BORING BH54  STA 11+34.79  BORING DEPTH 15.5'  ROCK NOT ENCOUNTERED  THERMAL RESISTIVITY 60

UG ALIGNMENT PROFILE

UG ALIGNMENT PLAN

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

ROCK C102

PRELIMINARY - NOT FOR CONSTRUCTION
Transmission Business
THE NORTHERN PASS
ROCK C104

UG ALIGNMENT PROFILE
VER. B/C: F-1F

UG ALIGNMENT PLAN
SCALE: 1"=30'

PRELIMINARY - NOT FOR CONSTRUCTION

UG ALIGNMENT PROFILE
VER. B/C: F-1F

UG ALIGNMENT PLAN
SCALE: 1"=30'
BORING BH59
STA 63+24.00
BORING DEPTH 15.5'
ROCK NOT ENCOUNTERED
THERMAL RESISTIVITY 90°

30" MIN COVER

ROCKC109
BORING BH61
STA 82+84.23
BORING DEPTH 15.5'
ROCK NOT ENCOUNTERED
THERMAL RESISTIVITY 70
UG ALIGNMENT PLAN

UG ALIGNMENT PROFILE

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

PT: 91+70.19
PC: 95+30.87

BORING BH62
STA 92+82.13
BORING DEPTH 15.5'
ROCK NOT ENCOUNTERED
THERMAL RESISTIVITY 75

1238.0
88+50
1236.0
89+00
1234.0
89+50
1232.0
90+00
1229.8
90+50
1227.7
91+00
1225.5
91+50
1223.0
92+00
1221.1
92+50
1218.8
93+00
1216.4
93+50
1214.6
94+00
1212.9
94+50
1210.1
95+00
1208.4
95+50
1206.4
96+00
1204.4
96+50
1202.4

30" MIN COVER

PRELIMINARY - NOT FOR CONSTRUCTION
BORING BH63
STA 102+21.95
BORING DEPTH 15.5'
ROCK NOT ENCOUNTERED
THERMAL RESISTIVITY 80

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

UG ALIGNMENT PLAN
SCALE: 1"=30'
BORING BH67
STA 141+39.43
BORING DEPTH 15.5'
ROCK NOT ENCOUNTERED
THERMAL RESISTIVITY 70
2' MIN COVER
FROM UTILITY, TYP
BORING BH68
STA 150+34.86
BORING DEPTH 16.5'
ROCK NOT ENCOUNTERED
THERMAL RESISTIVITY 100
<table>
<thead>
<tr>
<th>ROCK</th>
<th>ROCK 1</th>
<th>ROCK 2</th>
<th>ROCK 3</th>
<th>ROCK 4</th>
<th>ROCK 5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ROCK 1</td>
<td>ROCK 2</td>
<td>ROCK 3</td>
<td>ROCK 4</td>
<td>ROCK 5</td>
</tr>
<tr>
<td></td>
<td>ROCK 1</td>
<td>ROCK 2</td>
<td>ROCK 3</td>
<td>ROCK 4</td>
<td>ROCK 5</td>
</tr>
<tr>
<td></td>
<td>ROCK 1</td>
<td>ROCK 2</td>
<td>ROCK 3</td>
<td>ROCK 4</td>
<td>ROCK 5</td>
</tr>
<tr>
<td></td>
<td>ROCK 1</td>
<td>ROCK 2</td>
<td>ROCK 3</td>
<td>ROCK 4</td>
<td>ROCK 5</td>
</tr>
<tr>
<td></td>
<td>ROCK 1</td>
<td>ROCK 2</td>
<td>ROCK 3</td>
<td>ROCK 4</td>
<td>ROCK 5</td>
</tr>
</tbody>
</table>

**Table Notes:**
- ROCK 1, ROCK 2, ROCK 3, ROCK 4, ROCK 5 refer to different rock types.
- The data in the table includes specifications such as density, porosity, and other properties relevant to the rock types.

**Legend:**
- Column headers are followed by specific rock characteristics.
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: 125 feet  C: 160 feet</td>
</tr>
<tr>
<td>Urban (high speed)</td>
<td>A: 300 feet  B: 375 feet  C: 500 feet</td>
</tr>
<tr>
<td>Rural</td>
<td>A: 500 feet  B: 625 feet  C: 800 feet</td>
</tr>
<tr>
<td>Expressway/Freeway</td>
<td>A: 1,300 feet B: 1,600 feet C: 2,640 feet</td>
</tr>
</tbody>
</table>

Notes:
1) Speed category to be determined by the highway agency.
2) The columns labeled A, B, and C are the dimensions shown in Figures 6C-1 through 6C-6. The A dimension is the distance between the first and second signs. The B dimension is the distance between the second and third signs. The C dimension is the distance between the third and fourth signs. (The "third sign" is the sign in a three-sign series that is placed in the TIZ zone. The "third sign" is the sign that is furthest upstream from the TIZ zone.)

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>Marching taper</td>
<td>at least TIZ</td>
</tr>
<tr>
<td>Tapered taper</td>
<td>at least TIZ</td>
</tr>
</tbody>
</table>

Note: Use Table 6C-3 to determine taper length.

Table 6C-3. Formulas for Determining Taper Length

<table>
<thead>
<tr>
<th>Speed (S)</th>
<th>Taper Length (L) in feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>mph &lt; 50</td>
<td>L = 85 (V - 50) L &lt; 50</td>
</tr>
<tr>
<td>50 ≤ mph &lt; 80</td>
<td>L = 85 (80 - V) L &gt; 50</td>
</tr>
<tr>
<td>mph ≥ 80</td>
<td>L = 500</td>
</tr>
</tbody>
</table>

Where:
L = taper length in feet
V = speed of traffic in miles per hour

Table 6C-4. Quick Reference Tables

Quick Reference Tables

LEGEND
- ReflectORIZED PLASTIC DRUM
- EXISTING TRAVEL LANE
- PROPOSED TRAVEL LANE
- PROPOSED SIGN
- WORK ZONE
- FLAGGER
- TYPE 3 BARRIACDE

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

TYPICAL LANE CLOSURE (FOR LONGITUDINAL)
TRANSPORTATION BEYOND THE INSTALLATION ZONE (A) WITH TYPICAL WORK ZONE LENGTH = 750
NOT TO SCALE

PROPOSED TRAVEL LANE
REFLECTORIZED PLASTIC DRUM
EXISTING TRAVEL LANE
PROPOSED SIGN
WORK ZONE
FLAGGER
TYPE 3 BARRIACDE
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)

**LEGEND**

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

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

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

<table>
<thead>
<tr>
<th>Type of Taper</th>
<th>Taper Length (in feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shoulder Taper</td>
<td>30 feet</td>
</tr>
<tr>
<td>Median Taper</td>
<td>30 feet</td>
</tr>
<tr>
<td>End Line, Two Lane Traffic Control Taper</td>
<td>30 feet</td>
</tr>
</tbody>
</table>

Note: See Table 1A-1 for roadway widths.

Table 6C-3. Formulas for Determining Taper Length

<table>
<thead>
<tr>
<th>Variable</th>
<th>Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed (S)</td>
<td>Taper Length (L) =</td>
</tr>
<tr>
<td></td>
<td>S^2</td>
</tr>
</tbody>
</table>

Where:
L = Taper length (in feet)  
S = Speed limit (mph)

Table 6C-4. Formulas for Determining Taper Length

<table>
<thead>
<tr>
<th>Variable</th>
<th>Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed (S)</td>
<td>Taper Length (L) =</td>
</tr>
<tr>
<td></td>
<td>S^2</td>
</tr>
</tbody>
</table>

TYPICAL TEMPORARY LANE CLOSURE AT INTERSECTIONS
NOT TO SCALE

PRELIMINARY - NOT FOR CONSTRUCTION
**LEGEND**

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

A = 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>Urban (low speed)*</td>
<td>100 feet</td>
</tr>
<tr>
<td>Urban (high speed)*</td>
<td>600 feet</td>
</tr>
<tr>
<td>Rural</td>
<td>1,000 feet</td>
</tr>
<tr>
<td>Exposure / Freeway</td>
<td>1,000 feet</td>
</tr>
</tbody>
</table>

* Speed category to be determined by the highway agency

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

<table>
<thead>
<tr>
<th>Type of Taper</th>
<th>Taper Length (in feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hoisting</td>
<td>50</td>
</tr>
<tr>
<td>Waiting</td>
<td>75</td>
</tr>
</tbody>
</table>

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

\[
T = \frac{v^2}{2g}\left(\frac{30}{v}\right)
\]

Where:
- \(T\) = Taper length (in feet)
- \(v\) = Speed of vehicle in miles per hour
- \(g\) = 32 ft/s²

Note: Use Table 6C-4 for all cases.
PHASE 2
INTERSECTION OF PROFILE ROAD (ROUTE 18) AND MAIN STREET
(ROUTE 302) - BETHLEHEM, NH