

**VTrans** STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION

**BORING LOG** Boring No.: B-1A/B Page No.: 1 of 3 Pin No.: 12158 Checked By: JFW

Richard BR# 0302(28) Richard, VT GeoDesign # 750-09.13

Boring Crew: J. Leonhardt (TransTech), A. Barbour (GeoDesign)  
 Date Started: 9/04/13 Date Finished: 9/05/13  
 VTSFG MOBS: N 809895.07 ft E 1582596.89 ft  
 Station: 44+19 Offset: S' L  
 Ground Elevation: 436.5 ft

Casing Sampler: FJ SS  
 L.D.: 4 in 2 in  
 Hammer Wt: 140 lb. 140 lb.  
 Hammer Fall: 30 in. 30 in.  
 Hammer/Rod Type: Auto/W/M  
 Rig: CME S50X ATV CE = ~1.5

Groundwater Observations (3)  
 Date: 09/04/13 Depth (ft): See Note 3.

Depth (ft)	Strat (ft)	CLASSIFICATION OF MATERIALS (Description)	Run (ft)	Core Rec. (ft)	DR Bit (ft)	Wash. Cont. %	Gravel %	Sand %	Fines %	LL %	PL %	
5	0-5	8" Asphalt S1 (0.5' to 2'): Medium dense, brown-gray fine to coarse SAND, little fine gravel, little SILT, slightly moist. (T1) Rec. = 1.0 ft (AASHTO M145 Classification: A-1-b.) S2 (2' to 4'): Medium dense, brown-gray fine to coarse SAND, some fine to coarse gravel, little SILT, slightly moist. (T1) Rec. = 1.42 ft (AASHTO M145 Classification: A-1-b.) S3 (4' to 6'): Medium dense, brown fine to coarse SAND and fine to coarse GRAVEL, little SILT, very moist to wet. (T1) Rec. = 1.17 ft (AASHTO M145 Classification: A-1-b.) S4 (6' to 8'): Loose, brown fine to coarse SAND, some SILT, little fine gravel, very moist. (Passable FT) Rec. = 0.83 ft (AASHTO M145 Classification: A-2-4.) S5 (8' to 11'): Loose, no recovery. Rec. = 0.0 ft	18-9-8 (17)	4.2	35.4	48.5	15.1	NP	NP			
	5-11	4-5-11 (17)	7.1	41.4	43.3	15.3	NP	NP				
	10-9-5	10-9-5 (15)	10.2	49.5	35.6	14.9	NP	NP				
	4-5-4-5	4-5-4-5 (8)	15.7	21.6	48.9	28.5	NP	NP				
	7-4-5-7	7-4-5-7 (8)										
	7-6-6-6	7-6-6-6 (12)	28.7	2.3	97.7	NP	NP					
15	11-13	S6 (11' to 13'): Medium dense; S6A (Upper 5'): Brown fine to coarse SAND and SILT, trace fine gravel (concentrated at top of sample), wet. S6B (Lower 3'): Gray SILT, trace fine sand, wet. (Sand/Silt) Rec. = 0.87 ft (AASHTO M145 Classification: A-4.) C1 (13' to 13.7'): Hard, slightly weathered, gray with white QUARTZITE BOULDER.	18-19-19 (38)	10.5	48.1	17.5	34.4	NP	NP			
	14-16	S7 (14' to 16'): Dense, greenish-gray fine to coarse GRAVEL and SILT, some fine to coarse sand, moist. (Glacial Till) Rec. = 0.5 ft (AASHTO M145 Classification: A-2-4.) S8 (16' to 18'): Dense, gray fine to coarse SAND, some SILT, some fine gravel, moist to wet. (Glacial Till) Rec. = 1.17 ft (AASHTO M145 Classification: A-2-4.) S9 (18' to 19.3'): Refused, gray SILT, some fine to coarse sand, some fine to coarse gravel (fractured), wet. (Glacial Till) Rec. = 0.25 ft (AASHTO M145 Classification: A-4.) S10 (21' to 21.2'): Refused, gray fine to coarse GRAVEL, some fine to coarse sand, little SILT, wet. (Glacial Till) Rec. = 0.17 ft (AASHTO M145 Classification: A-1-b.) S11 (24' to 24.5'): Refused, gray SILT and fine to coarse SAND, trace fine gravel, moist. (Glacial Till) Rec. = 0.5 ft (AASHTO M145 Classification: A-4.)	9-18-18 (38)	10.4	38.0	31.5	29.5	NP	NP			
	19-19.3	00/3" (6)	8.5	38.4	23.4	38.2	NP	NP				
	21-21.2	00/2" (6)	7.5	63.1	20.0	16.9	NP	NP				
	24-24.5	100/6" (6)	8.5	14.9	31.7	53.4	NP	NP				
25	29-28.5	S12 (29' to 28.5'): Refused, gray SILT and fine to coarse SAND, little fine gravel, moist. (Glacial Till) Rec. = 0.5 ft	100/6" (6)	9.0	18.1	29.9	52.0	NP	NP			

Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual.  
 2. If values have not been corrected for hammer energy, CE is the hammer energy correction factor.  
 3. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

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**BORING LOG** Boring No.: B-1A/B Page No.: 2 of 3 Pin No.: 12158 Checked By: JFW

Richard BR# 0302(28) Richard, VT GeoDesign # 750-09.13

Boring Crew: J. Leonhardt (TransTech), A. Barbour (GeoDesign)  
 Date Started: 9/04/13 Date Finished: 9/05/13  
 VTSFG MOBS: N 809895.07 ft E 1582596.89 ft  
 Station: 44+19 Offset: S' L  
 Ground Elevation: 436.5 ft

Casing Sampler: FJ SS  
 L.D.: 4 in 2 in  
 Hammer Wt: 140 lb. 140 lb.  
 Hammer Fall: 30 in. 30 in.  
 Hammer/Rod Type: Auto/W/M  
 Rig: CME S50X ATV CE = ~1.5

Groundwater Observations (3)  
 Date: 09/04/13 Depth (ft): See Note 3.

Depth (ft)	Strat (ft)	CLASSIFICATION OF MATERIALS (Description)	Run (ft)	Core Rec. (ft)	DR Bit (ft)	Wash. Cont. %	Gravel %	Sand %	Fines %	LL %	PL %
35	34-35	(AASHTO M145 Classification: A-4.) S13 (34' to 35'): Refused, gray fine to coarse SAND and SILT, little fine gravel, wet. (Glacial Till) Rec. = 0.83 ft (AASHTO M145 Classification: A-4.)	58-100/3.5" (6)	12.2	18.0	46.3	35.7	NP	NP		
40	38-38.4	S14 (38' to 38.4'): Refused, gray and greenish gray fine to coarse SAND and SILT, some fine gravel, wet. Approximately 2" in spoon shoe of possible weathered bedrock. (Glacial Till) Rec. = 0.42 ft (AASHTO M145 Classification: A-2-4.) Inferred Weathered Bedrock C2 (41' to 48'): Poor quality, gray-greenish gray, moderately hard, fine grained, moderately weathered PHYLLITE interbedded with Quartz, fracture angle approximately 45 to 90 degrees.	C2 83 (48)	3.5							
	40-41	Top of Bedrock @ 41.0 ft	4								
	41-48	5.5									
	48-51	6.5									
50	48-51	C3 (48' to 51'): Poor quality, greenish gray, moderately hard, fine grained, moderate weathered PHYLLITE, fracture angle approximately 80 to 80 degrees.	C3 87 (47)	4							
	48-51	5									
	51-51.7	6									
	51-51.7	6									
	51-51.7	6									
55		Hole stopped @ 51.0 ft B-1A abandoned; B-1B end of Core									

Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual.  
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 3. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

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**BORING LOG** Boring No.: B-1A/B Page No.: 3 of 3 Pin No.: 12158 Checked By: JFW

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Boring Crew: J. Leonhardt (TransTech), A. Barbour (GeoDesign)  
 Date Started: 9/04/13 Date Finished: 9/05/13  
 VTSFG MOBS: N 809895.07 ft E 1582596.89 ft  
 Station: 44+19 Offset: S' L  
 Ground Elevation: 436.5 ft

Casing Sampler: FJ SS  
 L.D.: 4 in 2 in  
 Hammer Wt: 140 lb. 140 lb.  
 Hammer Fall: 30 in. 30 in.  
 Hammer/Rod Type: Auto/W/M  
 Rig: CME S50X ATV CE = ~1.5

Groundwater Observations (3)  
 Date: 09/04/13 Depth (ft): See Note 3.

Depth (ft)	Strat (ft)	CLASSIFICATION OF MATERIALS (Description)	Run (ft)	Core Rec. (ft)	DR Bit (ft)	Wash. Cont. %	Gravel %	Sand %	Fines %	LL %	PL %
5	5-11	5) Advanced casing in B-18 to 14' deep prior to continuing with soil sampling. 6) Noted occasional roller bit grinding/chatter below 18' deep, on inferred gravel. 7) Encountered inferred weathered bedrock at approximately 39.2' deep based on spRl spoon resistance. Roller bit penetration slowed to approximately 1 inch in 5 minutes of approximately 41' deep on inferred top of competent rock. Began rock core at 41' deep. 8) Used reduced drilling RPM and pressure for entire rock core. Encountered oscillations of drill string below 48' deep, most pronounced from 50' to 51' deep, where driller had to pause every 10 to 30 seconds to correct. 9) Grouted borehole with 1 bag portland cement, 1/2 bag bentonite powder, and 40 gallons water. Topped off borehole with approximately 3 inches of cold pack asphalt of the rock surface. 10) All visual descriptions are per the Burmister classification system. All lab gradations are per the AASHTO M 145 classification system.									

Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual.  
 2. If values have not been corrected for hammer energy, CE is the hammer energy correction factor.  
 3. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.



**BORING LOG**

Richford BR# 0302(29)  
Richford, VT  
GeoDesign # 750-09.13

Boring No.: B-2  
Page No.: 1 of 2  
Pin No.: 12|158  
Checked By: JFW

Boring Crew: J. Leonhardt (TransTech), A. Baribault (GeoDesign)  
Date Started: 9/09/13 Date Finished: 9/09/13  
VTSPP NAD83: N 909686.67 ft E 1592603.64 ft  
Station: 44+15 Offset: 5' R  
Ground Elevation: 436.5 ft

Type: FJ  
I.D.: 4 in  
Hammer Wt: 140 lb  
Hammer Fall: 30 in  
Hammer/Rod Type: Auto/NWJ  
Rig: CME 550X ATV  
Casing: FJ  
Sampler: SS  
Date: 09/09/13  
Notes: Not recorded.  
Groundwater Observations (3)

Depth (ft)	Strat(1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (ROD %)	Drill Rate minutes/ft	Blows/6" (N Value)(2)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
0-5	X X X X	6" Asphalt Inferred Fill										
5-10	X X X X	Inferred Boulder / Cobble Inferred Fill S1 (9' to 11'): Medium dense, brown fine to coarse SAND and fine to coarse GRAVEL, little Silt, wet. Rec. = 0.83 ft (AASHTO M145 Classification: A-1-b.) Inferred Possible Fill				4-9-16-14	11.3	50.1	32.3	17.6	NP	NP
10-15	X X X X	Inferred Silt / Sand										
15-25	X X X X	Inferred Glacial Till										

Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual.  
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GeoDesign # 750-09.13

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Page No.: 2 of 2  
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Date Started: 9/09/13 Date Finished: 9/09/13  
VTSPP NAD83: N 909686.67 ft E 1592603.64 ft  
Station: 44+15 Offset: 5' R  
Ground Elevation: 436.5 ft

Type: FJ  
I.D.: 4 in  
Hammer Wt: 140 lb  
Hammer Fall: 30 in  
Hammer/Rod Type: Auto/NWJ  
Rig: CME 550X ATV  
Casing: FJ  
Sampler: SS  
Date: 09/09/13  
Notes: Not recorded.  
Groundwater Observations (3)

Depth (ft)	Strat(1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (ROD %)	Drill Rate minutes/ft	Blows/6" (N Value)(2)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
0-35	X X X X	Inferred Fill										
35-40	X X X X	Inferred Boulder / Cobble Inferred Fill										
40-43.5	X X X X	C1 (40' to 43.5'): Poor quality, moderately hard, silver-gray-green PHYLLITE. Fractures at approximately 60 to 90 degrees.		C1	67 (33)	2.3						
43.5-45	X X X X	Hole stopped @ 43.5 ft										
45-55	X X X X	Inferred Silt / Sand										
55-60	X X X X	Inferred Glacial Till										

Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual.  
2. N Values have not been corrected for hammer energy. CE is the hammer energy correction factor.  
3. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

GEODESIGN BORING LOG: 750-09.13 RICHFORD VTRANS.GPJ VERMONT\_AOT.GDT 11/22/13

GEODESIGN BORING LOG: 750-09.13 RICHFORD VTRANS.GPJ VERMONT\_AOT.GDT 11/22/13

Remarks:  
1) Hammer efficiency correction factor is assumed. Strata breaks and composition are inferred from roller bit and casing resistance observed during borehole advance and soil samples collected in nearby Borings B-1 and B-4. Elevation, station and offset are estimated by GeoDesign from site plans provided by VTrans and topped measurements from existing features made in the field by GeoDesign personnel. They should be considered accurate only to the degree implied by the method of location used.  
2) Drove casing to near refusal at approximately 7' deep and cleaned out with roller bit. Return water brown, except gray/greenish-gray from 7' to 7.5' deep. Casing drove at approximately 100 to 200 blows per inch from 7' to 7.3' deep.  
3) Inferred gravel fill to 5' deep. Inferred elevated gravel content from 5' to 9' deep based on roller bit grinding. Inferred cobble/boulder at 7' to 7.5' deep.  
4) Infer strata change between 13' and 15' deep due to decrease in resistance and grinding during casing and roller bit advance from 13' to 14' deep and a change in wash water color to gray between 14' and 15' deep.  
5) Infer strata change to glacial till at 17' deep based on increased roller bit resistance. Note quartz gravel in the return water.  
6) Encountered inferred gravel within the soil matrix based on roller bit resistance at 26', 27.5', 28.5', 30', 33', 34', 35', and 37.5' deep. Encountered roller bit refusal at 40' deep on inferred competent bedrock.  
7) Lowered drilling RPM while coring at 42.5' deep due to rig oscillations. Water hose burst while advancing core barrel at 43.5' deep. Terminated boring at 43.5' deep.  
8) Borehole backfilled with winter sand mix and topped with approximately 3 inches of cold patch asphalt at the ground surface.  
9) All visual descriptions are per the Burmister classification system. All lab gradations are per the AASHTO M 145 classification system.

Top of Bedrock @ 40.0 ft



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**BORING LOG** Boring No.: B-4  
Richard BRF 0302(29) Page No.: 1 of 3  
Richford, VT File No.: 12158  
GeoDesign # 750-09.13 Checked By: JFW

Boring Crew: J. Leenhardt (TransTech), A. Barbovici (GeoDesign)  
Date Started: 9/03/13 Date Finished: 9/04/13  
VSPG MADS: M 909724.15 ft E 1592624.76 ft  
Station: 44+58 Offset: 5' R  
Ground Elevation: 437 ft

Type: Casing Sampler  
I.D.: 4 in SS  
Hammer Wt: 140 lb. SS  
Hammer Fall: 30 in. SS  
Hammer/rod Type: Auto/MWJ  
Rig: CME 550K ATV CE = ~1.5

Groundwater Observations (3)  
Date Depth (ft) Notes  
09/03/13 10.0 Wet sample  
09/04/13 9.5 In Casing

Depth (ft)	Strat (ft)	CLASSIFICATION OF MATERIALS (Description)	Pen (lb/ft²)	Casing		Moisture Content (%)	Gravel %	Sand %	Fines %	LL %	PL %
				Core No. (ft)	Drill Rate (min/ft)						
0	0	6" Asphalt									
0-1	0-1	S1 (0.5' to 2'): Medium dense, tan fine to coarse SAND, little fine gravel, little SIL, slightly moist. (Roadbase F8) Rec. = 1.08 ft (AASHTO M145 Classification: A-1-b.)	8-15-14 (26)	4.7	29.3	51.9	18.8	NP	NP		
1-2	1-2	S2 (2' to 4'): Medium dense, brown fine to coarse SAND, some fine to coarse gravel, some SIL, moist. (Subbase F8) Rec. = 1.0 ft (AASHTO M145 Classification: A-1-b.)	11-9-7-6 (16)	8.0	42.5	35.7	21.8	NP	NP		
2-3	2-3	S3 (4' to 6'): Loose, brown fine to coarse SAND, some SIL, little fine gravel, moist. (Possible F8) Rec. = 0.67 ft (AASHTO M145 Classification: A-2-4.)	3-2-3-2 (5)	16.0	26.1	52.5	21.4	NP	NP		
3-4	3-4	S4 (6' to 8'): Loose, brown and gray fine to coarse SAND, some SIL, trace fine gravel, very moist. (Possible F8) Rec. = 1.08 ft (AASHTO M145 Classification: A-2-4.)	4-3-1-3 (4)	23.2	8.5	58.4	32.1	NP	NP		
4-5	4-5	S5 (9' to 11'): Loose, gray SILT, little fine to coarse SAND, trace fine gravel (concentrated in top of sample), wet. (SH / Sand) Rec. = 1.17 ft (AASHTO M145 Classification: A-4.)	3-3-2-4 (5)	25.1	9.6	4.2	86.2	22	1		
5-6	5-6	S6 (11' to 13'): Medium dense, gray SILT, some Clayey SIL, trace fine Sand, wet. (SH / Sand) Rec. = 1.67 ft (AASHTO M145 Classification: A-4.)	4-8-5-6 (11)	27.8	1.3	98.7	25	6			
6-7	6-7	S7 (14' to 16'): Loose, gray SILT and Clayey SILT (laminated), trace fine Sand, wet. (SH / Sand) Rec. = 1.67 ft (AASHTO M145 Classification: A-4.)	3-4-3-3 (7)	28.8	1.0	99.0	24	5			
7-8	7-8	S8A (16' to 17') - Upper 8" of S8: Medium dense, gray SILT, trace Clayey SIL, trace fine Sand, wet. (SH / Sand) Rec. = 1.0 ft (AASHTO M145 Classification: A-4.)	5-2-8-10 (10)	27.4	2.7	97.3	22	2			
8-9	8-9	S8B (17' to 18') - Lower 4" of S8: Medium dense, gray fine to coarse SAND, some SIL, some fine gravel, wet. (Diastal TB) (AASHTO M145 Classification: A-2-4.)	9-16-20 (26)	9.5	35.3	34.2	30.5	NP	NP		
9-10	9-10	S9 (19' to 21'): Dense, gray fine to coarse SAND, some fine to coarse gravel, some SIL, moist to wet. (Diastal TB) Rec. = 1.33 ft (AASHTO M145 Classification: A-2-4.)	24-29-27-28 (56)	10.0	32.7	32.0	35.5	NP	NP		
10-11	10-11	S10 (21' to 23'): Very dense, gray/green fine to coarse SAND and SILT, some fine gravel, moist to wet. (Diastal TB) Rec. = 1.25 ft (AASHTO M145 Classification: A-2-4.)	80/5.5" (8)	9.1	29.7	32.5	37.8	NP	NP		
11-12	11-12	S11 (24' to 24.4'): Refusal, gray SILT and fine to coarse SAND, some fine to coarse gravel, moist to wet. (Diastal TB) Rec. = 0.42 ft (AASHTO M145 Classification: A-4.)	80/5.5" (8)	9.7	14.4	33.8	51.8	NP	NP		
12-13	12-13	S12 (26' to 28.4'): Refusal, gray SILT and fine to coarse SAND, some fine gravel, moist. (Diastal TB) Rec. = 0.42	80/5.5" (8)	9.7	14.4	33.8	51.8	NP	NP		

Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual.  
2. If values have not been corrected for hammer energy, CE is the hammer energy correction factor.  
3. Only test results have been made of fines and water content data. Fractures of granular material may occur due to other factors than those present at the time measurements were made.

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Ground Elevation: 437 ft

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I.D.: 4 in SS  
Hammer Wt: 140 lb. SS  
Hammer Fall: 30 in. SS  
Hammer/rod Type: Auto/MWJ  
Rig: CME 550K ATV CE = ~1.5

Groundwater Observations (3)  
Date Depth (ft) Notes  
09/03/13 10.0 Wet sample  
09/04/13 9.5 In Casing

Depth (ft)	Strat (ft)	CLASSIFICATION OF MATERIALS (Description)	Pen (lb/ft²)	Casing		Moisture Content (%)	Gravel %	Sand %	Fines %	LL %	PL %
				Core No. (ft)	Drill Rate (min/ft)						
11-12	11-12	S13 (54' to 34.3'): Refusal, gray SILT, some fine to coarse SAND, some fine to coarse gravel (fractured, platy), moist. (Diastal TB) Rec. = 0.33 ft (AASHTO M145 Classification: A-4.)	80/4" (8)	9.3	29.0	28.9	44.1	NP	NP		
13-14	13-14	S14 (39' to 39.2'): Refusal, gray and white SILT, some fine to coarse gravel, some fine to coarse SAND, moist. (Diastal TB) Rec. = 0.25 ft (AASHTO M145 Classification: A-4.)	100/3" (8)	8.9	36.5	24.0	39.5	NP	NP		
14-15	14-15	S15 (44' to 44.2'): Refusal, gray WEATHERED PHYLLITE C1 (44' to 48'): Very poor quality, gray to greenish-gray, fine-grained weathered to extremely weathered (majority of core weathered) PHYLLITE, fracture angle estimated of 70 to 90 degrees.	C1 25 (0)	2.5	100/2" (8)	4.3					
15-16	15-16	S16 (49' to 49.1'): Refusal, gray WEATHERED PHYLLITE with highly weathered zones. C2 (49' to 54'): Fair quality, greenish-gray fine grained, slightly to moderately weathered PHYLLITE, fracture angle approximately 45 to 70 degrees.	C2 78 (50)	5.5	100/1" (8)	2				Top of Bedrock @ 49.0 ft	
16-17	16-17	S17 (54' to 56'): Poor quality, greenish-gray fine grained, moderately weathered PHYLLITE, fracturing approximately 70 to 90 degrees.	C3 80 (25)	3.5		4					
17-18	17-18					5					
18-19	18-19					7					
19-20	19-20					8					
20-21	20-21					9					
21-22	21-22					10					
22-23	22-23					11					
23-24	23-24					12					
24-25	24-25					13					
25-26	25-26					14					
26-27	26-27					15					
27-28	27-28					16					
28-29	28-29					17					
29-30	29-30					18					
30-31	30-31					19					
31-32	31-32					20					
32-33	32-33					21					
33-34	33-34					22					
34-35	34-35					23					
35-36	35-36					24					
36-37	36-37					25					
37-38	37-38					26					
38-39	38-39					27					
39-40	39-40					28					
40-41	40-41					29					
41-42	41-42					30					
42-43	42-43					31					
43-44	43-44					32					
44-45	44-45					33					
45-46	45-46					34					
46-47	46-47					35					
47-48	47-48					36					
48-49	48-49					37					
49-50	49-50					38					
50-51	50-51					39					
51-52	51-52					40					
52-53	52-53					41					
53-54	53-54					42					
54-55	54-55					43					
55-56	55-56					44					
56-57	56-57					45					
57-58	57-58					46					
58-59	58-59					47					
59-60	59-60					48					
60-61	60-61					49					
61-62	61-62					50					
62-63	62-63					51					
63-64	63-64					52					
64-65	64-65					53					
65-66	65-66					54					
66-67	66-67					55					
67-68	67-68					56					
68-69	68-69					57					
69-70	69-70					58					
70-71	70-71					59					
71-72	71-72					60					
72-73	72-73					61					
73-74	73-74					62					
74-75	74-75					63					
75-76	75-76					64					
76-77	76-77					65					
77-78	77-78					66					
78-79	78-79					67					
79-80	79-80					68					
80-81	80-81					69					
81-82	81-82					70					
82-83	82-83					71					
83-84	83-84					72					
84-85	84-85					73					
85-86	85-86					74					
86-87	86-87					75					
87-88	87-88					76					
88-89	88-89					77					
89-90	89-90					78					
90-91	90-91					79					
91-92	91-92					80					
92-93	92-93					81					
93-94	93-94					82					
94-95	94-95					83					
95-96	95-96					84					
96-97	96-97					85					
97-98	97-98					86					
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99-100	99-100					88					
100-101	100-101					89					
101-102	101-102					90					
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103-104	103-104					92					
104-105	104-105					93					
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106-107	106-107					95					
107-108	107-108					96					
108-109	108-109					97					
109-110	109-110					98					
110-111	110-111					99					
111-112	111-112					100					
112-113	112-113					101					