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April 19, 2017

Ms. Stephanie Labbe
PAR Electrical Contractors, Inc.
4770 North Belleview Avenue Suite 300
Kansas City, MO 64116

Re: Northern Pass Project-Supplemental Route Survey
Surveyor's Report Regarding Right-of-Way Determination

Dear Stephanie:

BL Companies is providing the following Surveyor's Report relative to the Supplemental Route Survey electronic drawing. BL Companies partnered with Meridian Land Services, Inc. and Arago land Consultants, LLC to complete the Right of Way survey. BL Companies completed the ROT3 and NRTH route segments as well as the northern portion of BB covering about 25 miles, from Bethlehem to North Woodstock. Meridian Land Services complete the southern segment of the BB route covering about 25 miles from North Woodstock to US/NH RRoute 3 in Bridgewater.

The overall Right-of-Way determination per Part A of the *Specifications for Underground Transmission Line Design Survey and Subsurface Utility Engineering Services* stated that "Right of Way and adjacent parcel line locations will be developed and plotted from a combination of evidence measured during the field survey and by supplemental information available from tax assessors mapping and GIS parcel data layers". The team's approach took this several steps further and we further clarified that the survey would utilize different line types and line weights to depict the right of way's accuracy:

- Bold Solid-for those right of way lines determined from established layout and found monumentation in the field.
- Bold Dashed for approximately per plan and/or layout and physical evidence best fit with the record information
- Dashed for approximately per tax map, GIS parcel information or a specific width offset from centerline of current travel way.

Research was performed by Arago Land Consultants, LLC and included the following:

- Obtaining abutter's list generated by town records
- Review of each abutter deed for referenced plans or other information
- Obtaining plans form NHDOT ROW Bureau
- ROW research and layout information from the NH State Archives

Prior to field work, a compilation plan was prepared depicting record monuments from State ROW plans, physical evidence depicted on recorded plans prepared by licensed land surveyors, and other calls mentioned in the abutter deeds. The compilation was overlaid with digital imagery and these plans were utilized by the field crews for reconnaissance and monument location.

BL Companies has outlined the right-of-way determinations for the various sections within their segments of the project. They are attached herewith as part of this report.

In summary, the right of way lines were determined as follows:

Bold Determined - Where NHDOT layouts and the associated monuments called for on the plans were found and were in relative position to the layout, the layout was Determined in that specific area.

Bold Dashed Approximate – Where physical evidence referenced on survey plans, various markers which may or may not be survey evidence, and uncalled for survey monuments recovered during the course of the survey were located, the obtained plans and record layout widths were best fit based on this evidence but not necessarily deemed accurately determined.

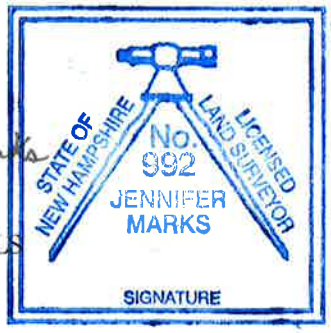
Dashed Approximate – Where there was no or very limited physical evidence found, the majority of the sidelines were based on the record layout width and offset from the centerline of the exiting travel way pavement.

The Supplemental Route Survey electronic drawing has noted the record plans, layout widths or other sources of information for the determination along the route. Between areas of more determined locations and those areas which were approximate, reasonable transition lines were established to create one long continuous right of way.

This is to certify that the Right of Way lines shown within the Supplemental Route Survey electronic drawing are accurate to the degrees as defined and explained within this Surveyor's report.

Very truly yours,
BL Companies

Jennifer Marks




Jennifer Marks, PLS
Principal

## Bear Rock Road – Stewartstown

*Survey Baseline*

A combination of GPS and conventional land surveying methods were used to establish a horizontal and vertical control network along Bear Rock Road. Horizontal control is on the New Hampshire State Plane Coordinate System NAD 83, (Zone 2800, US Survey Foot). The order of accuracy of this control survey is second order, Class II. Static GPS post processed by NGS OPUS methods was utilized to obtain State Plane Coordinate values.

*Records Research*

Research was conducted at the New Hampshire State Archive Records for the original roadway layout. Bear Rock Road was established October 5, 1849 in Book 2 Page 223 as a three rod road. Research was conducted at the county registry and many existing maps were recovered and each one is labeled on the prepared map.

*Monument Recovery and Locations*

On the prepared mapping, all monumentation found is shown. The surveyor utilized these field locations to place the ROW in this mapping. It was determined that most but not all of these locations checked with the previous geometry shown on existing mapping and/or the centerline of the travel way.

*Final ROW Lines*

Using the record research and field locations the following methods were used in placing and identifying the ROW within the prepared map. Different line types were utilized to indicate the right-of-way's accuracy: Bold Solid for determined, Two Dashed for approximately per plan/layout and physical evidence, and Dashed for approximately per centerline of travel way holding a width of three rods.

## Old County Road/North Hill Road – Clarksville and Stewartstown

*Survey Baseline*

A combination of GPS and conventional land surveying methods were used to establish a horizontal and vertical control network along Old County Road and North Hill Road. Horizontal control is on the New Hampshire State Plane Coordinate System NAD 83, (Zone 2800, US Survey Foot). The order of accuracy of this control survey is second order, Class II. Static GPS post processed by NGS OPUS methods was utilized to obtain State Plane Coordinate values.

*Records Research*

Research was conducted at the New Hampshire State Archive Records for the original roadway layout. Old County Road was established August 26, 1839 in Book 1 Page 10 as a four rod road and North Hill Road was established May 8, 1828 in Book 1 Page 211 as a four rod road. Research was conducted at the county registry and many existing maps were recovered and each one is labeled on the prepared map.

*Monument Recovery and Locations*

On the prepared mapping, all monumentation found is shown. The surveyor utilized these field locations to place the ROW in this mapping. It was determined that most but not all of these locations checked with the previous geometry shown on existing mapping and/or the centerline of the travel way.

*Final ROW Lines*

Using the record research and field locations the following methods were used in placing and identifying the ROW within the prepared map. Different line types were utilized to indicate the right-of-way's accuracy: Bold Solid for determined, Two Dashed for approximately per plan/layout and physical evidence, and Dashed for approximately per centerline of travel way holding a width of four rods.

## Route 3 – Pittsburg

*Survey Baseline*

A combination of GPS and conventional land surveying methods were used to establish a horizontal and vertical control network along Route 3. Horizontal control is on the New Hampshire State Plane Coordinate System NAD 83, (Zone 2800, US Survey Foot). The order of accuracy of this control survey is second order, Class II. Static GPS post processed by NGS OPUS methods was utilized to obtain State Plane Coordinate values.

*Records Research*

Research was conducted at the New Hampshire State Archive Records for the original roadway layout. Route 3 was established October 21, 1875 in Book 2 Page 116 as a four rod road. The roadway was designed for reconstruction and approved on April 16, 1971. This mapping was the primary base for the establishment of the Route 3 ROW.

*Monument Recovery and Locations*

On the prepared mapping, all monumentation found is shown. The surveyor utilized these field locations to place the ROW in this mapping. It was determined that most but not all of these locations checked with the previous geometry shown on existing mapping and/or the centerline of the travel way.

*Final ROW Lines*

Using the record research and field locations the following methods were used in placing and identifying the ROW within the prepared map. Different line types were utilized to indicate the right-of-way's accuracy: Bold Solid for determined, Two Dashed for approximately per plan/layout and physical evidence, and Dashed for approximately per centerline of travel way holding a width of four rods.

## Route 112 – Easton and Woodstock

*Survey Baseline*

A combination of GPS and conventional land surveying methods were used to establish a horizontal and vertical control network along Route 112. Horizontal control is on the New Hampshire State Plane Coordinate System NAD 83, (Zone 2800, US Survey Foot). The order of accuracy of this control survey is second order, Class II. Static GPS post processed by NGS OPUS methods was utilized to obtain State Plane Coordinate values.

*Records Research*

Research was conducted at the New Hampshire State Archive Records for the original roadway layout. The majority of this ROW was defined in State Project 12971 mapping approved in November 19, 2002. Research was conducted at the county registry and many existing maps were recovered and each one is labeled on the prepared map.

*Monument Recovery and Locations*

On the prepared mapping, all monumentation found is shown. The surveyor utilized these field locations to place the ROW in this mapping. It was determined that most but not all of these locations checked with the previous geometry shown on existing mapping and/or the centerline of the travel way.

*Final ROW Lines*

Using the record research and field locations the following methods were used in placing and identifying the ROW within the prepared map. Different line types were utilized to indicate the right-of-way's accuracy: Bold Solid for determined, Two Dashed for approximately per plan/layout and physical evidence, and Dashed for approximately per centerline of travel way holding a width of three rods.

## Route 116 – Franconia and Easton

*Survey Baseline*

A combination of GPS and conventional land surveying methods were used to establish a horizontal and vertical control network along Route 116. Horizontal control is on the New Hampshire State Plane Coordinate System NAD 83, (Zone 2800, US Survey Foot). The order of accuracy of this control survey is second order, Class II. Static GPS post processed by NGS OPUS methods was utilized to obtain State Plane Coordinate values.

*Records Research*

Research was conducted at the New Hampshire State Archive Records for the original roadway layout. We could not find a volume or page reference only a map prepared in April, 1903 showing no defined width or geometry. Research was conducted at the county registry and many existing maps were recovered and each one is labeled on the prepared map.

*Monument Recovery and Locations*

On the prepared mapping, all monumentation found is shown. The surveyor utilized these field locations to place the ROW in this mapping. It was determined that most but not all of these locations checked with the previous geometry shown on existing mapping and/or the centerline of the travel way.

*Final ROW Lines*

Using the record research and field locations the following methods were used in placing and identifying the ROW within the prepared map. Different line types were utilized to indicate the right-of-way's accuracy: Bold Solid for determined, Two Dashed for approximately per plan/layout and physical evidence, and Dashed for approximately per centerline of travel way holding a variable width based on adjacent mapping and/or existing features located.

## Route 302 and Route 18 – Bethlehem and Sugar Hill

*Survey Baseline*

A combination of GPS and conventional land surveying methods were used to establish a horizontal and vertical control network along Route 302 and Route 18. Horizontal control is on the New Hampshire State Plane Coordinate System NAD 83, (Zone 2800, US Survey Foot). The order of accuracy of this control survey is second order, Class II. Static GPS post processed by NGS OPUS methods was utilized to obtain State Plane Coordinate values.

*Records Research*

Research was conducted at the New Hampshire State Archive Records for the original roadway layout. We could not find a volume or page reference only a map prepared in April, 1903 showing no defined width or geometry. Route 18 was established March 2, 1820 in Book 2 Page 13 as a four rod road. Research was conducted at the county registry and many existing maps were recovered and each one is labeled on the prepared map.

*Monument Recovery and Locations*

On the prepared mapping, all monumentation found is shown. The surveyor utilized these field locations to place the ROW in this mapping. It was determined that most but not all of these locations checked with the previous geometry shown on existing mapping and/or the centerline of the travel way.

*Final ROW Lines*

Using the record research and field locations the following methods were used in placing and identifying the ROW within the prepared map. Different line types were utilized to indicate the right-of-way's accuracy: Bold Solid for determined, Two Dashed for approximately per plan/layout and physical evidence, and Dashed for approximately per centerline of travel way holding a width of four rods.

## Sugar Hill – Franconia - Easton

*Baseline Survey*

A combination of GPS and conventional land surveying methods were used to establish a horizontal and vertical control network along the project corridor. Horizontal control is on the New Hampshire State Plane Coordinate System NAD 83, (Zone 2800, US Survey Foot). The order of accuracy of this control survey is second order, Class II. Static GPS post processed by NGS OPUS methods was utilized to obtain State Plane Coordinate values.

*Records Research*

Research was conducted at each town, county and state offices to obtain right-of-way information, highway layouts, property owner information, current deeds and any filed plans for properties along the project corridor. Research was also conducted at the New Hampshire DOT, Grafton and Coos county registries, local town offices, and the New Hampshire state archives. Ownership information including name, street address, tax parcel ID, and recording information has been depicted on the final Baseline Map.

*Monument Recovery and Locations*

As BL Companies' three-man survey team moved along the corridor, the crew chief stayed ahead of the others to recover existing monumentation depicted on the record mapping. Monumentation found was flagged for the following crew members to field survey. Attached to this document are multiple pdfs showing the corridor within the three towns listed above. The mapping found during the records research is listed on these pdfs and the circles and squares indicate monumentation shown on these existing maps. The monumentation found and field surveyed is highlighted in yellow.

*ROW Mapping*

Using the NHDOT plans and adjacent private property plans recovered during the research, the ROW lines in the provided base mapping were adjusted to the monumentation found and field surveyed. The resulting accuracies of these lines were labeled and noted on the Base Survey Plan. Different line types were utilized to indicate the right-of-way's accuracy: Bold Solid for determined, Bold Dashed for approximately per plan/layout and physical evidence, and Dashed for approximately per existing provided base mapping.