

Exception Request No.: 2 (Rev 2)
Town: Plymouth
Highway: US 3 (Tier 2)
Section: WBR3
Station: 2688+00 to 2690+25±
Drawing No.: WBR3 C242
Survey Report Cross Reference No.: WBR3 C238
Exception Type: Alignment in Pavement

Traffic Information

NHS: No
ADT: 2089
Traffic Control Type: Alt 1-way
Traffic Control Duration: Traffic control duration is estimated to be 6 days for the proposed installation. If the requested exception is not granted, NPT expects an additional 6 days of traffic control to install the alignment outside the paved area (not including the installation of new guardrail).

Summary of Justification for Exception

NPT is requesting an exception from the UAM guidelines for the location of the cable trench in the pavement on US 3, Daniel Webster Highway from STA 2688+00 to 2690+25± of the NPT WBR3 Underground Alignment. (See Exhibit A.)

Due to limited ROW space outside the pavement and beyond the existing guardrail, construction outside the guardrail is not practicable because: (i) if the guardrail is not removed, NPT does not have the necessary property rights to construct outside the NHDOT ROW; (ii) if the guardrail and a portion of the roadway is temporarily removed to allow construction of the ductbank in the slope without extending past the right of way limits for benching, the traffic impacts and costs of this construction method are greater than the proposed installation. The proposed alignment is located beneath the pavement at a 5-foot offset from the guardrail consistent with NHDOT's request to avoid future conflicts with guardrail repairs or replacement or disruption to the existing guardrail system.

Technical Discussion of Justification of Exception

The roadway alignment at this location is constrained by guardrail on the eastern side of US 3 with moderate to steep slopes on the outside of the guardrails. (See Exhibit A and B.) Consequently, the steep slopes behind the guardrail, combined with NHDOT's requested offset of 5-feet from the existing guardrail, would result in significant constructability issues (if the guardrail were not removed), including the need for benching into the side slope to create a level and safe working area. The modified side slopes would extend beyond the ROW limits. (See Exhibit B.)

At the request of the DOT, we also evaluated an option to remove the guardrail and a portion of the roadway to allow NPT to construct the ductbank in the slope without extending past the right of way limits. Considerable amounts of materials would have to be removed and transported to another site for temporary storage in order to bench into the slope. These materials would then have to be transported back to the site to restore the site after the ductbank was completed. (See Exhibit C.) This

option would significantly increase the time necessary in the NH DOT ROW required to construct the ductbank and would be more costly, having a net increase of \$23,362 including the cost of material transport and new guardrail installation. (See Exhibit D). (Note: This marginal cost estimate does not factor in the potential that native materials cannot be used during reburial because more expensive, select materials may be needed to address cable thermal issues.) In addition, traffic impacts would be significantly greater for this option (as compared to the proposed installation) due to the additional work for the benching activities.

Additionally, NPT has liability concerns regarding DOT's request that NPT install new guardrails after completion of its work. Unlike NHDOT, if NPT were to install new guardrails, NPT would not have the benefit of immunity protections afforded to NHDOT under New Hampshire law. See N.H. R.S.A. § 230:80. Therefore, even in cases where NPT deemed the cost of the "guardrail replacement option" to be a reasonable project cost for a particular location, NPT could not agree to have any role in work to replace the guardrails unless NHDOT were willing to agree to defend, indemnify, and hold harmless NPT against any and all claims related in any manner to, or arising out of, the installation of the new guardrails. If NHDOT were not willing to provide such protection to NPT, then NPT would be willing, in the alternative, to reimburse NHDOT for the cost NHDOT and/or its contractors incur to replace any guardrails removed during our work, but NPT could not have any role in such work. However, NPT is not requesting the "guardrail replacement option" at this location, where it deems the additional traffic impacts and cost of this work to be prohibitive.

NPT also evaluated placing the cable trench alignment on the western side of the road in this area and determined it was impracticable. Specifically, there are construction constraints on the western side of the road, including a drainage line and headwall and required relocation of a distribution utility pole, which will require acquisition of additional easement rights on private property for modified distribution pole guying. (See Exhibit A) In addition, moving the alignment to the western side of the road would require two additional highway crossings. These road crossings would involve disturbance to approximately 100 feet of paved roadway to avoid the proposed 225-foot alignment within the road (and NHDOT exception approval for these road crossings). NPT submits that any benefits of moving to the opposite side of the road are negated by the additional traffic impacts and additional delays associated with the construction of the road crossings.

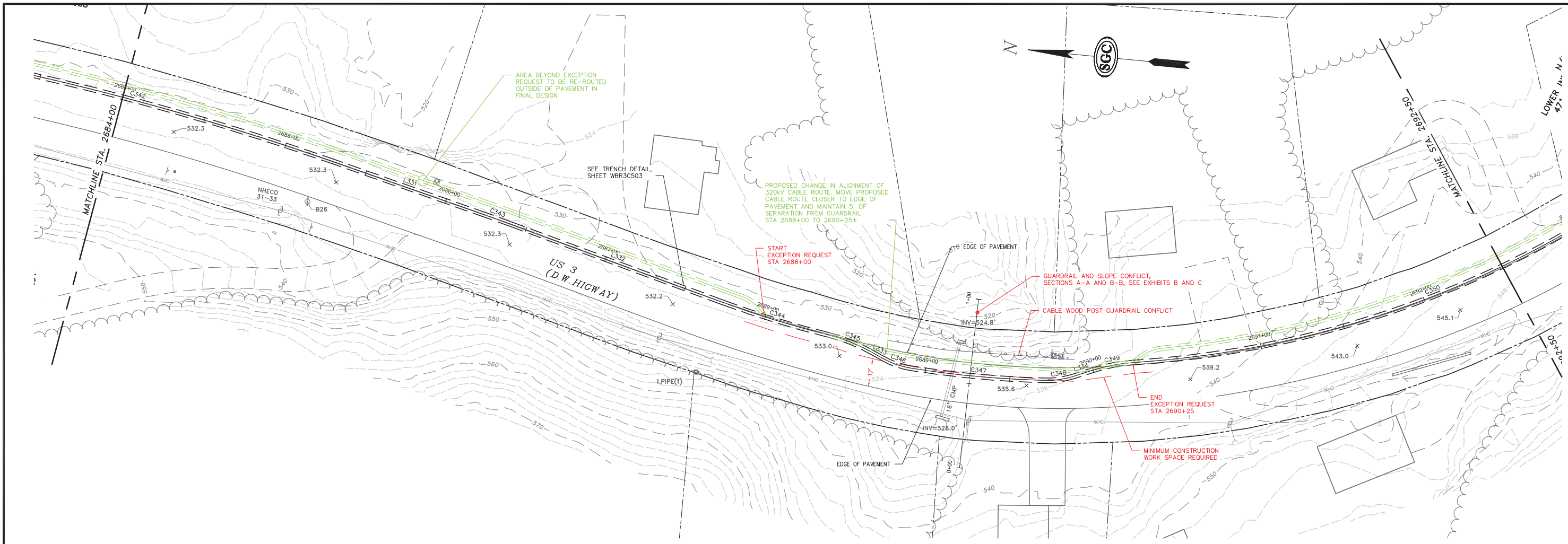
Excavation limits and work areas are shown on the attached drawings. During construction, one lane will remain open to traffic at all times.

Impacts

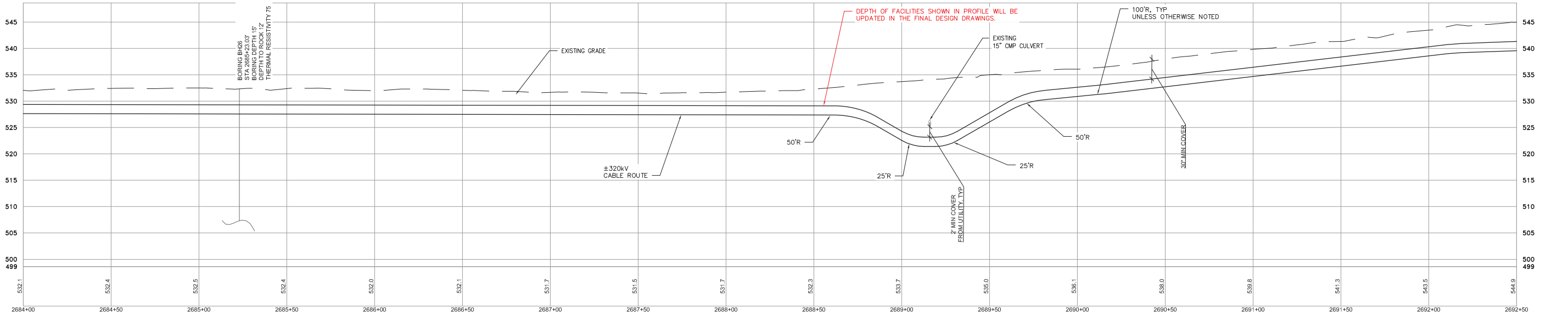
The design, as proposed, will not adversely affect the design, construction, stability, traffic, safety, environmental commitments, maintenance, or operation of the highway. The alignment has been located 5-feet off the edge of the guardrail, to avoid future conflicts with guardrail repairs or replacement or disruption to the existing guardrail system. The installation of the ductbank and pavement restoration will be designed and constructed in accordance with conditions outlined in the NHDOT's April 3, 2017 letter to the New Hampshire Site Evaluation Committee. The installation's proposed depth meets NHDOT's criteria relating to the structural box to minimize any potential conflicts with maintenance and future highway projects. A traffic control plan has been submitted to the NHDOT for this design and complies with the Manual on Uniform Traffic Control Devices.

Supporting Documentation

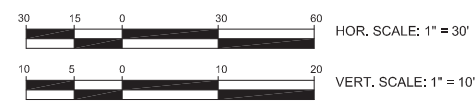
See attached Exhibits A, B, and C showing a plan, profile, and sections for the proposed installation and alternatives, and see Exhibit D for cost estimates.



UG ALIGNMENT PLAN
SCALE: 1"=30'



UG ALIGNMENT PROFILE
HOR. SCALE: 1"=30'
VER. SCALE: 1"=10'

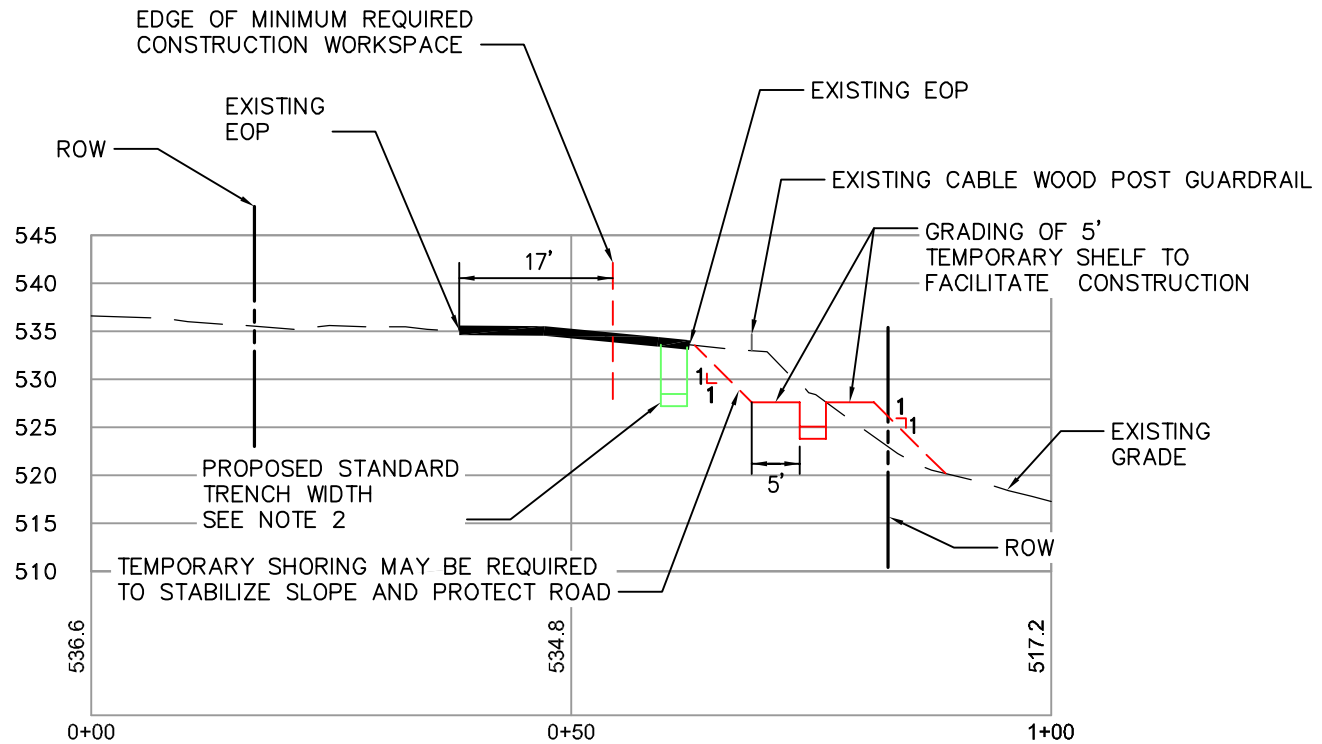


NO.	DATE	DRWN	CHKD	APPR.
1	05/22/17	TDD	MRR	TMY
0	05/03/17	TDD	MRR	TMY



EXCEPTION 2-ALIGNMENT IN PAVEMENT AND CROSSING EXISTING UTILITY
WBR3-UNDERGROUND ALIGNMENT
STA 2688+00 TO 2690+25
SCALE: H. 1"=30', V. 1"=10'
DATE: 10/26/2016
DES: TDD
CHK: MRR
DRW: TDD
APR: TMY
TOWN:
PLYMOUTH

TRANSMISSION LINE:
WBR3
EXHIBIT A

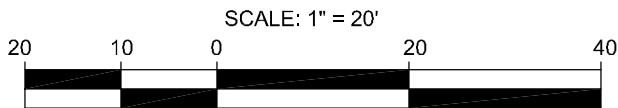


SECTION A-A

SCALE: 1"=20'

NOTE:

1. TRENCH LOCATION SHOWN IN RED IS NOT PROPOSED AND ONLY INTENDED TO DEMONSTRATE CONSTRUCTABILITY ISSUES
2. TRENCH WIDTH SHOWN TO BE MAINTAINED USING TRENCH JACKS AND SHEETING



JOB NO.: 1384001

TITLE:
EXCEPTION 2-ALIGNMENT IN PAVEMENT
NPT-WBR3 UNDERGROUND ALIGNMENT
WBR3 SECTION-STA 2688+00 TO 2690+25±
TOWN: PLYMOUTH

PREPARED FOR:
NH DOT
7 HAZEN DRIVE
CONCORD, NH

REVISIONS:

NO.	DATE	EXCEPTION REQUEST
0	05/03/2017	
0	05/12/2017	UPDATED EXCEPTION REQUEST



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 • Civil Design & Survey Engineering
 • Environmental & Regulatory Permitting
 • Electrical Power Systems Engineering

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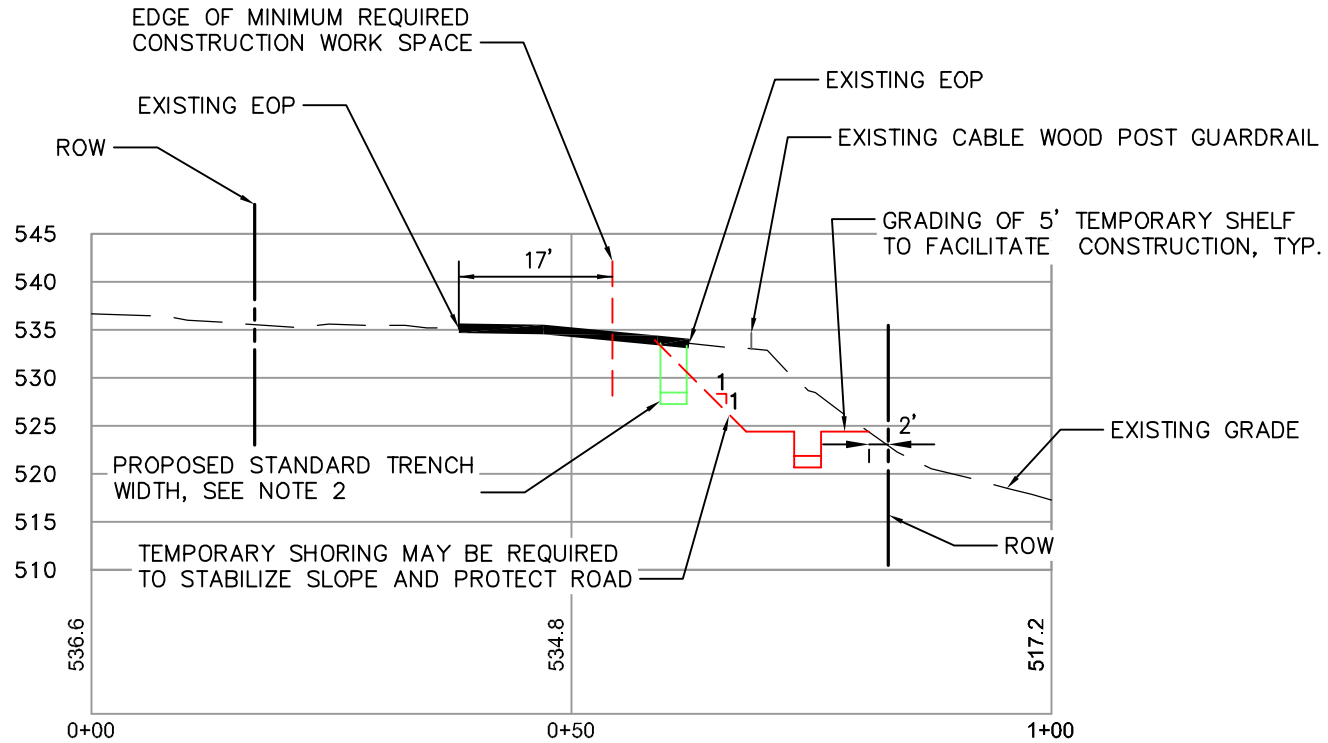
501 County Road Westbrook, Maine 04092 Tel: 207-547-8100 Fax: 207-547-8101	40 Harbor Street, Suite 2 Bangor, Maine 04401 Tel: 207-217-6759 Fax: 207-217-0018	14 School Street, Suite 203-A Bristol, VT 05443 Tel: 802-739-9298	Galinda Tower 1, Suite 2478 2700 Post Oak Boulevard Houston, TX 77056
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EXHIBIT NO.: B

DATE: 05/2017

DRAWN: MRR

SCALE: 1" = 30'



GUARDRAIL SECTIONS

START STATION	END STATION	LENGTH (FT)
2688+75	2689+87	112

ALTERNATE LOCATION CUT VOLUME EVALUATION:

1. GUARDRAIL LENGTH: 112 FT
2. APPROX. CUT AREA: 102 SF
3. APPROX. CUT VOLUME: 11,424 CF (423 CY)

SECTION B-B

SCALE: 1"=20'

NOTE:

1. TRENCH LOCATION SHOWN IN RED IS NOT PROPOSED AND ONLY INTENDED TO DEMONSTRATE CONSTRUCTABILITY ISSUES
2. TRENCH WIDTH SHOWN TO BE MAINTAINED USING TRENCH JACKS AND SHEETING

SCALE: 1" = 20'



JOB NO.: 1384001

TITLE:
 EXCEPTION 2-ALIGNMENT IN PAVEMENT
 NPT-WBR3 UNDERGROUND ALIGNMENT
 WBR3 SECTION-STA 2688+00 TO 2690+25±
 TOWN: PLYMOUTH

PREPARED FOR:
 NH DOT
 7 HAZEN DRIVE
 CONCORD, NH

REVISIONS:

NO.	DATE	UPDATED EXCEPTION REQUEST
0	05/12/2017	



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 • Electrical Power Systems Engineering

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 40 Harbor Street, Suite 2, Bangor, Maine 04401, Tel: 207-217-6759, Fax: 207-217-0018
 14 School Street, Suite 203-A, Bellingham, VT 05443, Tel: 802-736-9296
 Galleria Tower 1, Suite 2473, 2700 Post Oak Boulevard, Houston, TX 77056

EXHIBIT NO.: C

DATE: 05/2017

DRAWN: MRR

SCALE: 1" = 30'

Exhibit D - Exception 2 Cost Estimates

Additional Cost for Removing Guardrail and Benching into slope

Length	112			
Cut Volume	423 cy			
	Quantity	Units	Unit Price	Total
Material Removal, Hauling & Replacement	423	cy	\$42.19	\$17,846.37
Guardrail	112	LF	\$49.25	<u>\$5,516.00</u>
Net Additional Cost				\$23,362.37

1. Cost assumes rock excavation not required.
2. Cost assumes off site storage available within 20 miles