# NORTHERN PASS TRANSMISSION (NPT) PROJECT

**SHEBS ESTATE BYPASS (SHEB) UNDERGROUND ALIGNMENT**

PERMIT PACKAGE - NH DOT DISTRICT 1

DECEMBER 8, 2016

## DRAWING INDEX

### GENERAL DRAWINGS

<table>
<thead>
<tr>
<th>No.</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Site Plan</td>
</tr>
<tr>
<td>2</td>
<td>Full Sectional Plan</td>
</tr>
<tr>
<td>3</td>
<td>Longitudinal Sectional Plan</td>
</tr>
<tr>
<td>4</td>
<td>Cross Sectional Plan</td>
</tr>
<tr>
<td>5</td>
<td>Detail Plan</td>
</tr>
</tbody>
</table>

### ALIGNMENT DRAWINGS

<table>
<thead>
<tr>
<th>No.</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Alignment Plan</td>
</tr>
<tr>
<td>7</td>
<td>Alignment Detail Plan</td>
</tr>
</tbody>
</table>

### TRENCHLESS DRAWINGS

<table>
<thead>
<tr>
<th>No.</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Route Profile</td>
</tr>
<tr>
<td>9</td>
<td>Trenchless Plan</td>
</tr>
<tr>
<td>10</td>
<td>Trenchless Detail Plan</td>
</tr>
</tbody>
</table>

### TRAFFIC CONTROL PLAN DRAWINGS

<table>
<thead>
<tr>
<th>No.</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>Traffic Plan</td>
</tr>
</tbody>
</table>

### DETAIL DRAWINGS

<table>
<thead>
<tr>
<th>No.</th>
<th>Title</th>
</tr>
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<tbody>
<tr>
<td>12</td>
<td>Foundation Details</td>
</tr>
<tr>
<td>13</td>
<td>Structural Details</td>
</tr>
<tr>
<td>14</td>
<td>Electrical Details</td>
</tr>
</tbody>
</table>

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PRELIMINARY - NOT FOR CONSTRUCTION
BORING BH71
STA 192+15
BORING DEPTH 15.5'
ROCK NOT ENCOUNTERED
THERMAL RESISTIVITY 105

2' MIN COVER FROM UTILITY, TYP
30" MIN COVER

THE NORTHERN PASS
SHEB

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

UG ALIGNMENT PROFILE
HOR. SCALE: 1"=30'
VER. SCALE: 1"=10'
BORING BH75
STA 240+18
BORING DEPTH 15.5'
ROCK NOT ENCOUNTERED
THERMAL RESISTIVITY 100

2' MIN COVER
FROM UTILITY, TYP

30" MIN COVER

PRELIMINARY - NOT FOR CONSTRUCTION

THE NORTHERN PASS
SHEBC110
UG ALIGNMENT PROFILE
HOR. SCALE: 1"=30'
VER. SCALE: 1"=10'

UG ALIGNMENT PLAN
SCALE: 1"=30'

CONSTRUCTION ACTIVITY
CORRESPONDING TRAFFIC CONTROL LAYOUT BY SHEET NUMBER
230600 39600-1: CONSTRUCTION/INSTALLATION/RELATING AREA SHEET 1
230660 39606-1: CONSTRUCTION/INSTALLATION SHEET 2
230660 39606-2: WORK AREA/WORKING

PC: 235+93.89
PT: 236+11.13
PC: 236+63.92
PT: 236+76.33
PC: 237+26.36
PT: 237+48.29
PC: 238+58.64
PT: 239+07.91
PC: 240+81.43
PT: 241+08.30
PC: 241+33.84
PT: 241+59.46

233+00 234+00 235+00 236+00 237+00 238+00 239+00 240+00 241+00

PRELIMINARY - NOT FOR CONSTRUCTION
BORING BH76
STA 250+06
BORING DEPTH 15.5'
ROCK NOT ENCOUNTERED
THERMAL RESISTIVITY 80

PC: 253+26.04
PT: 254+82.13

THE NORTHERN PASS
SHEBC112

UG ALIGNMENT PLAN
SCALE: 1"=30'
HOR. SCALE: 1"=30'
VER. SCALE: 1"=10'
BORING BH82
STA 315+01
BORING DEPTH 15.5'
ROCK NOT ENCOUNTERED
THERMAL RESISTIVITY 95

2' MIN COVER
FROM UTILITY, TYP

THE NORTHERN PASS
SHEB

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

UG ALIGNMENT PLAN
SCALE: 1"=30'

PRELIMINARY - NOT FOR CONSTRUCTION

TRANSMISSION BUSINESS

SHEBC119

CONSTRUCTION ACTIVITY
SHEBC - CONSENT INSTALLATION/HEED STONING AREA

CORRESPONDING TRAFFIC CONTROL LAYOUT OR SHEET NUMBER SHEET 1
BORING BH85  
STA 345+75  
BORING DEPTH 15.5'  
ROCK NOT ENCOUNTERED  
THERMAL RESISTIVITY 105
PC: 363+96.95
PT: 364+43.69
BORING BH87
STA 365+02
BORING DEPTH 15.5'
ROCK NOT ENCOUNTERED
THERMAL RESISTIVITY 100

2' MIN COVER
FROM UTILITY, TYP

THE NORTHERN PASS
SHEB

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

UG ALIGNMENT PLAN
SCALE: 1"=30'
BORING BH92
STA 412+79
BORING DEPTH 15.5'
ROCK NOT ENCOUNTERED
THERMAL RESISTIVITY 95

UG ALIGNMENT PROFILE

UG ALIGNMENT PLAN

PRELIMINARY - NOT FOR CONSTRUCTION

THE NORTHERN PASS
SHEBC131
UG ALIGNMENT PROFILE

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

CONSTRUCTION ACTIVITY
304-08
434-05 CONSTRUCT INSTALLATION/END STAGING AREA
SHEET 1

CONSTRUCTION ACTIVITY
304-08
434-05 CONSTRUCT INSTALLATION/END STAGING AREA
SHEET 1
BORING BH95
STA 449+52
BORING DEPTH 15.5'
ROCK NOT ENCOUNTERED
THERMAL RESISTIVITY 95

UG ALIGNMENT PLAN
SCALE: 1"=30'

UG ALIGNMENT PROFILE
HORIZ SCALE 1"=30'
VERT SCALE 1"=10'

UG ALIGNMENT PLAN
HORZ. SCALE: 1"=30'
VER. SCALE: 1"=10'

PRELIMINARY - NOT FOR CONSTRUCTION
TRANSMISSION BUSINESS
THE NORTHERN PASS
SHEBC135
BORING BH16A
STA 515+18
BORING DEPTH 56'
ROCK NOT ENCOUNTERED
THERMAL RESISTIVITY 85

UG ALIGNMENT PLAN
SCALE: 1"=30'

UG ALIGNMENT PROFILE
LINE SCALE 1'-0"
Z-SCALE 1'-0"
UG ALIGNMENT PLAN

UG ALIGNMENT PROFILE

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

SHEB145

UG ALIGNMENT PLAN

SHEB145

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

PT: 530+98.24
PC: 533+71.82
PT: 534+11.31
PC: 536+27.73
PT: 538+01.48
PC: 539+33.40

BORING BH100
STA 533+46
BORING DEPTH 15.5'
ROCK NOT ENCOUNTERED
THERMAL RESISTIVITY 100

2' MIN COVER FROM UTILITY, TYP

THE NORTHERN PASS
PRELIMINARY - NOT FOR CONSTRUCTION
PC: 568+06.31
PT: 569+00.25

BORING BH19A
STA 565+25
BORING DEPTH 64.5'
ROCK DEPTH 34'
THERMAL RESISTIVITY 60

BORING BH19B
STA 571+28
BORING DEPTH 65'
ROCK DEPTH 40'
THERMAL RESISTIVITY 85

PRELIMINARY - NOT FOR CONSTRUCTION

THE NORTHERN PASS SHEBC149
UG ALIGNMENT PROFILE
HOR. SCALE: 1"=30'
VER. SCALE: 1"=10'

UG ALIGNMENT PLAN
SCALE: 1"=30'
BORING BH19C
STA 577+18
BORING DEPTH 55.5'
ROCK NOT ENCOUNTERED
THERMAL RESISTIVITY 60

Transmission Business
THE NORTHERN PASS
SHEB
SHEBC150
UG ALIGNMENT PROFILE
HOR. SCALE: 1"=30'
VER. SCALE: 1"=10'

UG ALIGNMENT PLAN
SCALE: 1"=30'

UG ALIGNMENT PROFILE
SCALE: 1"=30'
VER. SCALE: 1"=10'
BORING BH103
STA 605+63
BORING DEPTH 15'
ROCK NOT ENCOUNTERED
THERMAL RESISTIVITY 75
2' MIN COVER
FROM UTILITY, TYP

PRELIMINARY - NOT FOR CONSTRUCTION
BORING BH104
STA 615+71
BORING DEPTH 15.5'
ROCK NOT ENCOUNTERED
THERMAL RESISTIVITY 90

BORING BH20A
STA 623+37
BORING DEPTH 65'
ROCK DEPTH 3.5'
THERMAL RESISTIVITY 45
2' MIN COVER FROM UTILITY, TYP

THE NORTHERN PASS
SHEBC155
UG ALIGNMENT PROFILE
HOR. SCALE: 1"=30'
VER. SCALE: 1"=10'

UG ALIGNMENT PLAN
SCALE: 1"=30'
BORING BH106
STA 648+90
BORING DEPTH 15'
ROCK NOT ENCOUNTERED
THERMAL RESISTIVITY 80

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

PRELIMINARY - NOT FOR CONSTRUCTION
Transmission Business
THE NORTHERN PASS
SHEB
SHEBC158
UG ALIGNMENT PROFILE
HOR. SCALE: 1"=30'
VER. SCALE: 1"=10'

PC: 641+71.59
PT: 642+05.49
PC: 642+23.23
PT: 642+57.14

PC: 643+00
PT: 644+00
PC: 645+00
PT: 646+00
PC: 647+00
PT: 648+00
PC: 649+00
PT: 650+00

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

SHARED USE
STATION TO STATION CONSTRUCTION ACTIVITY
EGY: 183.06 CONDUCT INSTALLATION

SHEET 1
PC: 652+37.40
PT: 652+51.31
PC: 652+62.62
PT: 652+76.53
PC: 652+91.82
PT: 655+01.68
PRELIMINARY - NOT FOR CONSTRUCTION

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

UG ALIGNMENT PLAN
SCALE: 1"=30'
BORING BH108

STA 669+12

BORING DEPTH 15'

ROCK NOT ENCOUNTERED

THERMAL RESISTIVITY 85

2' MIN COVER FROM UTILITY, TYP
PT: 683+68.89
PC: 684+00

PT: 684+36.43
PC: 690+89.56

BORING BH22A
STA 687+94
BORING DEPTH 60.5'
ROCK NOT ENCOUNTERED
THERMAL RESISTIVITY 75

THE NORTHERN PASS
SHEBC163
UG ALIGNMENT PROFILE
HOR. SCALE: 1"=30'
VER. SCALE: 1"=10'

UG ALIGNMENT PLAN
SCALE: 1"=30'
BORING BH22C
STA 699+37
BORING DEPTH 61'
ROCK NOT ENCOUNTERED
THERMAL RESISTIVITY 60

BORING BH22B
STA 693+74
BORING DEPTH 60.5'
ROCK NOT ENCOUNTERED
THERMAL RESISTIVITY 75

PRELIMINARY - NOT FOR CONSTRUCTION

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

UG ALIGNMENT PLAN
SCALE: 1"=30'
DETAIL 5
±320 kV CABLE SPLICE PIT INSTALLATION - TEMPORARY BACKFILL

DETAIL 6
±320 kV CABLE SPLICE PIT INSTALLATION - FINAL
LEGEND
- REFLECTORIZED PLASTIC DRUM
- EXISTING TRAVEL LANE
- PROPOSED TRAVEL LANE
- PROPOSED SIGN
- WORK ZONE
- FLAGGER
- TYPE 3 BARRICADE

X = SPACING OF REFLECTORIZED PLASTIC DRUM
SPACING SHALL EQUAL THE POSTED SPEED LIMIT
(EXAMPLE: 35 MPH SPEED LIMIT = 35’ DRUM SPACING)

Quick Reference Tables

Table 6C-1. Recommended Advance Warning Sign Minimum Spacing

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Distance Between Signs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Urban (low speed)</td>
<td>150</td>
</tr>
<tr>
<td>Urban (high speed)</td>
<td>350</td>
</tr>
<tr>
<td>Rural</td>
<td>500</td>
</tr>
<tr>
<td>Expressway/ Freeway</td>
<td>1,000</td>
</tr>
</tbody>
</table>

Table 6C-2. Taper Length Criteria for Temporary Traffic Control Zones

<table>
<thead>
<tr>
<th>Type of Taper</th>
<th>Taper Length (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shifting Taper</td>
<td>at least 2 ft</td>
</tr>
<tr>
<td>Variable Taper (V)</td>
<td>at least 6 ft</td>
</tr>
<tr>
<td>Variable Taper (S)</td>
<td>at least 5 ft</td>
</tr>
<tr>
<td>One Lane, Two Lane</td>
<td>at least 4 ft, 6 ft max.</td>
</tr>
<tr>
<td>Two Lane, Three Lane</td>
<td>at least 4 ft, 6 ft max.</td>
</tr>
</tbody>
</table>

Table 6C-3. Formulas for Determining Taper Length

<table>
<thead>
<tr>
<th>Speed (mph)</th>
<th>Taper Length (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-40</td>
<td>L = 0.07 * Speed</td>
</tr>
<tr>
<td>&gt;40</td>
<td>L = 0.07 * 40 + 0.025 * (Speed - 40)</td>
</tr>
</tbody>
</table>

Note: See Figure 6C-4 for illustration.
### QUICK REFERENCE TABLES

#### Table 6C-1. Recommended Advance Warning Sign Minimum Spacing

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Distance Between Signs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban (low speed)</td>
<td>A: 100 feet B: 100 feet C: 150 feet</td>
</tr>
<tr>
<td>Urban (high speed)</td>
<td>A: 200 feet B: 150 feet C: 250 feet</td>
</tr>
<tr>
<td>Rural</td>
<td>A: 500 feet B: 500 feet C: 500 feet</td>
</tr>
<tr>
<td>Expressway</td>
<td>1,000 feet 1,500 feet 2,000 feet</td>
</tr>
</tbody>
</table>

* Speed category is determined by the highway agency.

* The column headings A, B, and C are the dimensions shown in Figures 6C-1 through 6C-6. The A dimension is the distance from the projection point of the end of the advance warning sign to the begin of the work zone. The B dimension is the distance between the end of the advance warning sign and the start of the TIF zone. The C dimension is the distance between the last advance warning sign and the end of the work zone. (Turns to the left in the TIF zone.

#### Table 6C-3. Taper Length Criteria for Temporary Traffic Control Zones

<table>
<thead>
<tr>
<th>Type of Taper</th>
<th>Taper Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum</td>
<td></td>
</tr>
<tr>
<td>Max</td>
<td></td>
</tr>
<tr>
<td>Inside</td>
<td>1</td>
</tr>
<tr>
<td>Outside</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Zone Type</th>
<th>Taper Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inside</td>
<td>1</td>
</tr>
<tr>
<td>Outside</td>
<td>1</td>
</tr>
</tbody>
</table>

#### Table 6C-4. Formulas for Determining Taper Length

<table>
<thead>
<tr>
<th>Formula</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>L = (V/60)²</td>
<td>Speed in miles per hour</td>
</tr>
<tr>
<td>L = (V/52.4)²</td>
<td>Speed in kilometers per hour</td>
</tr>
</tbody>
</table>

Where:
- L = Taper Length in feet
- V = speed of traffic in either direction
- A = speed of traffic in either direction

Note: Use Table 6C-4 for calculations.
Table 6C-1. Recommended Advance Warning Sign Minimum Spacing

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Distance Between Signs (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban (low speed)</td>
<td>A</td>
</tr>
<tr>
<td>road</td>
<td>100</td>
</tr>
<tr>
<td>Urban (high speed)</td>
<td>300</td>
</tr>
<tr>
<td>Rural</td>
<td>200</td>
</tr>
<tr>
<td>Expressway / Freeway</td>
<td>1,000</td>
</tr>
</tbody>
</table>

*Speed category is determined by the highway agency.
*The column headings A, B, and C are the dimensions shown in Figures 6-1 through 6-6. The A dimension is the distance from the location or point of restraint to the first sign. The B dimension is the distance between the first and second sign. The C dimension is the distance between the second and third sign. For the second sign, the third dimension is the minimum distance between the second sign and the third sign.

Table 6C-2. Taper Length Criteria for Temporary Traffic Control Zones

<table>
<thead>
<tr>
<th>Type of Taper</th>
<th>Taper Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shoulder Taper</td>
<td>100% of A</td>
</tr>
<tr>
<td>Make-up Taper</td>
<td>80% of B</td>
</tr>
<tr>
<td>Shoulder Taper</td>
<td>60% of C</td>
</tr>
<tr>
<td>Overlap Taper</td>
<td>60% of B</td>
</tr>
<tr>
<td>Shoulder Taper</td>
<td>50% of C</td>
</tr>
<tr>
<td>Overlap Taper</td>
<td>50% of B</td>
</tr>
<tr>
<td>Shoulder Taper</td>
<td>40% of C</td>
</tr>
<tr>
<td>Overlap Taper</td>
<td>40% of B</td>
</tr>
</tbody>
</table>

Table 6C-3. Formulas for Determining Taper Length

<table>
<thead>
<tr>
<th>Speed (mi/h)</th>
<th>Taper Length (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>100</td>
</tr>
<tr>
<td>10</td>
<td>200</td>
</tr>
<tr>
<td>15</td>
<td>300</td>
</tr>
<tr>
<td>20</td>
<td>400</td>
</tr>
</tbody>
</table>

Table 6C-4. Formulas for Determining Taper Length

<table>
<thead>
<tr>
<th>Speed (mi/h)</th>
<th>Taper Length (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>100</td>
</tr>
<tr>
<td>10</td>
<td>200</td>
</tr>
<tr>
<td>15</td>
<td>300</td>
</tr>
<tr>
<td>20</td>
<td>400</td>
</tr>
</tbody>
</table>

Figure 6-1. Recommended Advance Warning Sign Minimum Spacing.

Figure 6-2. Taper Length Criteria for Temporary Traffic Control Zones.

Figure 6-3. Formulas for Determining Taper Length.

Figure 6-4. Formulas for Determining Taper Length.
LEGEND

| REFLECTORIZED PLASTIC DRUM |
| EXISTING TRAVEL LANE |
| PROPOSED TRAVEL LANE |
| PROPOSED SIGN |
| WORK ZONE |
| FLAGGER |
| TYPE 3 BARRICADE |

X = SPACING OF REFLECTORIZED PLASTIC DRUM SPACING SHALL EQUAL THE POSTED SPEED LIMIT:
EXAMPLE: 30 MPH SPEED LIMIT = 30’ DRUM SPACING

TYPICAL LANE CLOSURE FOR LONGITUDINAL TRENCH/SPICE ENCLOSURE INSTALLATION IN DOWNTOWN WITH SIDEWALK ON BOTH SIDES OF THE ROAD (<850 VPH)
TYPICAL WORK ZONE = 700’
NOT TO EXCEED 1600’
NOT TO SCALE

Table 6C-1. Recommended Advance Warning Sign Minimum Spacing

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Distance Between Signs</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban (low speed)</td>
<td>150 feet</td>
<td>150 feet</td>
<td>150 feet</td>
<td></td>
</tr>
<tr>
<td>Urban (high speed)</td>
<td>200 feet</td>
<td>200 feet</td>
<td>200 feet</td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>250 feet</td>
<td>250 feet</td>
<td>250 feet</td>
<td></td>
</tr>
<tr>
<td>Expressway/Freeway</td>
<td>1,000 feet</td>
<td>1,000 feet</td>
<td>2,000 feet</td>
<td></td>
</tr>
</tbody>
</table>

Table 6C-2. Taper Length Criteria for Temporary Traffic Control Zones

<table>
<thead>
<tr>
<th>Type of Taper</th>
<th>Taper Length</th>
<th>Zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>All in Zone</td>
<td>150 feet</td>
<td></td>
</tr>
<tr>
<td>Shoulder Taper</td>
<td>90 feet</td>
<td></td>
</tr>
<tr>
<td>Shoulder Taper</td>
<td>60 feet</td>
<td></td>
</tr>
<tr>
<td>Shoulder Taper</td>
<td>30 feet</td>
<td></td>
</tr>
<tr>
<td>Shoulder Taper</td>
<td>15 feet</td>
<td></td>
</tr>
<tr>
<td>Shoulder Taper</td>
<td>7.5 feet</td>
<td></td>
</tr>
</tbody>
</table>

Table 6C-3. Formulas for Determining Taper Length

\[
Taper \text{ Length (in feet)} = \frac{\text{Speed (mph)}^2}{100,000}
\]

Table 6C-4. Quick Reference Tables

<table>
<thead>
<tr>
<th>Value of Taper Length (L)</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width of Offset in Feet</td>
<td>10</td>
<td>20</td>
<td>30</td>
<td>40</td>
<td>50</td>
<td>60</td>
<td>70</td>
<td>80</td>
<td>90</td>
<td>100</td>
<td>110</td>
<td>120</td>
<td>130</td>
<td>140</td>
</tr>
</tbody>
</table>
QUICK REFERENCE TABLES

TYPICAL LANE CLOSURE FOR LONGITUDINAL TRENCH/SPICE ENCLOSURE INSTALLATION IN DOWNTOWN WITH SIDEWALK ON ONE SIDE OF THE ROAD (<850 VPH)

TYPICAL WORK ZONE = 700’

NOT TO SCALE

Table 6C-1. Recommended Advance Warning Sign Minimum Spacing

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Distance Between Signs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>A</td>
</tr>
<tr>
<td>Low speed</td>
<td>100 feet</td>
</tr>
<tr>
<td>High speed</td>
<td>350 feet</td>
</tr>
<tr>
<td>Rural</td>
<td>500 feet</td>
</tr>
<tr>
<td>Expressway</td>
<td>1,000 feet</td>
</tr>
</tbody>
</table>

* Speed category is determined by the highway agency.
* The columns headings, A, B, C, are the dimensions shown in Figures 6C-1 through 6C-3. The A dimension is the distance from the transition point of two signs to the first sign. The B dimension is the distance from the second sign to the second sign. The C dimension is the distance from the second sign to the last sign. The distance from the end of the highway work zone to the last sign is the “Downstream” dimension. The “Upstream” dimension is the distance from the end of the highway work zone to the first sign.

Table 6C-2. Taper Length Criteria for Temporary Traffic Control Zones

<table>
<thead>
<tr>
<th>Type of Traffic Control Zone</th>
<th>Taper Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable Speed Taper</td>
<td>at least 0.1</td>
</tr>
<tr>
<td>Shoulder Taper</td>
<td>at least 0.3</td>
</tr>
<tr>
<td>Variable Speed Taper</td>
<td>at least 0.1</td>
</tr>
<tr>
<td>Shoulder Taper</td>
<td>at least 0.3</td>
</tr>
</tbody>
</table>

Table 6C-3. Formulas for Determining Taper Length

<table>
<thead>
<tr>
<th>Speed (mph)</th>
<th>Taper Length (in feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 20</td>
<td>0.1</td>
</tr>
<tr>
<td>20-40</td>
<td>0.15</td>
</tr>
<tr>
<td>40-60</td>
<td>0.2</td>
</tr>
<tr>
<td>60-80</td>
<td>0.25</td>
</tr>
<tr>
<td>&gt; 80</td>
<td>0.3</td>
</tr>
</tbody>
</table>

Note: (2) = minimum 20’ between signs and (3) = minimum 100’ between signs.

Table 6C-4. Formulas for Determining Taper Length

<table>
<thead>
<tr>
<th>Speed (mph)</th>
<th>Value of Taper Length (L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 20</td>
<td>0.1</td>
</tr>
<tr>
<td>20-40</td>
<td>0.15</td>
</tr>
<tr>
<td>40-60</td>
<td>0.2</td>
</tr>
<tr>
<td>60-80</td>
<td>0.25</td>
</tr>
<tr>
<td>&gt; 80</td>
<td>0.3</td>
</tr>
</tbody>
</table>

Where:
- L = length of lane
- W = width of a side street
- a = posted speed limit
- T = anticipated operating speed of vehicle
- T = travel time
- T = time of day
- T = weather condition
- T = traffic conditions

NOT TO SCALE
TRAFFIC CONTROL FOR THE INTERSECTION OF MAIN STREET (RT 18/116) AND CHURCH STREET (RT 116) - FRANCONIA, NH
MICROTUNNELING TRAFFIC CONTROL
INTERSECTION OF MAIN STREET (RT 18/116) AND CHURCH STREET (RT 116) - FRANCONIA, NH
NOTES:

GENERAL

1. VERIFY ALL DIMENSIONS AND ELEVATIONS SHOWN ON THESE PLANS PRIOR TO INSTALLING THE ALIGNMENTS. IF DISCREPANCIES ARE NOTED, NOTIFY BRIGHTLEY SO THAT APPROPRIATE REVISIONS CAN BE MADE TO THE HDD DESIGN.

2. IF UTILITIES WILL INTERFERE WITH INSTALLATION OF THE ALIGNMENTS AS SHOWN ON THESE DRAWINGS, NOTIFY BRIGHTLEY SO THAT APPROPRIATE REVISIONS CAN BE MADE TO THE HDD DESIGN.

3. PERFORM HDD CONSTRUCTION IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS AND CONFORM TO ALL APPLICABLE SAFETY REGULATIONS INCLUDING THE PROVISIONS OF FEDERAL OSHA.

4. PROVIDE PROTECTIVE BARRIER AROUND ALL EXCAVATIONS THAT CONFORMS TO ALL APPLICABLE SAFETY REGULATIONS.

5. ALL UTILITIES DISCOVERED DURING DESIGN ARE INDICATED ON THE PROJECT DRAWINGS. THE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION, SIZE AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO THE START OF ANY CONSTRUCTION. ALL UTILITIES WITHIN 15 FEET OF THE DRILL PATH SHALL BE EXCAVATED AND PROTECTED DURING CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION AGreed TO BY THE ENGINEER BEFORE PROCEEDING WITH THE WORK.

6. THE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING DIRTAFE AT 811, AT LEAST 72 HOURS BEFORE DIGGING OR DRILLING AND SHALL MAINTAIN AN ACTIVE PERMIT DURING ALL SUBSURFACE WORK. A COPY OF THIS PERMIT SHALL BE ON SITE AND AVAILABLE FOR VIEWING BY THE OWNER AND OWNERS’ REPRESENTATIVES DURING ALL SUBSURFACE WORK.

7. REFER TO TEST BORING LOGS FOR SPECIFIC DETAILS OF SUBSURFACE CONDITIONS ENCOUNTERED.

8. ACTUAL SOIL CONDITIONS MAY VARY SIGNIFICANTLY FROM THOSE INDICATED ON THE PROFILES. SUBCONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING EXISTING SUBSURFACE INFORMATION, AND SELECTING THE AppROPRIATE MEANS AND METHODS FOR COMPLETING THE WORK.

9. THE SUBCONTRACTOR SHALL VERIFY PROJECT COORDINATES, AZIMUTHS AND ELEVATIONS PRIOR TO CONSTRUCTION.

10. ALL DIRECTIONAL DRILLING SHALL BE COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, AND SPECIFICATION SECTION 1840 - HORIZONTAL DIRECTIONAL DRILL INSTALLATION.

11. SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTAINMENT, CLEANUP AND DISPOSAL OF ALL DRILLING FLUIDS IN ACCORDANCE WITH APPROVED DRILL FLUID MANAGEMENT AND CONTINGENCY RELEASE PLAN, INCLUDING INADVERTENT SURFACE RETURNS.

12. SUBCONTRACTOR SHALL BE RESPONSIBLE FOR ALL NECESSARY TRAFFIC CONTROL.

13. THE PLANS AND PROFILES WERE DEVELOPED INCORPORATING THE INFORMATION AVAILABLE AT THE TIME OF DESIGN.

SITE LEGEND

ELEVATION CONTOUR
EX. EDGE OF PAVEMENT
PROPERTY LINES
RIGHT OF WAY LIMIT
EX. OVERHEAD ELECTRIC
EX. BUILDING
EX. WATER
EX. SANITARY
EX. UTILITY POLE
EX. STORM DRAIN
EX. GAS
EX. COMMUNICATIONS
EX. ELECTRIC
EX. FENCE

HDD ENTRY AREA WORK SPACE

TEST BORING

LEGEND