Exception Request No.: 17
Section: WBR3
Town: Campton
Highway: US 3 (Tier 2)
Station: 2391+50 to 2398+25
Drawing No.: WBR3 C207 to C208
Survey Report Cross Reference No.: WBR3 C203 to C204
Exception Type: Alignment in Pavement

Traffic Information

NHS: No
ADT: 1300
Traffic Control Type: Alt 1-way
Traffic Control Duration: Traffic control duration is estimated to be 8 days for the proposed installation. If the requested exception is not granted, NPT expects an additional 11 days of traffic control to install the alignment outside of 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 station 2391+50 to 2398+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 cost of this construction method are substantially 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 north side of US 3 with moderate to steep slopes on the outside of the guardrails. 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, 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 unreasonably costly, causing a net increase of $205,723 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.

We also evaluated placing the cable trench alignment on the south side of US 3 in this area and determined it was impracticable. Moving the alignment to the south side of the road is possible for approximately 350 feet of the proposed alignment. However, it would require two additional highway crossings. These road crossings would involve disturbance to approximately 100 feet of paved roadway (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 particularly given that the road crossings impact both lanes.

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

Note: NPT is requesting an exception for the portion of the alignment from station 2391+50 to 2398+25±. (See Exhibit A.) In the original permit drawings, NPT proposed an alignment within the pavement for a longer portion of the roadway in this area. In response to NHDOT comments, NPT has reduced the length of the alignment within the paved area, which will require relocating four utility poles from station 2401+00 to 2405+75. The revised alignment will be reflected in revised drawings to be submitted at a later date.

Impacts

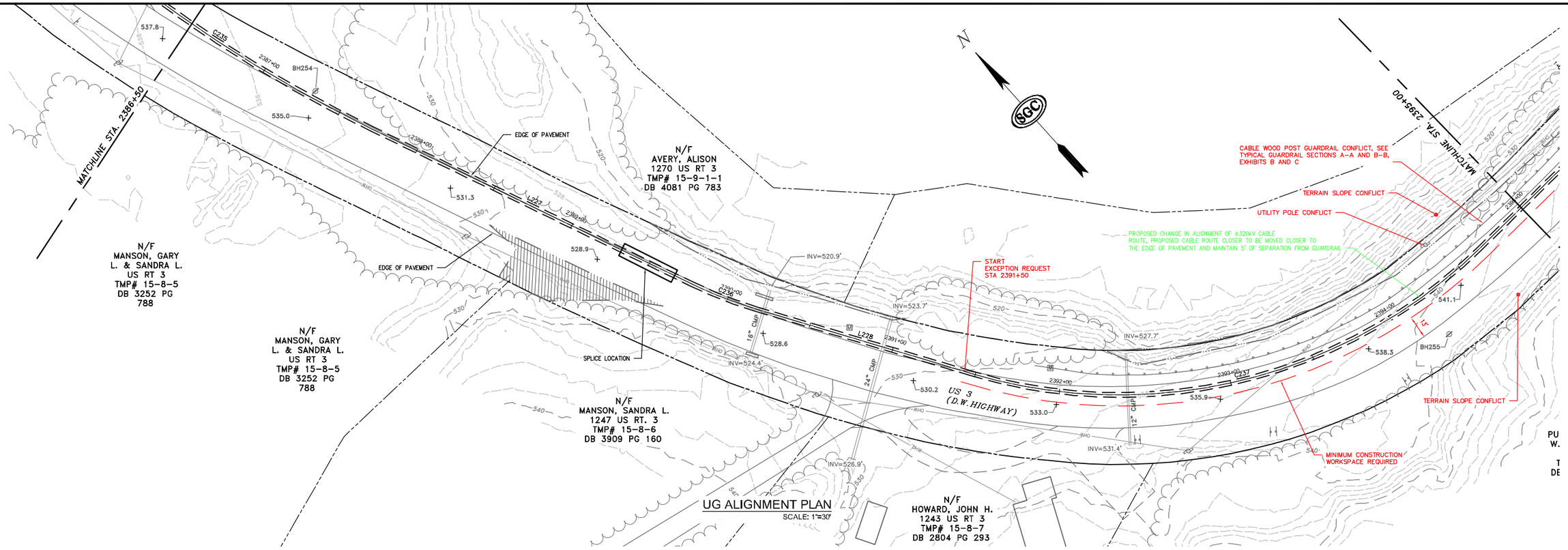
The design, as proposed, will not adversely affect the design, construction, stability, traffic, safety, environmental commitments, maintenance, or operation of the highway. The alignment has been located 5-feet off the edge of the guardrail, to avoid future conflicts with guardrail repairs or replacement 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.

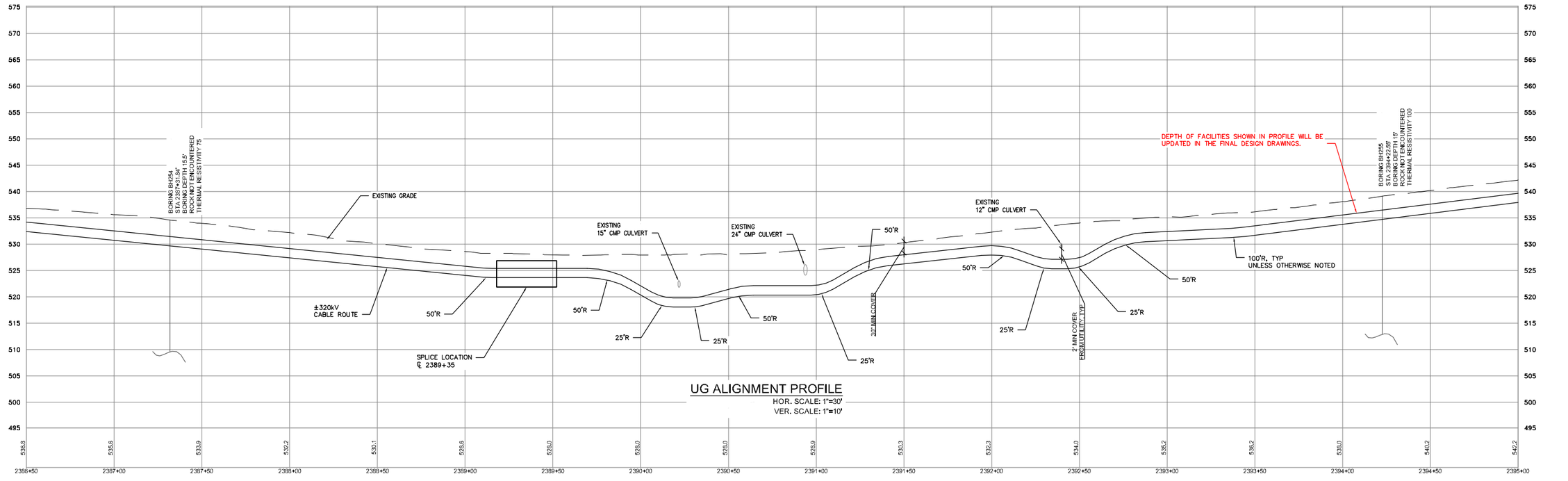
Supporting Documentation

See attached Exhibits A, B and C showing a plan, profile, and section. See Exhibit D for the cost estimates.

PRELIMINARY - NOT FOR CONSTRUCTION



UG ALIGNMENT PLAN
SCALE: 1"=30'



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

30 15 0 30 60 HOR. SCALE: 1" = 30'

10 5 0 10 20 VERT. SCALE: 1" = 10'

NO.	REVISION	DATE	DRWN	CHKD	APPRV.
0	EXCEPTION REQUEST	06/15/17	TDD	TDD	TMH

SGC Engineering, LLC
a Stantec Register Company

PAR
ELECTRICAL CONTRACTORS, INC.

THE NORTHERN PASS
Transmission Business

EXCEPTION 17-ALIGNMENT IN PAVEMENT
NPT WBR3-UNDERGROUND ALIGNMENT
WBR3 SECTION-STA 2391+50 TO 2398+25±

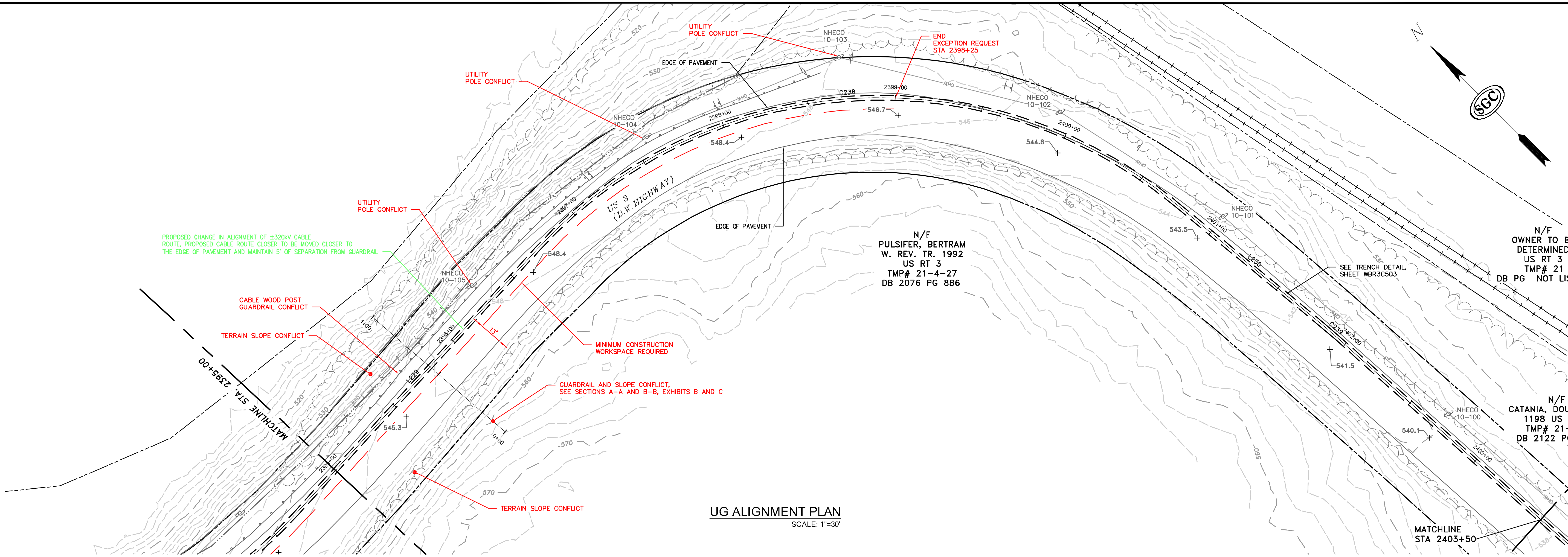
DATE: 05/2017
SCALE:

DES: MRR | CHK: TDD
DRW: MRR | APR: TMH

TOWN: CAMPTON

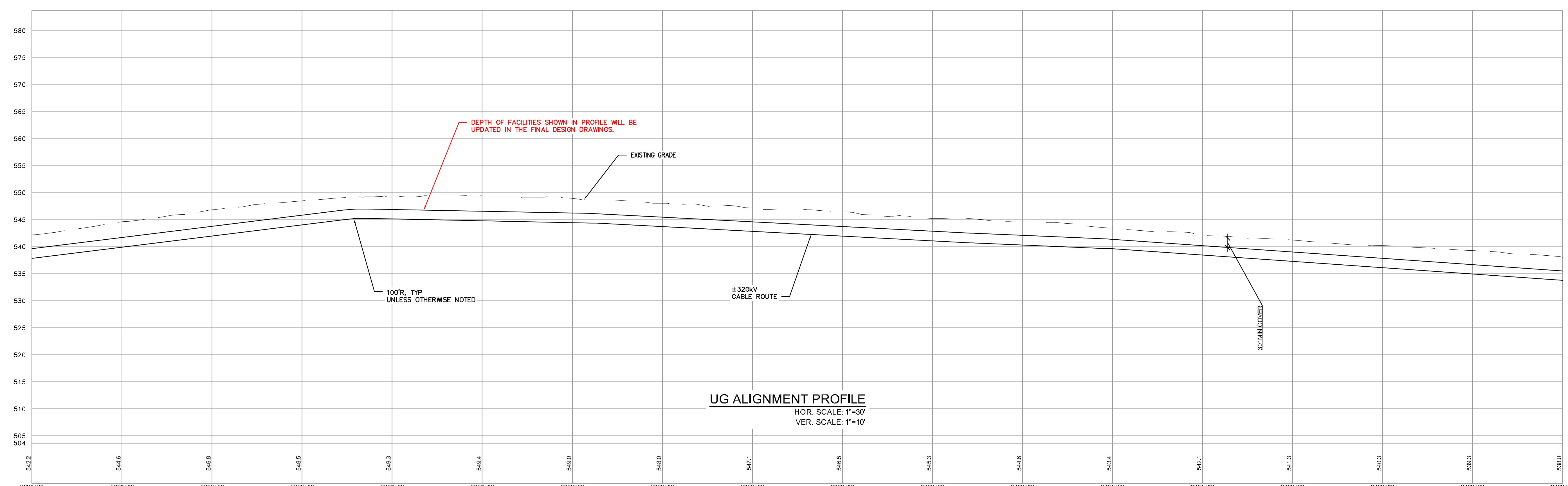
TRANSMISSION LINE: WBR3

EXHIBIT A.1



UG ALIGNMENT PLAN

SCALE: 1"=30'



UG ALIGNMENT PROFILE

HOR. SCALE: 1"=30'
VER. SCALE: 1"=10'

HOR. SCALE: 1" = 30'

VERT. SCALE: 1" = 10'

PRELIMINARY - NOT FOR CONSTRUCTION

NO.	REVISION	DATE	DRWN	CHKD	APPRV.
0	EXCEPTION REQUEST	05/15/17	TDO	TDO	TMH

SGC Engineering, LLC

THE NORTHERN PASS

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EXCEPTION 17-ALIGNMENT IN PAVEMENT
NPT WBR3-UNDERGROUND ALIGNMENT
WBR3 SECTION-STA 2391+50 TO 2398+25±

DATE: 05/2017

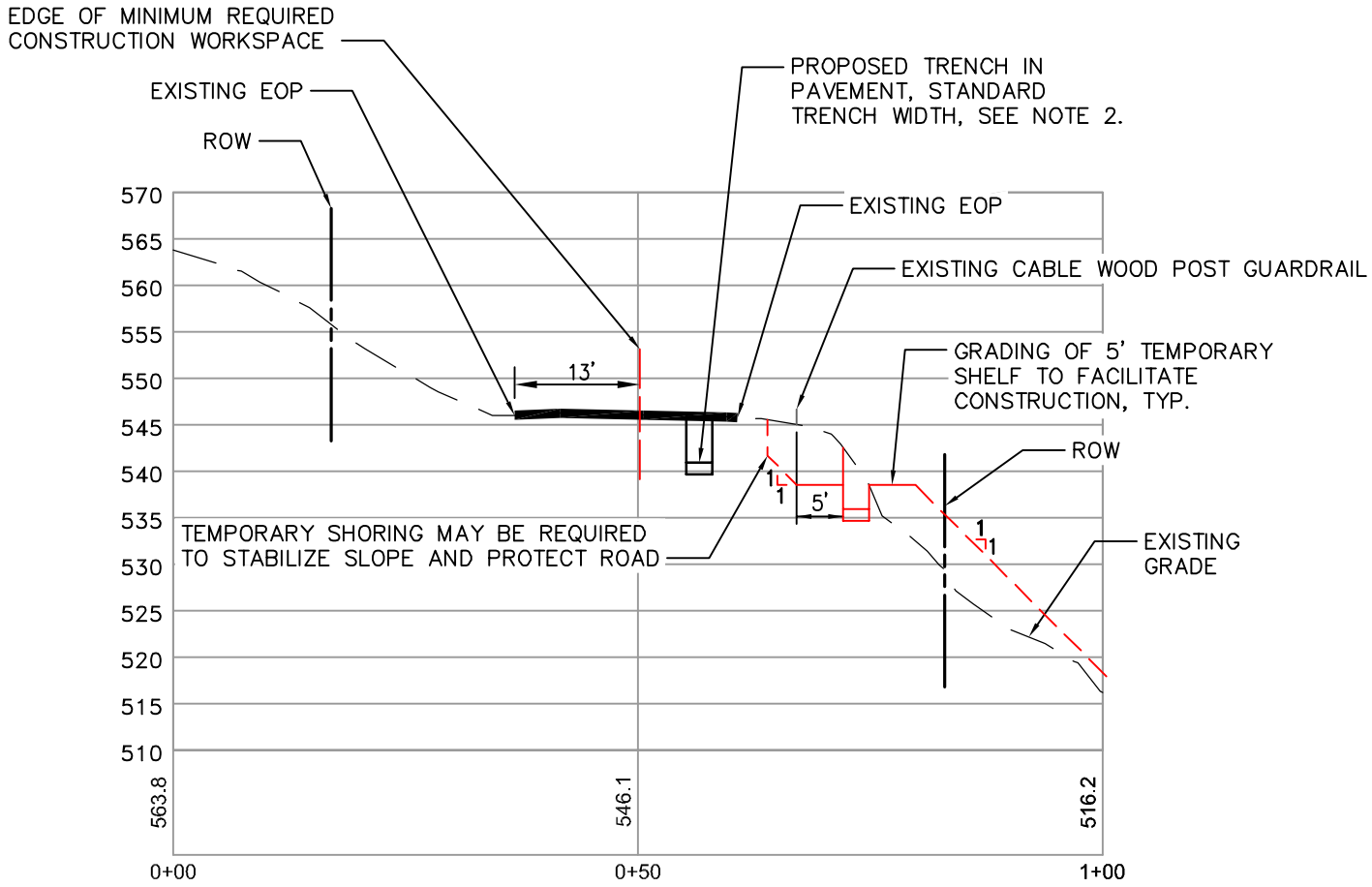
SCALE:

DES: MRR CHK: TDO
DRW: MRR APR: TMH

TOWN: CAMPTON

TRANSMISSION LINE: WBR3

EXHIBIT A.2



SECTION A-A

SCALE: 1"=20'

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

SCALE: 1" = 20'

20 10 0 20 40

JOB NO.: 1384001

TITLE:

EXCEPTION 17-ALIGNMENT IN PAVEMENT
NPT-WBR3 UNDERGROUND ALIGNMENT
WBR3 SECTION-STA 2391+50 TO 2398+25±
TOWN: CAMPTON

PREPARED FOR:

NH DOT
7 HAZEN DRIVE
CONCORD, NH

REVISIONS:

NO.	DATE	EXCEPTION REQUEST
0	05/15/2017	

EXHIBIT NO.: B | DATE: 05/2017 | DRAWN: MRR | SCALE: 1" = 20'

SGC ENGINEERING, LLC
• Civil Design & Survey Engineering
• Environmental & Regulatory Permitting
• Electrical Power Systems Engineering
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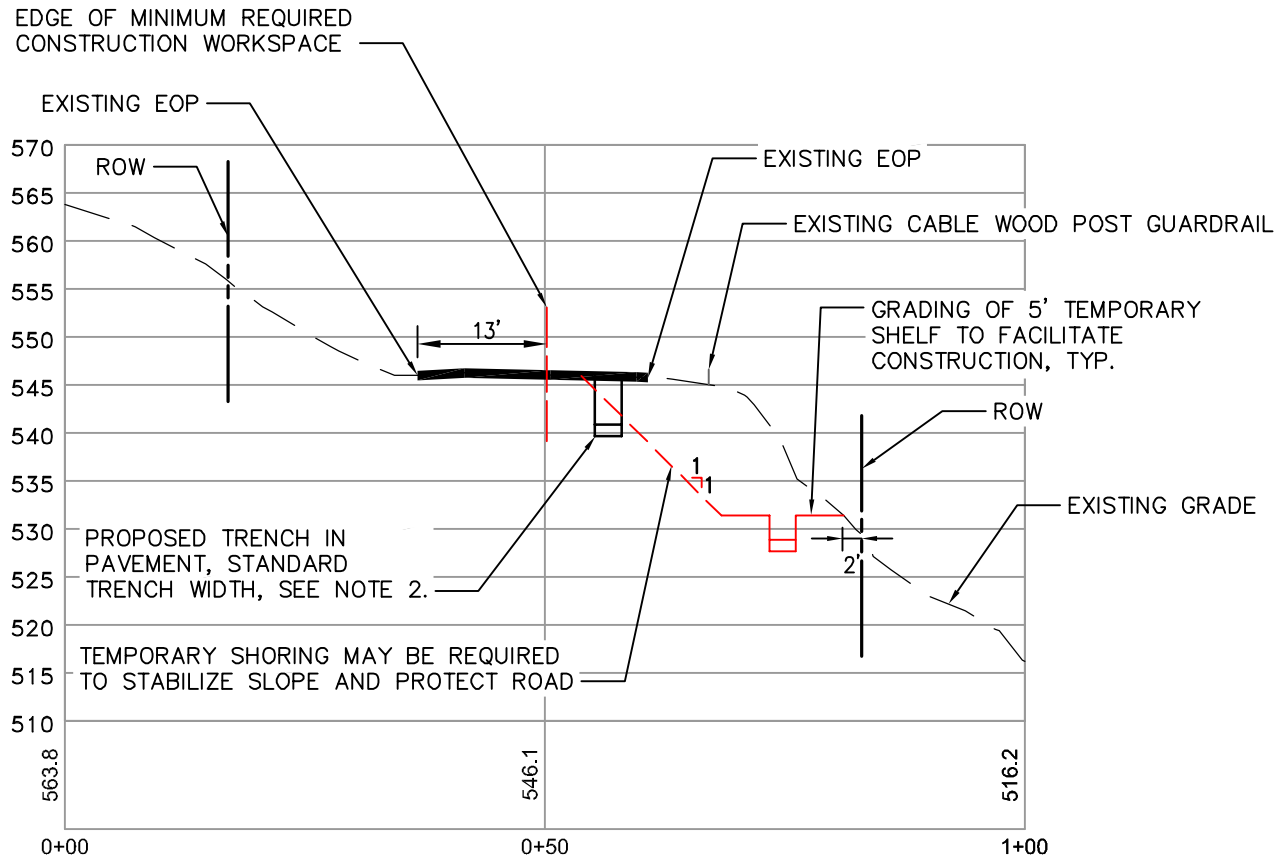
501 County Road, Westbrook, Maine 04092, Tel: 207-347-8100, Fax: 207-347-8101
40 Harlow Street, Suite 2, Bangor, Maine 04401, Tel: 207-217-5769, Fax: 207-217-6018
14 School Street, Suite 203-5, Bristol, VT 05443, Tel: 802-735-0258
Galleria Tower 1, Suite 2478, 2700 Post Oak Boulevard, Houston, TX 77056



GUARDRAIL SECTIONS

START STATION	END STATION	LENGTH (FT)
2391+85	2398+55	670

ALTERNATE LOCATION CUT VOLUME EVALUATION:

1. GUARDRAIL LENGTH: 670 FT
2. APPROX. CUT AREA: 191 SF
3. APPROX. CUT VOLUME: 127,970 CF (4,740 CY)

SCALE: 1" = 20'

20 10 0 20 40

SECTION B-B

SCALE: 1"=20'

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JOB NO.: 1384001

TITLE:

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NPT-WBR3 UNDERGROUND ALIGNMENT
WBR3 SECTION-STA 2391+50 TO 2398+25±
TOWN: CAMPTON

PREPARED FOR:

NH DOT
7 HAZEN DRIVE
CONCORD, NH

REVISIONS:

NO.	DATE	EXCEPTION REQUEST
0	05/15/2017	

EXHIBIT NO.: C | DATE: 05/2017 | DRAWN: MRR | SCALE: 1" = 20'

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Exhibit D - Exception 17 Cost Estimates

Additional Cost for Removing Guardrail and Benching into slope

Length	670'			
Cut Volume	4740 cy			
	Quantity	Units	Unit Price	Total
Material Removal, Hauling & Replacement	4740	cy	$36.44	$172,725.60
Guardrail	670	LF	$49.25	$32,997.50
Net Additional Cost				$205,723.10

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