Exception Request No.: 99
Section: ROCK
Town: Bethlehem
Highway: NH 18/116 (Franconia Road) (Tier 3)
Station: 140+10 to 145+10
Drawing No.: ROCK C118
Survey Report Reference No.: ROCK C117
Exception Type: Alignment in Pavement
Highway Crossings

Traffic Information

NHS: No
ADT: 1181
Traffic Control Type: Alt 1-way
Traffic Control Duration: Traffic control duration is estimated to be 18 days for the proposed installation.

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 NH 18/116 (Franconia Road) from approximately station 140+10 to 145+10 of the NPT ROCK Underground Alignment. (See Exhibit A.) Due to limited space under the I-93 overpass, construction outside the paved area is not possible. In addition, two road crossings are needed because the alignment on both sides of the bridge is on the south side of NH 18/116, and the only feasible place to construct the duct bank under the overpass is on the north side.

Technical Discussion of Justification of Exception

The proposed alignment is within the roadway because of constraints posed by the bridge abutments for the I-93 overpass on the south side of Franconia Road and by an existing 24-inch Reinforced Concrete Pipe culvert running along the south side of NH 18/116 as it passes under the I-93 overpass. (See Exhibit A.) The proposed alignment crosses from the south side of NH 18/116 to the north side, passes under the I-93 overpass in pavement, and then crosses from the north side back to the south side of NH 18/116. The alignment will be set at a 5-foot offset from the bridge abutments to avoid future conflicts with bridge repairs or replacement.

Construction of the duct bank on the south side of NH 18/116 is not feasible. In order to maintain separation from the RCP culvert, NPT would need to close the road to construct the duct bank along the southern side of the road. NPT will be able to maintain one lane of traffic by constructing on the north side of the road under the overpass.

NPT has also evaluated a trenchless option to pass under the I-93 overpass. The trenchless installation will be unreasonably costly (a net estimated increase of $2,069,100 for the trenchless crossing). (See cost estimate attached in Exhibit B.) Also, traffic impacts would be increased for a trenchless installation due to the addition of trenchless work areas and the extended duration of installation.

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

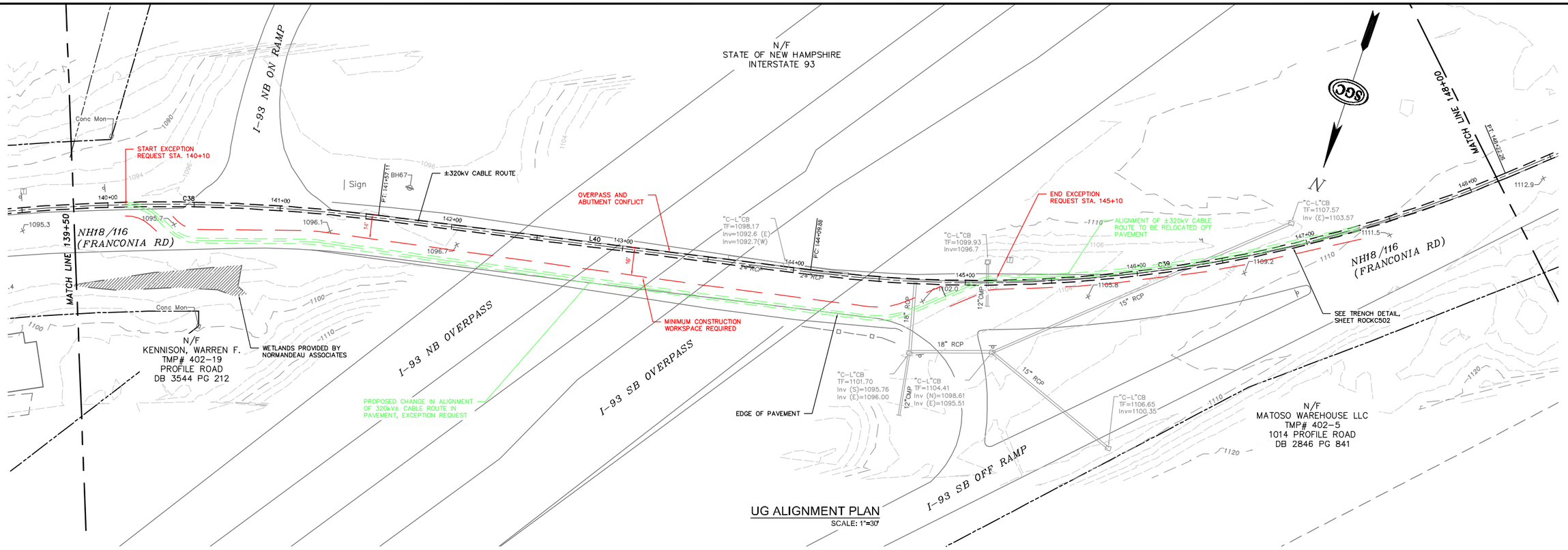
Impacts

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

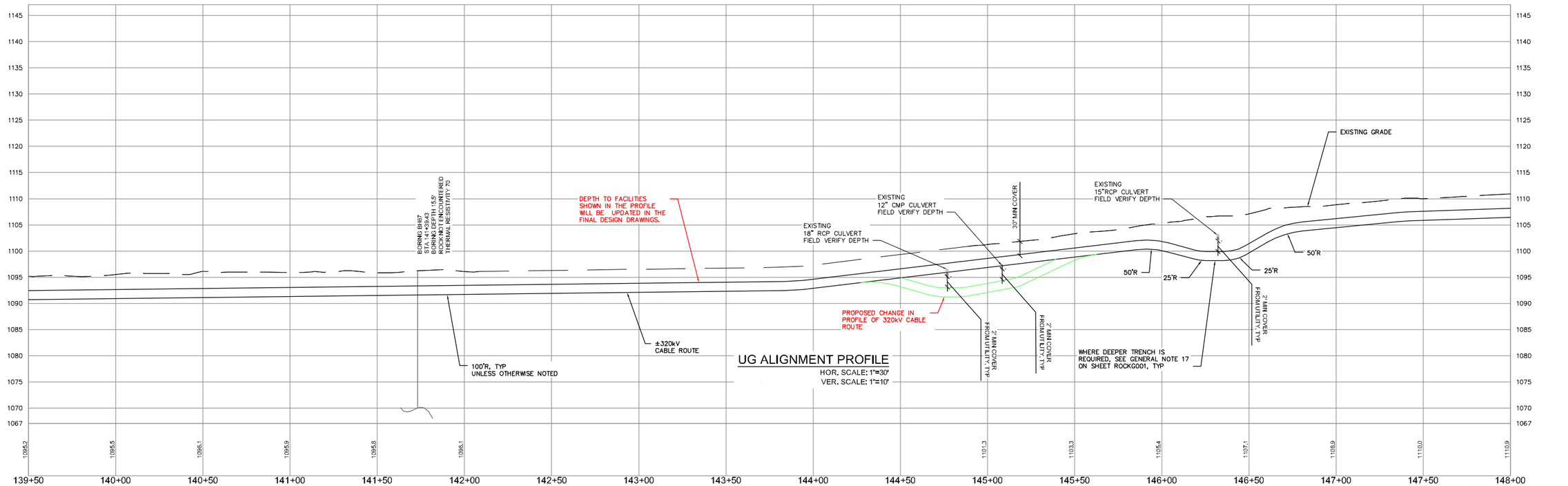
Supporting Documentation

See attached Exhibit A showing a plan and profile view, and Exhibit B for cost estimates.

PRELIMINARY - NOT FOR CONSTRUCTION



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'

NO.	REVISION	DATE	DRWN	CHKD	APPRV
0	EXCEPTION REQUEST	06/27/17	TDD	TDD	TMH

SGC Engineering, LLC
a Lloyd's Register Company

PAR ELECTRICAL CONTRACTORS, INC.

THE NORTHERN PASS
Transmission Business

EXCEPTION 99 - ALIGNMENT IN PAVEMENT
NPT ROCK-UNDERGROUND ALIGNMENT
ROCK SECTION-STA 140+10 TO 145+10

DATE: 05/2017
SCALE:

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

TOWN: BETHLEHEM

TRANSMISSION LINE: ROCK

EXHIBIT A

Exhibit B - Exception 99 Cost Estimates

Additional Cost for Installing HDD Under I-93 Overpass

Length	900			
Max Depth	30'			
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	($135,000.00)
Deduct for Surface Restoration	900	LF	$41.00	($36,900.00)
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.