

| RECORD OF BOREHOLE B-5 | | | | | | | | | | | |
|-------------------------------------|--|--|-------------|--------------------------|---------|-----------------------------|------------------|---|---------|---|---|
| PROJECT: VHB/LIMEKILN BRIDGE/VT | | PROJECT LOCATION: S.Burlington/Colchester VT | | PROJECT NUMBER: 993-6856 | | BORING LOCATION: See Figure | | BORING TIME: 1555 / 06-29-99 to 0900 / 06-30-99 | | DATUM: Local Datum | |
| DEPTH SCALE FEET | BORING METHOD | SOIL PROFILE | | | SAMPLES | | | SAMPLE DESCRIPTIONS AND BORING NOTES | | | |
| | | USCS | GRAPHIC LOG | ELEV. DEPTH | NUMBER | TYPE | BLOWS / 6 INCHES | | | | N |
| 0 | 0.0-0.2 Top soil | | | 0.00 | 1 | D.O. | 10-11-16-28 | 27 | 1.4/2.0 | 0.0-0.2 Top soil - dark brown SILT with organic matter. 0.2-0.9 Compact light brown cmf sand some silt highly weathered limestone (fill). 0.9-1.4 Stiff brown to olive brown SILTY CLAY little to some silt, little to some sand and gravel, firm, moist. 1.4-5.0 No recovery | |
| 5 | 5.0-8.0 Stiff greenish gray silty clay some medium coarse sand and fine gravel, firm, moist(M) | | | 5.00 | 2 | D.O. | 5-5-10-10 | 15 | 1.5/2.0 | 5.0-6.5 Stiff greenish gray SILTY CLAY, some sand and fine gravel, consisting of limestone ranging from slightly weathered to highly weathered. 6.5-7.0 No Recovery | |
| 10 | 8.0-12.7 Firm brown SILT interbedded with brown CLAY | | | 7.00 | | | | | | formation change @ 8 bgs. | |
| 15 | 12.7 BEDROCK | | | 10.00 | 3 | D.O. | 5-5-5-8 | 10 | 1.4/2.0 | 10.0-11.4 Firm interbedded brown silty clay some fine sand, trace fine gravel. (CL) 11.4-12.0 No Recovery | |
| 15 | See corehole logs for continuation | | | 12.00 | | | | | | 12.7 Bedrock. | |
| DRILL RIG: MOBILE B-47 | | WEIGHT OF HAMMER: 140 lbs | | LOGGED: M. Zarenski | | | | | | | |
| DRILLING CONTRACTOR: Con - Tec INC. | | DROP: 30 inches | | CHECKED: MZ | | | | | | | |
| DRILLER: R. McGlashan | | SHEET 1 OF 1 | | DATE: 08/11/99 | | | | | | | |

| RECORD OF BOREHOLE B-6 | | | | | | | | | | | |
|-------------------------------------|---|--|-------------|--------------------------|---------|-----------------------------|------------------|---|---------|---|---|
| PROJECT: VHB/LIMEKILN BRIDGE/VT | | PROJECT LOCATION: S.Burlington/Colchester VT | | PROJECT NUMBER: 993-6856 | | BORING LOCATION: See Figure | | BORING TIME: 0830 / 06-23-99 to 1030 / 06-23-99 | | DATUM: Local Datum | |
| DEPTH SCALE FEET | BORING METHOD | SOIL PROFILE | | | SAMPLES | | | SAMPLE DESCRIPTIONS AND BORING NOTES | | | |
| | | USCS | GRAPHIC LOG | ELEV. DEPTH | NUMBER | TYPE | BLOWS / 6 INCHES | | | | N |
| 0 | 0.0 - 8.4 FILL - upper 0.2 ft is Asphalt pavement, then CMF SAND AND GRAVEL to fine-med sand little to some silt, little coarse sand, little gravel, compact, moist | | | 0.00 | 1 | D.O. | 73-13-11-13 | 24 | .75/2.0 | 0.0-0.2 Asphalt concrete 0.2-0.75 FILL compact brown CMF SAND AND GRAVEL moist | |
| 5 | 4.0-9.0 Firm greenish brown SILT, some fine sand trace gravel, trace fine sand, moist. | | | 4.00 | 2 | D.O. | 14-11-8-7 | 19 | 1.3/2.0 | 4.0-5.3 FILL compact brown fine-med SAND, little to some silt, little coarse sand, little gravel. Slight moist. 5.3-6.0 No Recovery | |
| 10 | 8.4-9.0 Bedrock. Fresh to faintly weathered MARBLE. | | | 9.00 | | | | | | Bedrock encountered @ 8.4' bgs | |
| 15 | See corehole log for continuation | | | | | | | | | | |
| DRILL RIG: MOBILE B-47 | | WEIGHT OF HAMMER: 140 lbs | | LOGGED: M. Zarenski | | | | | | | |
| DRILLING CONTRACTOR: Con - Tec INC. | | DROP: 30 inches | | CHECKED: MZ | | | | | | | |
| DRILLER: R. McGlashan | | SHEET 1 OF 1 | | DATE: 08/11/99 | | | | | | | |

| RECORD OF BOREHOLE B-7 | | | | | | | | | | | |
|-------------------------------------|--|--|-------------|--------------------------|---------|-----------------------------|------------------|---|---------|---|---|
| PROJECT: VHB/LIMEKILN BRIDGE/VT | | PROJECT LOCATION: S.Burlington/Colchester VT | | PROJECT NUMBER: 993-6856 | | BORING LOCATION: See Figure | | BORING TIME: 0831 / 06-29-99 to 1103 / 06-29-99 | | DATUM: Local Datum | |
| DEPTH SCALE FEET | BORING METHOD | SOIL PROFILE | | | SAMPLES | | | SAMPLE DESCRIPTIONS AND BORING NOTES | | | |
| | | USCS | GRAPHIC LOG | ELEV. DEPTH | NUMBER | TYPE | BLOWS / 6 INCHES | | | | N |
| 0 | 0.0-0.2 Asphalt | | | 0.00 | 1 | D.O. | 6-10-9-14 | 19 | 1.3/2.0 | 0.0-0.2 Asphalt 0.2-0.5 SAND, SILT, GRAVEL FILL 0.5-1.8 compact yellow brown C-M-F SAND AND fine GRAVEL FILL moist. 1.8-2.5 No Recovery | |
| 5 | 4.0-9.0 Firm greenish brown SILT, some fine sand trace gravel, trace fine sand, moist. | | | 5.00 | 2 | D.O. | 5-4-4-5 | 8 | 1.3/2.0 | Formation change at approx 4' bgs. 5.0-6.3 Firm greenish brown SILT, some fine sand trace gravel. 6.3-7.0 No Recovery. Formation change @ approximately 9' bgs. | |
| 10 | 9.0-10.1 Brown CLAY firm, moist. | | | 10.00 | | | | | | Attempted 10-12: Spoon encountered bedrock @ 10.1 bgs. 10.0-10.1 Brown CLAY. 10.1 Bedrock. | |
| 15 | See corehole log for continuation | | | 10.3 | 3 | D.O. | N/A | N/A | .1/2.0 | See corehole log for continuation of borehole. | |
| DRILL RIG: MOBILE B-47 | | WEIGHT OF HAMMER: 140 lbs | | LOGGED: M. Zarenski | | | | | | | |
| DRILLING CONTRACTOR: Con - Tec INC. | | DROP: 30 inches | | CHECKED: MZ | | | | | | | |
| DRILLER: R. McGlashan | | SHEET 1 OF 1 | | DATE: 08/11/99 | | | | | | | |

| RECORD OF ROCK COREHOLE B-5 | | | | | | | | | | | |
|-----------------------------------|--|--|-------------|--------------------------|-----------------|-----------------------------|-------------|---|---|---|--------------|
| PROJECT: VHB/LIMEKILN BRIDGE/VT | | PROJECT LOCATION: S.Burlington/Colchester VT | | PROJECT NUMBER: 993-6856 | | BORING LOCATION: See Figure | | BORING TIME: 06-24-99/0730 to 06-24-99/1010 | | DATUM: Local Datum | |
| DEPTH SCALE FEET | BORING METHOD | CORE DESCRIPTION | | | RUN INFORMATION | | | DISCONTINUITIES | | | |
| | | USCS | GRAPHIC LOG | ELEV. DEPTH | RUN | Penetration Rate MIN. / FT | WATER USAGE | | | | % FLUSH RET. |
| 12.5 | 12.7-17.7 Faintly to slightly weathered, closely jointed gray very fine grained (crystalline) partly oxidized LIMESTONE or low-grade MARBLE. Rock has Fe or Mn staining on fracture surfaces, especially between 16 and 17 bgs which contains 1 long vertical fracture. Signs of rehealed fractures throughout core. | | | 12.7 | 5 | | | 0% | 5 | 70° J 65° J 55° J/Fe 70° J 80° MF ~70° J/UE 70° J/UE ~80° J/UE 65° J ~85° MF ~10° J,Mn or Fe 80° J/Fe 70° J/ST 90° J | |
| 15 | End corehole at 17.7 bgs. | | | 17.7 | NA | | | 0% | M | NOTE: TOR COULD NOT BE DETERMINED IN RUN NO. 2 DUE TO HIGHLY FRACTURED NATURE OF ROCK. | |
| DRILL RIG: MOBILE B-47 | | TOTAL LENGTH CORED: 10' | | LOGGED: M. Zarenski | | | | | | | |
| DRILLING CONTRACTOR: Con-Tec Inc. | | BITS USED: 1 | | CHECKED: PCI | | | | | | | |
| DRILLER: R. McGlashan | | SHEET 1 OF 2 | | DATE: 04/28/05 | | | | | | | |

| RECORD OF ROCK COREHOLE B-6 | | | | | | | | | | | |
|-----------------------------------|--|--------------------------------|-------------|--------------------------|-----------------|-----------------------------|-------------|---|---|-------------------------------------|--------------|
| PROJECT: VHB/LIMEKILN BRIDGE/VT | | PROJECT LOCATION: LIMEKILN, VT | | PROJECT NUMBER: 993-6856 | | BORING LOCATION: See Figure | | BORING TIME: 06-23-99/0955 to 06-23-99/1030 | | DATUM: Local Datum | |
| DEPTH SCALE FEET | BORING METHOD | CORE DESCRIPTION | | | RUN INFORMATION | | | DISCONTINUITIES | | | |
| | | USCS | GRAPHIC LOG | ELEV. DEPTH | RUN | Penetration Rate MIN. / FT | WATER USAGE | | | | % FLUSH RET. |
| 14.0 | 9.0-14.0 Fresh faintly weathered, moderately close to closely jointed gray (with white and black stringers) very fine grained (crystalline) MARBLE. Very minor staining and weathering of fractures. No signs of rehealed fractures or vertical fractures. | | | 9.0 | 5 | | | 75% | 0 | 55° J/PL 70° Mechanical fracture | |
| 15 | End coring @ 14 bgs. | | | 14.0 | NA | | | 75% | 1 | 80° J or MF | |
| 15 | End coring @ 14 bgs. | | | 14.0 | NA | | | 75% | 2 | 90° J or MF | |
| 15 | End coring @ 14 bgs. | | | 14.0 | NA | | | 75% | 2 | 75° J/PL 80° J/PL 80° J/PL | |
| 15 | End coring @ 14 bgs. | | | 14.0 | NA | | | 75% | 4 | | |
| DRILL RIG: MOBILE B-47 | | TOTAL LENGTH CORED: 10' | | LOGGED: M. Zarenski | | | | | | | |
| DRILLING CONTRACTOR: Con-Tec Inc. | | BITS USED: 1 | | CHECKED: PCI | | | | | | | |
| DRILLER: R. McGlashan | | SHEET 1 OF 1 | | DATE: 04/28/05 | | | | | | | |

| RECORD OF ROCK COREHOLE B-7 | | | | | | | | | | | |
|-----------------------------------|--|--|-------------|--------------------------|-----------------|-----------------------------|-------------|---|---|--|--------------|
| PROJECT: VHB/LIMEKILN BRIDGE/VT | | PROJECT LOCATION: S.Burlington/Colchester VT | | PROJECT NUMBER: 993-6856 | | BORING LOCATION: See Figure | | BORING TIME: 06-29-99/1103 to 06-29-99/1300 | | DATUM: Local Datum | |
| DEPTH SCALE FEET | BORING METHOD | CORE DESCRIPTION | | | RUN INFORMATION | | | DISCONTINUITIES | | | |
| | | USCS | GRAPHIC LOG | ELEV. DEPTH | RUN | Penetration Rate MIN. / FT | WATER USAGE | | | | % FLUSH RET. |
| 10.5 | 10.5-15.5 Fresh to faintly weathered moderately close to closely jointed light gray very fine grained (crystalline) MARBLE. Very little Fe or Mn staining on fracture surfaces. Most fractures appear mechanically induced. No indication of rehealed fractures. | | | 10.5 | 5 | | | 75% | M | 10° MF ~90° J & Core spin MF 55° MF 80° MF 80° MF 80° MF 90° MF 70° J/UE 65° J 70° J 80° J or MF | |
| 15 | End coring @ 15.5 bgs. | | | 15.5 | NA | | | 25% | 2 | | |
| DRILL RIG: MOBILE B-47 | | TOTAL LENGTH CORED: 5' | | LOGGED: M. Zarenski | | | | | | | |
| DRILLING CONTRACTOR: Con-Tec Inc. | | BITS USED: 1 | | CHECKED: PCI | | | | | | | |
| DRILLER: R. McGlashan | | SHEET 1 OF 1 | | DATE: 04/28/05 | | | | | | | |

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83 (92)

NOTE:
THE SUBSURFACE EXPLORATIONS SHOWN ON THIS SHEET ARE IN ENGLISH UNITS AS RECORDED BY GOLDER ASSOCIATES IN 1999.

VHB Vanasse Hangen Brustlin, Inc.

**STATE OF VERMONT
AGENCY OF TRANSPORTATION**

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|--|--------------------------------|
| Town Of COLCHESTER-SOUTH BURLINGTON | Bridge No. 6 |
| Highway No. TH 4/3 | Log Sta. Surv. Sta. |
| TH 4/3 OVER WINOOSKI RIVER & N.E. C.R. | |
| BORING LOGS (3 OF 9) | |
| Designed By GOLDER | Drawn By M. M. LANDREY |
| Checked By M. A. COLGAN | Date 4/05 |
| PROJECT COLCHESTER-SOUTH BURLINGTON | PROJECT NO. BRM 5600 (6) S C/2 |
| L.G.C. Info. | |
| Bridge Sheet No. ZD139LG3 | Sheet 39 of 124 |

VHB NO. 50735 plot date: 4/28/2005