DATE

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CITY OF LEBANON
LEBANON, NEW HAMPSHIRE
TRUES BROOK ROAD OVER BLOODS BROOK
DETOUR PROFILE (2 OF 2)

PROJECT NO. 21.906414.00
SHEET NO. 16
SHEET 16 OF 45

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FILENAME
906414detPlans

MODEL NAME
PRO2

SCALE
AS SHOWN

DESIGNED
JFMS

DRAWN
JFMS

CHECKED
SBH

DATE
JANUARY 2024

REV.

DESCRIPTION

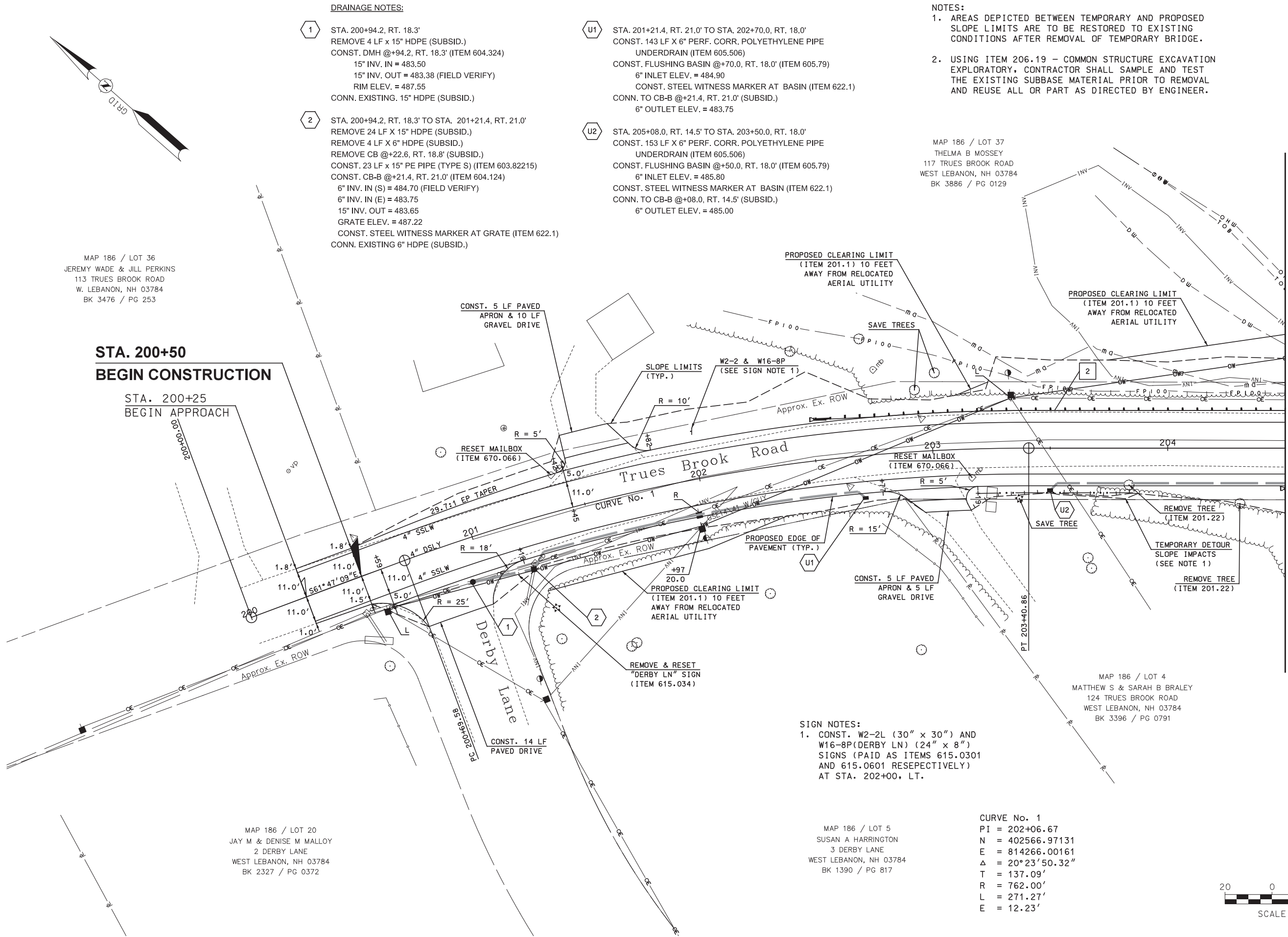
DRW. CHKD. BY

DATE

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CITY OF LEBANON
LEBANON, NEW HAMPSHIRE
TRUES BROOK ROAD OVER BLOODS BROOK

ROADWAY PLAN (1 OF 2)

PROJECT NO. 21.906414.00

SHEET NO.

17

SHEET 17 OF 45

DRAINAGE NOTES:

5 STA. 207+03.5, RT. 42.5' TO STA. 207+30.0.0, RT. 15.0'
CONST. 36 LF x 15" PE PIPE (TYPE S) (ITEM 603.82215)
CONST. 18" STEEL END SECTION @+03.5, RT. 42.5' (ITEM 603.34118)
15" OUTLET ELEV. = 484.00
CONST. STEEL WITNESS MARKER @ OUTLET (ITEM 622.1)
CONST. 5' X 7' STONE OUTLET PROTECTION, CLASS C (SEE DETAIL)
CONST. CB-B @+30.0, RT. 15.0' (ITEM 604.124)
CONST. POLYETHYLENE LINER (ITEM 604.0007)
15" INV. OUT = 484.30
GRATE ELEV. = 488.03

6 STA. 207+32.5, LT. 44.5' TO STA. 207+90.5, LT. 37.0'
CONST. 62 LF X 12" PE PIPE (TYPE S) (ITEM 603.822112)
CONST. 15" STEEL END SECTION @+32.5, LT. 44.5' (ITEM 603.34115)
12" OUTLET ELEV. = 484.00
CONST. STEEL WITNESS MARKER AT OUTLET (ITEM 622.1)
CONST. 5' X 7' STONE OUTLET PROTECTION, CLASS C (SEE DETAIL)
CONST. 15" STEEL END SECTION @+90.5, LT. 37.0' (ITEM 603.34115)
12" INLET ELEV. = 484.70
CONST. STEEL WITNESS MARKER AT INLET (ITEM 622.1)
CONST. 5' X 5' STONE INLET PROTECTION, CLASS C (SEE DETAIL)

GUARDRAIL NOTES:

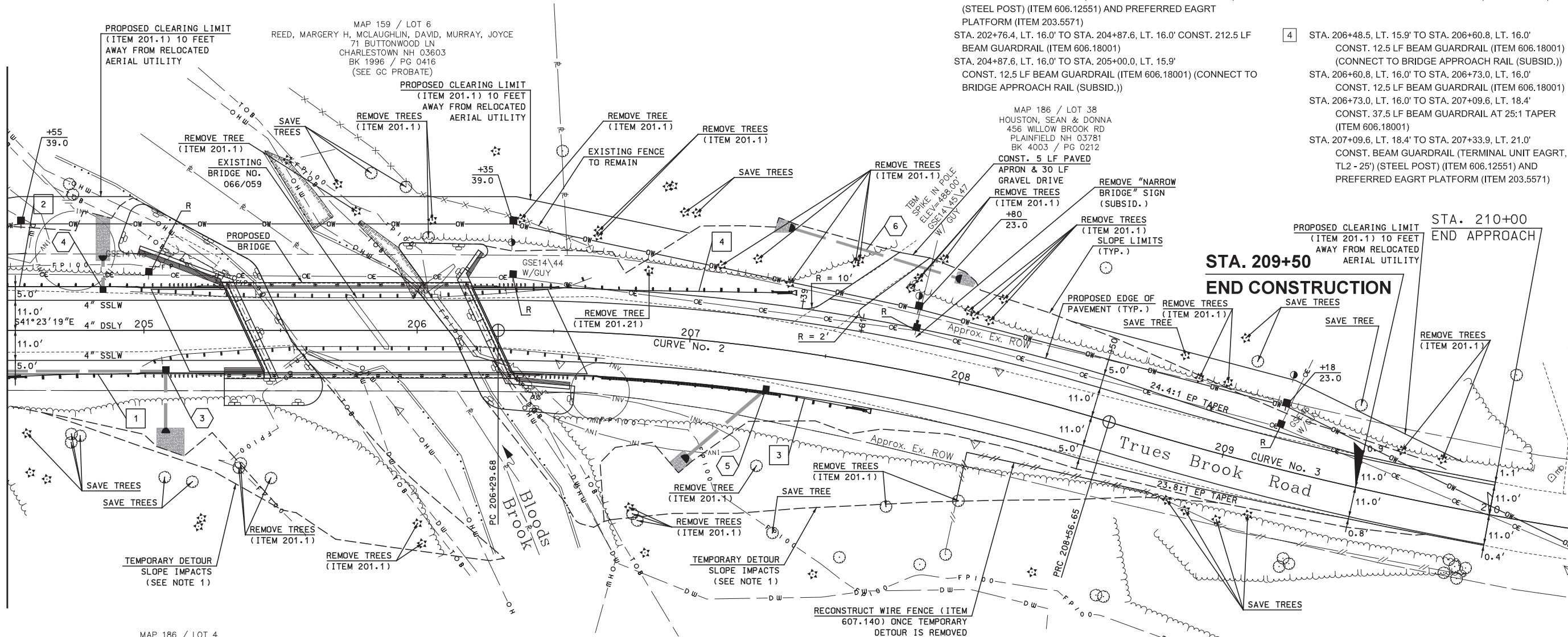
1 STA. 204+50.5, RT. 17.0' TO STA. 204+75.5, RT. 16.0'
CONST. BEAM GUARDRAIL (TERMINAL UNIT EAGRT, TL 2 - 25') (STEEL POST) (ITEM 606.12551) AND PREFERRED EAGRT PLATFORM (ITEM 203.5571)
STA. 204+75.5, RT. 16.0' TO STA. 204+88.0, RT. 16.0'
CONST. 12.5 LF BEAM GUARDRAIL (ITEM 606.18001)
STA. 204+88.0, RT. 16.0' TO STA. 205+00.5, RT. 15.7'
CONST. 12.5 LF BEAM GUARDRAIL (ITEM 606.18001) (CONNECT TO BRIDGE APPROACH RAIL (SUBSID.))

2 STA. 202+52.0, LT. 17.4' TO STA. 202+76.4, LT. 16.0'
CONST. BEAM GUARDRAIL (TERMINAL UNIT EAGRT, TL2 - 25') (STEEL POST) (ITEM 606.12551) AND PREFERRED EAGRT PLATFORM (ITEM 203.5571)
STA. 202+76.4, LT. 16.0' TO STA. 204+87.6, LT. 16.0' CONST. 212.5 LF BEAM GUARDRAIL (ITEM 606.18001)
STA. 204+87.6, LT. 16.0' TO STA. 205+00.0, LT. 15.9'
CONST. 12.5 LF BEAM GUARDRAIL (ITEM 606.18001) (CONNECT TO BRIDGE APPROACH RAIL (SUBSID.))

3 STA. 206+65.2, RT. 15.9' TO STA. 206+78.0, RT. 16.0'
CONST. 12.5 LF BEAM GUARDRAIL (ITEM 606.18001) (CONNECT TO BRIDGE APPROACH RAIL (SUBSID.))
STA. 206+78.0, RT. 16.0' TO STA. 207+29.1, RT. 16.0'
CONST. 50 LF BEAM GUARDRAIL (ITEM 606.18001)
STA. 207+29.1, RT. 16.1 TO STA. 207+41.9, RT. 16.4'
CONST. 12.5 LF BEAM GUARDRAIL AT 25:1 TAPER (ITEM 606.18001)
STA. 207+41.9, RT. 16.4' TO STA. 207+67.4, RT. 17.0'
CONST. BEAM GUARDRAIL (TERMINAL UNIT EAGRT, TL2 - 25') (STEEL POST) (ITEM 606.12551) AND PREFERRED EAGRT PLATFORM (ITEM 203.5571)

4 STA. 206+48.5, LT. 15.9' TO STA. 206+60.8, LT. 16.0'
CONST. 12.5 LF BEAM GUARDRAIL (ITEM 606.18001) (CONNECT TO BRIDGE APPROACH RAIL (SUBSID.))
STA. 206+60.8, LT. 16.0' TO STA. 206+73.0, LT. 16.0'
CONST. 12.5 LF BEAM GUARDRAIL (ITEM 606.18001)
STA. 206+73.0, LT. 16.0' TO STA. 207+09.6, LT. 18.4'
CONST. 37.5 LF BEAM GUARDRAIL AT 25:1 TAPER (ITEM 606.18001)
STA. 207+09.6, LT. 18.4' TO STA. 207+33.9, LT. 21.0'
CONST. BEAM GUARDRAIL (TERMINAL UNIT EAGRT, TL2 - 25') (STEEL POST) (ITEM 606.12551) AND PREFERRED EAGRT PLATFORM (ITEM 203.5571)

MATCH TO ROADWAY PLAN (1 OF 2)



DRAINAGE NOTES:

3 STA. 205+08.0, RT. 36.0' TO STA. 205+08.0, RT. 14.5'
CONST. 20 LF x 15" PE PIPE (TYPE S) (ITEM 603.82215)
CONST. 18" STEEL END SECTION @+08.0, RT. 36.0' (ITEM 603.34118)
15" OUTLET ELEV. = 484.80
CONST. STEEL WITNESS MARKER @ OUTLET (ITEM 622.1)
CONST. 10' X 9' STONE OUTLET PROTECTION, CLASS C (SEE DETAIL)
CONST. CB-B @+08.0, RT. 14.5' (ITEM 604.124)
CONST. POLYETHYLENE LINER (ITEM 604.0007)
6" INV. IN = 485.00
15" INV. OUT = 484.90
GRATE ELEV. = 489.73

4 STA. 204+85.0, LT. 25.0' TO STA. 204+85.0, LT. 15.0'
CONST. 9 LF x 15" PE PIPE (TYPE S) (ITEM 603.82215)
CONST. 18" STEEL END SECTION @+85.0, LT. 25.0' (ITEM 603.34118)
15" OUTLET ELEV. = 486.00
CONST. STEEL WITNESS MARKER @ OUTLET (ITEM 622.1)
CONST. 5' X 16' STONE OUTLET PROTECTION, CLASS C (SEE DETAIL)
CONST. CB-B @+85.0, LT. 15.0' (ITEM 604.124)
CONST. POLYETHYLENE LINER (ITEM 604.0007)
15" INV. OUT = 486.25
GRATE ELEV. = 490.42

NOTES:

- AREAS DEPICTED BETWEEN TEMPORARY AND PROPOSED SLOPE LIMITS ARE TO BE RESTORED TO EXISTING CONDITIONS AFTER REMOVAL OF TEMPORARY BRIDGE.
- USING ITEM 206.19 - COMMON STRUCTURE EXCAVATION EXPLORATORY, CONTRACTOR SHALL SAMPLE AND TEST THE EXISTING SUBBASE MATERIAL PRIOR TO REMOVAL AND REUSE ALL OR PART AS DIRECTED BY ENGINEER.

CURVE No. 2 CURVE No. 3
PI = 207+44.01 PI = 209+60.63
N = 402161.66040 N = 401962.72511
E = 814623.18799 E = 814713.10361
Δ = 17°03'58.97" Δ = 9°40'14.75"
T = 114.33' T = 103.98'
R = 762.00' R = 1229.15'
L = 226.97' L = 207.46'
E = 8.53' E = 4.39'



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CITY OF LEBANON
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TRUES BROOK ROAD OVER BLOODS BROOK

ROADWAY PLAN (2 OF 2)

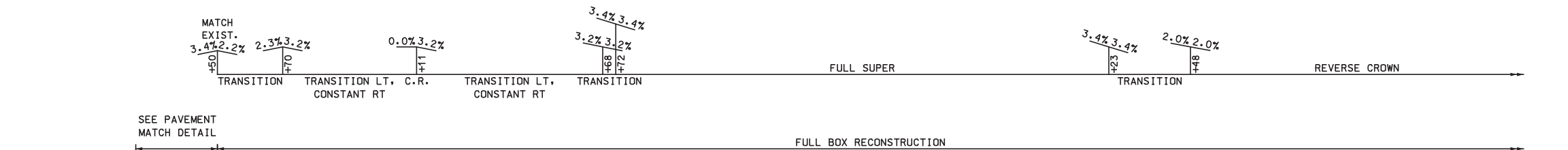
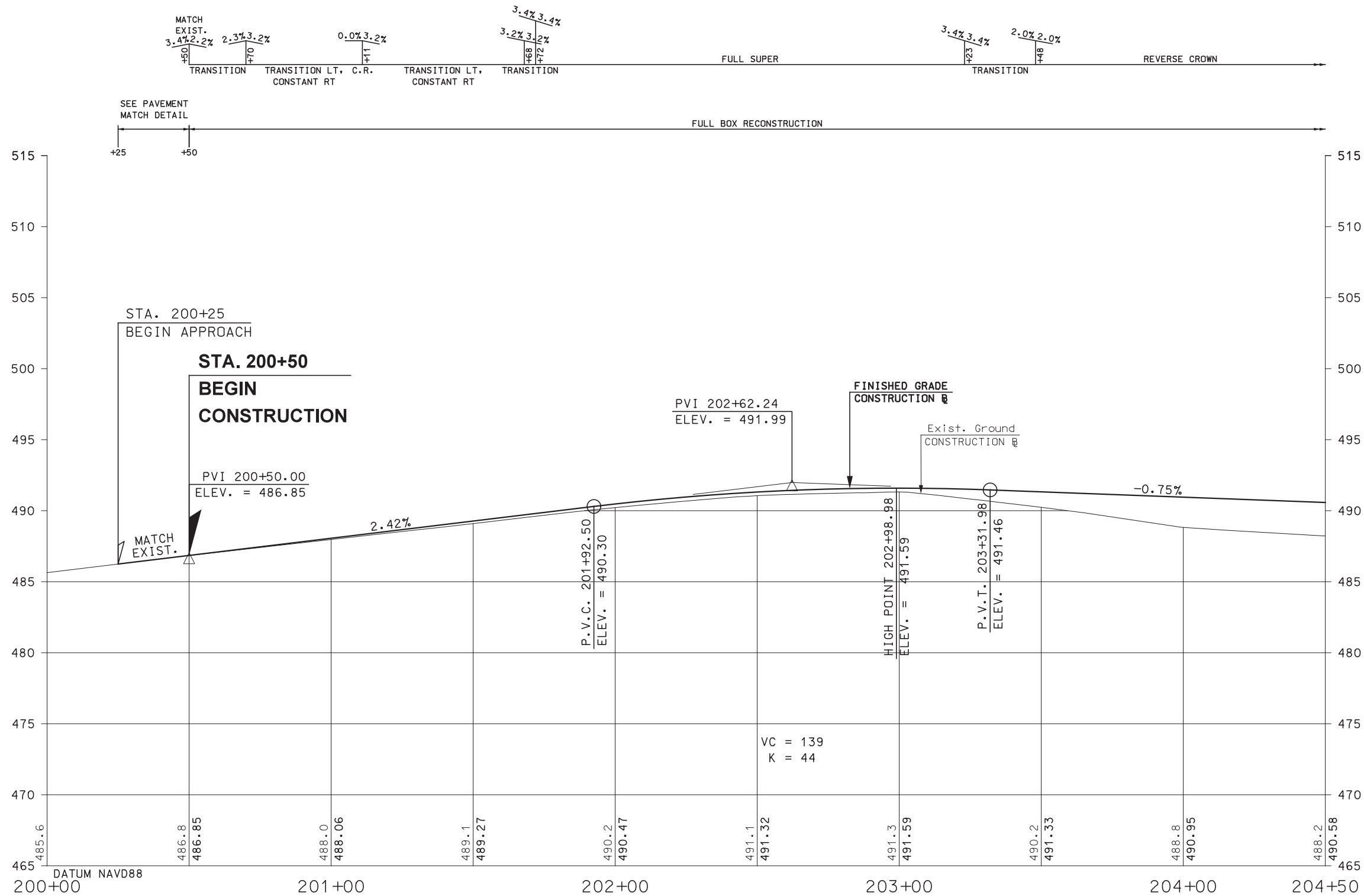
PROJECT NO. 21.906414.00

SHEET NO.

18

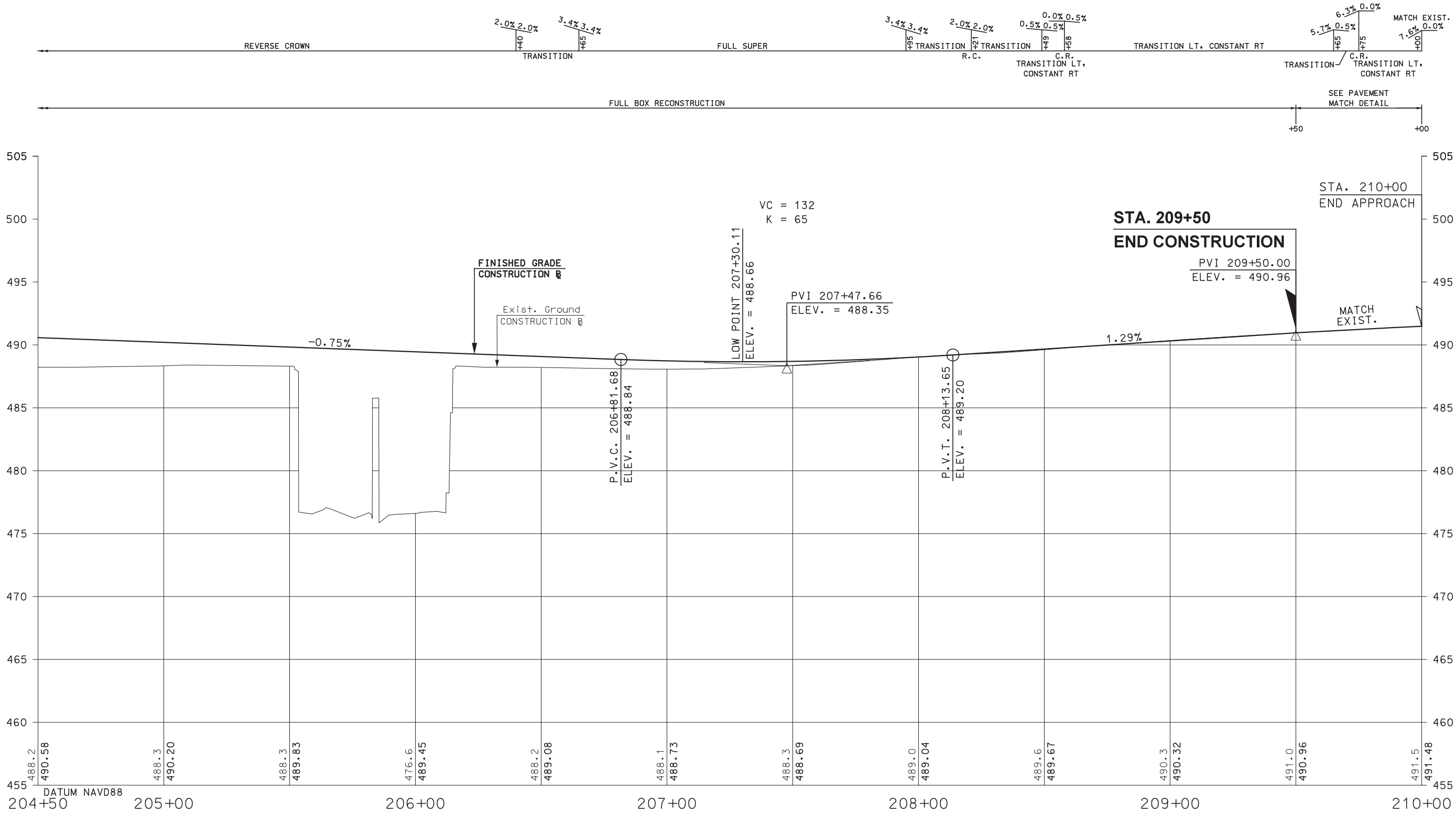
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PROJECT NO. 21.906414.00		SHEET NO. 19		SHEET 19 OF 45	
CITY OF LEBANON LEBANON, NEW HAMPSHIRE		ROADWAY PROFILE (1 OF 2)		HOYLE TANNER	
TRUES BROOK ROAD OVER BLOODS BROOK				150 Dow Street • Manchester, NH 03301 (603) 669-5555 • www.hoyletanner.com	
NHDOT BRIDGE NO.		DESIGNED FILENAME 906414\proplans		DATE JANUARY 2024	
REV.		CHECKED SBH		DATE	
DESCRIPTION		DRAWN JFMS		DATE	
DRW. CHKD. BY		JFMS		DATE	
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REV.	DESCRIPTION	DRW	CHKD	DATE

FILE NAME	DESIGNED	DATE
906414\proplans	JFMS	

MODEL NAME	DRAWN	DATE
PRO02	JFMS	

SCALE	CHECKED	DATE
AS SHOWN	SBH	

PROJECT NO. 21.906414.00

SHEET NO. 20

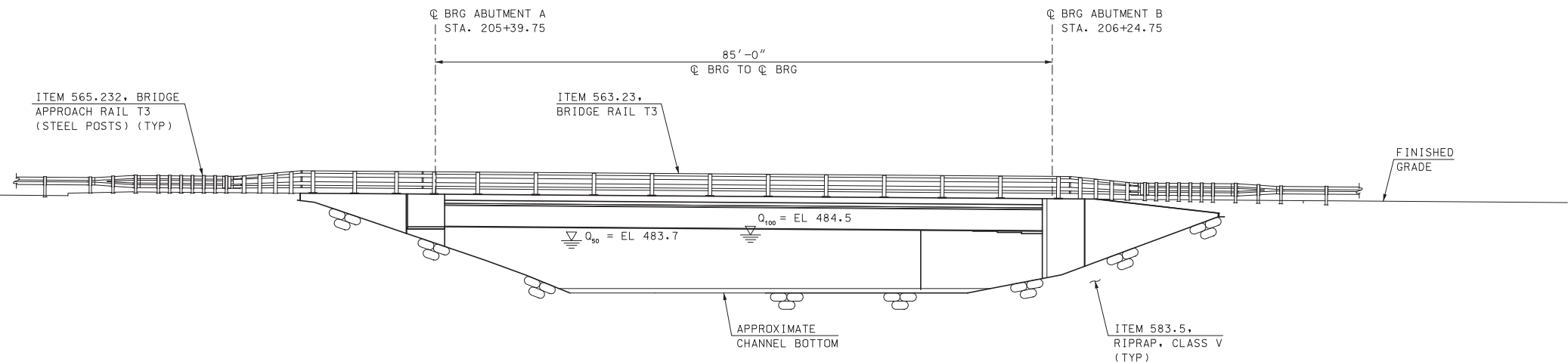
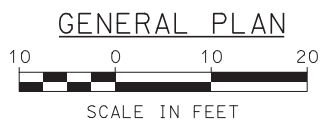
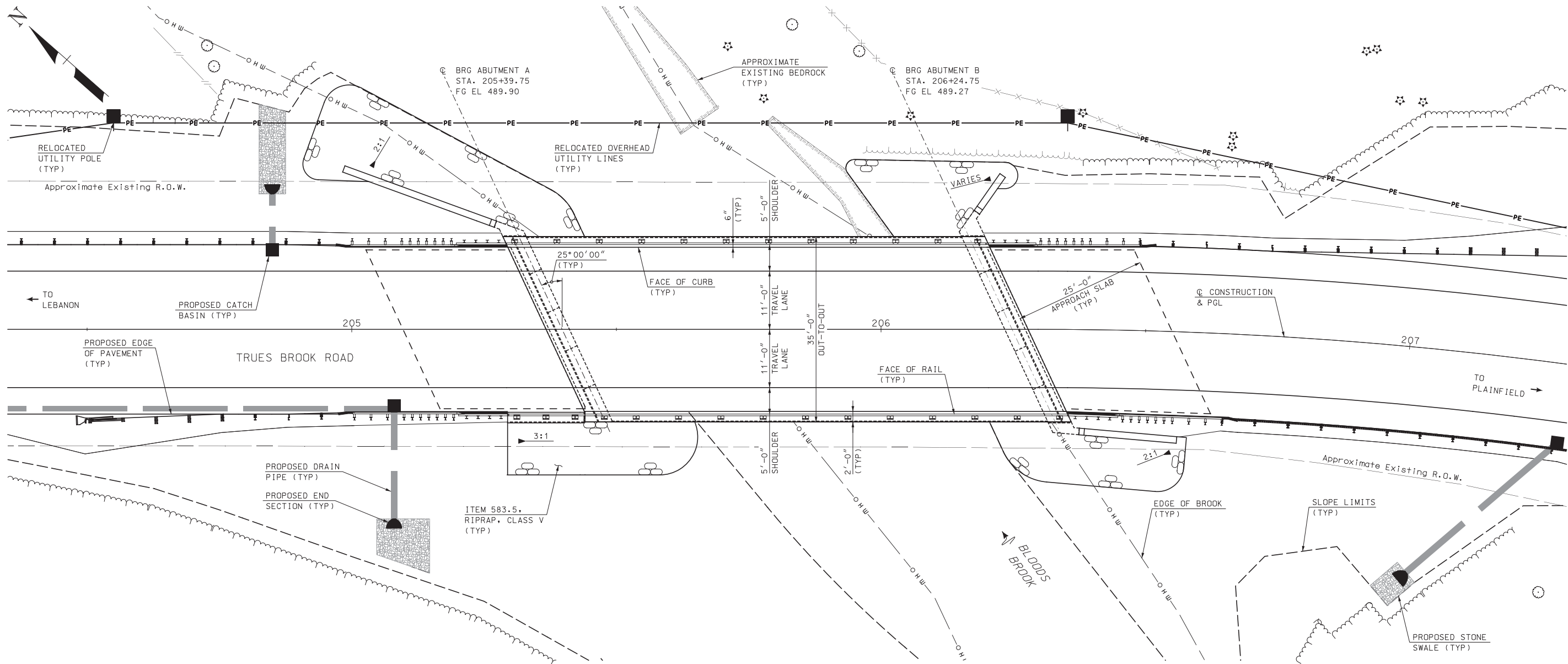
SHEET 20 OF 45

CITY OF LEBANON
LEBANON, NEW HAMPSHIRE
TRUES BROOK ROAD OVER BLOODS BROOK
ROADWAY PROFILE (2 OF 2)

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ELEVATION

REV.	DESCRIPTION	DATE

FILE NAME	DESIGNED	DATE
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MODEL NAME	DRAWN	
906414Genplan	PBD	
SCALE	CHECKED	
AS SHOWN	JB	
DATE		
JANUARY 2024		

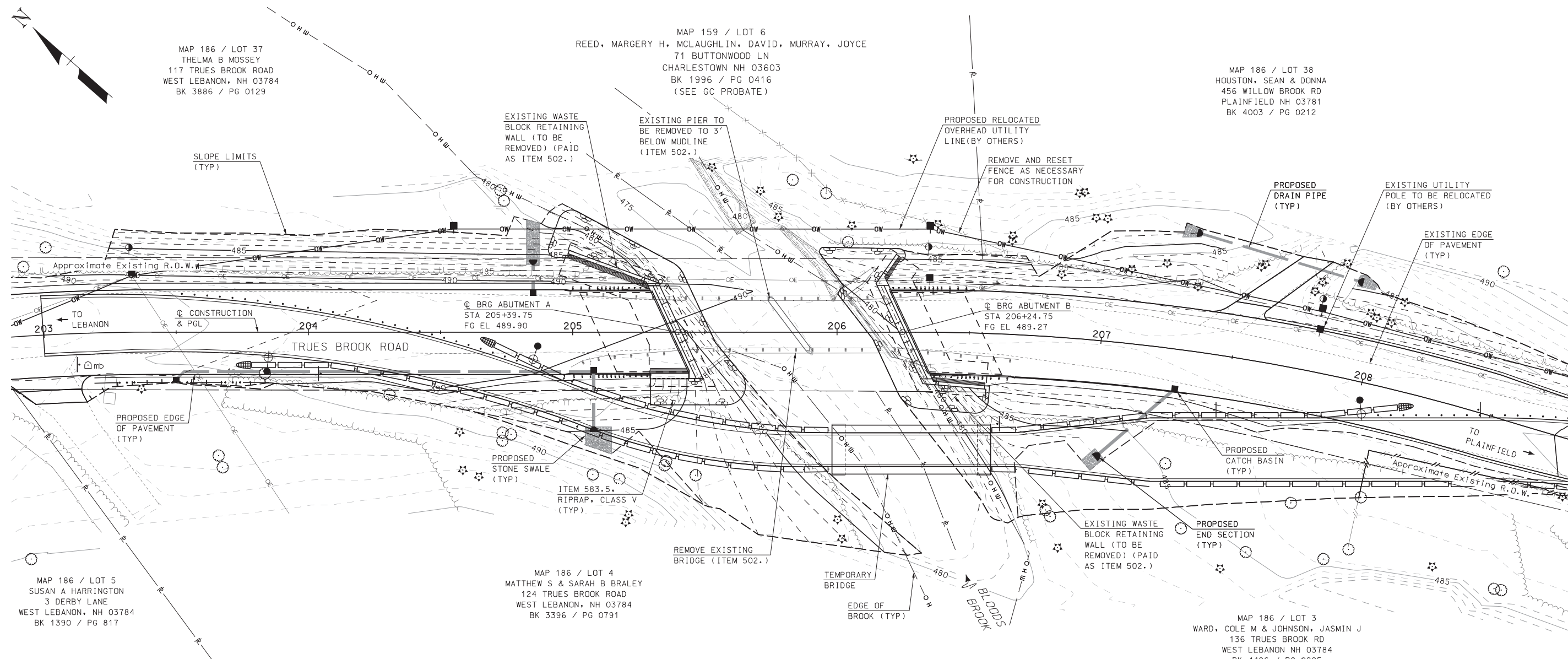
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CITY OF LEBANON
LEBANON, NEW HAMPSHIRE
TRUES BROOK ROAD OVER BLOODS BROOK

GENERAL PLAN AND ELEVATION

PROJECT NO. 21.906414.00
SHEET NO. 21
SHEET 21 OF 45



NHDOT BRIDGE NO.		REV.	DESCRIPTION	DRW CHKD BY	DATE
FILENAME	DESIGNED				
900414StepIn	KWH				
MODEL NAME	DRAWN				
900414StepIn	PBD				
SCALE	CHECKED				
AS SHOWN	JB				
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LEBANON, NEW HAMPSHIRE
TRUES BROOK ROAD OVER BLOODS BROOK

SITE PLAN

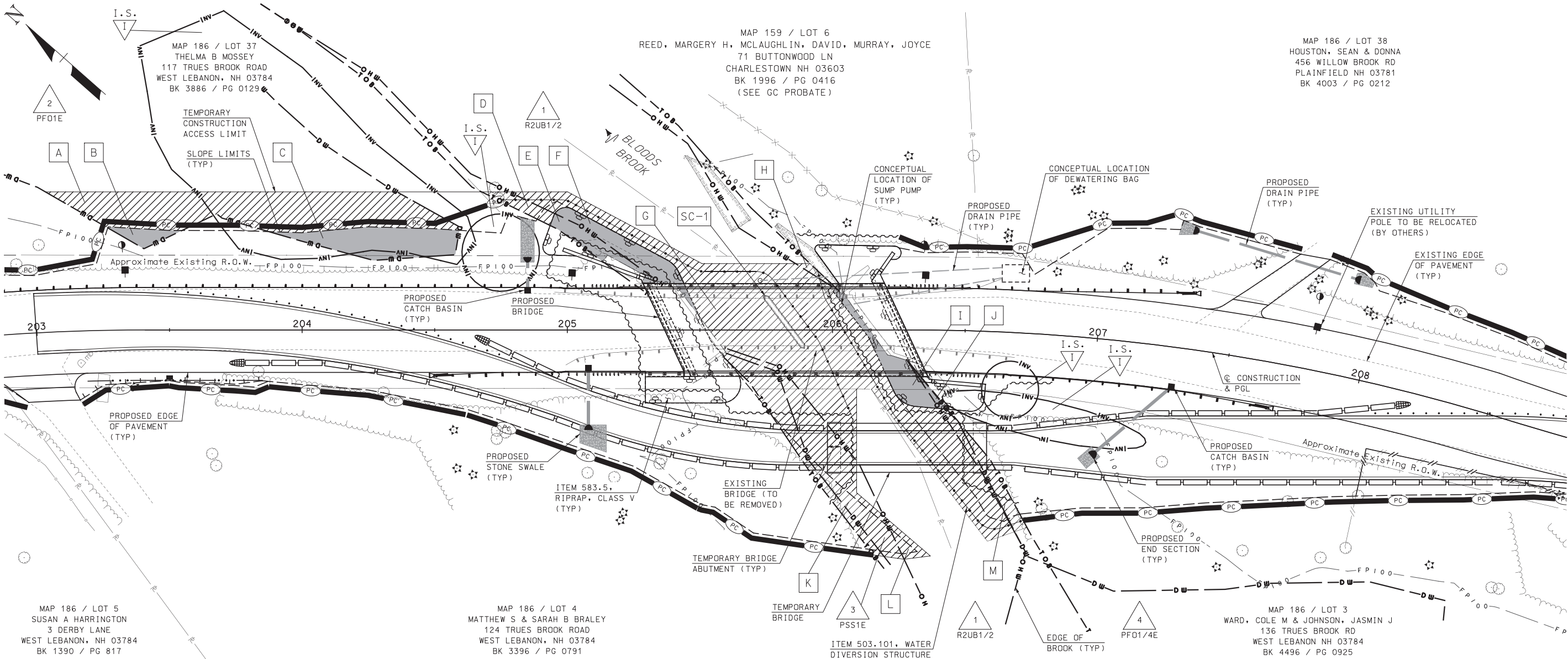
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SHEET NO.

22

SHEET 22 OF 45

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WETLAND IMPACTS PLAN



SUMMARY OF IMPACTS

TOTAL NEW TEMPORARY IMPACTS = 7391 SF / 255 LF
TOTAL NEW PERMANENT IMPACTS = 1544 SF / 171 LF

TOTAL IMPACTS = 8935 SF / 426 LF

WETLAND IMPACTS (SF)		
SYMBOL	IMPACT TYPE	AREA
A	TEMPORARY WETLAND	1800
B	PERMANENT WETLAND	106
C	PERMANENT WETLAND	584
D	TEMPORARY BANK	111
E	PERMANENT BANK	194
F	PERMANENT STREAMBED	337
G	TEMPORARY STREAMBED	3889
H	TEMPORARY BANK	29
I	PERMANENT STREAMBED	294
J	PERMANENT BANK	29
K	TEMPORARY BANK	1233
L	TEMPORARY STREAMBED	86
M	TEMPORARY BANK	243

WETLAND IMPACTS (LF)		
SYMBOL	IMPACT TYPE	LENGTH
D	TEMPORARY BANK OF STREAM	24
E	PERMANENT BANK OF STREAM	44
F	PERMANENT BED OF STREAM	48
G L	TEMPORARY CHANNEL	69
H	TEMPORARY BANK OF STREAM	17
I	PERMANENT BED OF STREAM	56
J	PERMANENT BANK OF STREAM	23
K	TEMPORARY BANK OF STREAM	91
M	TEMPORARY BANK OF STREAM	54

STREAM CREATION			
SYMBOL	IMPACT TYPE	AREA (SF)	LENGTH (LF)
SC-1	EXISTING PIER REMOVAL	49	25

WETLAND CLASSIFICATION	
1 R2UB1/2	RIVERINE, LOWER PERENNIAL, UNCONSOLIDATED BOTTOM, COBBLE-GRAVEL, SAND
2 PF01E	PALUSTRINE, FORESTED, BROAD-LEAVED DECIDUOUS, SEASONALLY FLOODED/SATURATED
3 PSS1E	PALUSTRINE, SCRUB-SHRUB, BROAD-LEAVED DECIDUOUS, SEASONALLY FLOODED/SATURATED
4 PF01/4E	PALUSTRINE, FORESTED, BROAD-LEAVED DECIDUOUS/NEEDLE-LEAVED EVERGREEN, SEASONALLY FLOODED/SATURATED

CYNTHIA M. BALCIUS, CERTIFIED WETLAND SCIENTIST #061 OF STONEY RIDGE ENVIRONMENTAL, LLC OF ALTON, NH, PERFORMED THE WETLAND MAPPING ON MAY 12, 2021 ACCORDING TO THE STANDARDS OF THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL AND THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHEAST AND NORTHWEST REGION, VERSION 2.0, JANUARY 2012, US ARMY CORPS OF ENGINEERS.

LEGEND

	TEMPORARY IMPACTS
	PERMANENT IMPACTS
	STREAM CREATION
	DELINEATED WETLAND
	TOP OF BANK
	ORDINARY HIGH WATER
	100 YEAR FLOOD PLAIN BOUNDARY
	COFFERDAMS
	WATER DIVERSION STRUCTURE
	PERIMETER CONTROL (SILT FENCE OR SILT SOCK)
	PROPERTY LINE
	WETLAND DESIGNATION NUMBER

GENERAL WETLAND IMPACTS NOTES

- AFTER COMPLETION OF IN-WATER WORK, REMOVE ALL WATER DIVERSION STRUCTURES AND RESTORE ALL DISTURBED AREAS TO PRE-CONSTRUCTION CONDITIONS.
- EROSION AND SEDIMENT CONTROL SHOWN FOR PLANNING PURPOSES ONLY. CONTRACTOR MEANS AND METHODS MAY ALTER SLIGHTLY BASED ON SITE CONDITIONS.
- CONTRACTOR SHALL RETAIN SEDIMENT ON-SITE AND IMPLEMENT THE FOLLOWING DEWATERING CONTROL PRACTICES:
 - TEMPORARY SEDIMENT BASINS SHALL BE SIZED TO RETAIN ON SITE, THE VOLUME OF A 2-YEAR 24-HOUR STORM EVENT FOR ANY AREA OF DISTURBANCE OR 3,600 CUBIC FEET OF STORMWATER RUNOFF PER ACRE OF DISTURBANCE, WHICHEVER IS GREATER.
 - CONSTRUCT AND STABILIZE DEWATERING INFILTRATION BASINS OR BAGS PRIOR TO ANY EXCAVATION THAT MAY REQUIRE DEWATERING.
 - TEMPORARY SEDIMENT BASINS SHALL BE PLACED AND STABILIZED AT LOCATIONS WHERE CONCENTRATED FLOW (CHANNELS AND PIPES) DISCHARGE TO THE SURROUNDING ENVIRONMENT FROM AREAS OF UNSTABILIZED EARTH DISTURBING ACTIVITIES.
 - SEDIMENT FROM THE DEWATERING INFILTRATION BASINS OR BAG SHALL BE DISPOSED OF PER NHDES REGULATIONS.
- EASEMENTS FOR WORK PROPOSED AS SHOWN ON PRIVATE PROPERTIES OUTSIDE OF THE ROW TO BE OBTAINED.

CITY OF LEBANON
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TRUES BROOK ROAD OVER BLOODS BROOK

WETLAND IMPACTS PLAN

PROJECT NO. 21.906414.00

SHEET NO.

23

SHEET 23 OF 45

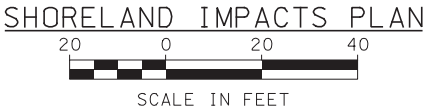
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NHDT BRIDGE NO.	FILE NAME	DESIGNED	DRAWN	CHECKED	DATE
	906414Wetplan	KMH	PBD		
	906414Wetplan				

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TOTAL REF TO WB50 =	10302
TOTAL WB50 TO NWB150 =	16420
TOTAL NWB150 TO PS250 =	4593
TOTAL IMPACTS REF TO PS250 =	31315

(X) SHORELAND IMPACT LOCATION

— REF — REFERENCE LINE
— WB50 — WATERFRONT BUFFER LINE
— NWB150 — NATURAL WOODLAND BUFFER LINE
— PS250 — PROTECTED SHORELAND LINE

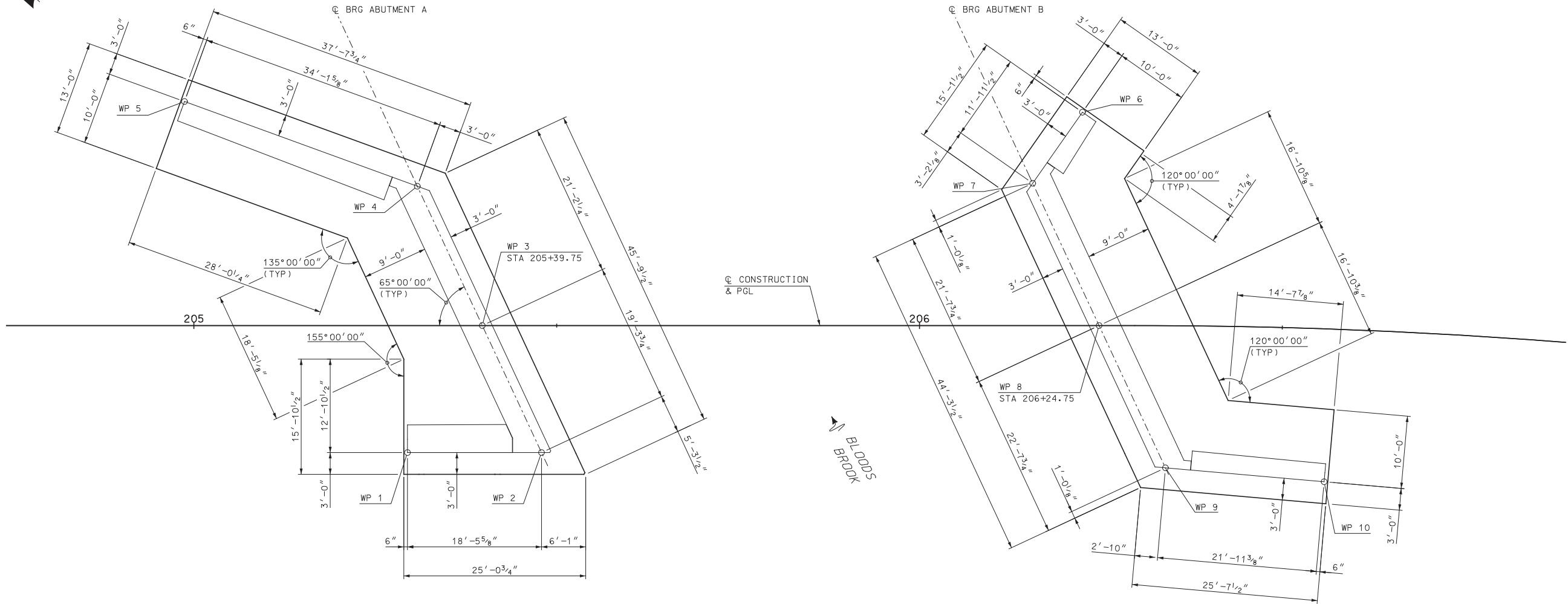
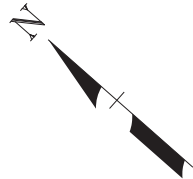


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SHORELAND IMPACTS PLAN (1 OF 2)

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BRIDGE LAYOUT PLAN
SCALE: 1/8" = 1'-0"

WORKING POINT COORDINATES		
WP	NORTHING	EASTING
1	402311.0659	814468.1963
2	402297.2112	814480.4060
3	402314.9038	814488.1399
4	402334.3211	814496.6277
5	402366.1090	814484.1775
6	402272.2962	814564.8877
7	402270.9661	814553.0082
8	402251.1332	814544.3387
9	402231.3091	814535.6730
10	402213.6378	814548.6960

CITY OF LEBANON
LEBANON, NEW HAMPSHIRE
TRUES BROOK ROAD OVER BLOODS BROOK
BRIDGE LAYOUT PLAN

PROJECT NO. 21.906414.00

SHEET NO. 26

SHEET 26 OF 45

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FILENAME
906414Brplan
MODEL NAME
906411Brplan
SCALE
AS SHOWN

DESIGNED
KMH
DRAWN
PBD
CHECKED
JB

DATE
JANUARY 2024

REV.

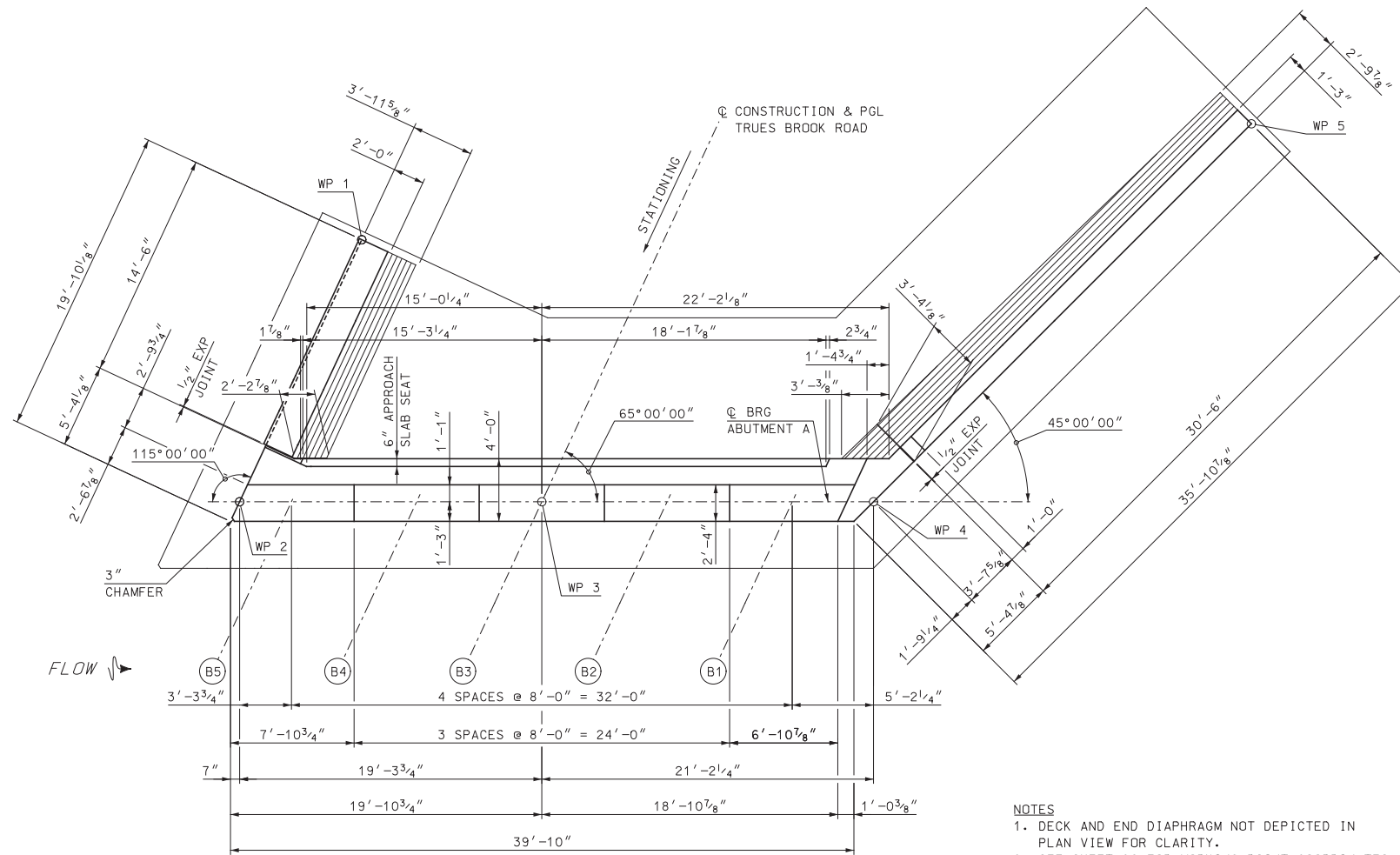
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DRW. CHKD. BY

DATE

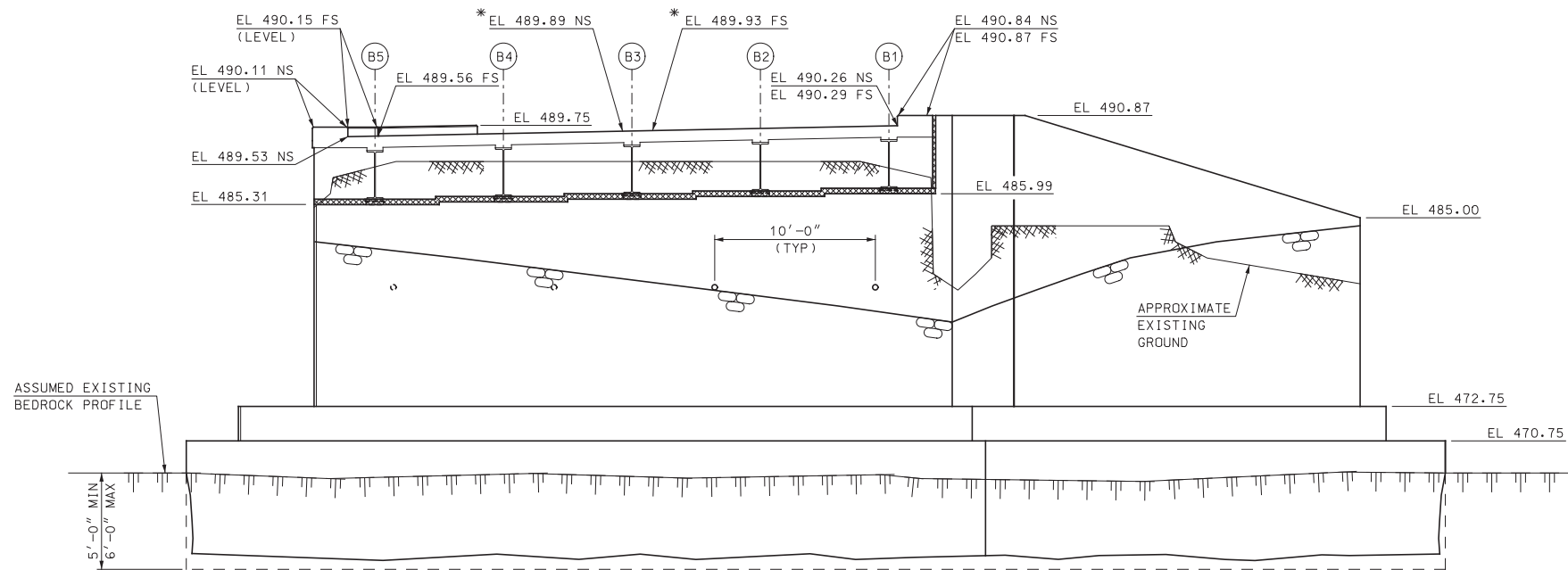
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Page 111 of 135



PLAN
SCALE: $\frac{3}{16}'' = 1' - 0''$

- NOTES
1. DECK AND END DIAPHRAGM NOT DEPICTED IN PLAN VIEW FOR CLARITY.
 2. SEE SHEET 26 FOR WORKING POINT COORDINATES.



ELEVATION
SCALE: $\frac{3}{16}'' = 1'-0''$

* ELEVATION AT @ CONSTRUCTION

BEAM SEAT ELEVATIONS					
BEAM	B1	B2	B3	B4	B5
ELEVATION	485.99	485.82	485.65	485.48	485.31

INDOT BRIDGE NO.	REV.	DESCRIPTION	DRW	CHKD	DATE
FILE NAME 906414A-Abut	DESIGNED		BY		
MODEL NAME 906414A-Abut	KMH				
DRAWN 906414A-Abut					
SCALE					
AS SHOWN	CHECKED				
DATE JANUARY 2024	JB				

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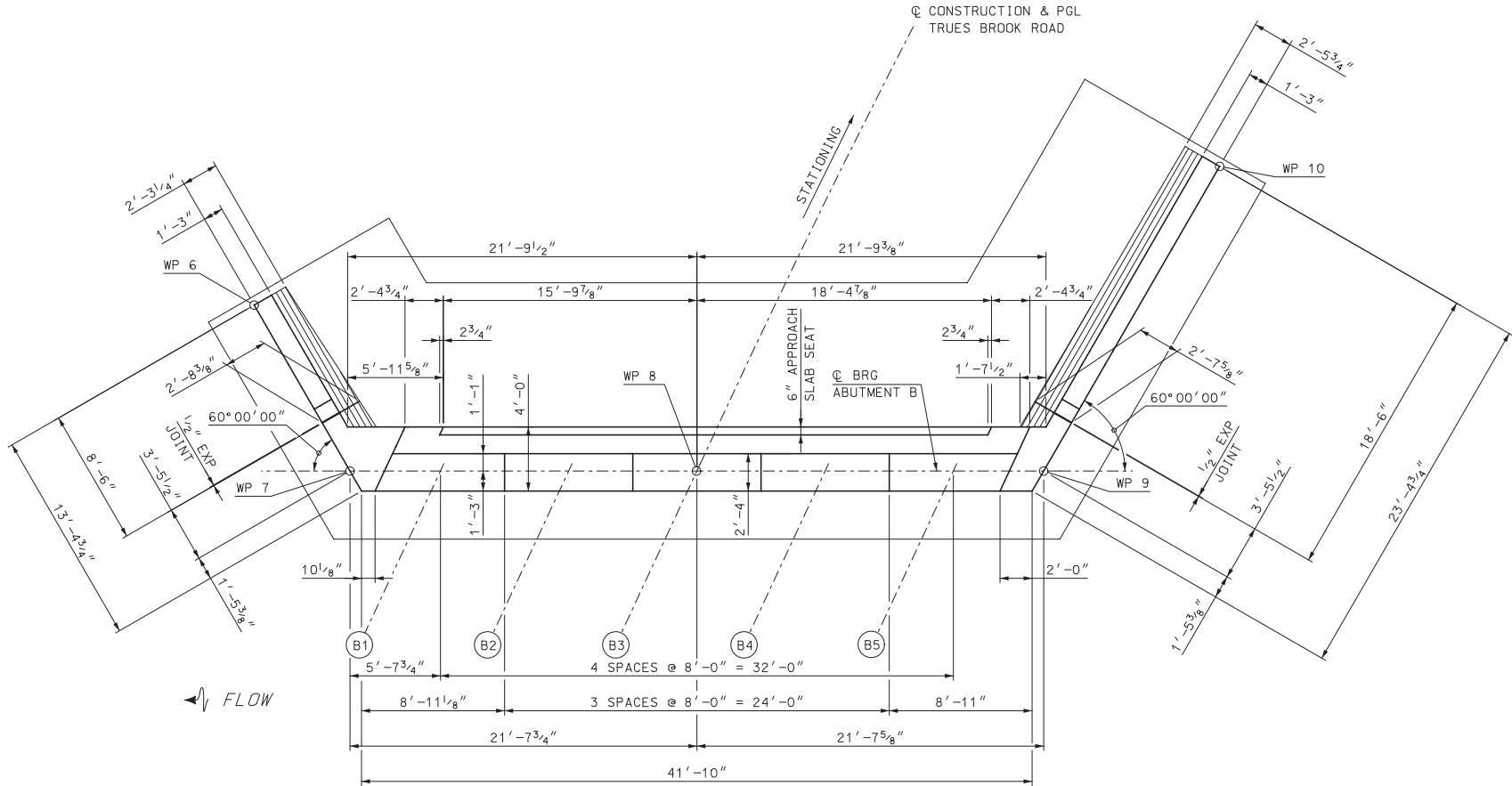
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TANNER**

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CITY OF LEBANON LEBANON, NEW HAMPSHIRE
TRUES BROOK ROAD OVER BLOODS BROOK
ABUTMENT A MASONRY

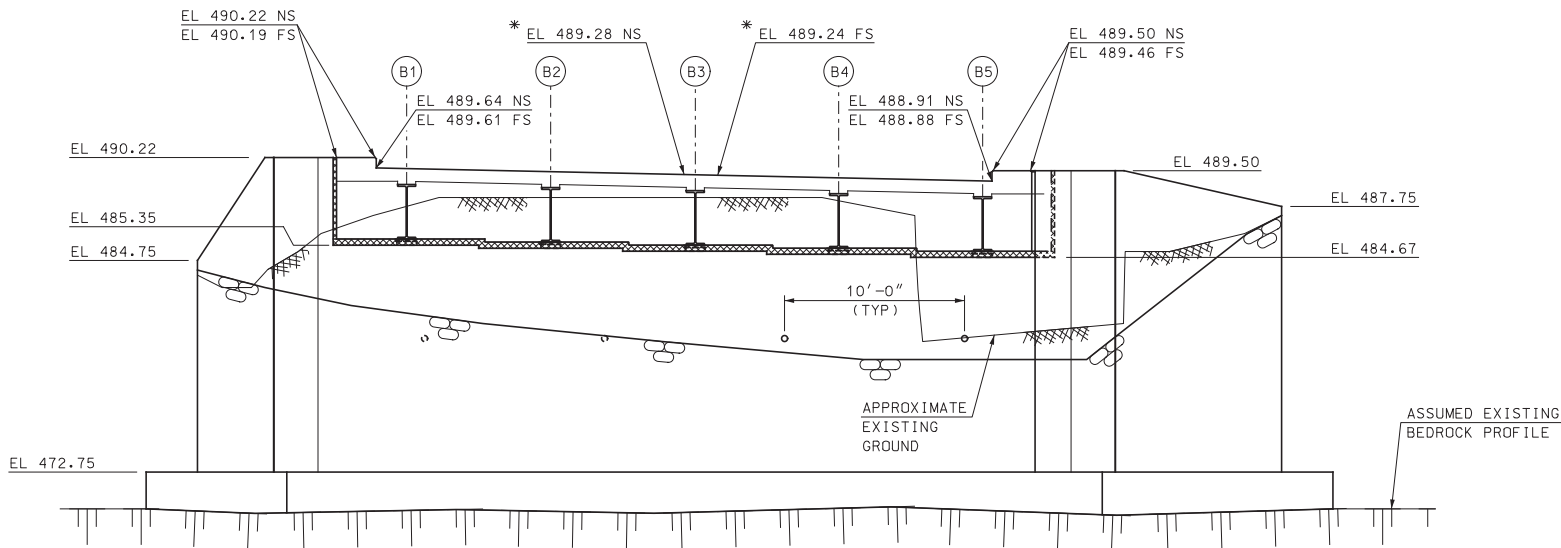
PROJECT NO.	21.906414.00
SHEET NO.	27
SHEET 27 OF 45	

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- NOTES
1. DECK AND END DIAPHRAGM NOT DEPICTED IN PLAN VIEW FOR CLARITY.
 2. SEE SHEET 26 FOR WORKING POINT COORDINATES.

PLAN
SCALE: $\frac{3}{16}'' = 1' - 0''$



ELEVATION
SCALE: $\frac{3}{16}'' = 1' - 0''$

* ELEVATION AT @ CONSTRUCTION

BEAM SEAT ELEVATIONS					
BEAM	B1	B2	B3	B4	B5
ELEVATION	485.35	485.18	485.01	484.84	484.67



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CITY OF LEBANON
LEBANON, NEW HAMPSHIRE
TRUES BROOK ROAD OVER BLOODS BROOK
ABUTMENT B MASONRY

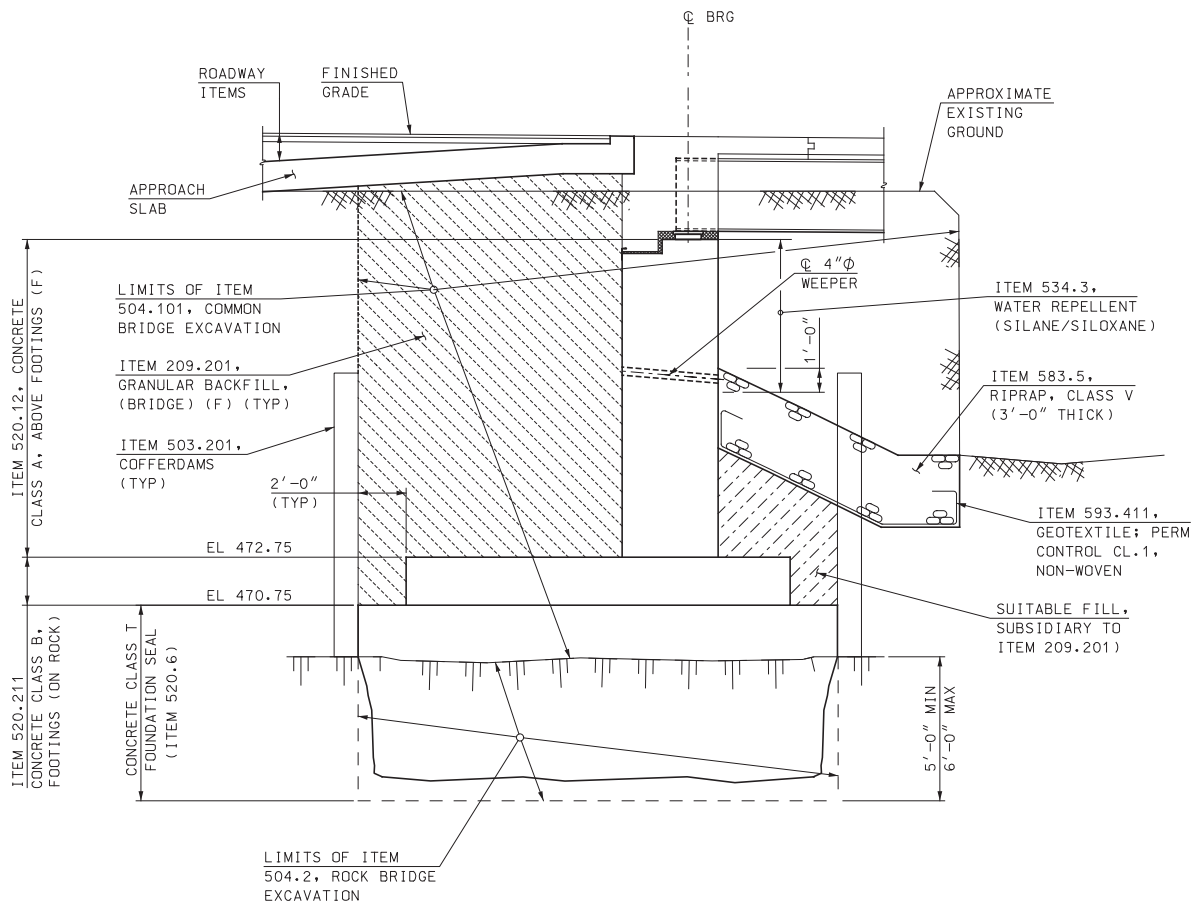
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SHEET NO.

28

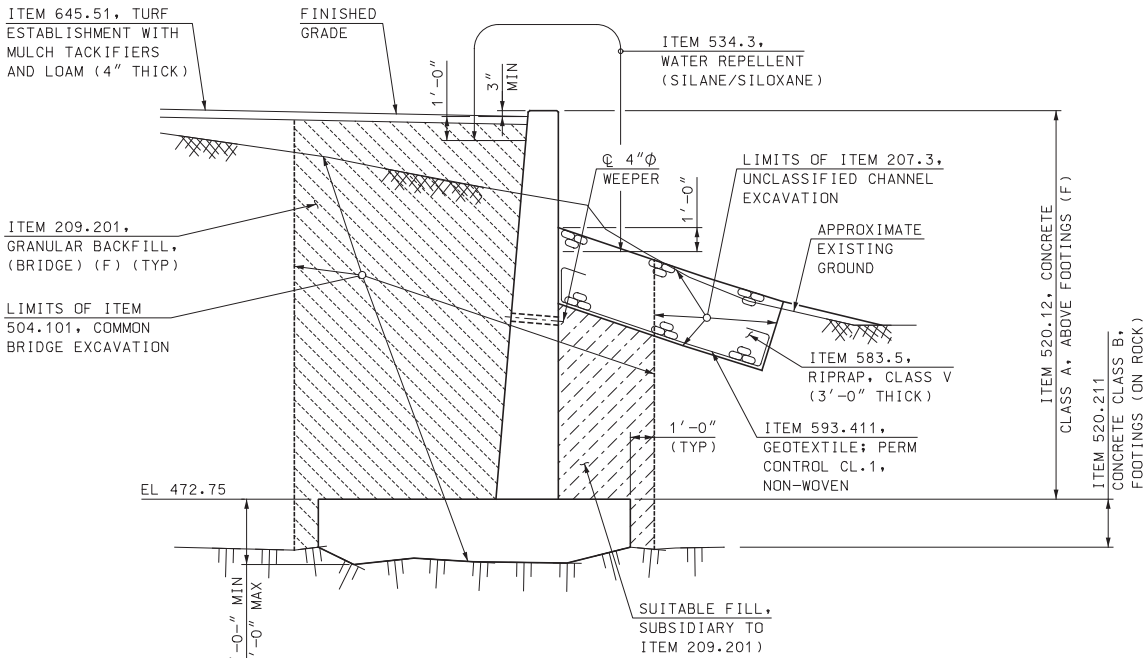
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- NOTES
1. ABUTMENT A SHOWN, ABUTMENT B SIMILAR.
 2. ROCK BRIDGE EXCAVATION AND FOUNDATION SEAL ARE APPLICABLE TO ABUTMENT A ONLY.

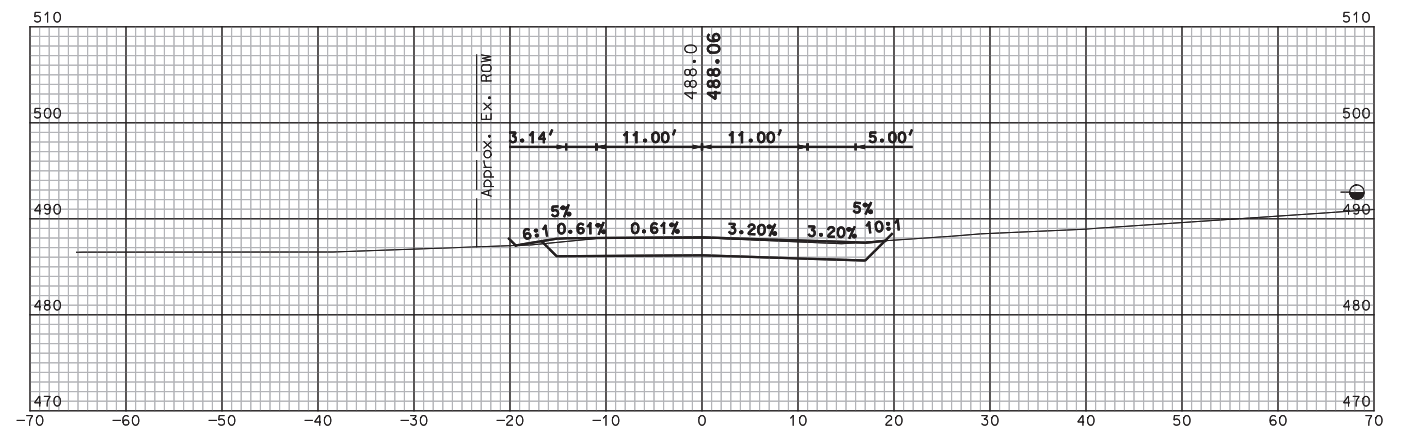
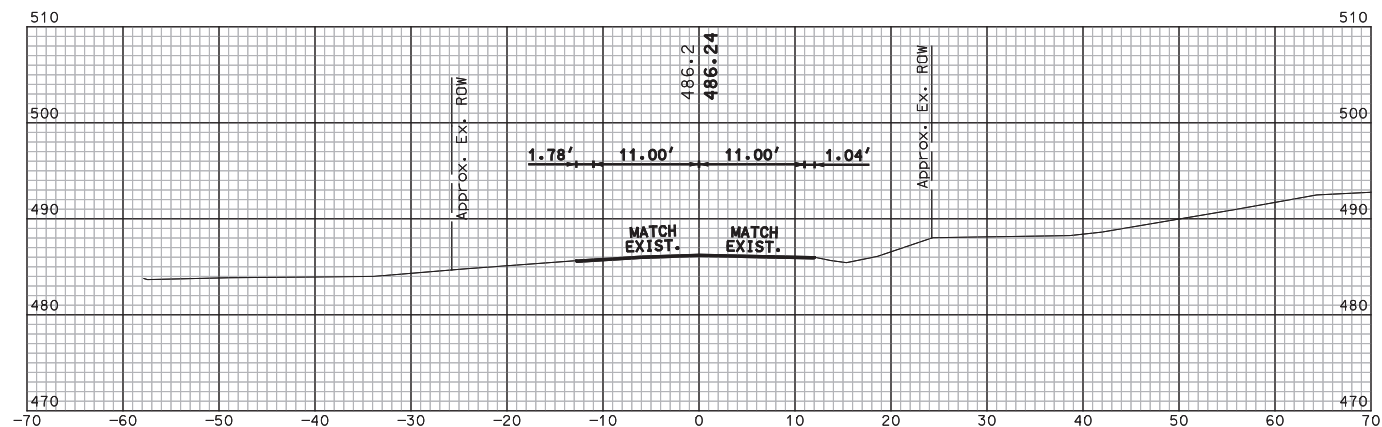
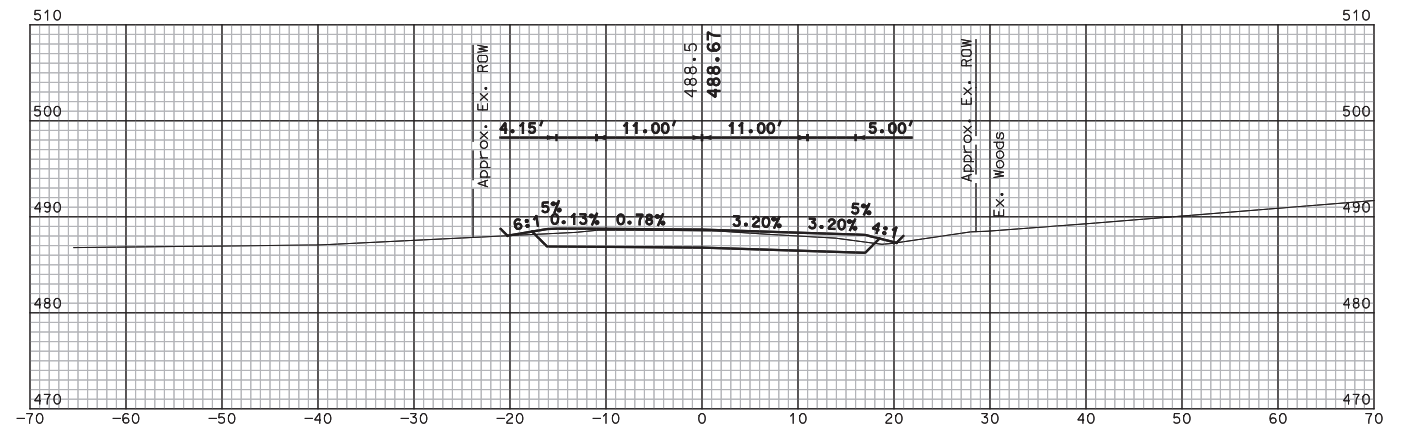
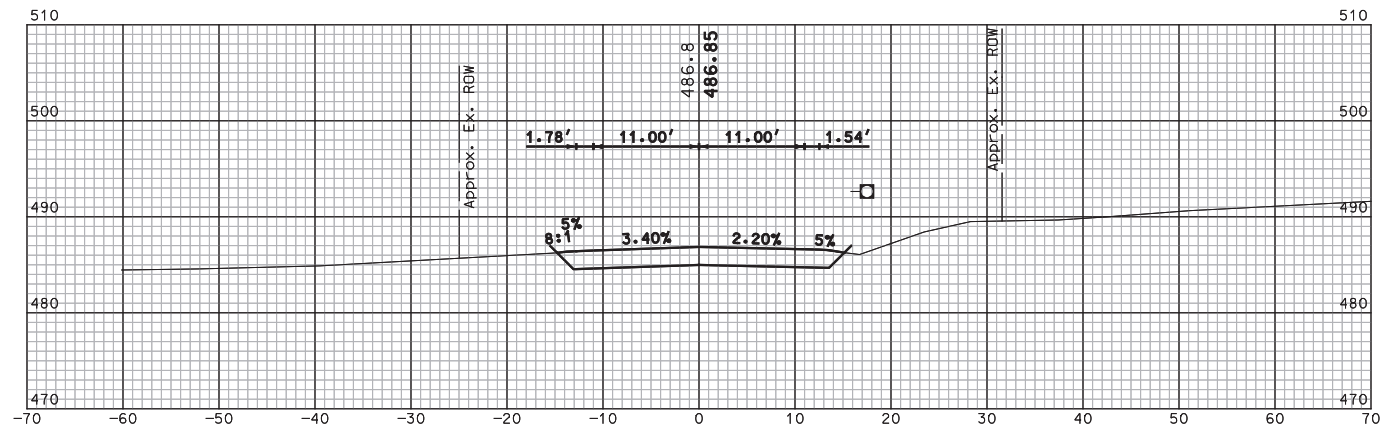
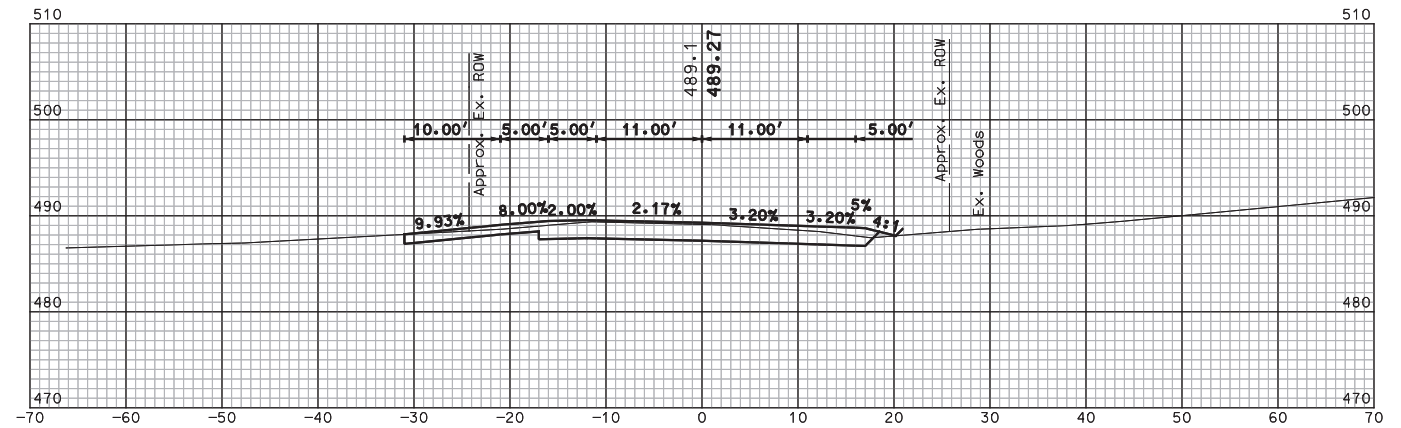
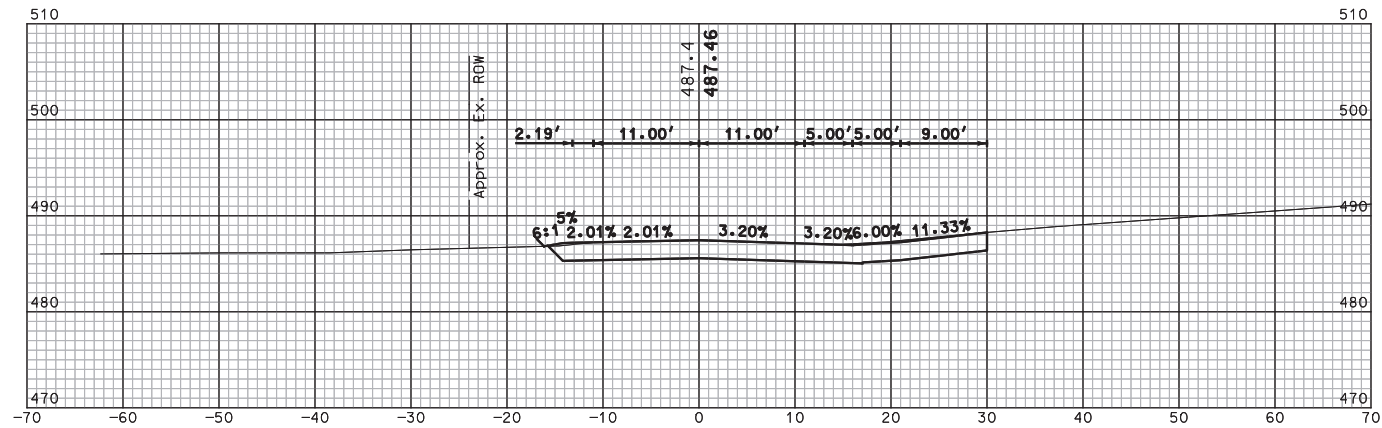
ABUTMENT TYPICAL EARTHWORK SECTION
SCALE: 1/4" = 1'-0"



- NOTES
1. SOUTHEAST WINGWALL SHOWN, NORTHEAST, NORTHWEST AND SOUTHWEST WINGWALL SIMILAR.
 2. ABUTMENT A WINGWALLS TO BE FOUNDED ON FOUNDATION SEAL.

WINGWALL TYPICAL SECTION
SCALE: 1/4" = 1'-0"

CITY OF LEBANON LEBANON, NEW HAMPSHIRE TRUES BROOK ROAD OVER BLOODS BROOK SUBSTRUCTURE DETAILS (1 OF 2)		PROJECT NO. 21.906414.00 SHEET NO. 29 SHEET 29 OF 45		PROJECT NO. 21.906414.00 SHEET NO. 29 SHEET 29 OF 45	
HOYLE TANNER		NHDOT BRIDGE NO.		REV.	
150 Dow Street • Manchester, NH 03301 (603) 669-5555 • www.hoyletanner.com		FILENAME 906414AB-Detls		DESIGNED KMH	
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		SCALE AS SHOWN		CHECKED JB	
		DATE JANUARY 2024		DRAWN BY	
				DATE	
				DESCRIPTION	
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	FILE NAME DESIGNED		
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	MODIFIED BY		
	XST01 JFMS		
	CHECKED		
	SBN		
	AS SHOWN		

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DATE
JANUARY 2024



LEBANON, NEW HAMPSHIRE

TRUES BROOK ROAD OVER BLOODS BROOK

TRUES BROOK ROAD CROSS SECTIONS (1 OF 7)

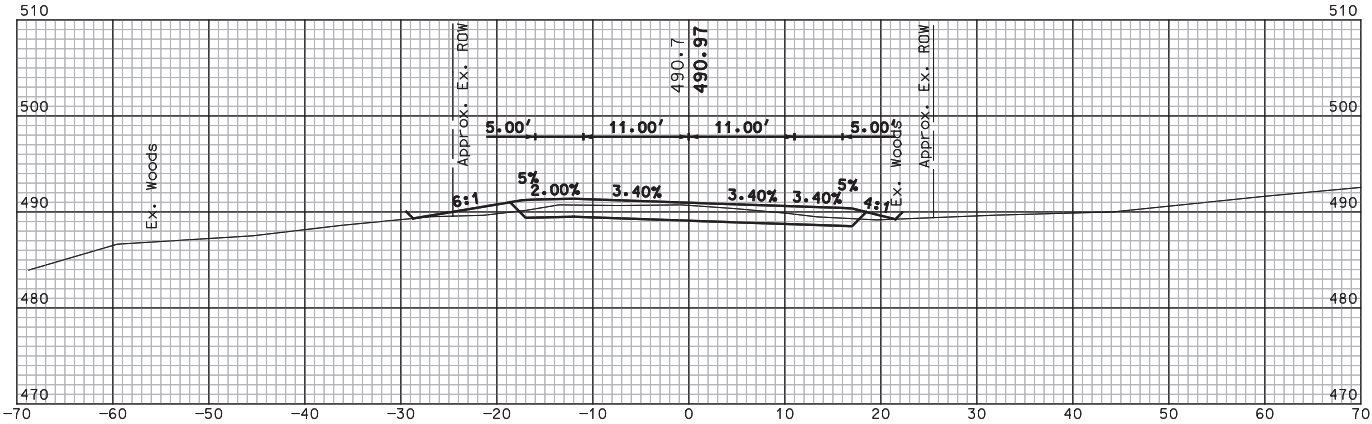
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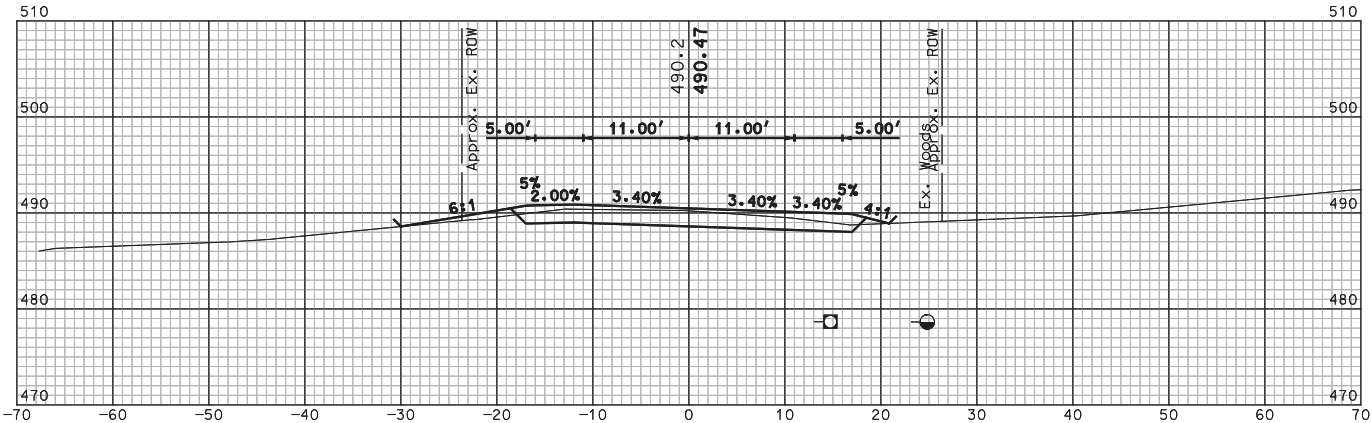
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SHEET 39 OF 45

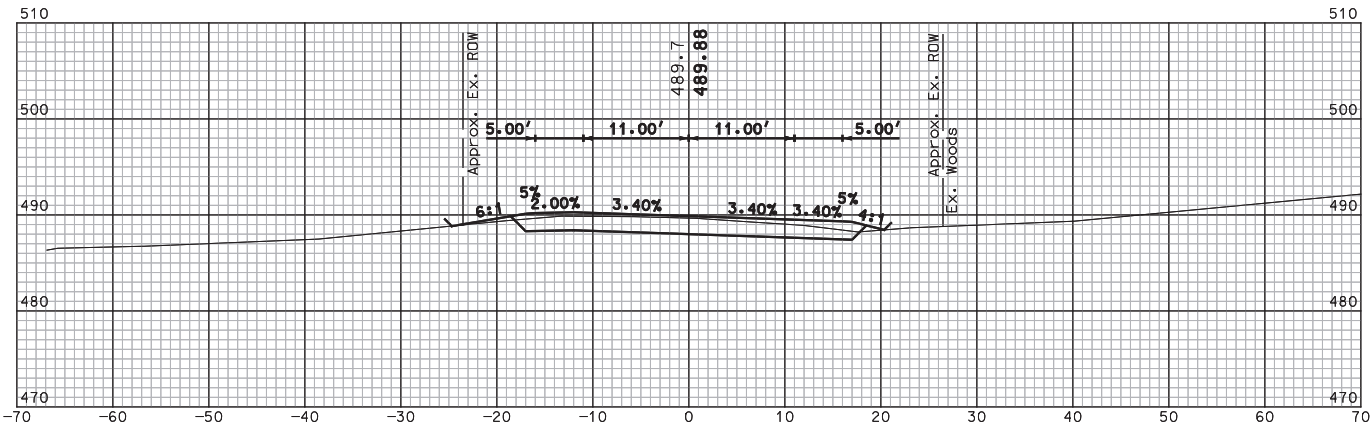
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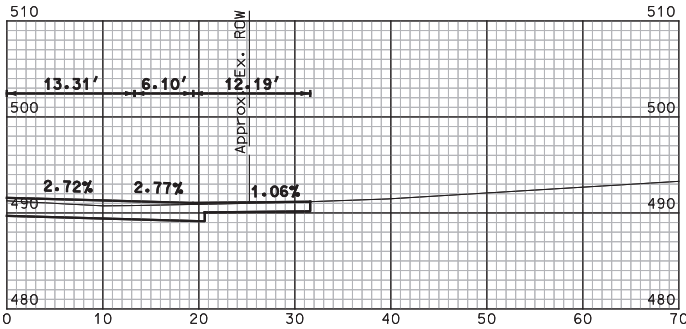
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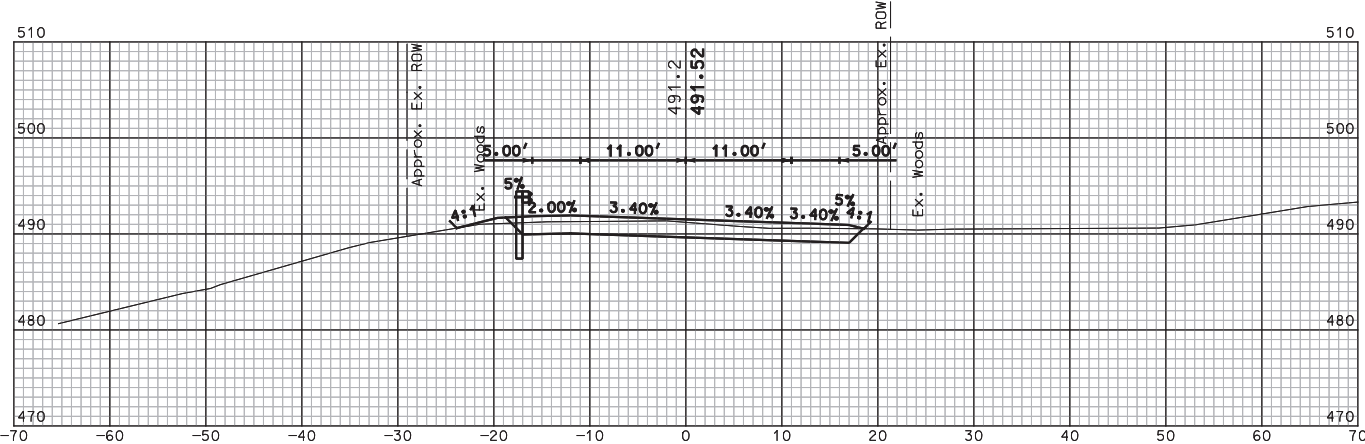
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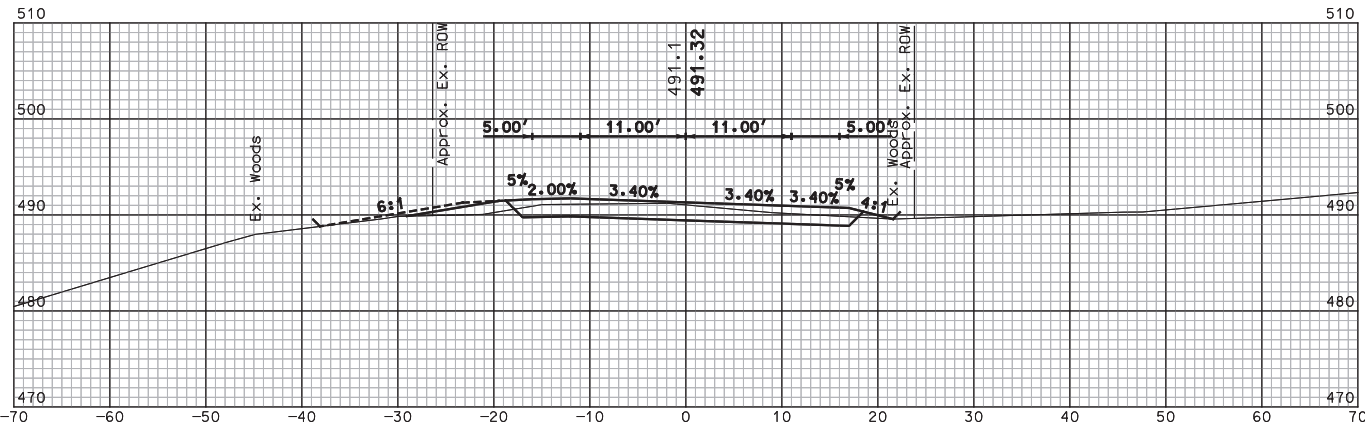
201+75



202+88 DRIVE RT (SKEWED)



202+75



202+50



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CITY OF LEBANON
LEBANON, NEW HAMPSHIRE
TRUES BROOK ROAD OVER BLOODS BROOK
TRUES BROOK ROAD CROSS SECTIONS (2 OF 7)

PROJECT NO. 21-906414.00

SHEET NO.

40

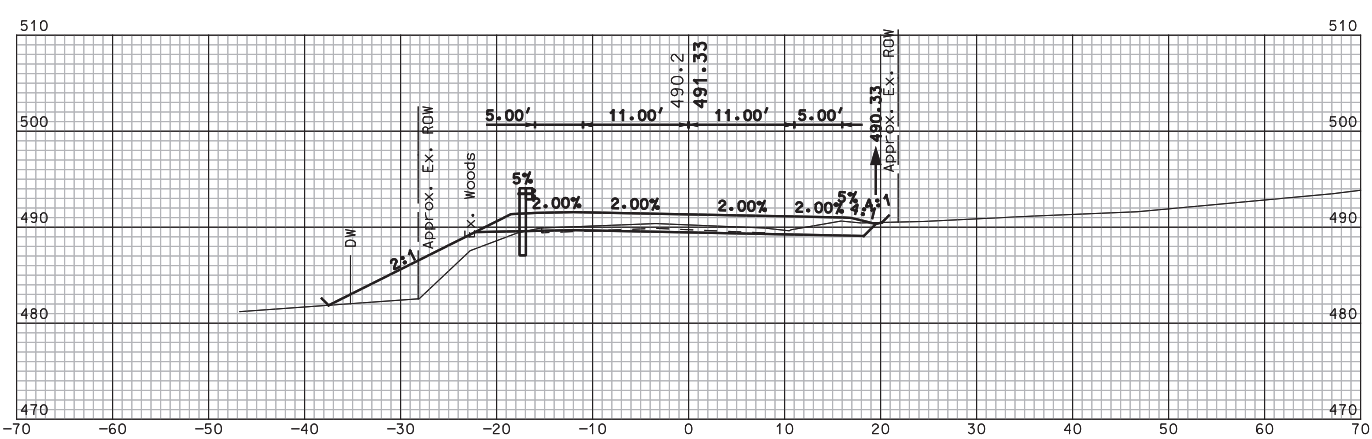
SHEET 40 OF 45

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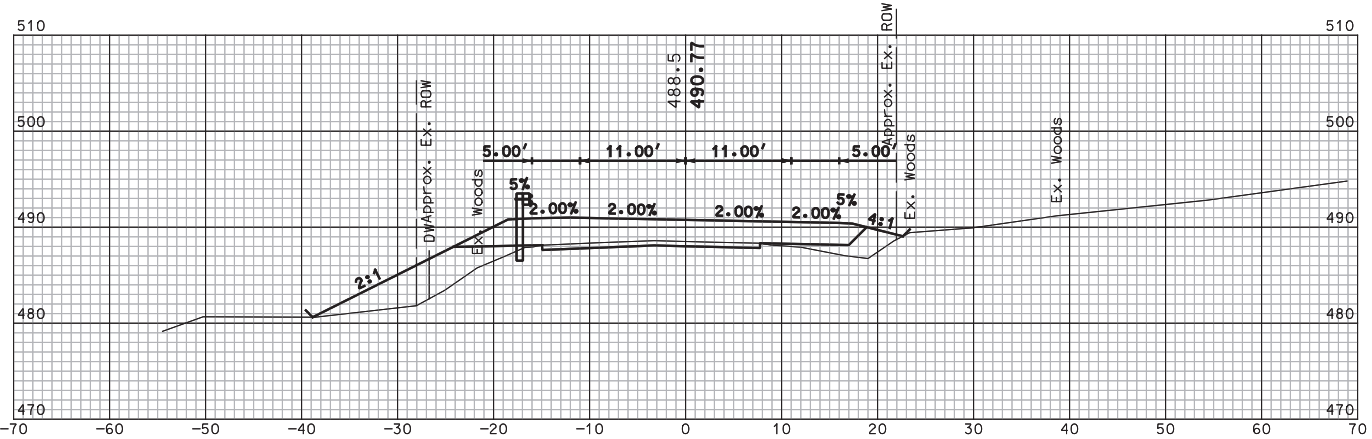
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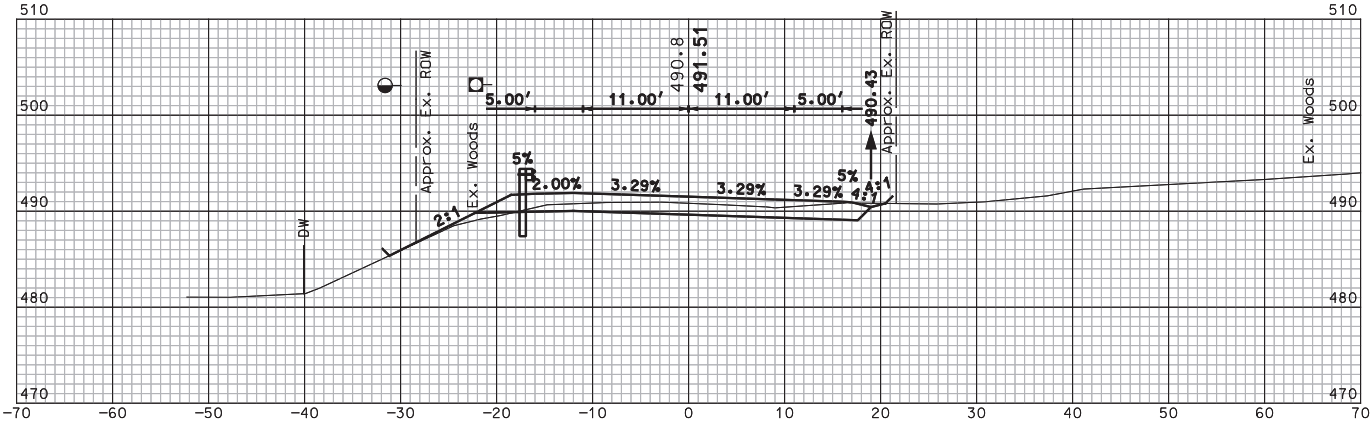
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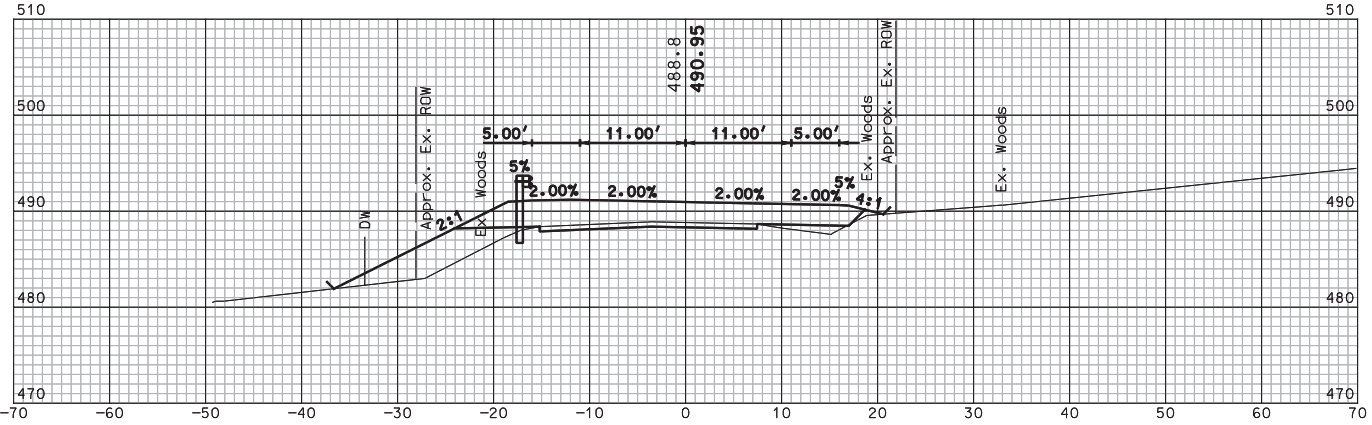
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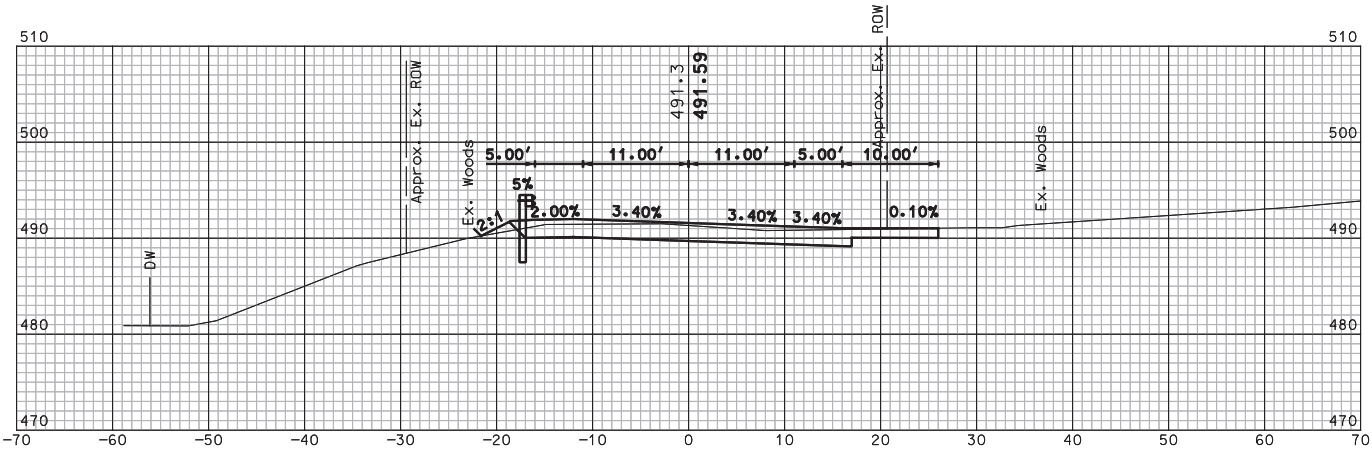
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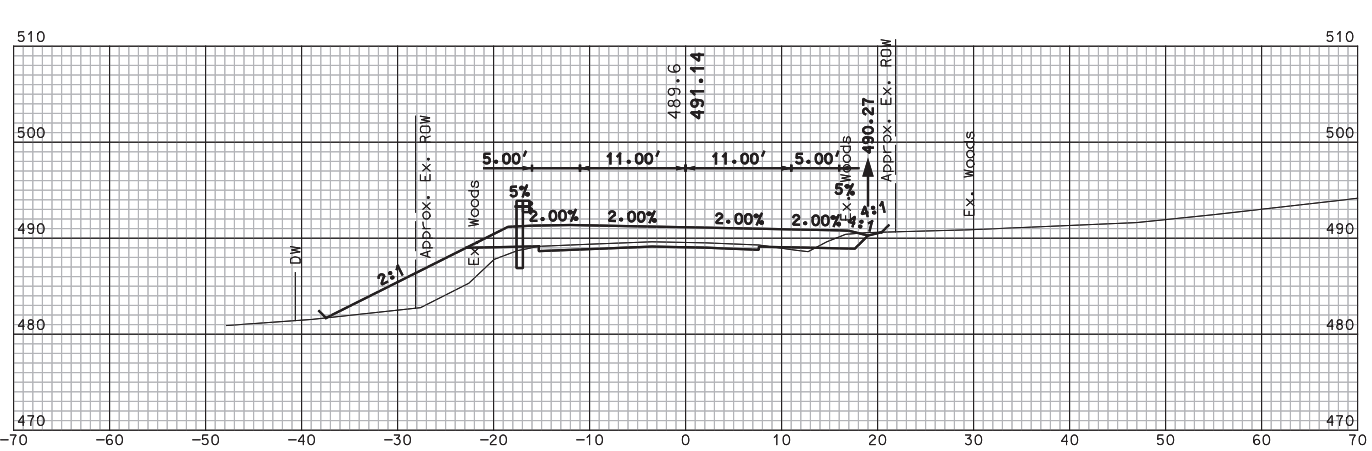
203+25



204+00



203+00



203+75

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XS03	JFMS
SCALE	CHECKED
AS SHOWN	SBH
DATE	JANUARY 2024

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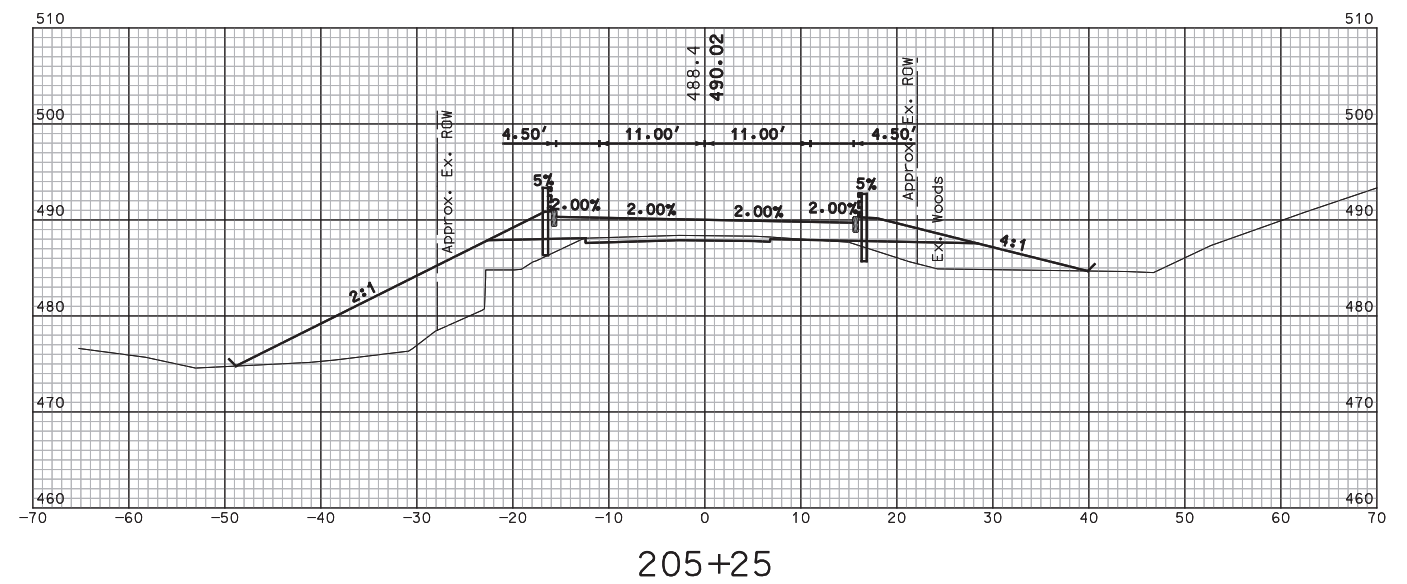
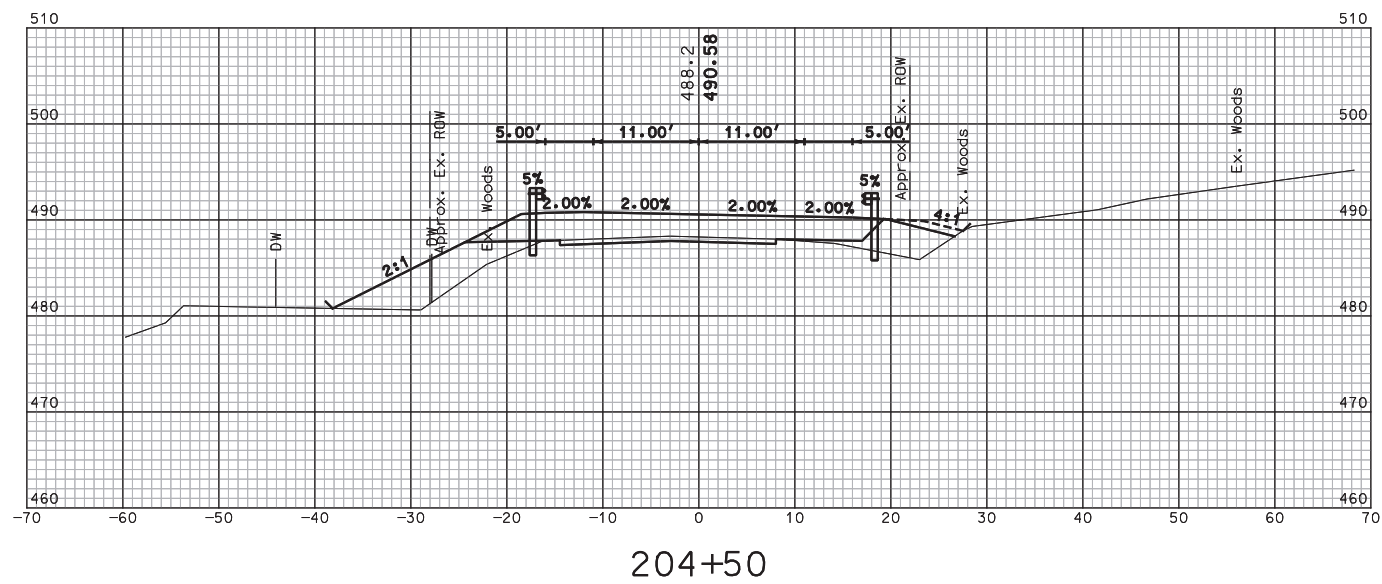
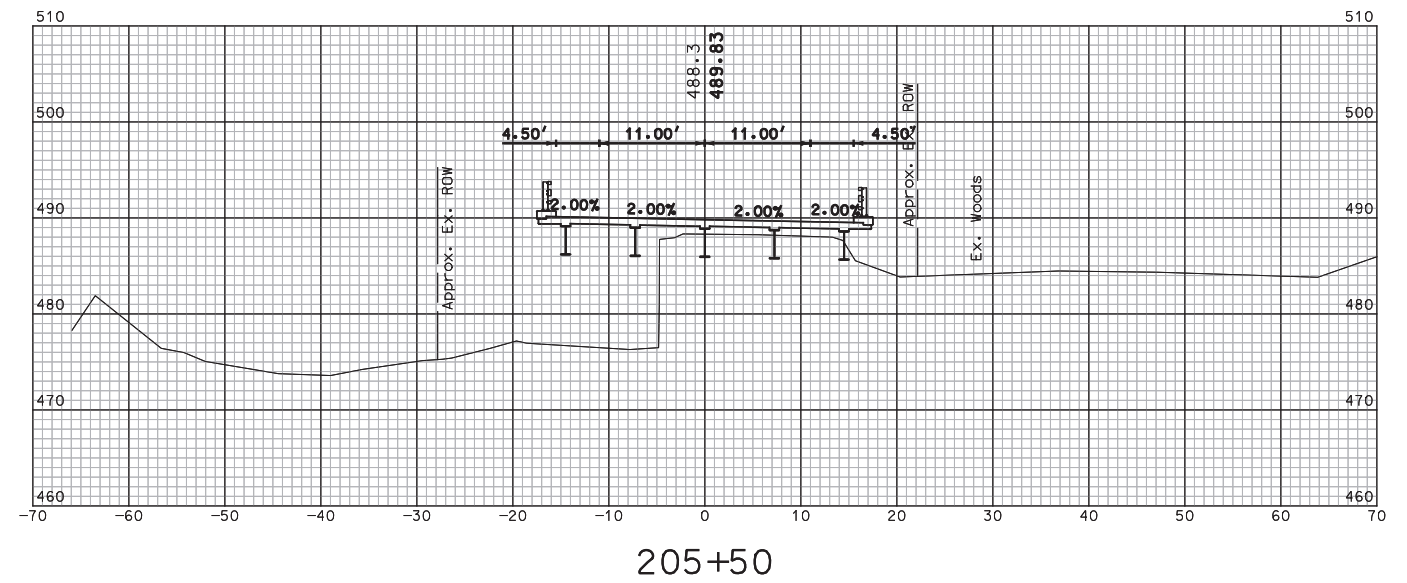
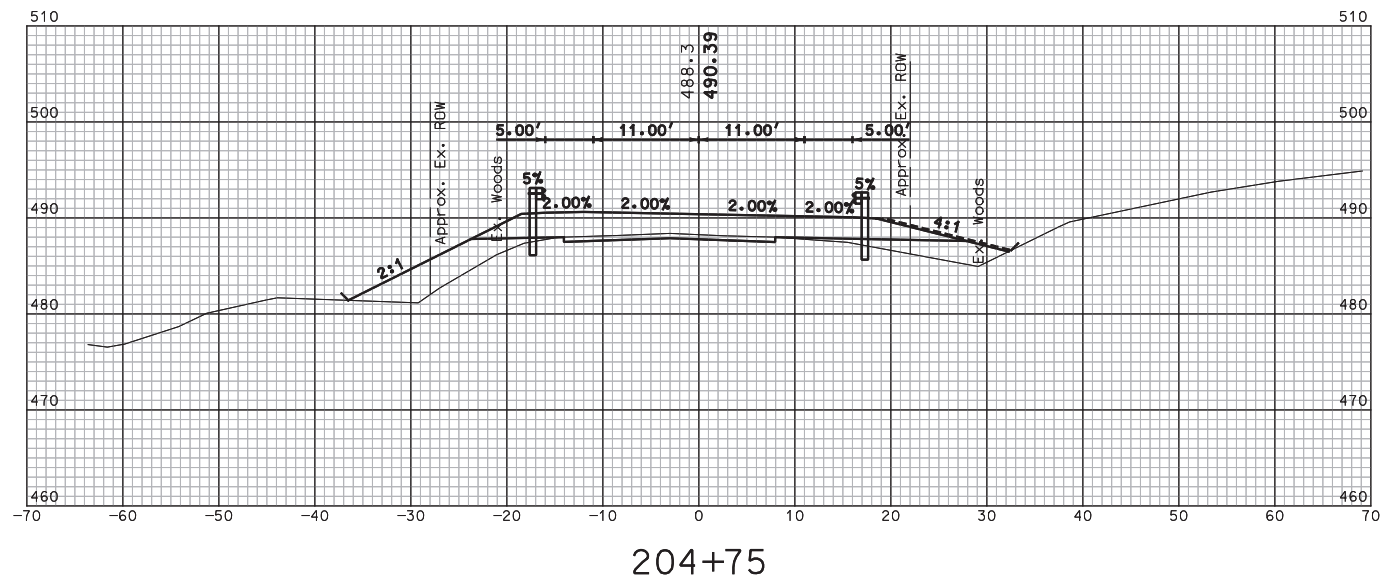
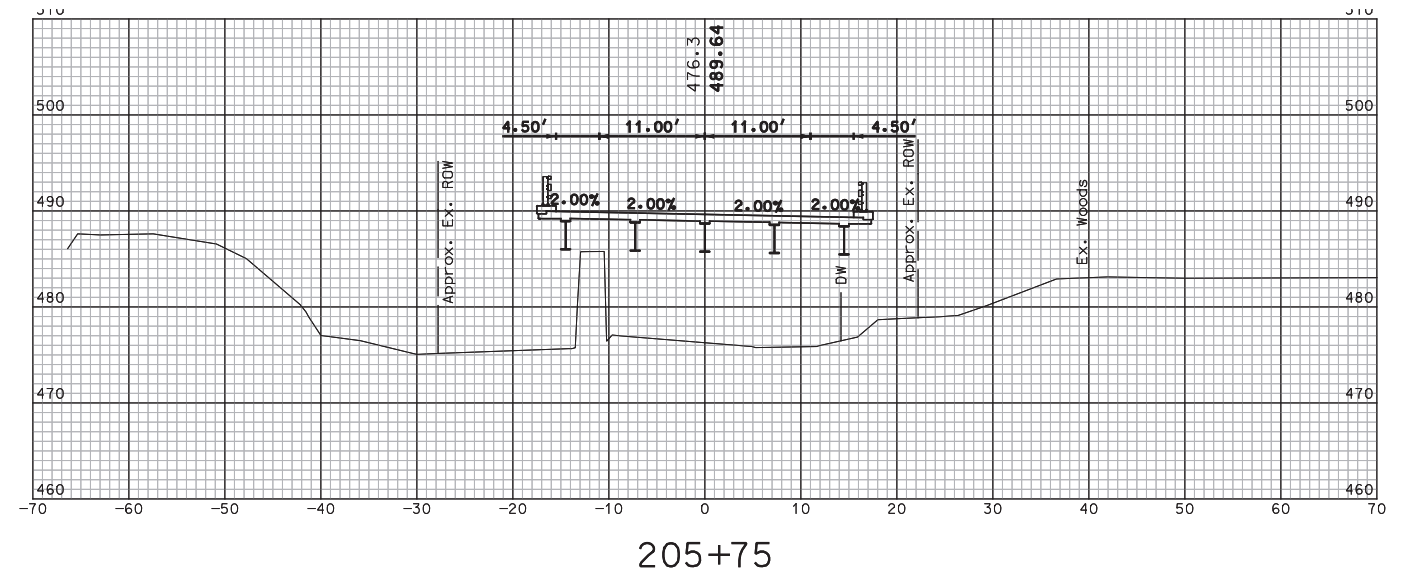
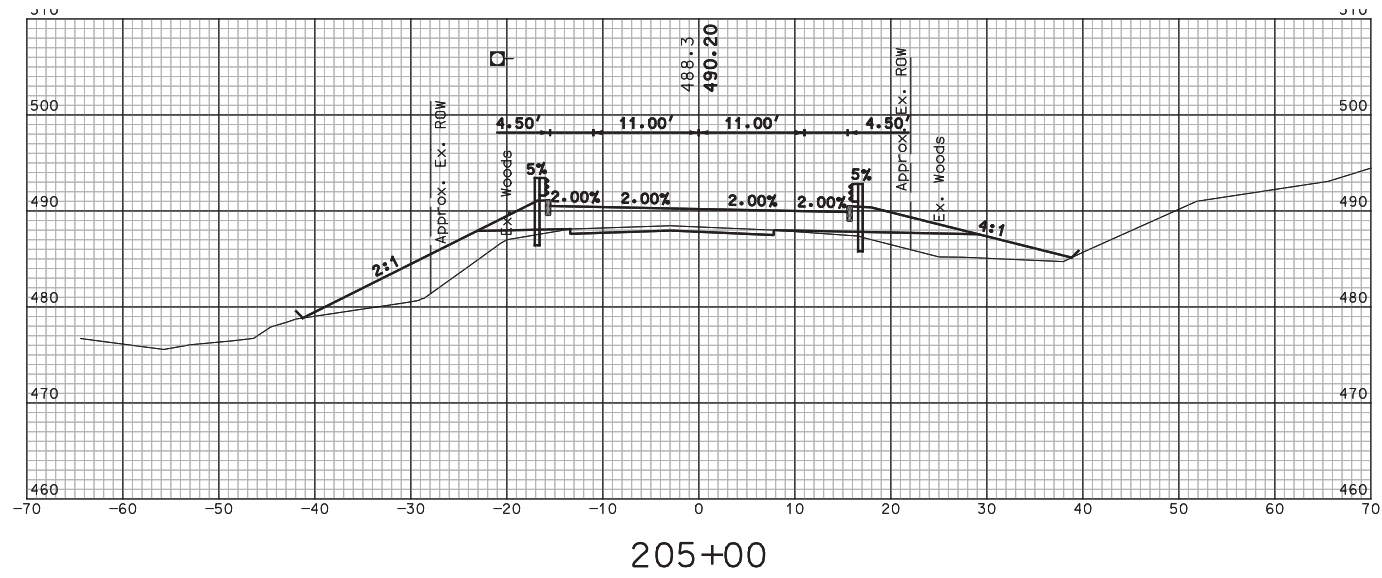


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CITY OF LEBANON
LEBANON, NEW HAMPSHIRE
TRUES BROOK ROAD OVER BLOODS BROOK
TRUES BROOK ROAD CROSS SECTIONS (3 OF 7)

PROJECT NO. 21.906414.00
SHEET NO.
41
SHEET 41 OF 45



REV.	DESCRIPTION	BY	DATE
	PERSONNEL		
	JFMS		
	DISPATCH		
	JFMS		
	CHARGED		
	SSH		
	SHOWN		
	DATE		
	JANUARY 2024		



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CITY OF LEBANON
LEBANON, NEW HAMPSHIRE
TRUES BROOK ROAD OVER BLOODS BROOK
TRUES BROOK ROAD CROSS SECTIONS (4 OF 7)

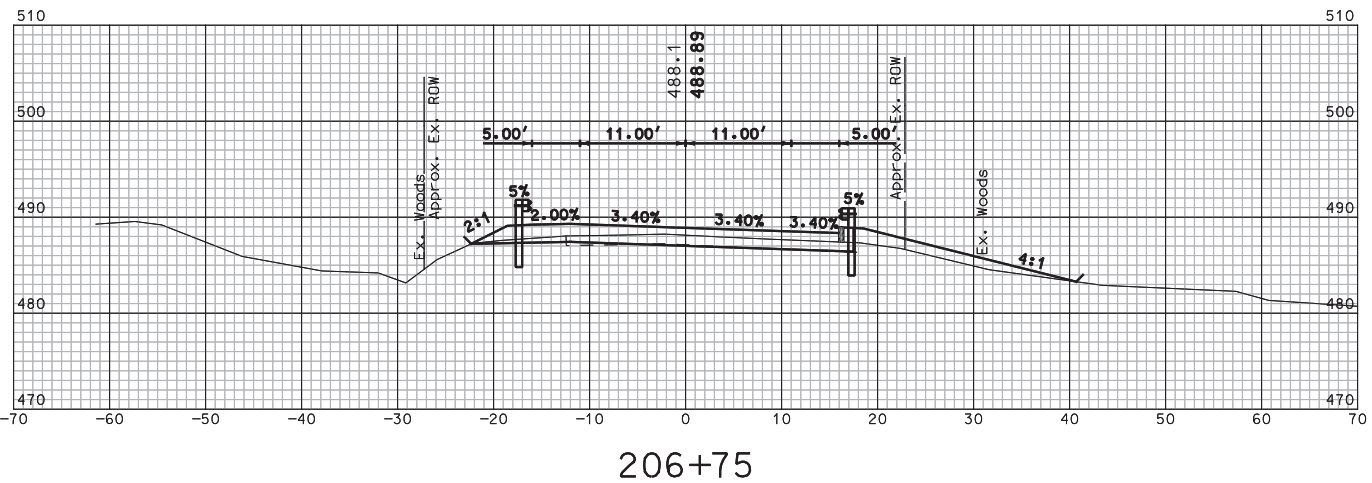
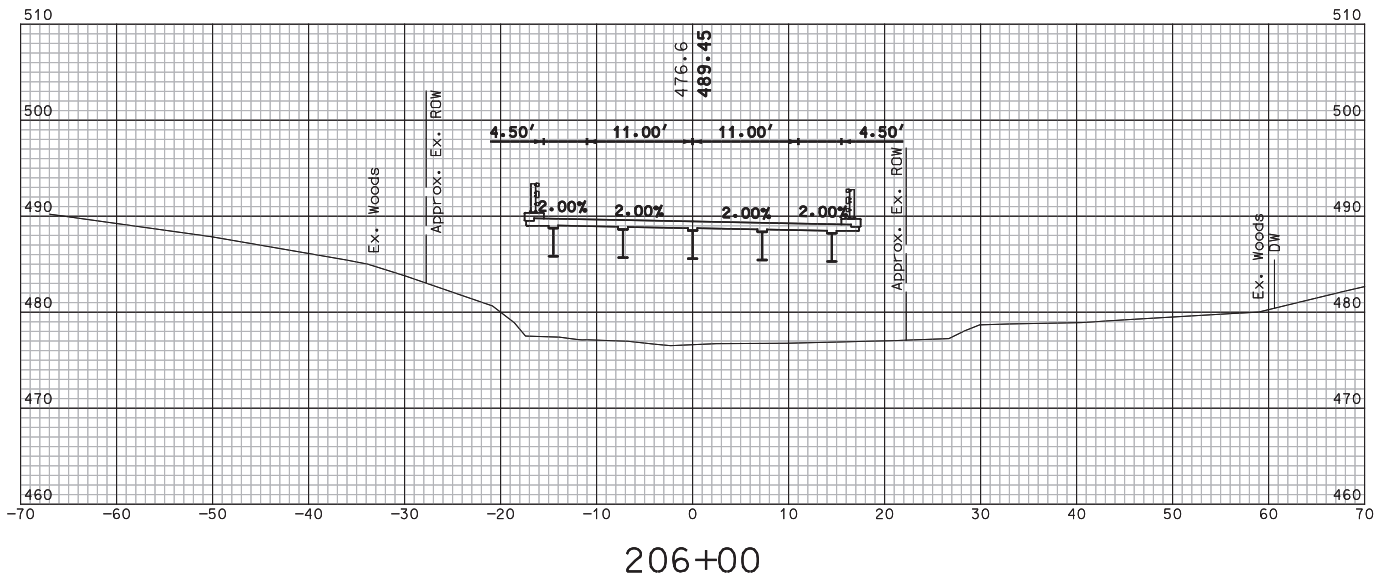
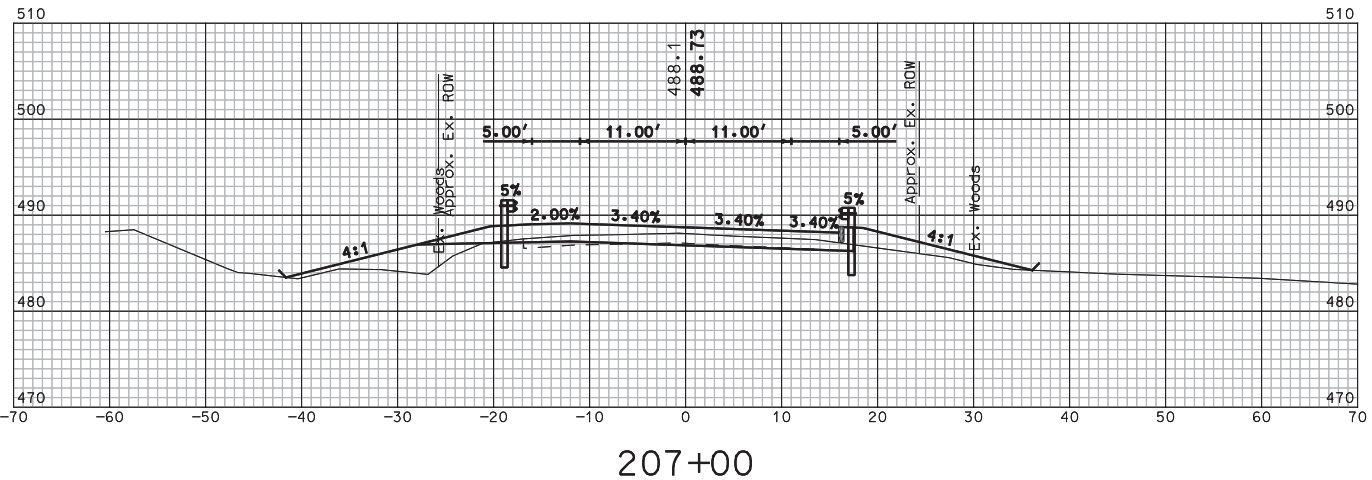
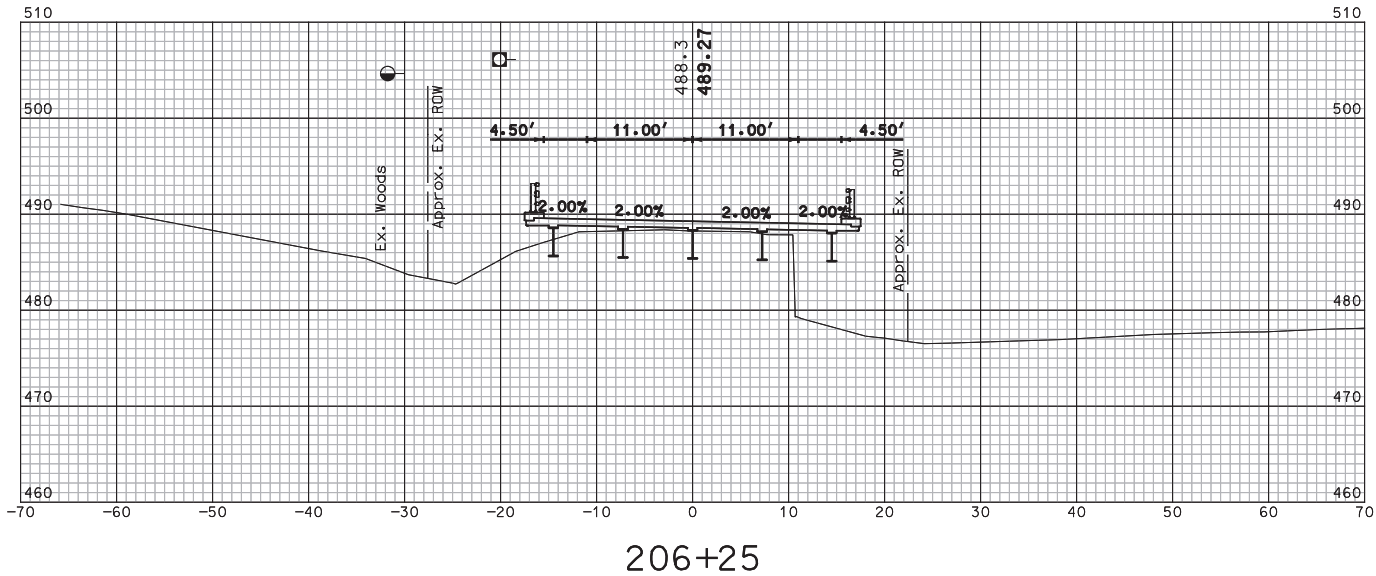
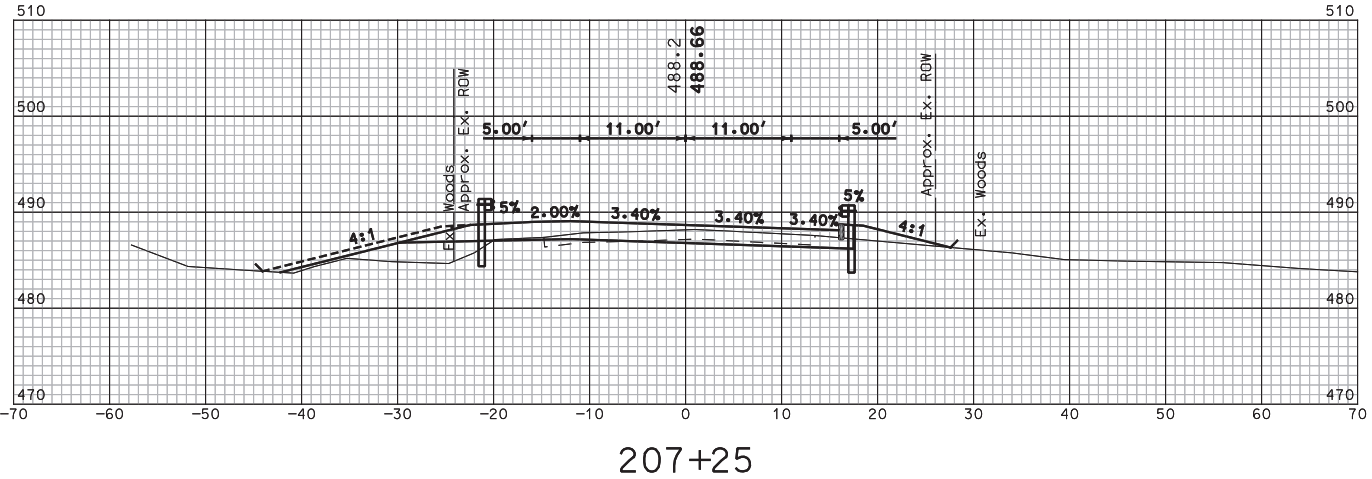
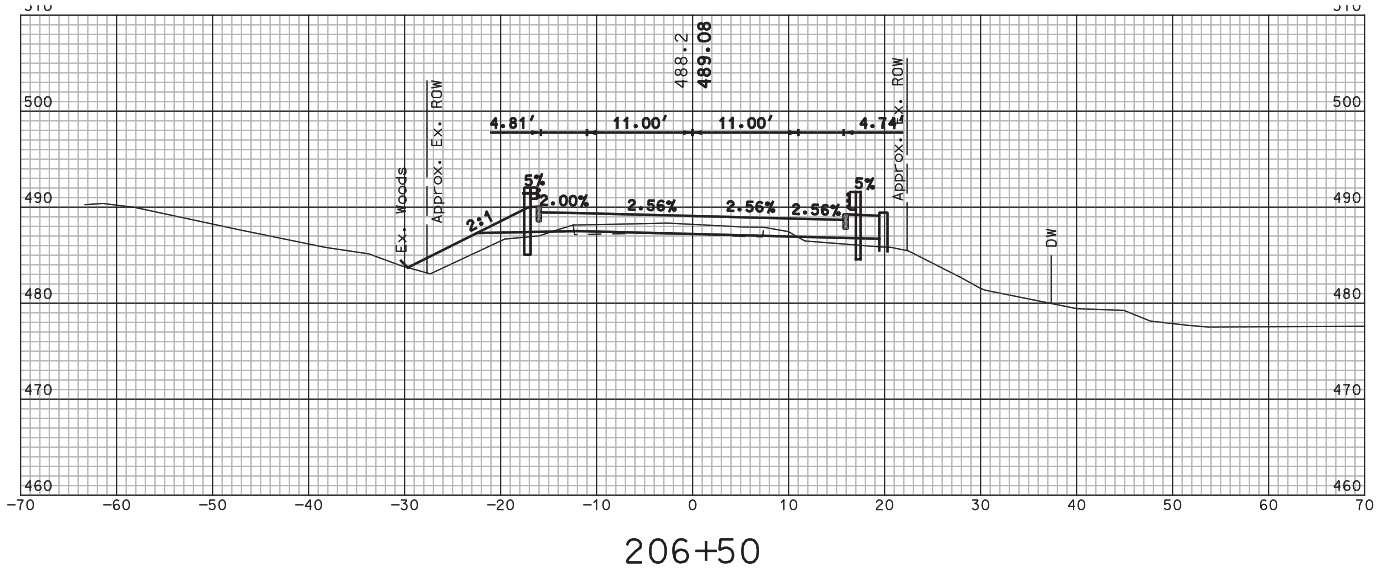
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SHEET NO.

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SHEET 42 OF 45

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CITY OF LEBANON
LEBANON, NEW HAMPSHIRE
TRUES BROOK ROAD OVER BLOODS BROOK
TRUES BROOK ROAD CROSS SECTIONS (5 OF 7)

PROJECT NO. 21.906414.00

SHEET NO. 43

SHEET 43 OF 45

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FILENAME 906414XS0
MODEL NAME XS05
SCALE AS SHOWN

DESIGNED JFMS
DRAWN JFMS
CHECKED SBH

DATE JANUARY 2024

REV.

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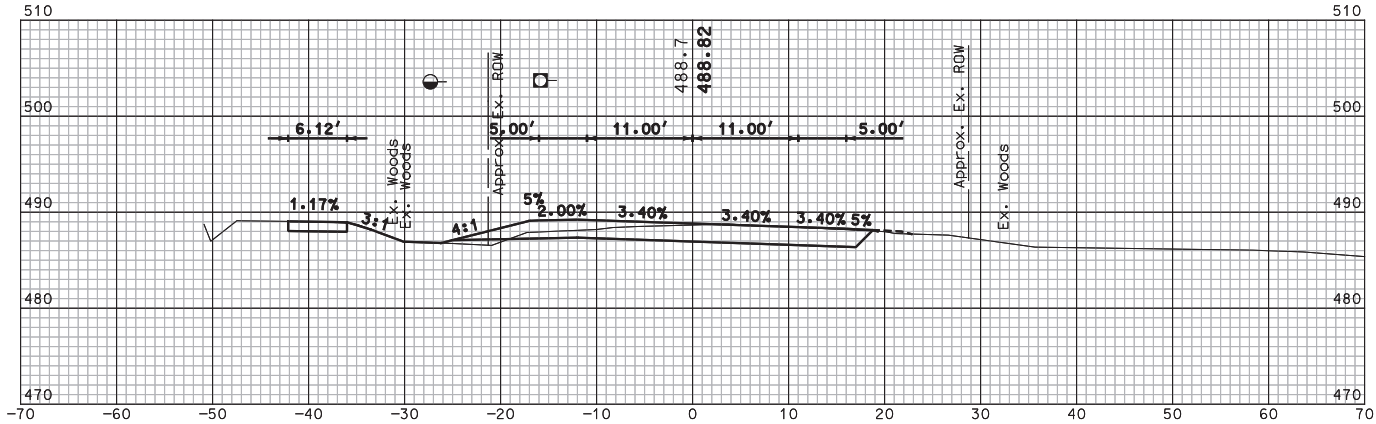
DRW. CHKD. BY

DATE

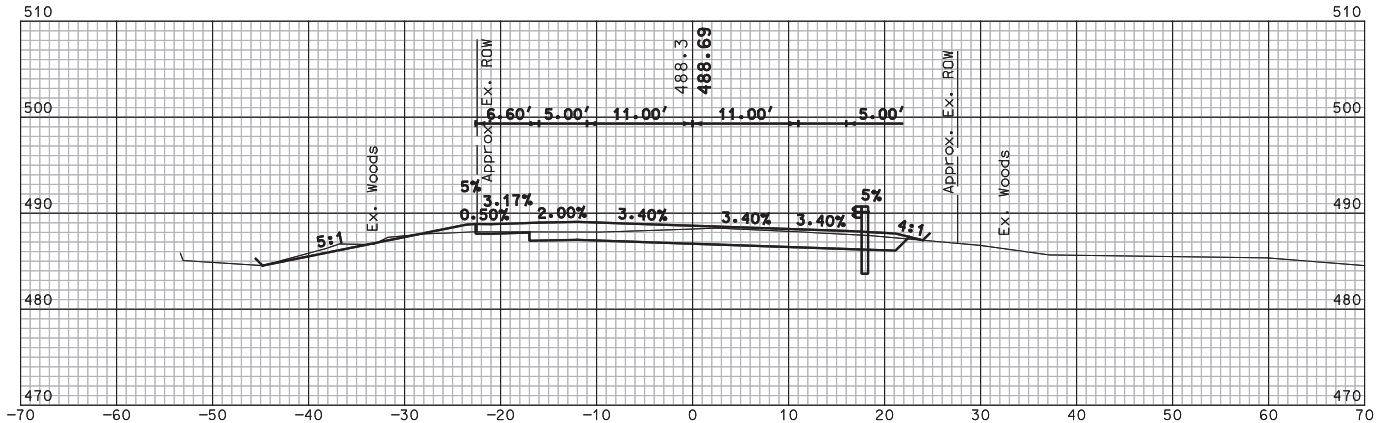
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Page 120 of 135

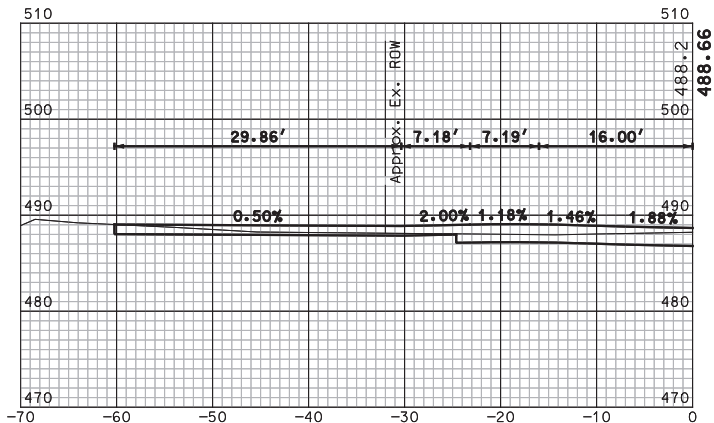
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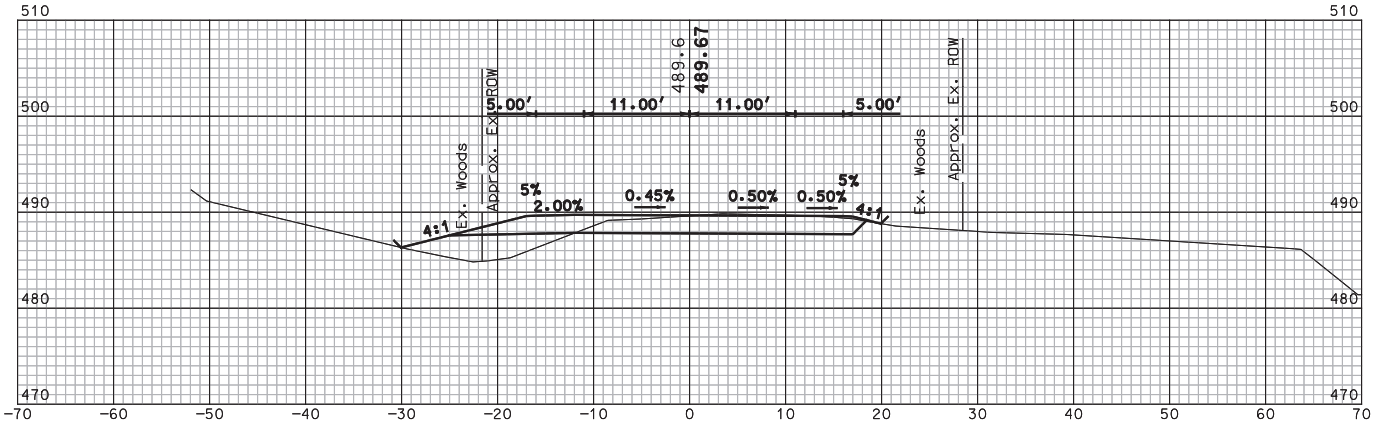
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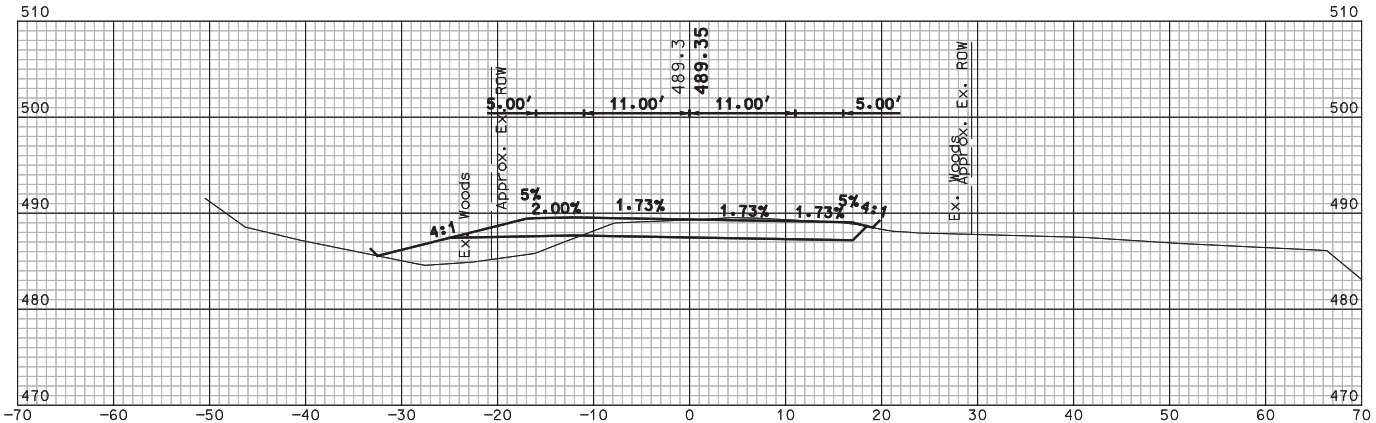
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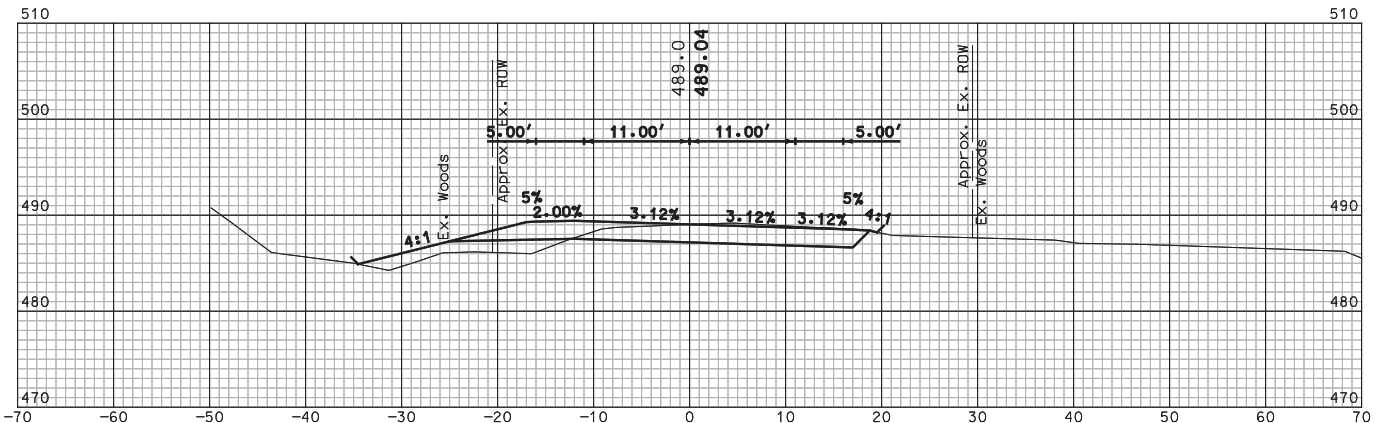
207+33 DRIVE LT (SKEWED)



208+50



208+25



208+00



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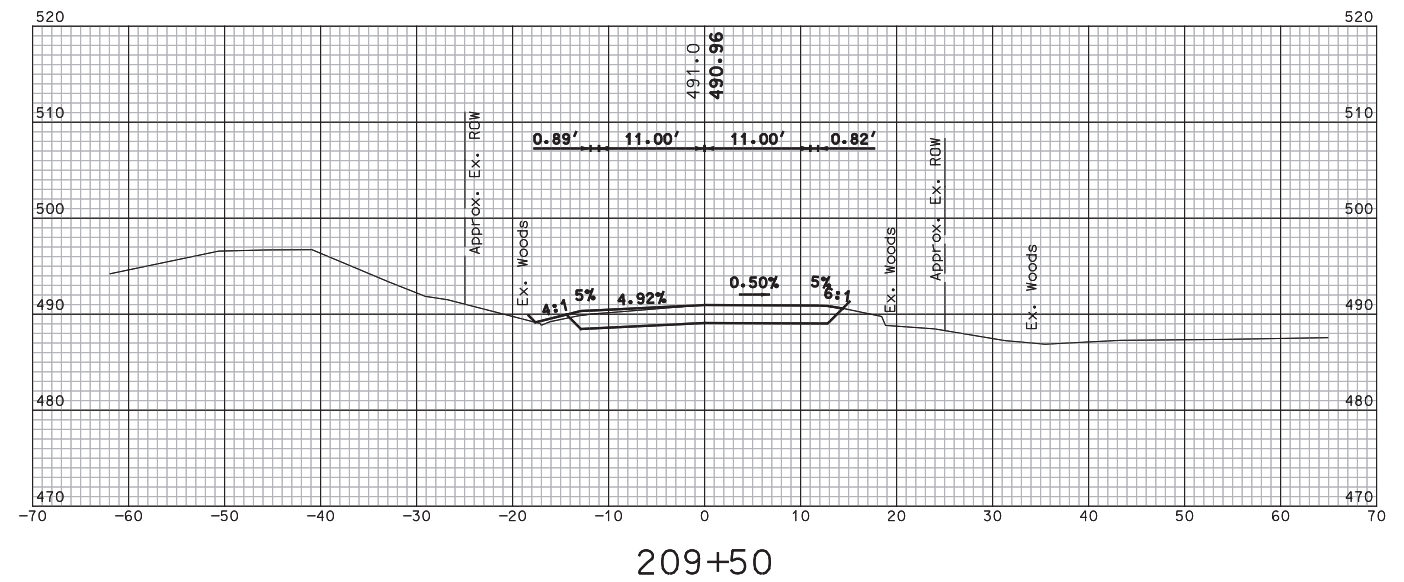
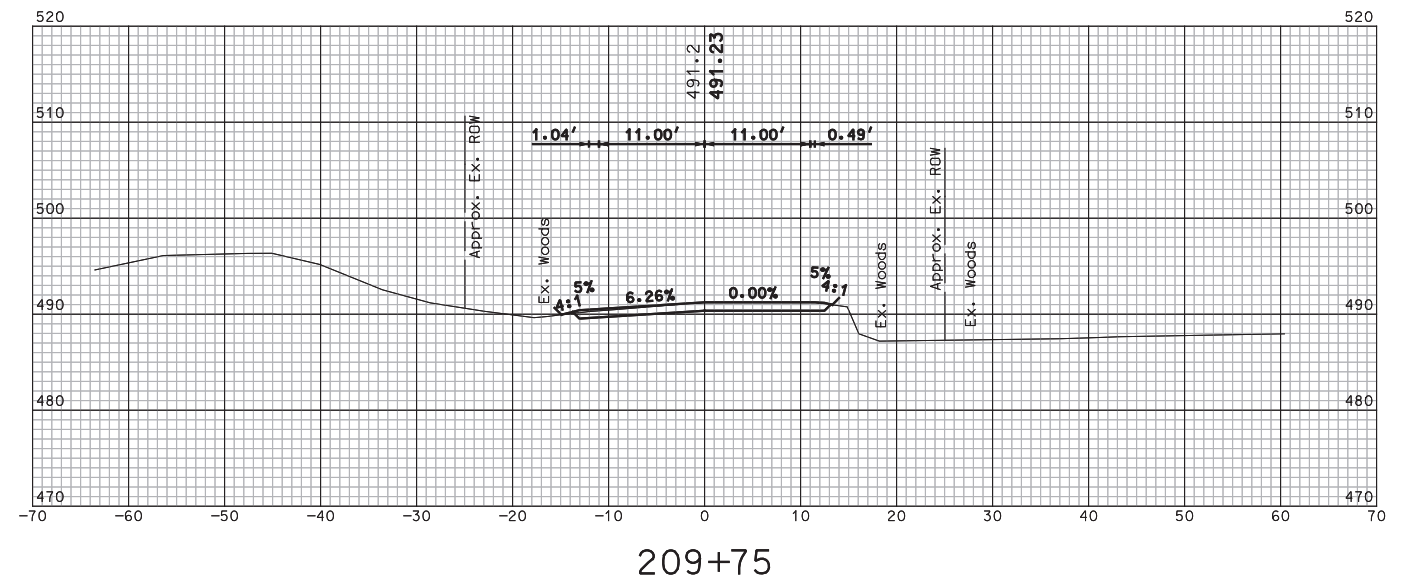
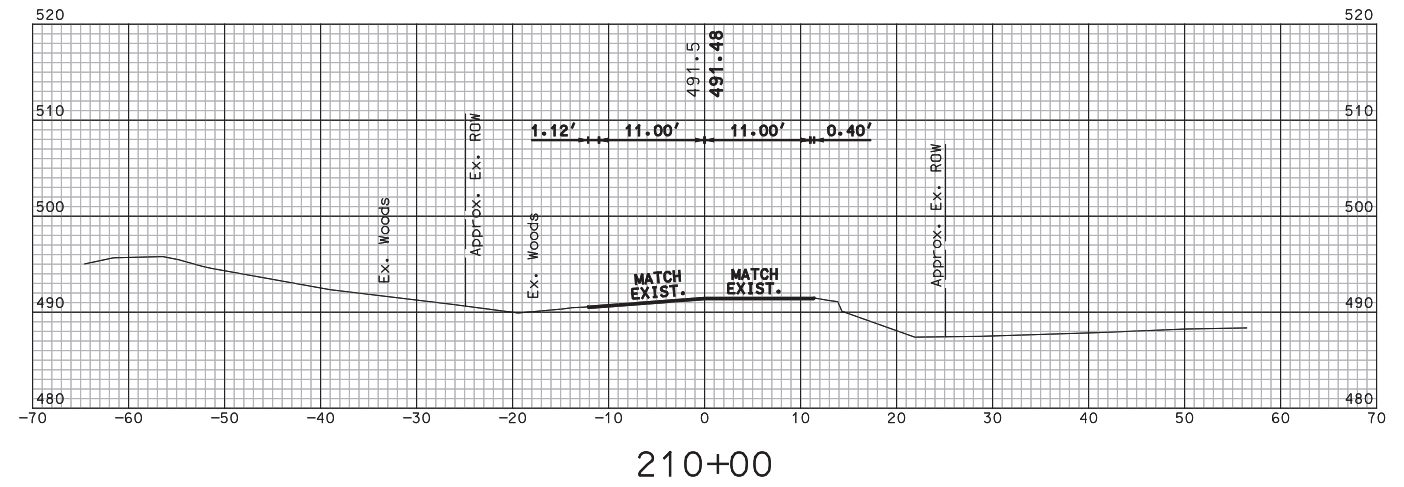
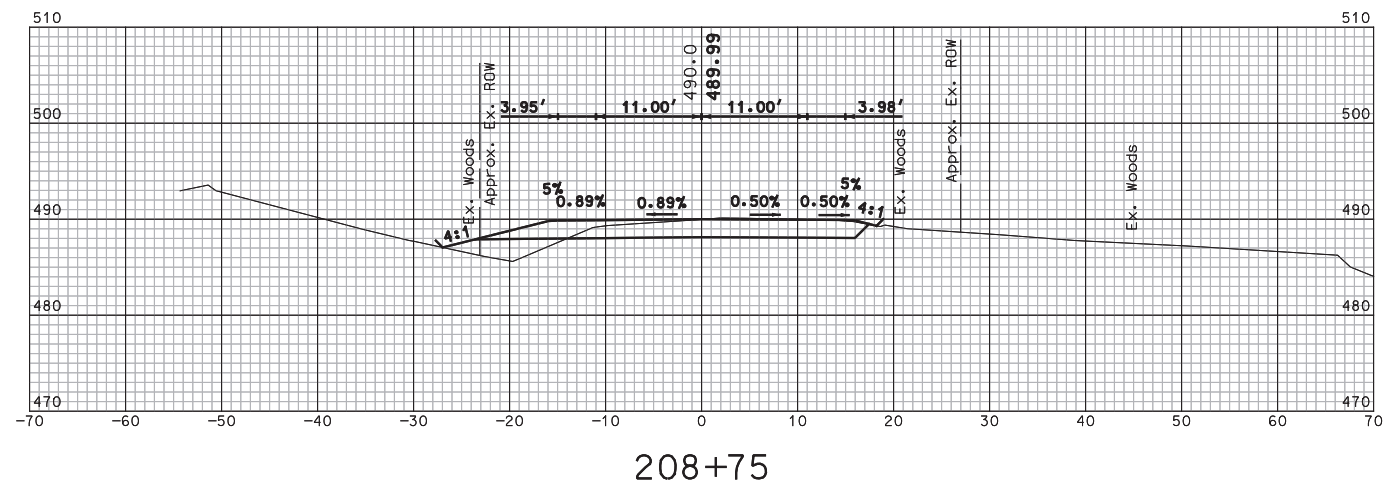
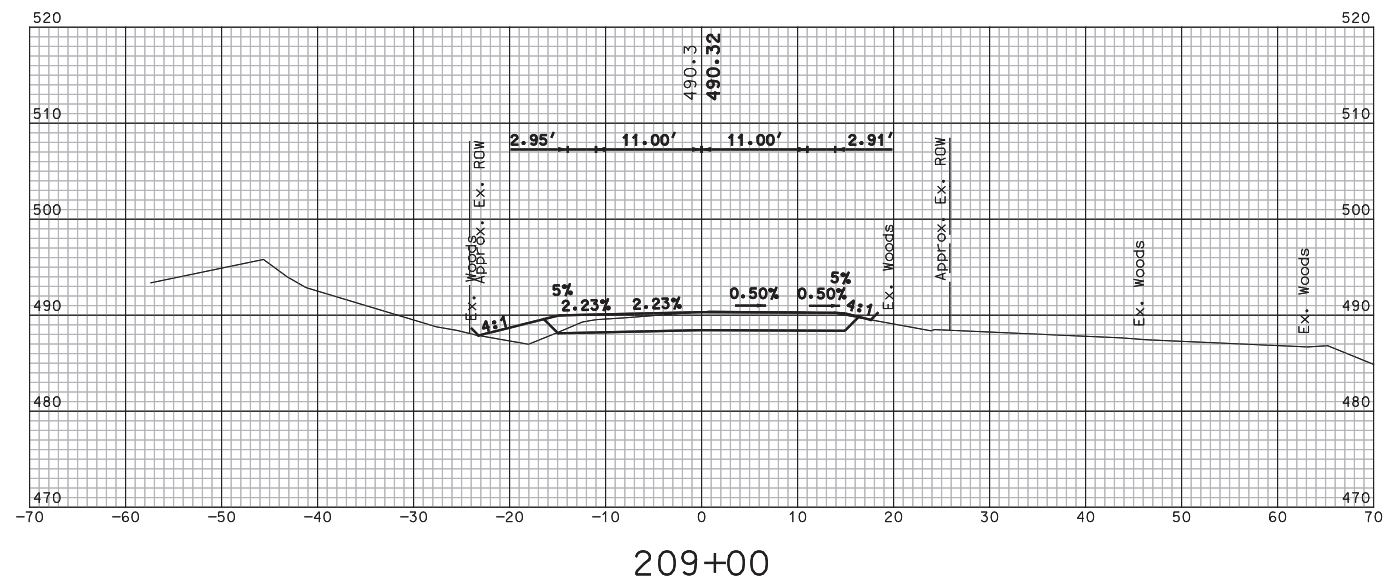
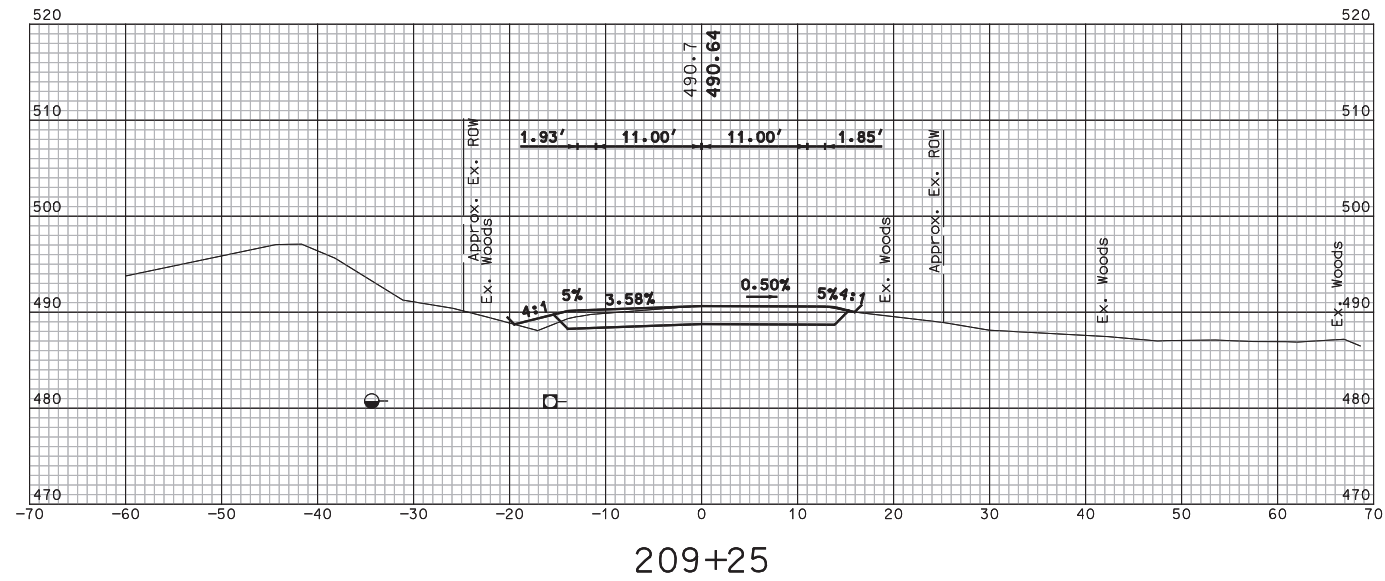
CITY OF LEBANON
LEBANON, NEW HAMPSHIRE
TRUES BROOK ROAD OVER BLOODS BROOK
TRUES BROOK ROAD CROSS SECTIONS (6 OF 7)

PROJECT NO. 21.906414.00

SHEET NO.

44

SHEET 44 OF 45



FILE NAME	DESIGNED	REV.	DESCRIPTION	BY	DATE
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MODEL NAME	DRAWN				
XS07	JFMS				
SCALE	CHECKED				
AS SHOWN	SBH				
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CITY OF LEBANON
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TRUES BROOK ROAD OVER BLOODS BROOK
TRUES BROOK ROAD CROSS SECTIONS (7 OF 7)

CITY OF LEBANON
LEBANON, NEW HAMPSHIRE
TRUES BROOK ROAD OVER BLOODS BROOK
TRUES BROOK ROAD CROSS SECTIONS (7 OF 7)

CITY OF LEBANON
LEBANON, NEW HAMPSHIRE
TRUES BROOK ROAD OVER BLOODS BROOK
TRUES BROOK ROAD CROSS SECTIONS (7 OF 7)

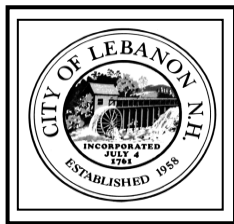
CITY OF LEBANON
LEBANON, NEW HAMPSHIRE
TRUES BROOK ROAD OVER BLOODS BROOK
TRUES BROOK ROAD CROSS SECTIONS (7 OF 7)

PROJECT NO. 21.906414.00

SHEET NO.

45

SHEET 45 OF 45



CITY OF LEBANON ~ PLANNING & DEVELOPMENT

MEMORANDUM

TO: Conservation Commission

FROM: Planning and Development Department Staff

RE: Request by Cicotte Properties, LLC to Amend Section 303.2 of the Zoning Ordinance – IND-L District Table of Uses

DATE: March 6, 2024

On January 4, 2024, the City received a request from Dan Nash, of Advanced Geomatics, on behalf of Cicotte Properties, LLC, pursuant to Section 1000.2.C of the Zoning Ordinance, for an amendment to Section 303.2 of the Zoning Ordinance to allow “vehicular sales” by Conditional Use in the IND-L District. The proposal is discussed in the attached staff memo dated January 9, 2024.

On January 17, 2024, the City Council agreed to submit the petitioner’s proposed amendment to the Zoning Board of Adjustment, Planning Board and Conservation Commission for review and comment, in accordance with Section 1000 of the Zoning Ordinance, as follows:

“Assistant Mayor Below MOVED, that the Lebanon City Council, in accordance with the City of Lebanon Zoning Ordinance, Article X, Section 1000.3, Amendment Procedures, hereby submits the Zoning Ordinance amendment to add “Vehicular sales” to the Light Industrial (IND-L) District Table of Uses as a use allowed by Conditional Use Permit as described in a January 2, 2024 letter from Daniel Nash of Advanced Geomatics & Design to the Planning Board, Conservation Commission, and Zoning Board of Adjustment for their review and comment. The City Council hereby sets the following tentative review schedule:

City Council’s decision to proceed – January 17, 2024

Legal Review – by February 1, 2024

Planning Board – February 26, 2024

Zoning Board of Adjustment March 4, 2024

Conservation Commission – March 14, 2024

City Council Work Session – March 20, 2024

City Council Public Hearing – April 3, 2024”

Section 1000.3 (“Amendment Procedures”), subsection C requires review and comment by the Planning Board regarding any proposed zoning amendment:

All proposed [zoning] amendments shall be forwarded to the Planning Board and Conservation Commission. Planning Board and Conservation Commission shall place the proposed amendment on their agenda for discussion and comment at least thirty (30) days prior to the City Council public hearing. The Planning Board and Conservation Commission shall forward their comments and recommendations to the City Council at least seven (7) days prior to City Council public hearing.

The Conservation Commission's comments should be limited to the potential impact of the amendment on matters or concerns within the Commission's purview. However, Commission members are welcome to and should feel free to provide general comments or suggestions on any of the amendments in the members' individual capacity as a City resident. Comments may be provided to staff and/or to the City Council at the public hearing on the proposed amendment.

For the Board's reference and review, please find attached the following:

- Staff memo to the City Council, dated January 9, 2024, providing a description of the proposed amendment as well as staff's recommendations
- January 4, 2024, rezoning request letter from Dan Nash, of Advanced Geomatics, on behalf of Cicotte Properties, LLC, with attachments
- September 28, 2023 rezoning request letter from Dan Nash, of Advanced Geomatics, on behalf of Cicotte Properties, LLC, without attachments
- A legal opinion from Christine Fillmore, Esq., dated February 26, 2024

Once review has been completed by the City's land use boards, the City Council will hold a public hearing followed by a vote on whether to adopt the proposed amendment to Section 303.2.



CITY OF LEBANON ~ PLANNING & DEVELOPMENT

MEMORANDUM

TO: Lebanon City Council

CC: Shaun Mulholland, City Manager
David Brooks, Deputy City Manager

FROM: Planning and Development Department Staff

RE: Request by Cicotte Properties, LLC, to Amend Section 303.2 of the Zoning Ordinance (IND-L District Table of Uses)

DATE: January 9, 2024

On September 28, 2023, the City received a request from Dan Nash, of Advanced Geomatics and Design, on behalf of Cicotte Properties, LLC, pursuant to Section 1000.2.C of the Zoning Ordinance, for three Zoning Map amendments and an amendment to Section 311A.2 of the Zoning Ordinance to add several additional uses as permitted uses in the R-O-1 District. Cicotte Properties, LLC's proposed amendments are outlined in the attached September 28, 2023 rezoning request letter from Dan Nash, PE.

As set forth in the attached memo from Mr. Nash dated January 2, 2024, the applicant has narrowed the scope of their zoning amendment request, which is now limited to the following:

1. Amend Section 311A.2 of the Zoning Ordinance to add "vehicular sales" as a use allowed by Conditional Use Permit in the Residential-Office-One (R-O-1) District. ("Cicotte Amendment #1")
2. Amend Section 303.2 of the Zoning Ordinance to add "vehicular sales" as a use allowed by Conditional Use Permit in the Light Industrial (IND-L) District. ("Cicotte Amendment #2")

Regarding Cicotte Amendment #1, a public hearing has been scheduled for January 17, 2024.

As discussed with the Council at its January 3, 2024 meeting, the City's legal counsel considers Cicotte Amendment #2 to be substantially different from the amendments as first presented on October 18th, and concluded that the proposed amendment would need its own review in accordance with the procedures outlined in Section 1000 of the Zoning Ordinance. Based on legal counsel's recommendation, the Council agreed that Cicotte Amendment #2 should be reviewed separately from Cicotte Amendment #1 which was fully reviewed under the Section 1000 process.

Note that Mr. Nash's January 2nd letter and materials refer to adding "auto sales and service" in the IND-L, which is not a use category identified in the Zoning Ordinance. Rather, staff recommends that the Council consider Cicotte Amendment #2 as a request relating to the existing "vehicular sales" category which is defined in Appendix A of the Zoning Ordinance as follows:

The display and sales of new or used motor vehicles, motorcycles, recreational vehicles, manufactured homes, and boats. No retail sale of gasoline or oil is

permitted. Vehicular sales shall include facilities for the short term leasing of automobiles and trucks to the end consumer.

Note that the “vehicular sales” use category includes all uses that are accessory to the primary “vehicular sales” use, including but not limited to auto repair.

MASTER PLAN

The City’s current Master Plan, adopted in March 2012, describes the current land use of the Exit 18 area as follows [Section 2|C-2b]:

- **Exit 18.** In the vicinity of Exit 18, there are several auto-related business (gas stations, convenience stores, auto dealerships, trucking facilities), as well as additional general commercial uses within close proximity (hotels, retail, etc.) In recent years, new construction and some redevelopment has been occurring in this area.

The Master Plan identifies the desired land uses north of Exit 18 as including “small-scale commercial, light industrial, office and residential uses”, but also recommends a study of the Route 120 corridor to address traffic patterns, land uses, and aesthetic concerns. See Section 2|D-2j:

- 2|D-2j **Heater Road-Route 120-Evans Drive-Hanover Street.** For the Heater Road area, the general recommendation is to determine the appropriate level and type of future development. The area surrounding the Hanover Street School and Lebanon High School would be appropriate for mixed-use development, including small-scale commercial, light industrial, office, and residential uses. Because of the proximity to schools and residential areas, surrounding wetlands, and difficult access for traffic from Route 120 onto Evans Drive, development must meet well-defined performance standards for traffic, hours of operation, impervious surface, and parking. A study of the entire Route 120 corridor is needed to address traffic patterns, land uses, and aesthetic concerns. The City supports the NHDOT’s position that no further curb cuts should be granted on Route 120 north of Exit 18. The entry corridor from Exit 18 to Hanover Street should be landscaped by the state to reduce the current expanse of impervious pavement.

See also Action# 2.2.A6 (“Conduct a study of the Route 120 corridor to address traffic patterns, land uses & aesthetic concerns”); and Action# 2.3.A10 (“Determine the appropriate level and type of future development in the Heater Road area”).

RECOMMENDATIONS:

Staff recommends the City Council consider postponing the applicant’s request in light of a pending land use study of the Route 120 corridor. Pursuant to the recommendations of the Master Plan (as described above), the City has contracted with VHB to prepare a neighborhood plan for the Route 120 corridor extending from Exit 18 to the Hanover line. A project “kick off” meeting was held with staff on January 3, 2024. The study will identify existing land uses and projected development demands along the corridor and will likely result in proposed amendments to the Zoning Ordinance to accommodate desired growth and uses. To add “vehicular sales” at this time on an ad-hoc basis is premature given the pending neighborhood master planning effort, the results of which are expected in the late spring/summer with zoning amendments to be presented to the City Council for “kick off” in October.

Alternatively, should the City Council elect to proceed with consideration of Cicotte Amendment #2 now, the Planning and Development Department recommends that the Council establish a

tentative schedule for review, as is required pursuant to Section 1000.3.A of the Zoning Ordinance. Staff offers the following tentative schedule for review and comment:

City Council decision to proceed: **January 17, 2024**
Legal review: **by February 1, 2024**
Planning Board: **February 26, 2024**
Zoning Board: **March 4, 2024**
Conservation Commission: **March 14, 2024**
City Council setting public hearing: **March 20, 2024**
City Council public hearing: **April 3, 2024**

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Supporting Materials:

- September 28, 2023 rezoning request letter from Dan Nash, of Advanced Geomatics, on behalf of Cicotte Properties, LLC, including attachments
- January 2, 2024 letter from Dan Nash, of Advanced Geomatics and Design, on behalf of Cicotte Properties, LLC, including attachment



TO: NATHAN REICHERT, PLANNING & DEVELOPMENT DIRECTOR

FROM: DANIEL A. NASH, PE

RE: PROPOSED ZONING CHANGES

CC: SHAUN MULHOLLAND, CITY MANAGER

DATE: 2 JANUARY 2024

In reviewing the City Council agenda for 3Jan24, I observed what appears to have been an oversight. On item 10.G., the item includes no mention of the petitioned changes brought before the city council on 18Oct23. At that meeting, the council directed that the petitioned changes track with those prepared by planning staff, being routed to the Zoning and Planning Boards and the Conservation commission.

At the Planning Board meeting on 11Dec23, the petitioned requests were narrowed to include automobile sales and service as a Conditional Use in the RO-1 and IND-L zones. This refinement is acceptable to the petitioner. Attached is a transcription of the motion made by the Planning Board. I have attached recommended changes to the zoning tables for each zone. As I understand, the Zoning Board and Conservation Commission comments do not conflict with the Planning Board recommendation.

Can you please ensure that this information is sent to the City Council as supplemental information for Item 10.G. on their 3Jan24 meeting? Please let me know if you have any questions regarding this request.

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SECTION 303 LIGHT INDUSTRIAL DISTRICT (IND-L).

303.1 Purpose.

The purpose of the IND-L District is to provide land in appropriate locations for the establishment of manufacturing plants and other businesses of a similar nature, which improve employment opportunities and strengthen the economic base of the city. Such activities should not adversely affect the natural environment, adjacent residential areas or community facilities. A variety of manufacturing, distribution and service industries, and certain limited support activities are allowed in the district. However, in order to preserve appropriate land for such uses, residential uses and many types of commercial uses, such as retailing and **personal services**, are not allowed.

303.2 Table of Uses.

<u>Permitted Uses</u>	<u>Special Exception Uses</u> (see Section 801.3)
<u>Commercial/Non-Residential</u> 1. Airport 2. Bus terminal 3. Essential service 4. Equipment and machinery sales, rental and service 5. Group day care facility per Section 604 6. Health club 7. Light industry 8. Local government use 9. Outdoor storage per Section 303.4 (less than 20%) 10. Plumbing, electrical or carpentry shop 11. Publishing/printing 12. Research laboratory 13. Renewable energy system per Section 612 14. Retail product pickup 15. Retail showroom per Section 303.5 (less than 10%) 16. Trucking terminal 17. Warehouse	<u>Commercial/Non-Residential</u> 1. Care and treatment of animals 2. Contractor's yard 3. Educational facility, college/university 4. Educational facility, vocational school
	<u>Uses by Conditional Use Permit</u> (see Section 302.4)
<u>Planned Developments</u> 18. Industrial PUD per Section 501 19. Planned business park per Section 508	<u>Commercial/Non-Residential</u> 1. Car wash 2. Inpatient rehabilitation facility 3. Office 4. Outdoor storage per Section 303.4 (more than 20%) 5. Retail showroom per Section 303.5 (between 10-20%) 6. Auto sales and Service

SECTION 311A RESIDENTIAL-OFFICE-ONE DISTRICT (R-O-1).

311A.1 Purpose.

The purpose of the R-O-1 district is to provide for well-planned neighborhoods of **offices** and higher density housing by carefully guiding the integration of multi-residential housing and **office** uses. The district balances the goals of: (1) preserving the economic viability of older, large **dwelling**s modified to accommodate multiple residential units or **office** space or both; (2) providing for attractive locations for small **offices**; and (3) providing for new **office** buildings compatible with surroundings.

311A.2 Table of Uses.

<u>Permitted Uses</u>	<u>Special Exception Uses</u> (see Section 801.3)
<u>Residential</u> One-family dwelling Two-family dwelling Multi-family dwelling (4 dwelling units or less) per Section 601 Accessory dwelling unit (ADU) per Section 610 <u>Commercial/Non-Residential</u> - Construction of new office building (3,000 sq. ft. or less) per Section 601 - Conversion of a dwelling to office use per Section 601 Financial institution Group day care facility per Section 604 Home business per Section 600 - House of worship Personal service Renewable energy system per Section 612 <u>Planned Developments</u> - PURD per Section 501	<u>Residential</u> Multi-family dwelling (5 dwelling units or more) per Section 601 Senior housing complex <u>Commercial/Non-Residential</u> - Construction of new office building (3,001 sq. ft. – 6,000 sq. ft.) per Section 601 Educational facility, college/university Educational facility, primary/secondary Essential service - Funeral home Group residence Health club Hospice Lodging house Public safety facility Recreational facility, indoor Recreational facility, outdoor Tourist home (or bed and breakfast facility)

	<u>Uses by Conditional Use Permit</u> (see Section 302.4)
	<u>Residential</u> 1. Cottage development per Section 509 2. Auto sales and Service

311A.3 Table of Area, Dimensions and Coverage.

Minimum Lot Size

Class	Area	Width	Additional Area per D.U. After Two	Maximum Height
1	10,000 sq.ft.	75'	3,000 sq.ft.	45'
2	15,000 sq.ft.	75'	5,000 sq.ft.	45'
3	40,000 sq.ft.	100'	15,000 sq.ft.	45'

Minimum Yard

Class	Front	Side	Rear	Maximum Building Coverage
1	20'	15'	20'	25%
2	20'	15'	20'	20%
3	25'	25'	30'	15%

Planning Board Motion

Extracted from meeting media for 11Dec2023 meeting

Motion is on media from time stamp 2:22:28 to 2:25:13.

Richard Ford Burley moved: the Planning Board would like to recommend that

a) it would seem to us to be acceptable that allowing auto sales and service in the IND-L and RO-1 zones only as a Conditional Use could be acceptable as a stop gap measure given the pending Route 120 neighborhood planning effort

b) we would like to strongly encourage matters like the present to be considered in the pending neighborhood planning effort and potential rezoning

c) we believe that Lot 63-4 should be left zoned as RL-3 pending further zoning and environmental review.

Seconded by Jeremy Rutter.

Vote 6-0 in favor.



28 September 2023

Honorable Mayor and City Council
City of Lebanon
51 North Park Street
Lebanon, NH 03766

Re: Request for Zoning Changes

Dear Mayor and Councilors:

On behalf of Cicotte Properties, this letter is being written to request zoning changes to be part of the city's annual zoning review.

Request #1. Rezone parcels 64-30 and 78-61 on Little Heater Road to GC (see attached "Little Heater").

Parcel 64-30 is an auto dealership and has been since 1985. The existing operation essentially maxes out the usable property. As can be seen on the sketch, the parcel is divided by a drainage feature. The land on the west side of the drain feature is likely wetlands and difficult to permit for use. The inclusion of the vacant parcel to the south, 78-61, is to preclude a claim of "spot zoning". As discussed, there is little risk of this change promoting a project that has harmful impacts, as it is essentially fully developed. The need is to restore the use of this land as a "Permitted Use". This status was lost when the zoning was changed to IND-L some time ago. This change placed an unnecessary burden on the landowner to obtain either a zoning special exception or a variance to make any changes to the property. The city's recent change to the expansion of non-conforming properties required the applicant to obtain a Variance to expand a legitimate addition to an auto dealership. This property has been a responsible and productive business for the city. The property generates roughly \$90,000 of tax revenue each year.

Restoring the proper zoning to these parcels would be just, appropriate, and not cause the potential for harmful impacts from development.

Request #2. Rezone parcels 78-40-1, 78-40-2, and 63-4 on Evans Drive to GC (see attached "Evans Drive").

These parcels were GC before their conversion to RO-1. It is my opinion that this change was inappropriate for the parcels involved and should be undone. In particular, the zoning of parcel 64-3 to RL-3 was "Spot zoning" and should never have been allowed. Parcel 78-40-2 has been an auto dealership since the 1960's and it is unjust for it to lose its "Permitted Use" status for no legitimate public purpose. There is no need or purpose for residential uses on these properties.

Request #3. Rezone parcel 63-4 on Evans Drive to RO-1 (see attached “Evans Drive”).

If request #2 does not find favor with the city, we request Parcel 63-4 be converted to RO-1, to be zoned as the abutting parcels. The zoning of parcel 64-3 to RL-3 was “Spot zoning” and should never have been allowed.

Request #4. Add several uses allowed in GC to be allowed in RO-1 by Special Exception or Conditional Use (see attached “GC”).

If requests #2 or #3 do not find favor with the city, we request the city allow several uses, namely uses 25-31, be allowed in the RO-1 zone as Special Exceptions or Conditional Uses. These uses were permitted uses before the parcels were inappropriately converted to RO-1 from GC. By placement of the uses under Special Exception or Conditional Use, allows additional city review of proposed uses to prevent adverse impacts to the city from development of these uses.

Please let me know if you have any questions regarding this request.

Sincerely,

Daniel A. Nash, PE
Principal

Attachments:
-Little Heater
-Evans Drive
-GC

CC: Johanna Cicotte

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February 26, 2024

Nathan Reichert, Director of Planning & Development
City of Lebanon
51 S. Park Street
Lebanon, NH 03766

**RE: Petitioned Zoning Amendment
Uses in IND-L District; Section 303.2**

Mr. Reichert:

This is a preliminary legal opinion as required by Section 1000.3(B)(2) of the Lebanon Zoning Ordinance concerning a proposed amendment to add “auto sales and service” as a Conditional Use in the IND-L District. I have reviewed the following documents in connection with this opinion:

- Request letter dated January 4, 2024 on behalf of Cicotte Properties
- Staff Memo to City Council dated January 9, 2024 regarding the requested amendment

The Ordinance requires this legal review to cover: (a) whether such amendments are within the authority delegated to the City under State law; (b) whether the form is appropriate; and (c) whether, from an administrative point of view, the amendments can be administered and enforced.

The proposal is simply to change the table of uses in Section 303.2 for the IND-L District. The appropriateness of particular uses in the IND-L District (or any zoning district) is a policy question. Consequently, my answer to the three questions in Section 1000.2.B(2) is “yes” and I discern no legal or administrative issues of concern with that request, except for the following recommendation: The petitioner’s proposed use category of “auto sales and service” is not a term currently found in the Zoning Ordinance. The Ordinance does currently include “vehicular sales” as a defined use category in other districts. As I understand it, “vehicular sales” includes both auto sales and all accessory uses thereto, including auto repair, and would accomplish the petitioner’s proposed goal without creating unnecessary confusion about whether there is any difference between the two terms. Therefore, I recommend that, if the amendment proceeds, the term “vehicular sales” be substituted for “auto sales and service.”

Please do not hesitate to contact me about any aspect of this.

Sincerely,



C. Christine (Fillmore) Johnston