

**Exception Request No.: 15**  
**Section: WBR3**  
**Town: Campton**  
**Highway: US 3 (Tier 2)**  
**Station: 2418+50±**  
**Drawing No.: WBR3 C210**  
**Survey Report Cross Reference No.: WBR3 C206**  
**Exception Type: Crossing Over Existing Drainage Structure**

Traffic Information

NHS: No  
ADT: 1300  
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 to install the duct bank above the drainage structure is not granted, NPT expects an additional 1-2 weeks of traffic control.

Summary of Justification for Exception

NPT is requesting an exception from the UAM guidelines for crossing above an existing 36-inch reinforced concrete box culvert on US 3, Daniel Webster Highway at station 2418+50±. (See Exhibit A). There is 14 feet of cover over the culvert. The proposed alignment in this area will be set outside the pavement. The alignment is proposed over the existing drainage structure to avoid road closures or other significant traffic impacts, unreasonable costs associated with a deeper excavation, and increased construction width which will extend the duration of construction and traffic impacts. The attached exhibits have been provided for this location to illustrate the constraints associated with installing the ductbank below the existing culvert.

Technical Discussion of Justification of Exception

The vertical positioning of the cable trench is constrained by the depth of the existing culvert (fourteen feet to the top of the culvert). (See Exhibits A and B). Crossing under the existing culvert to meet the required 2-foot minimum separation will require a greater separation of the conduits and cable to accommodate shoring and thermal design criteria for the electric cables resulting from the additional depth. This trench width and additional offsets necessary for construction would likely require either complete road closures or result in significant traffic impacts, including extended duration of construction within roadway to allow for sheeting installation and removal and extensive excavation due to the depth and width of the trench. We estimate that these construction alternatives will add one to two weeks to the traffic impacts. Finally, we estimate the increase in cost associated with crossing underneath the culvert would be approximately \$248,000 for this 200 foot section. (See Exhibit C.) Road closures are not needed for the proposed installation, which thereby minimizes traffic impacts and attendant safety issues.

We have also evaluated a trenchless option to pass under the culvert. The trenchless installation will be unreasonably costly (a net estimated increase of \$2,069,100 for the 36-inch culvert crossing section).

(See cost estimate attached in Exhibit C). Also, traffic impacts would be increased for a trenchless installation due to the addition of trenchless work areas and the extended duration of installation.

Note: NPT is requesting only an exception for the portion of the alignment passing over the culvert (See Exhibit A.) In the original permit drawings, NPT proposed an alignment within the pavement in this section. In response to NHDOT comments, NPT is moving the alignment outside the paved area. The revised alignment will be reflected in revised drawings to be submitted at a later date.

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

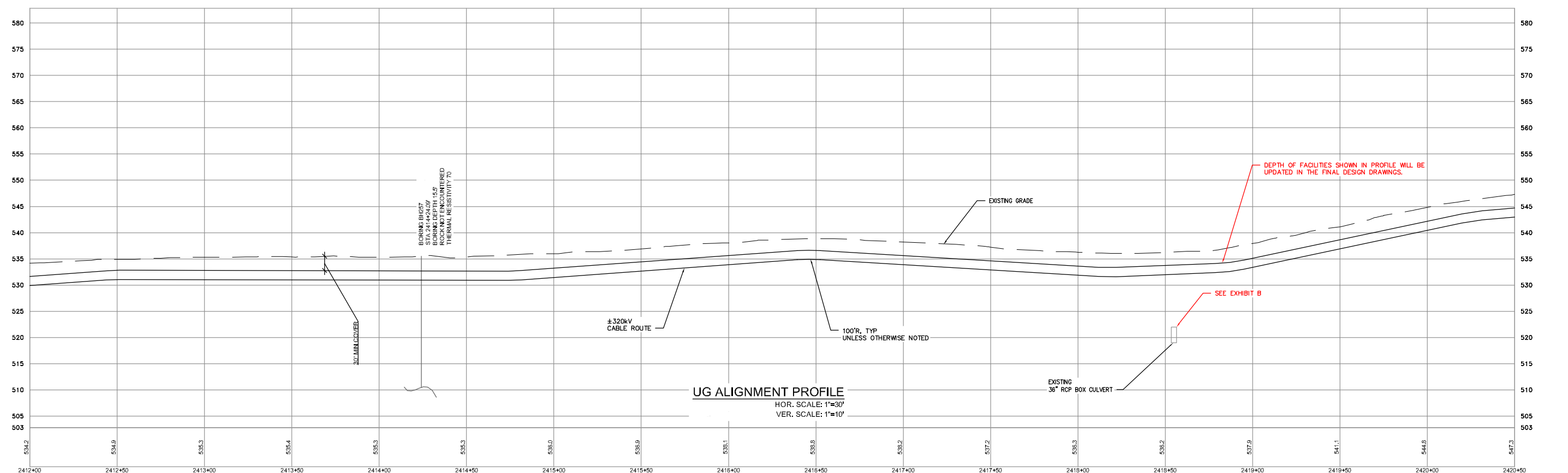
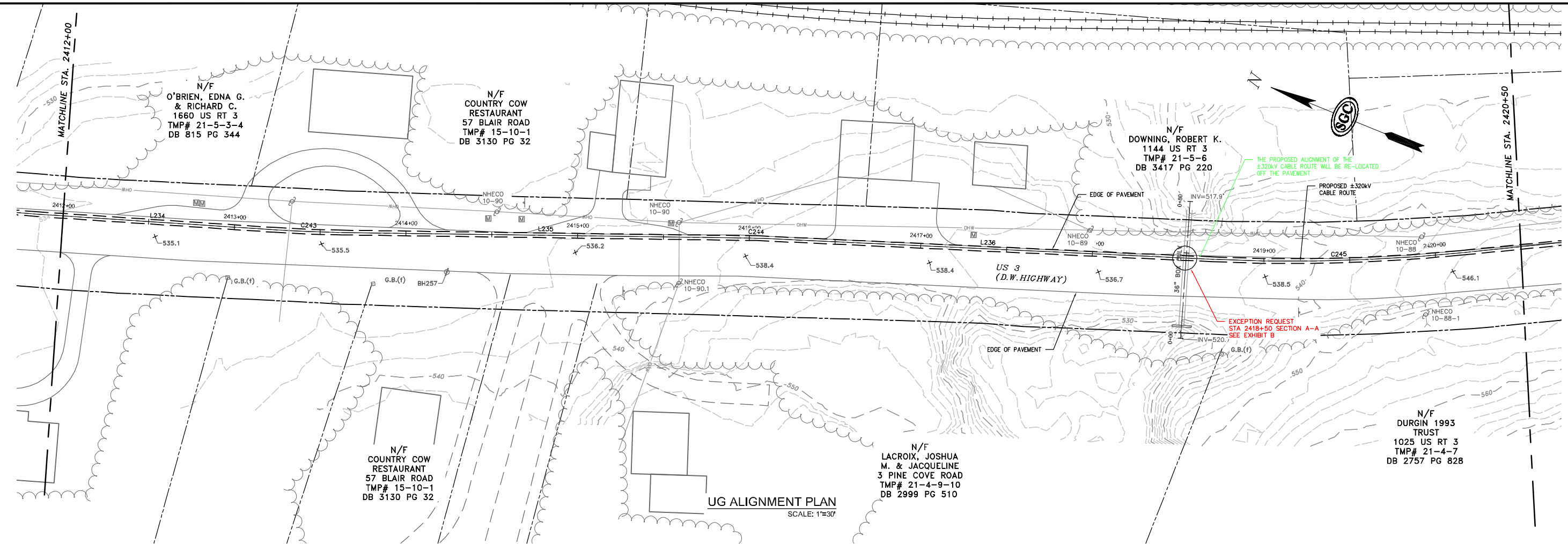
### Impacts

At all locations where the new ductbank is constructed over an existing drainage structure or utility, NPT will add rebar to the concrete encasing of the ductbank for a 15-foot section on each side of the crossing to form a 30-foot self-sustaining bridge that will allow for excavation under the duct bank for purposes of future maintenance of existing utilities or drainage structures. In connection with future maintenance activities, especially related to the culvert, NPT will provide any and all required support, including but not limited to, providing crews to assist while work is being conducted in the vicinity of the culvert.

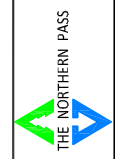
### Supporting Documentation

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

**PRELIMINARY - NOT FOR CONSTRUCTION**



NO.	REVISION	DATE	BY	CHKD	APPRV.
0	EXCEPTION REQUEST	05/15/17	TDD	DOWN	CHAD



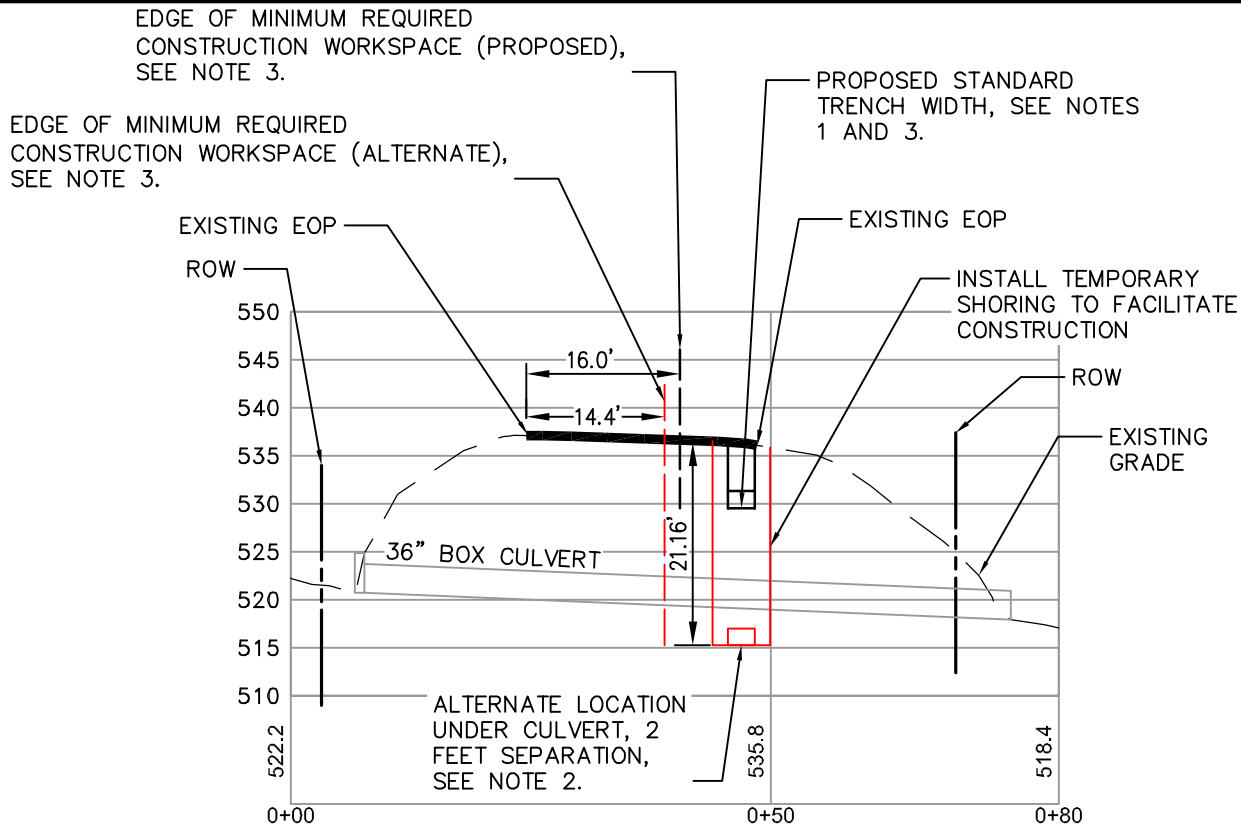
Transmission Business

EXCEPTION 15-CROSSING OVER EXISTING UTILITY/DRAINAGE  
 NPT WBR3-UNDERGROUND ALIGNMENT  
 WBR3 SECTION-STA. 2418+50  
 SCALE: DATE: 05/20/17

DES: MRR CHK: TDD  
 DRW: MRR APR: TMM  
 TOWN: CAMPTON

TRANSMISSION LINE:  
**WBR3**

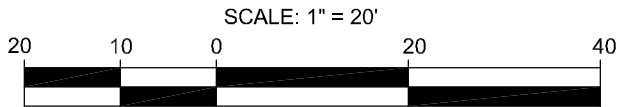
**EXHIBIT A**



**SECTION A-A**  
SCALE: 1"=20'

**NOTES:**

1. TRENCH WIDTH SHOWN TO BE MAINTAINED USING TRENCH JACKS AND TEMPORARY SHEETING.
2. TRENCH WIDTH SHOWN TO BE MAINTAINED WITH BOXES.
3. THE PROPOSED ALIGNMENT OF THE ±320kV CABLE ROUTE WILL BE RE-LOCATED OFF THE PAVEMENT.



JOB NO.: 1384001

**TITLE:**  
EXCEPTION 15-CROSSING OVER EXISTING UTILITY/DRAINAGE  
NPT-WBR3 UNDERGROUND ALIGNMENT  
WBR3 SECTION-STA 2418+50±  
TOWN: CAMPTON

**PREPARED FOR:**  
NH DOT  
7 HAZEN DRIVE  
CONCORD, NH

**REVISIONS:**

NO.	DATE	EXCEPTION REQUEST
0	05/15/2017	



**SGC ENGINEERING, LLC**  
• Civil Design & Survey Engineering  
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14 School Street, Suite 203-A  
Bristol, VT 05443  
Tel: 802-256-9256

Galinda Tower 1, Suite 2478  
2700 Post Oak Boulevard  
Houston, TX 77056

EXHIBIT NO.: B

DATE: 05/2017

DRAWN: MRR

SCALE: 1" = 20'

**Exhibit C - Exception 15 Cost Estimates**

**Additional Cost for Trenching Under Culvert**

Length	200'			
Max Depth	21.16'			
Min Depth	6.7'			
	Quantity	Units	Unit Price	Total
Trench Cost for Deeper Trench	200	LF	\$1,390.00	\$278,000.00
Deduct for Base Trench Cost	200	LF	\$150.00	<u>(\$30,000.00)</u>
Net Additional Cost				\$248,000.00

1. Cost assumes rock excavation not required.
2. Costs based on contractual unit pricing for the project.
3. 200 foot minimum length required for the trenching installation is required to accommodate the gradual slope necessary to accommodate the minimum bend.

**Additional Cost for Installing HDD Under Culvert**

Length	900'			
Max Depth	27.5'			
Min Depth	6.7'			
	Quantity	Units	Unit Price	Total
HDD (2-8" Bores)	900	LF	\$2,490.00	\$2,241,000.00
Deduct for Base Trench Cost	900	LF	\$150.00	<u>(\$135,000.00)</u>
Deduct for Surface Restoration	900	LF	\$41.00	<u>(\$36,900.00)</u>
Net Additional Cost				\$2,069,100.00

1. Cost assumes rock excavation not required.
2. Costs based on contractual unit pricing for the project.
3. 900 foot minimum length required for HDD installation to accommodate minimum bending requirements.