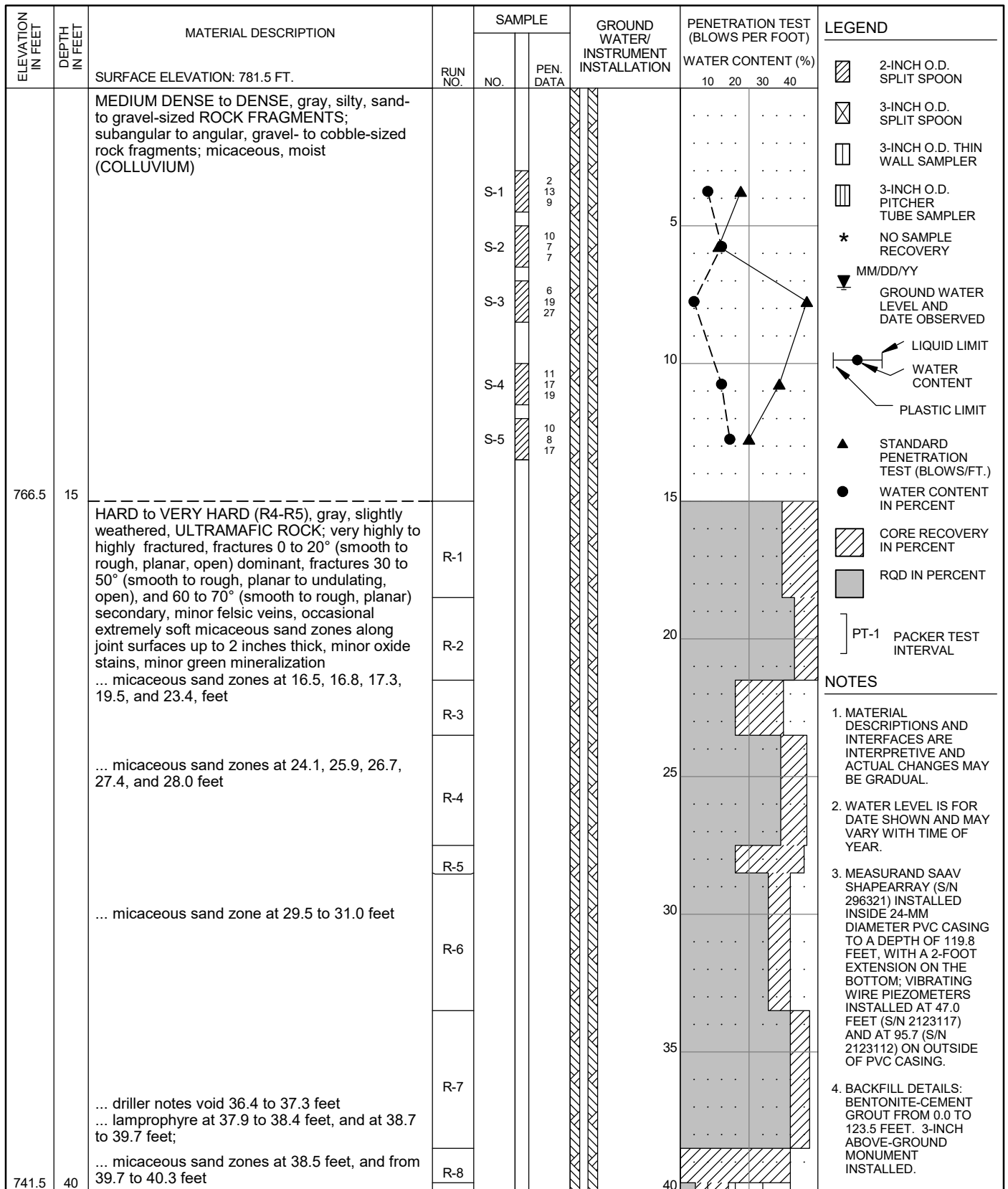




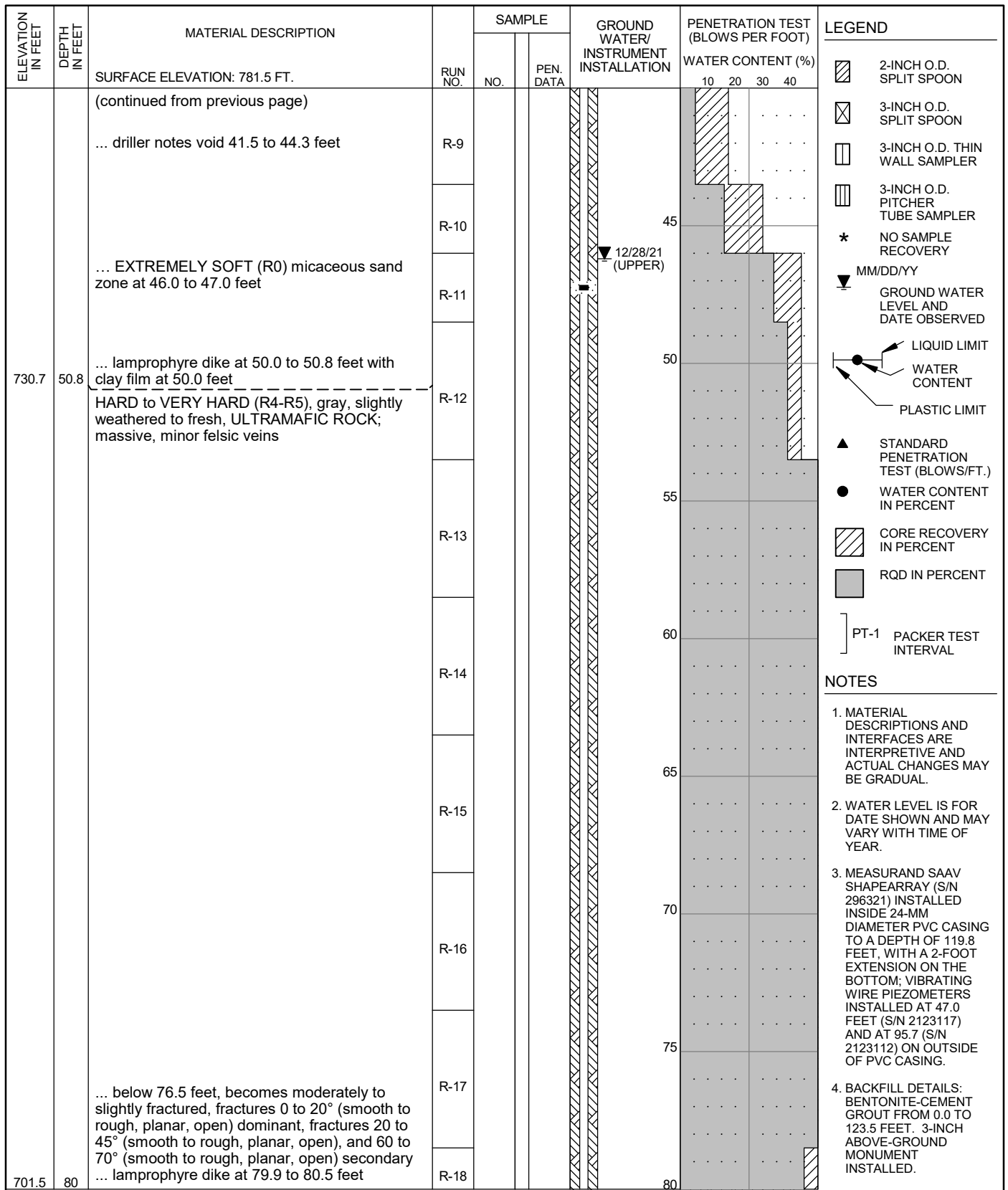
Appendix A: Summary Boring Logs



HAMMER ASSEMBLY: AUTO TRIP SPT SAMPLER: NO LINER - CONSTANT ID RECOVERY/RQD (%)

DRILL ROD USED: NWJ BOREHOLE DIAM.: 4.5" (0.0'-15'); 3.78" (15'-123.5')

DRILLER: DISCOVERY DATE START: 9/9/2021 FINISH: 9/12/2021 DRILLING TECHNIQUE: HWT CASING ADVANCER/HQ3 CORING	 10250 S.W. Greenburg Road, Suite 111 Portland, Oregon 97223 Phone 503-452-1200 Fax 503-452-1528	SUMMARY BORING LOG LT-1 (1 of 4) BEACH RD LANDSLIDE HAINES, AK	MAR 2022
			PROJ 2930
			FIG. A-1



20 40 60 80
RECOVERY/RQD (%)

HAMMER ASSEMBLY: AUTO TRIP
DRILL ROD USED: NWJ

SPT SAMPLER: NO LINER - CONSTANT ID
BOREHOLE DIAM.: 4.5" (0.0'-15'); 3.78" (15'-123.5')

DRILLER: DISCOVERY
DATE START: 9/9/2021 FINISH: 9/12/2021
DRILLING TECHNIQUE: HWT CASING
ADVANCER/HQ3 CORING

10250 S.W. Greenburg Road, Suite 111
Portland, Oregon 97223
Phone 503-452-1200 Fax 503-452-1528

SUMMARY BORING LOG
LT-1 (2 of 4)

BEACH RD LANDSLIDE
HAINES, AK

MAR 2022
PROJ 2930
FIG. **A-1**

- NOTES**
- MATERIAL DESCRIPTIONS AND INTERFACES ARE INTERPRETIVE AND ACTUAL CHANGES MAY BE GRADUAL.
 - WATER LEVEL IS FOR DATE SHOWN AND MAY VARY WITH TIME OF YEAR.
 - MEASURAND SAAV SHAPEARRAY (S/N 296321) INSTALLED INSIDE 24-MM DIAMETER PVC CASING TO A DEPTH OF 119.8 FEET, WITH A 2-FOOT EXTENSION ON THE BOTTOM; VIBRATING WIRE PIEZOMETERS INSTALLED AT 47.0 FEET (S/N 2123117) AND AT 95.7 (S/N 2123112) ON OUTSIDE OF PVC CASING.
 - BACKFILL DETAILS: BENTONITE-CEMENT GROUT FROM 0.0 TO 123.5 FEET. 3-INCH ABOVE-GROUND MONUMENT INSTALLED.

ELEVATION IN FEET	DEPTH IN FEET	MATERIAL DESCRIPTION	RUN NO.	SAMPLE		GROUND WATER/ INSTRUMENT INSTALLATION	PENETRATION TEST (BLOWS PER FOOT)				LEGEND
				NO.	PEN. DATA		WATER CONTENT (%)				
		SURFACE ELEVATION: 781.5 FT.					10	20	30	40	
		(continued from previous page)	R-18								
		... lamprophyre at 88.5 to 88.9 feet	R-19				85				
		... lamprophyre at 92.2 to 93.8 feet	R-20				90				
		... major felsic veins below 93.8 feet	R-21				95				
		... very highly fractured and altered rock at felsic vein contact from 95.8 to 96.0 feet	R-21			12/28/21 (DRY)					
		... highly to moderately fractured zone with numerous healed fractures from 101.0 to 105.5 feet	R-22				100				
		... lamprophyre at 101.3 to 105.5 feet	R-23				105				
			R-24				110				
			R-25				115				
		... lamprophyre at 117.5 to 118.5 feet	R-26				120				

- LEGEND**
- 2-INCH O.D. SPLIT SPOON
 - 3-INCH O.D. SPLIT SPOON
 - 3-INCH O.D. THIN WALL SAMPLER
 - 3-INCH O.D. PITCHER TUBE SAMPLER
 - NO SAMPLE RECOVERY
 - MM/DD/YY
 - GROUND WATER LEVEL AND DATE OBSERVED
 - LIQUID LIMIT
 - WATER CONTENT
 - PLASTIC LIMIT
 - STANDARD PENETRATION TEST (BLOWS/FT.)
 - WATER CONTENT IN PERCENT
 - CORE RECOVERY IN PERCENT
 - RQD IN PERCENT
 - PT-1 PACKER TEST INTERVAL

- NOTES**
1. MATERIAL DESCRIPTIONS AND INTERFACES ARE INTERPRETIVE AND ACTUAL CHANGES MAY BE GRADUAL.
 2. WATER LEVEL IS FOR DATE SHOWN AND MAY VARY WITH TIME OF YEAR.
 3. MEASURAND SAAV SHAPEARRAY (S/N 296321) INSTALLED INSIDE 24-MM DIAMETER PVC CASING TO A DEPTH OF 119.8 FEET, WITH A 2-FOOT EXTENSION ON THE BOTTOM; VIBRATING WIRE PIEZOMETERS INSTALLED AT 47.0 FEET (S/N 2123117) AND AT 95.7 (S/N 2123112) ON OUTSIDE OF PVC CASING.
 4. BACKFILL DETAILS: BENTONITE-CEMENT GROUT FROM 0.0 TO 123.5 FEET. 3-INCH ABOVE-GROUND MONUMENT INSTALLED.

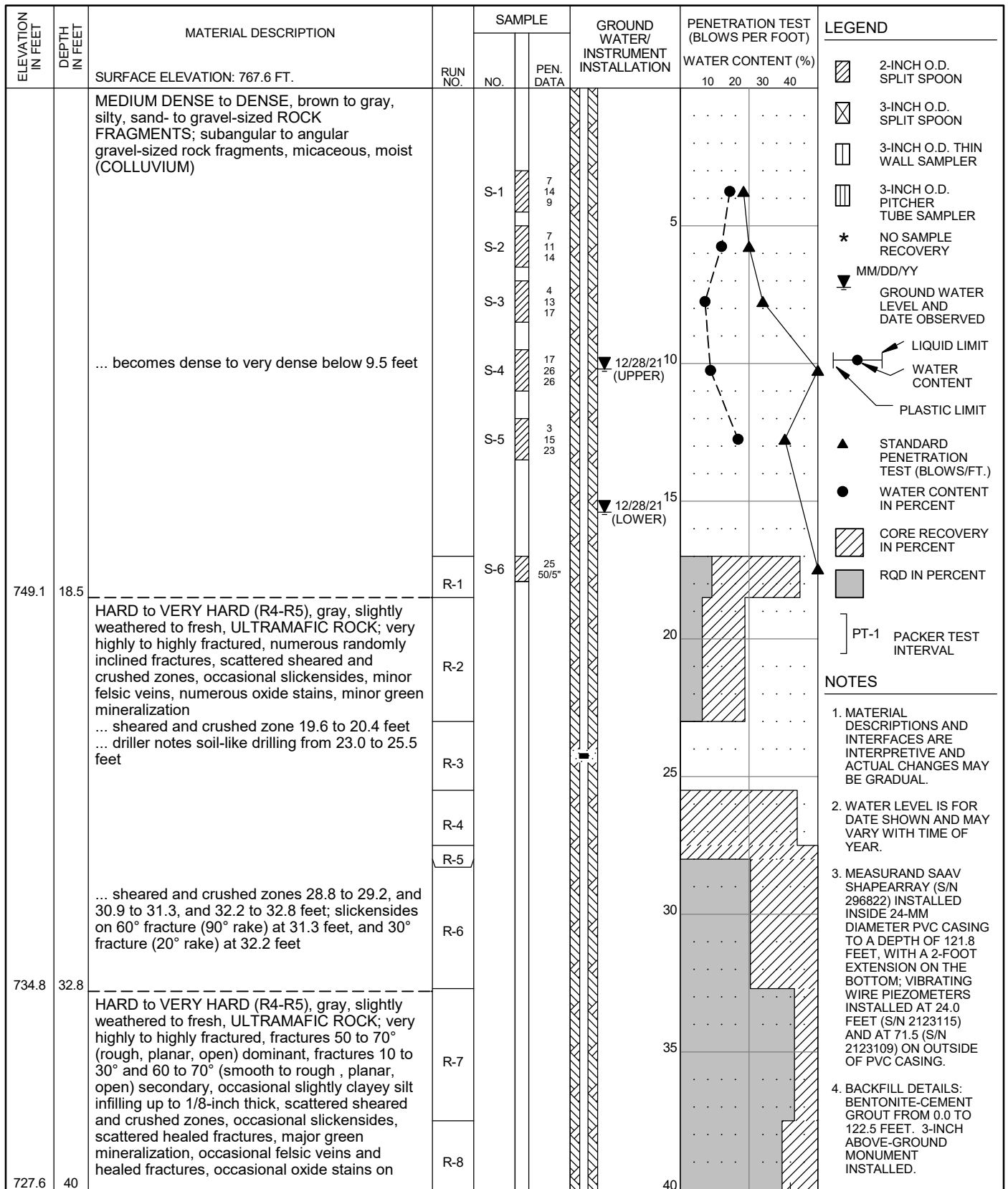
HAMMER ASSEMBLY: AUTO TRIP SPT SAMPLER: NO LINER - CONSTANT ID RECOVERY/RQD (%)
 DRILL ROD USED: NWJ BOREHOLE DIAM.: 4.5" (0.0'-15'); 3.78" (15'-123.5')

DRILLER: DISCOVERY DATE START: 9/9/2021 FINISH: 9/12/2021 DRILLING TECHNIQUE: HWT CASING ADVANCER/HQ3 CORING	 10250 S.W. Greenburg Road, Suite 111 Portland, Oregon 97223 Phone 503-452-1200 Fax 503-452-1528	SUMMARY BORING LOG LT-1 (3 of 4) BEACH RD LANDSLIDE HAINES, AK	MAR 2022
			PROJ 2930
			FIG. A-1

ELEVATION IN FEET	DEPTH IN FEET	MATERIAL DESCRIPTION	RUN NO.	SAMPLE		GROUND WATER/ INSTRUMENT INSTALLATION	PENETRATION TEST (BLOWS PER FOOT)				LEGEND		
				NO.	PEN. DATA		WATER CONTENT (%)						
		SURFACE ELEVATION: 781.5 FT.					10	20	30	40			
658.0	123.5	(continued from previous page)	R-26								2-INCH O.D. SPLIT SPOON 3-INCH O.D. SPLIT SPOON 3-INCH O.D. THIN WALL SAMPLER 3-INCH O.D. PITCHER TUBE SAMPLER * NO SAMPLE RECOVERY MM/DD/YY GROUND WATER LEVEL AND DATE OBSERVED LIQUID LIMIT WATER CONTENT PLASTIC LIMIT STANDARD PENETRATION TEST (BLOWS/FT.) WATER CONTENT IN PERCENT CORE RECOVERY IN PERCENT RQD IN PERCENT] PT-1 PACKER TEST INTERVAL		
		Bottom of Boring: 123.5 FT											
		125											
		130											
		135											
		140											
		145											
		150											
		155											
		160											


HAMMER ASSEMBLY: AUTO TRIP SPT SAMPLER: NO LINER - CONSTANT ID RECOVERY/RQD (%)
 DRILL ROD USED: NWJ BOREHOLE DIAM.: 4.5" (0.0'-15'); 3.78" (15'-123.5')

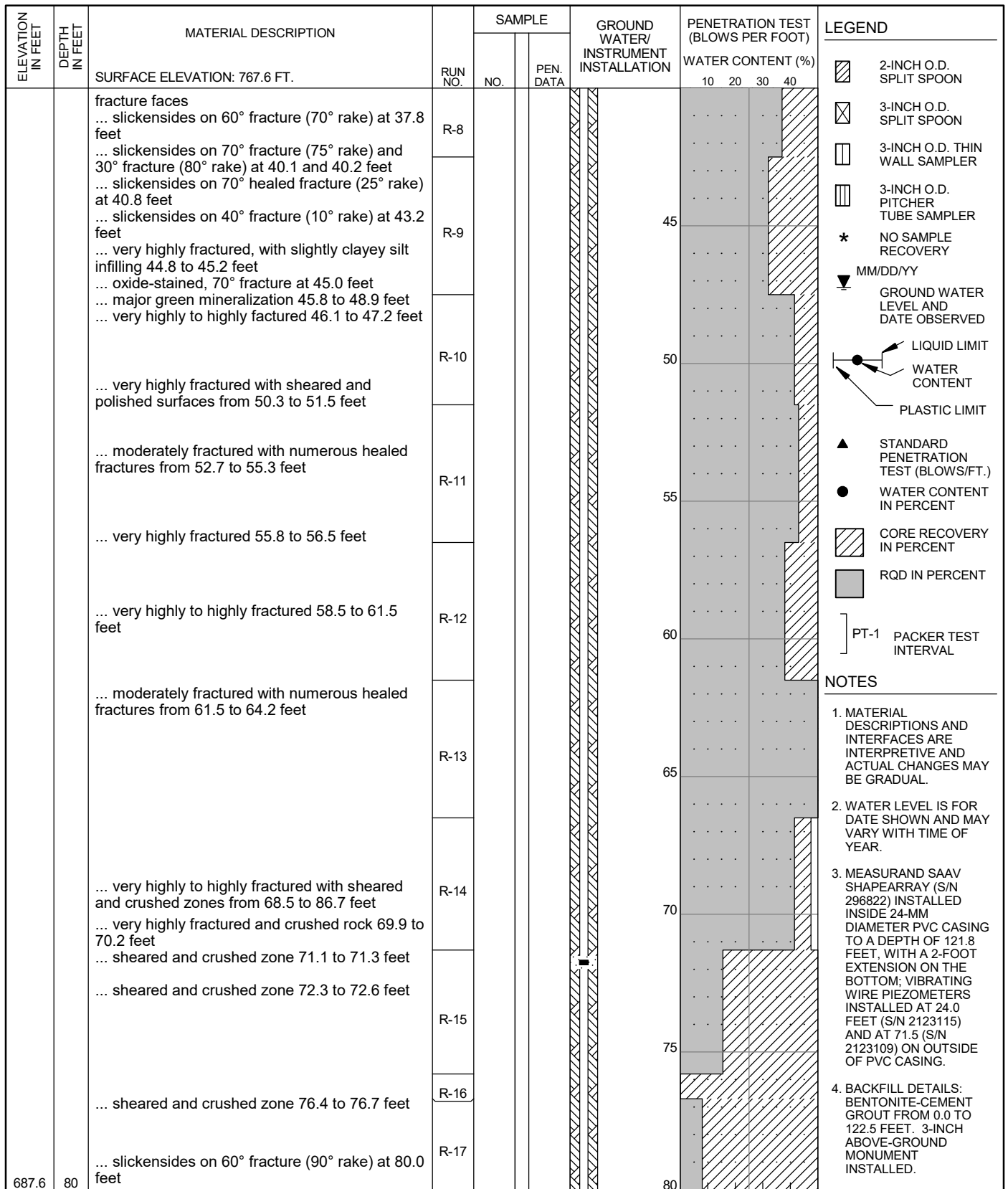
DRILLER: DISCOVERY DATE START: 9/9/2021 FINISH: 9/12/2021 DRILLING TECHNIQUE: HWT CASING ADVANCER/HQ3 CORING	 10250 S.W. Greenburg Road, Suite 111 Portland, Oregon 97223 Phone 503-452-1200 Fax 503-452-1528	SUMMARY BORING LOG LT-1 (4 of 4) BEACH RD LANDSLIDE HAINES, AK	MAR 2022
			PROJ 2930
			FIG. A-1



HAMMER ASSEMBLY: AUTO TRIP SPT SAMPLER: NO LINER - CONSTANT ID RECOVERY/RQD (%)

DRILL ROD USED: NWJ BOREHOLE DIAM.: 4.5" (0.0'-17.0'); 3.78" (17.0'-122.5')

DRILLER: DISCOVERY DATE START: 8/28/2021 FINISH: 8/30/2021 DRILLING TECHNIQUE: HWT CASING ADVANCER/HQ3 CORING	 10250 S.W. Greenburg Road, Suite 111 Portland, Oregon 97223 Phone 503-452-1200 Fax 503-452-1528	SUMMARY BORING LOG LT-2 (1 of 4) BEACH RD LANDSLIDE HAINES, AK	MAR 2022 PROJ 2930 FIG. A-2
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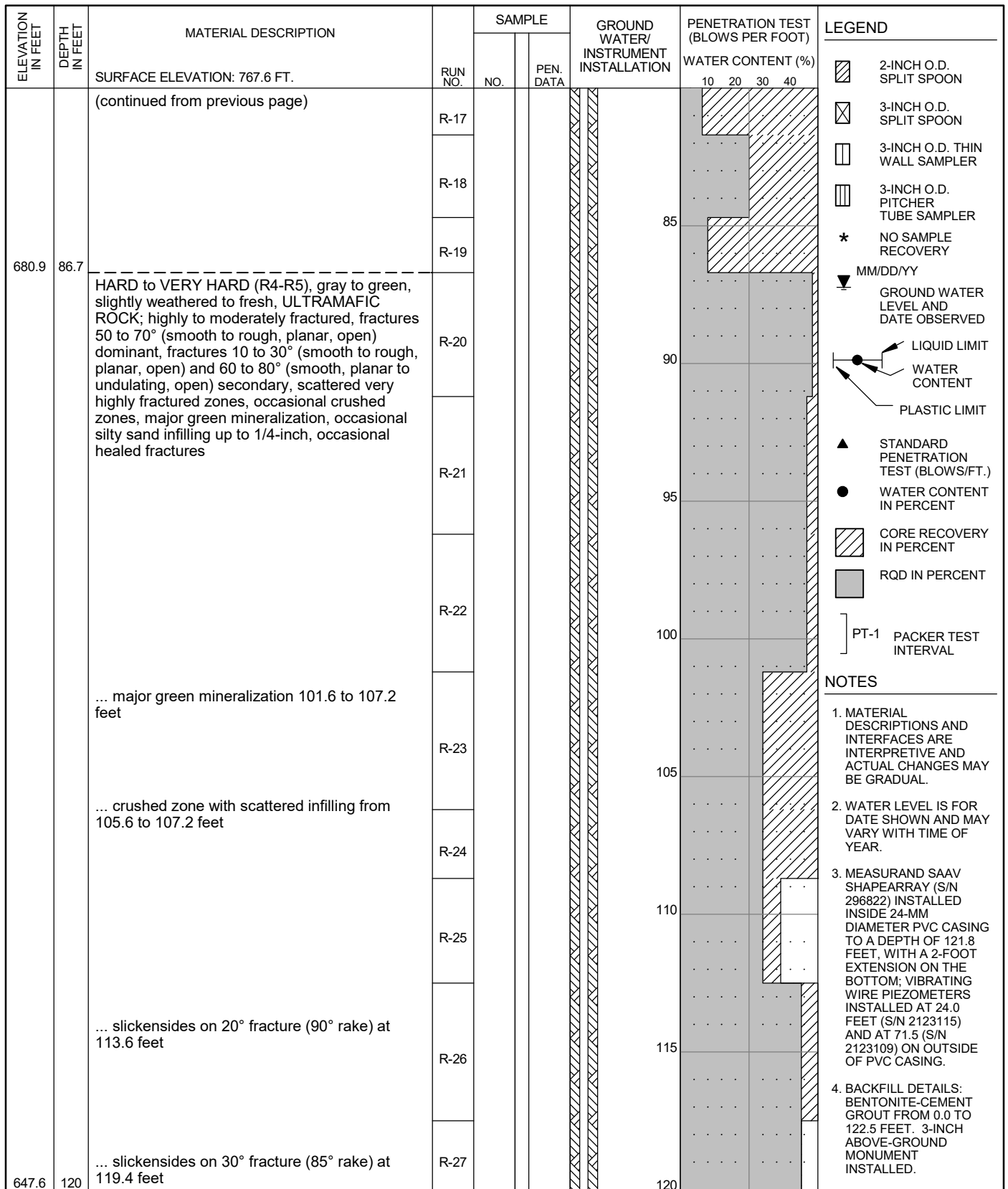
- LEGEND**
- 2-INCH O.D. SPLIT SPOON
 - 3-INCH O.D. SPLIT SPOON
 - 3-INCH O.D. THIN WALL SAMPLER
 - 3-INCH O.D. PITCHER TUBE SAMPLER
 - NO SAMPLE RECOVERY
 - MM/DD/YY GROUND WATER LEVEL AND DATE OBSERVED
 - LIQUID LIMIT
 - WATER CONTENT
 - PLASTIC LIMIT
 - STANDARD PENETRATION TEST (BLOWS/FT.)
 - WATER CONTENT IN PERCENT
 - CORE RECOVERY IN PERCENT
 - RQD IN PERCENT
 - PT-1 PACKER TEST INTERVAL

- NOTES**
1. MATERIAL DESCRIPTIONS AND INTERFACES ARE INTERPRETIVE AND ACTUAL CHANGES MAY BE GRADUAL.
 2. WATER LEVEL IS FOR DATE SHOWN AND MAY VARY WITH TIME OF YEAR.
 3. MEASURAND SAAV SHAPEARRAY (S/N 296822) INSTALLED INSIDE 24-MM DIAMETER PVC CASING TO A DEPTH OF 121.8 FEET, WITH A 2-FOOT EXTENSION ON THE BOTTOM; VIBRATING WIRE PIEZOMETERS INSTALLED AT 24.0 FEET (S/N 2123115) AND AT 71.5 (S/N 2123109) ON OUTSIDE OF PVC CASING.
 4. BACKFILL DETAILS: BENTONITE-CEMENT GROUT FROM 0.0 TO 122.5 FEET. 3-INCH ABOVE-GROUND MONUMENT INSTALLED.

HAMMER ASSEMBLY: AUTO TRIP SPT SAMPLER: NO LINER - CONSTANT ID RECOVERY/RQD (%)

DRILL ROD USED: NWJ BOREHOLE DIAM.: 4.5" (0.0'-17.0'); 3.78" (17.0'-122.5')

DRILLER: DISCOVERY DATE START: 8/28/2021 FINISH: 8/30/2021 DRILLING TECHNIQUE: HWT CASING ADVANCER/HQ3 CORING	 10250 S.W. Greenburg Road, Suite 111 Portland, Oregon 97223 Phone 503-452-1200 Fax 503-452-1528	SUMMARY BORING LOG LT-2 (2 of 4) BEACH RD LANDSLIDE HAINES, AK	MAR 2022
			PROJ 2930
			FIG. A-2



- NOTES**
- MATERIAL DESCRIPTIONS AND INTERFACES ARE INTERPRETIVE AND ACTUAL CHANGES MAY BE GRADUAL.
 - WATER LEVEL IS FOR DATE SHOWN AND MAY VARY WITH TIME OF YEAR.
 - MEASURAND SAAV SHAPEARRAY (S/N 296822) INSTALLED INSIDE 24-MM DIAMETER PVC CASING TO A DEPTH OF 121.8 FEET, WITH A 2-FOOT EXTENSION ON THE BOTTOM; VIBRATING WIRE PIEZOMETERS INSTALLED AT 24.0 FEET (S/N 2123115) AND AT 71.5 (S/N 2123109) ON OUTSIDE OF PVC CASING.
 - BACKFILL DETAILS: BENTONITE-CEMENT GROUT FROM 0.0 TO 122.5 FEET. 3-INCH ABOVE-GROUND MONUMENT INSTALLED.

HAMMER ASSEMBLY: AUTO TRIP SPT SAMPLER: NO LINER - CONSTANT ID RECOVERY/RQD (%)

DRILL ROD USED: NWJ BOREHOLE DIAM.: 4.5" (0.0'-17.0'); 3.78" (17.0'-122.5')

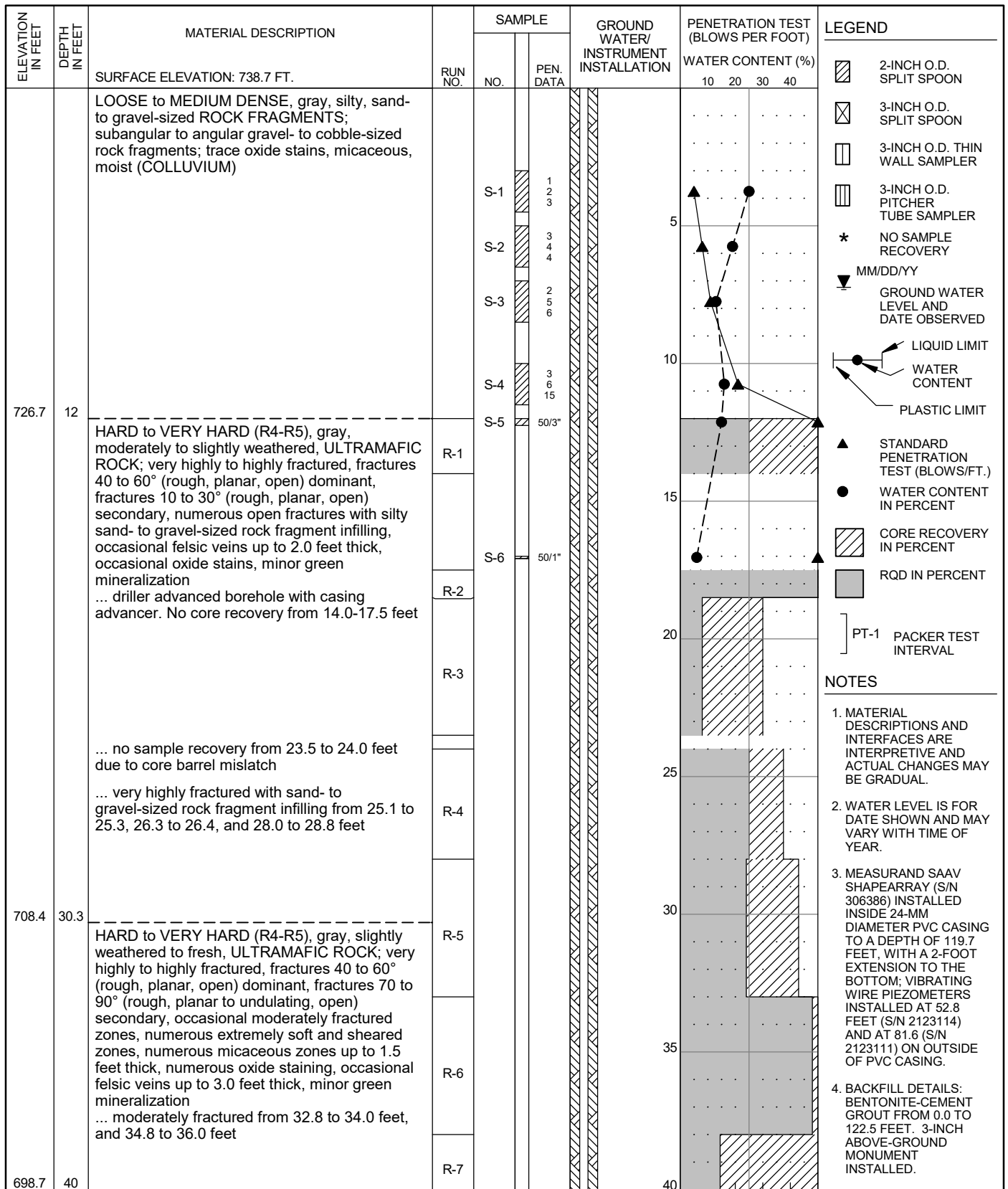
DRILLER: DISCOVERY DATE START: 8/28/2021 FINISH: 8/30/2021 DRILLING TECHNIQUE: HWT CASING ADVANCER/HQ3 CORING	<p>10250 S.W. Greenburg Road, Suite 111 Portland, Oregon 97223 Phone 503-452-1200 Fax 503-452-1528</p>	SUMMARY BORING LOG LT-2 (3 of 4) BEACH RD LANDSLIDE HAINES, AK	MAR 2022 PROJ 2930 FIG. A-2
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ELEVATION IN FEET	DEPTH IN FEET	MATERIAL DESCRIPTION	RUN NO.	SAMPLE		GROUND WATER/ INSTRUMENT INSTALLATION	PENETRATION TEST (BLOWS PER FOOT)				LEGEND									
				NO.	PEN. DATA		WATER CONTENT (%)													
		SURFACE ELEVATION: 767.6 FT.					10	20	30	40										
645.1	122.5	(continued from previous page)	R-27								<ul style="list-style-type: none"> 2-INCH O.D. SPLIT SPOON 3-INCH O.D. SPLIT SPOON 3-INCH O.D. THIN WALL SAMPLER 3-INCH O.D. PITCHER TUBE SAMPLER NO SAMPLE RECOVERY MM/DD/YY GROUND WATER LEVEL AND DATE OBSERVED LIQUID LIMIT WATER CONTENT PLASTIC LIMIT STANDARD PENETRATION TEST (BLOWS/FT.) WATER CONTENT IN PERCENT CORE RECOVERY IN PERCENT RQD IN PERCENT PT-1 PACKER TEST INTERVAL 									
		... slickensides on 50° fractures (90° rake) at 121.8 and 121.9 feet																		
		Bottom of Boring: 122.5 FT																		

HAMMER ASSEMBLY: AUTO TRIP SPT SAMPLER: NO LINER - CONSTANT ID RECOVERY/RQD (%)


DRILL ROD USED: NWJ BOREHOLE DIAM.: 4.5" (0.0'-17.0'); 3.78" (17.0'-122.5')

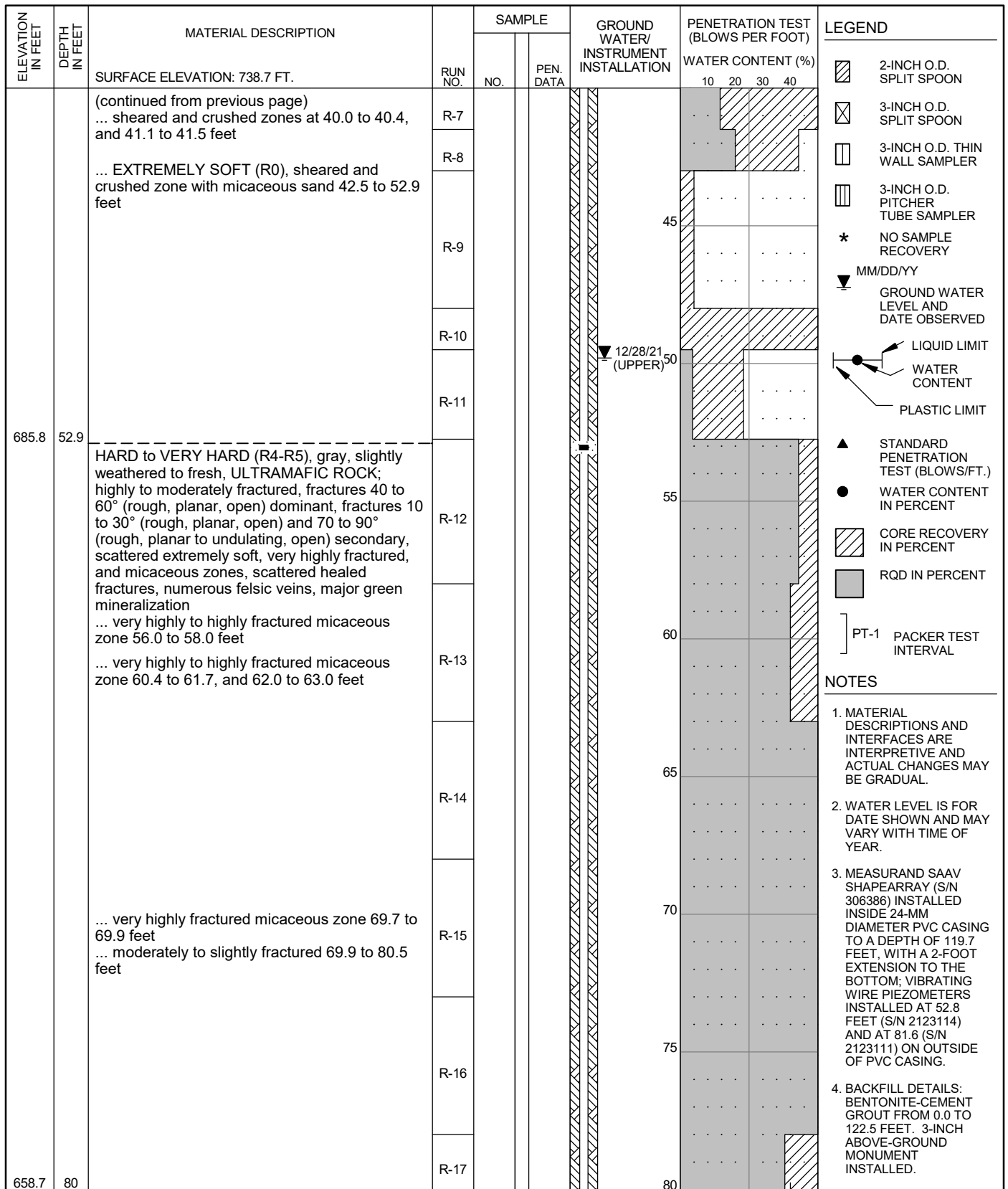
DRILLER: DISCOVERY DATE START: 8/28/2021 FINISH: 8/30/2021 DRILLING TECHNIQUE: HWT CASING ADVANCER/HQ3 CORING	 10250 S.W. Greenburg Road, Suite 111 Portland, Oregon 97223 Phone 503-452-1200 Fax 503-452-1528	SUMMARY BORING LOG LT-2 (4 of 4) BEACH RD LANDSLIDE HAINES, AK	MAR 2022
			PROJ 2930
			FIG. A-2



HAMMER ASSEMBLY: AUTO TRIP SPT SAMPLER: NO LINER - CONSTANT ID RECOVERY/RQD (%)

DRILL ROD USED: NWJ BOREHOLE DIAM.: 4.5" (0.0'-17.5'); 3.78" (17.5'-122.5')

DRILLER: DISCOVERY DATE START: 9/4/2021 FINISH: 9/7/2021 DRILLING TECHNIQUE: HWT CASING ADVANCER/HQ3 CORING	 10250 S.W. Greenburg Road, Suite 111 Portland, Oregon 97223 Phone 503-452-1200 Fax 503-452-1528	SUMMARY BORING LOG LT-3 (1 of 4) BEACH RD LANDSLIDE HAINES, AK	MAR 2022 PROJ 2930 FIG. A-3
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- LEGEND**
- 2-INCH O.D. SPLIT SPOON
 - 3-INCH O.D. SPLIT SPOON
 - 3-INCH O.D. THIN WALL SAMPLER
 - 3-INCH O.D. PITCHER TUBE SAMPLER
 - * NO SAMPLE RECOVERY
 - MM/DD/YY GROUND WATER LEVEL AND DATE OBSERVED
 - LIQUID LIMIT
 - WATER CONTENT
 - PLASTIC LIMIT
 - STANDARD PENETRATION TEST (BLOWS/FT.)
 - WATER CONTENT IN PERCENT
 - CORE RECOVERY IN PERCENT
 - RQD IN PERCENT
 - PT-1 PACKER TEST INTERVAL

- NOTES**
1. MATERIAL DESCRIPTIONS AND INTERFACES ARE INTERPRETIVE AND ACTUAL CHANGES MAY BE GRADUAL.
 2. WATER LEVEL IS FOR DATE SHOWN AND MAY VARY WITH TIME OF YEAR.
 3. MEASURAND SAAV SHAPEARRAY (S/N 306386) INSTALLED INSIDE 24-MM DIAMETER PVC CASING TO A DEPTH OF 119.7 FEET, WITH A 2-FOOT EXTENSION TO THE BOTTOM; VIBRATING WIRE PIEZOMETERS INSTALLED AT 52.8 FEET (S/N 2123114) AND AT 81.6 (S/N 2123111) ON OUTSIDE OF PVC CASING.
 4. BACKFILL DETAILS: BENTONITE-CEMENT GROUT FROM 0.0 TO 122.5 FEET. 3-INCH ABOVE-GROUND MONUMENT INSTALLED.

HAMMER ASSEMBLY: AUTO TRIP SPT SAMPLER: NO LINER - CONSTANT ID RECOVERY/RQD (%)

DRILL ROD USED: NWJ BOREHOLE DIAM.: 4.5" (0.0'-17.5'); 3.78" (17.5'-122.5')

DRILLER: DISCOVERY
DATE START: 9/4/2021 FINISH: 9/7/2021
DRILLING TECHNIQUE: HWT CASING
ADVANCER/HQ3 CORING



SUMMARY BORING LOG
LT-3 (2 of 4)

BEACH RD LANDSLIDE
HAINES, AK

MAR 2022
PROJ 2930
FIG. **A-3**

ELEVATION IN FEET	DEPTH IN FEET	MATERIAL DESCRIPTION	RUN NO.	SAMPLE		GROUND WATER/ INSTRUMENT INSTALLATION	PENETRATION TEST (BLOWS PER FOOT)				LEGEND
				NO.	PEN. DATA		WATER CONTENT (%)				
		SURFACE ELEVATION: 738.7 FT.					10	20	30	40	
		(continued from previous page) ... very highly fractured micaceous zone 80.5 to 80.7 feet ... EXTREMELY SOFT (R0) sheared and crushed micaceous zone with slightly clayey silt infilling on 60° fracture from 81.3 to 81.6 feet ... very highly to highly fractured 81.6 to 83.0 feet	R-17			10/30/21 (DRY)					
		... very highly fractured 86.9 to 87.4 feet	R-18				85				
		... very highly to highly fractured 89.8 to 92.7 feet	R-19				90				
		... 1/8-inch slightly clayey silt infilling on 70° fracture at 94.5 feet ... very highly to highly fractured 95.5 to 99.8 feet	R-20				95				
		... very highly fractured zone 106.8 to 108.0 feet; slickensides on 60° fracture (80° rake), and 50° fracture (60° rake) at 106.8 and 107.2 feet; slickensides with 1/8-inch slightly clayey silt infilling on 50° fracture (80° rake) at 108.0 feet	R-21				100				
		... sheared zone with 1/2-inch slightly clayey silt infilling, and slickensides on 55° fracture (40° rake) at 110.0 feet	R-23				110				
		... sheared zone with 1/8-inch slightly clayey silt infilling and slickensides on 50° fracture (60° rake) and 80° fracture (30° rake) at 111.6 feet	R-24				115				
		... polished fractures 112.5 to 113.0 feet									
		... EXTREMELY SOFT (R0) and sheared zone with slickensides on 50° fracture (80° rake) from 116.4 to 116.8 feet	R-25								
		very highly to highly fractured zone from 116.7 to 122.5 feet									
618.7	120						120				








- LEGEND**
- 2-INCH O.D. SPLIT SPOON
 - 3-INCH O.D. SPLIT SPOON
 - 3-INCH O.D. THIN WALL SAMPLER
 - 3-INCH O.D. PITCHER TUBE SAMPLER
 - * NO SAMPLE RECOVERY
 - MM/DD/YY GROUND WATER LEVEL AND DATE OBSERVED
 - LIQUID LIMIT
 - WATER CONTENT
 - PLASTIC LIMIT
 - STANDARD PENETRATION TEST (BLOWS/FT.)
 - WATER CONTENT IN PERCENT
 - CORE RECOVERY IN PERCENT
 - RQD IN PERCENT
 - PT-1 PACKER TEST INTERVAL

- NOTES**
1. MATERIAL DESCRIPTIONS AND INTERFACES ARE INTERPRETIVE AND ACTUAL CHANGES MAY BE GRADUAL.
 2. WATER LEVEL IS FOR DATE SHOWN AND MAY VARY WITH TIME OF YEAR.
 3. MEASURAND SAAV SHAPEARRAY (S/N 306386) INSTALLED INSIDE 24-MM DIAMETER PVC CASING TO A DEPTH OF 119.7 FEET, WITH A 2-FOOT EXTENSION TO THE BOTTOM; VIBRATING WIRE PIEZOMETERS INSTALLED AT 52.8 FEET (S/N 2123114) AND AT 81.6 (S/N 2123111) ON OUTSIDE OF PVC CASING.
 4. BACKFILL DETAILS: BENTONITE-CEMENT GROUT FROM 0.0 TO 122.5 FEET. 3-INCH ABOVE-GROUND MONUMENT INSTALLED.


HAMMER ASSEMBLY: AUTO TRIP SPT SAMPLER: NO LINER - CONSTANT ID RECOVERY/RQD (%)

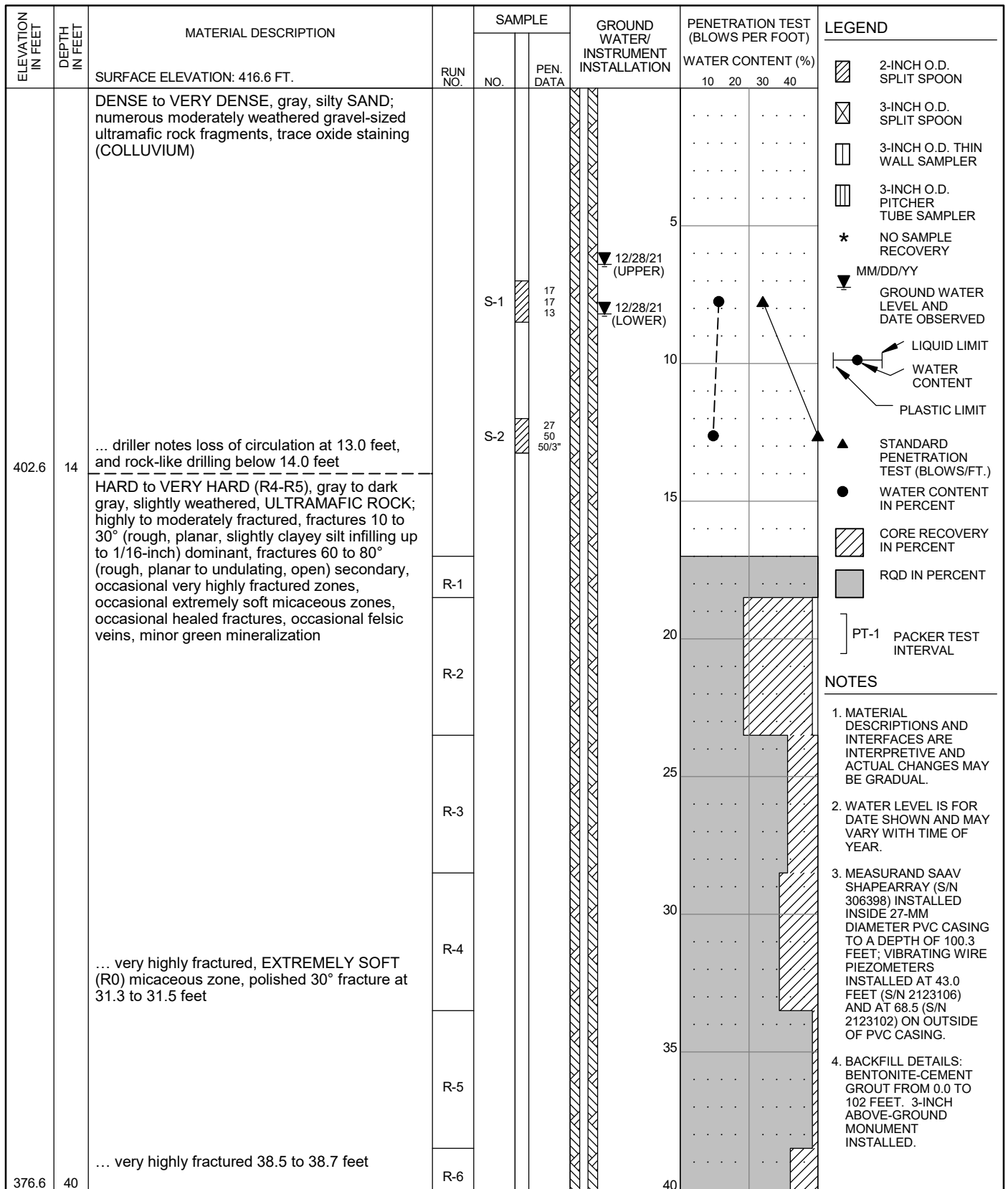
DRILL ROD USED: NWJ BOREHOLE DIAM.: 4.5" (0.0'-17.5'); 3.78" (17.5'-122.5')

DRILLER: DISCOVERY DATE START: 9/4/2021 FINISH: 9/7/2021 DRILLING TECHNIQUE: HWT CASING ADVANCER/HQ3 CORING	<p>10250 S.W. Greenburg Road, Suite 111 Portland, Oregon 97223 Phone 503-452-1200 Fax 503-452-1528</p>	<p>SUMMARY BORING LOG LT-3 (3 of 4)</p> <p>BEACH RD LANDSLIDE HAINES, AK</p>	MAR 2022 PROJ 2930 FIG. A-3
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ELEVATION IN FEET	DEPTH IN FEET	MATERIAL DESCRIPTION	RUN NO.	SAMPLE		GROUND WATER/ INSTRUMENT INSTALLATION	PENETRATION TEST (BLOWS PER FOOT)				LEGEND										
				NO.	PEN. DATA		WATER CONTENT (%)														
		SURFACE ELEVATION: 738.7 FT.					10	20	30	40											
616.2	122.5	(continued from previous page)	R-25																		
		Bottom of Boring: 122.5 FT																			

HAMMER ASSEMBLY: AUTO TRIP SPT SAMPLER: NO LINER - CONSTANT ID RECOVERY/RQD (%)
 DRILL ROD USED: NWJ BOREHOLE DIAM.: 4.5" (0.0'-17.5'); 3.78" (17.5'-122.5')

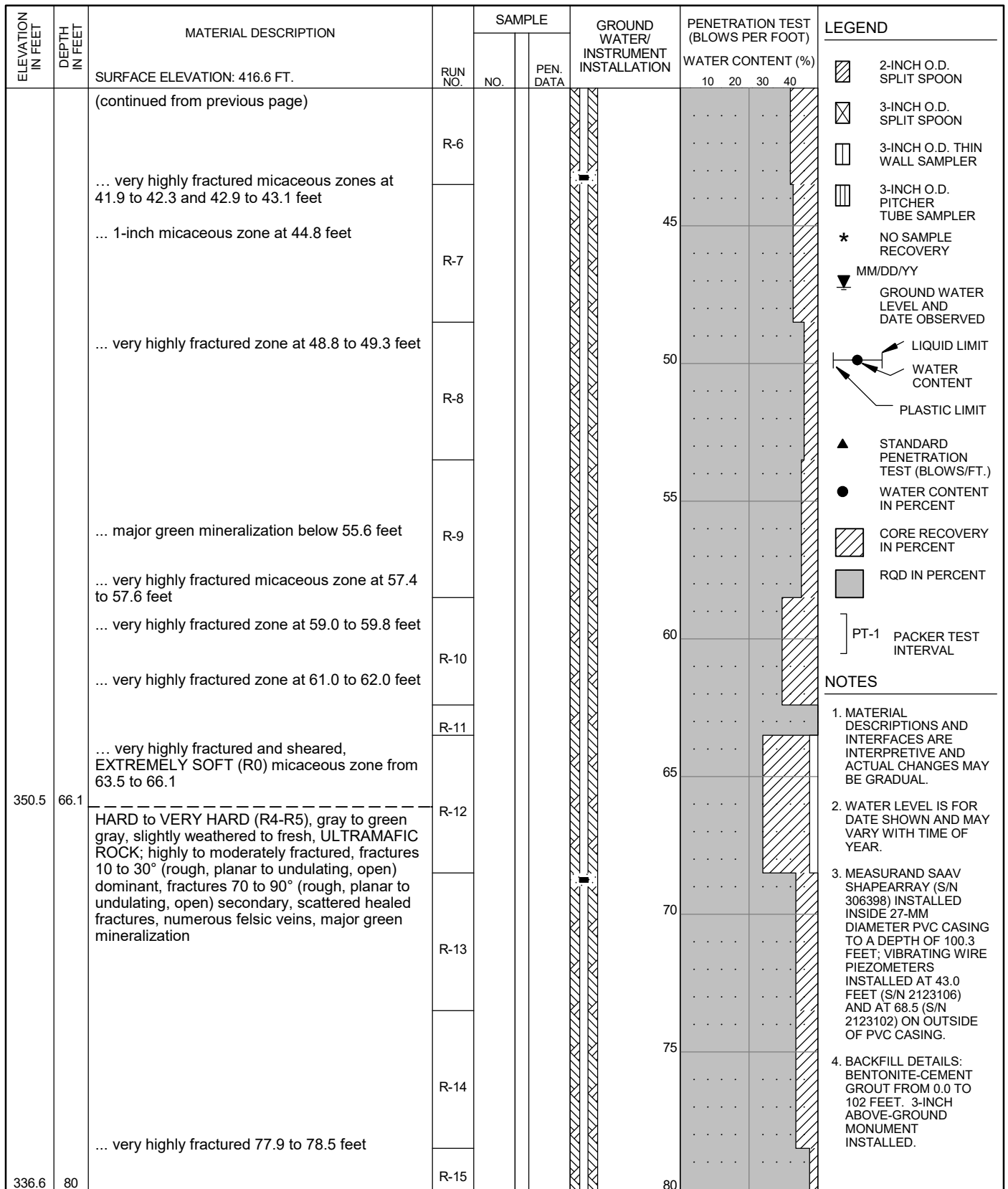
DRILLER: DISCOVERY DATE START: 9/4/2021 FINISH: 9/7/2021 DRILLING TECHNIQUE: HWT CASING ADVANCER/HQ3 CORING	 10250 S.W. Greenburg Road, Suite 111 Portland, Oregon 97223 Phone 503-452-1200 Fax 503-452-1528	SUMMARY BORING LOG LT-3 (4 of 4) BEACH RD LANDSLIDE HAINES, AK	MAR 2022
			PROJ 2930
			FIG. A-3



HAMMER ASSEMBLY: AUTO TRIP SPT SAMPLER: NO LINER - CONSTANT ID RECOVERY/RQD (%)


DRILL ROD USED: NWJ BOREHOLE DIAM.: 4.5" (0.0'-14.5'); 3.78" (14.5'-102.0')

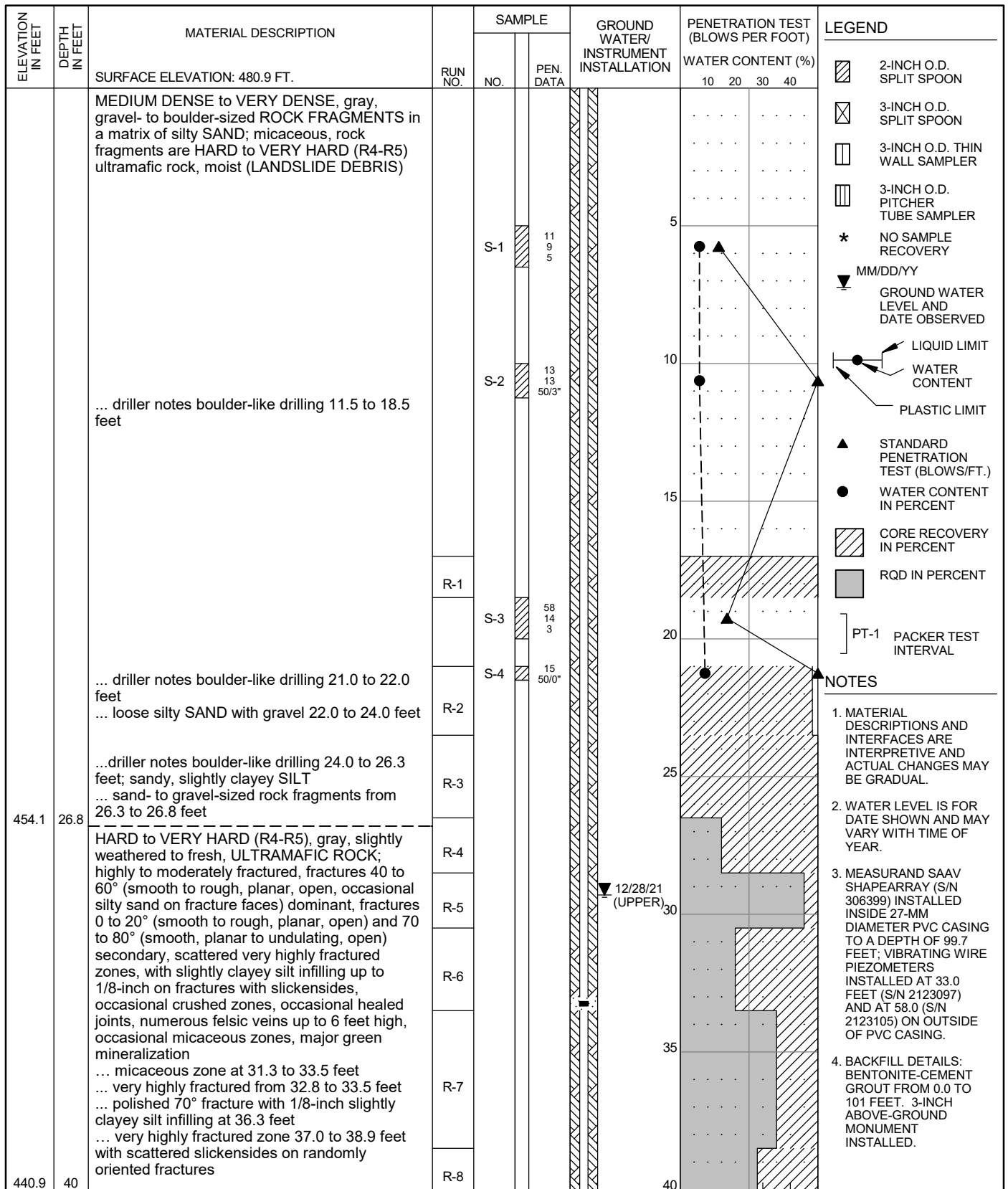
DRILLER: DISCOVERY DATE START: 10/6/2021 FINISH: 10/9/2021 DRILLING TECHNIQUE: HWT CASING ADVANCER/HQ3 CORING	 10250 S.W. Greenburg Road, Suite 111 Portland, Oregon 97223 Phone 503-452-1200 Fax 503-452-1528	SUMMARY BORING LOG LT-4 (1 of 3) BEACH RD LANDSLIDE HAINES, AK	MAR 2022 PROJ 2930 FIG. A-4
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HAMMER ASSEMBLY: AUTO TRIP SPT SAMPLER: NO LINER - CONSTANT ID RECOVERY/RQD (%)

DRILL ROD USED: NWJ BOREHOLE DIAM.: 4.5" (0.0'-14.5'); 3.78" (14.5'-102.0')

DRILLER: DISCOVERY DATE START: 10/6/2021 FINISH: 10/9/2021 DRILLING TECHNIQUE: HWT CASING ADVANCER/HQ3 CORING	 10250 S.W. Greenburg Road, Suite 111 Portland, Oregon 97223 Phone 503-452-1200 Fax 503-452-1528	SUMMARY BORING LOG LT-4 (2 of 3) BEACH RD LANDSLIDE HAINES, AK	MAR 2022 PROJ 2930 FIG. A-4
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- NOTES**
- MATERIAL DESCRIPTIONS AND INTERFACES ARE INTERPRETIVE AND ACTUAL CHANGES MAY BE GRADUAL.
 - WATER LEVEL IS FOR DATE SHOWN AND MAY VARY WITH TIME OF YEAR.
 - MEASURAND SAAV SHAPEARRAY (S/N 306399) INSTALLED INSIDE 27-MM DIAMETER PVC CASING TO A DEPTH OF 99.7 FEET; VIBRATING WIRE PIEZOMETERS INSTALLED AT 33.0 FEET (S/N 2123097) AND AT 58.0 (S/N 2123105) ON OUTSIDE OF PVC CASING.
 - BACKFILL DETAILS: BENTONITE-CEMENT GROUT FROM 0.0 TO 101 FEET. 3-INCH ABOVE-GROUND MONUMENT INSTALLED.

HAMMER ASSEMBLY: AUTO TRIP SPT SAMPLER: NO LINER - CONSTANT ID
 DRILL ROD USED: NWJ BOREHOLE DIAM.: 4.5" (0.0'-21.0'); 3.78" (21.0'-101.0')

DRILLER: DISCOVERY DATE START: 10/18/2021 FINISH: 10/21/2021 DRILLING TECHNIQUE: HWT CASING ADVANCER/HQ3 CORING	<p>10250 S.W. Greenburg Road, Suite 111 Portland, Oregon 97223 Phone 503-452-1200 Fax 503-452-1528</p>	SUMMARY BORING LOG LT-5 (1 of 3) BEACH RD LANDSLIDE HAINES, AK	MAR 2022 PROJ 2930 FIG. A-5
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ELEVATION IN FEET	DEPTH IN FEET	MATERIAL DESCRIPTION	RUN NO.	SAMPLE		GROUND WATER/ INSTRUMENT INSTALLATION	PENETRATION TEST (BLOWS PER FOOT)		LEGEND	
				NO.	PEN. DATA		WATER CONTENT (%)			
		SURFACE ELEVATION: 480.9 FT.					10	20	30	40
		(continued from previous page) ... slickensides on 55° fracture (30° rake) at 39.5 feet	R-8							
		... slickensides on 60° fracture (30° rake) with 1/8-inch slightly clayey silt infilling at 42.9 feet ... slickensides on 70° fracture (30° rake) at 43.2 feet	R-9				45			
		... very highly to highly fractured zone from 43.3 to 44.6 feet; slickensides on 60° fracture (70° rake) at 44.1 feet ... very highly fractured zone from 44.4 to 44.6 feet	R-10				50			
		... 1/8-inch slightly clayey silt infilling on 60° fracture at 45.0 feet ... very highly to highly fractured zone with scattered slightly clayey silt infilling up to 1/8-inch from 46.7 to 50.3 feet	R-11				55			
		... very highly to highly fractured micaceous zone with numerous healed fractures between 52.1 to 58.5 feet; numerous slickensides on randomly oriented fractures from 53.8 to 55.0 feet	R-12				60			
		... micaceous zone from 58.2 to 58.3 feet	R-13				65			
		... slickensides on 80° fracture (30° rake) at 62.3 feet ... very highly fractured zone from 63.0 to 63.5 feet	R-14				70			
		... very highly fractured from 66.7 to 66.9 feet; slickensides on 70° fracture (70° rake) with 1/8-inch slightly clayey silt infilling at 66.9 feet ... slickensides on 70° fracture (60° rake) at 68.5 feet	R-15				75			
		... slickensides on 80° fracture (70° rake) at 70.3 feet	R-16				80			
400.9	80									

LEGEND

- 2-INCH O.D. SPLIT SPOON
- 3-INCH O.D. SPLIT SPOON
- 3-INCH O.D. THIN WALL SAMPLER
- 3-INCH O.D. PITCHER TUBE SAMPLER
- NO SAMPLE RECOVERY
- MM/DD/YY GROUND WATER LEVEL AND DATE OBSERVED
- LIQUID LIMIT
- WATER CONTENT
- PLASTIC LIMIT
- STANDARD PENETRATION TEST (BLOWS/FT.)
- WATER CONTENT IN PERCENT
- CORE RECOVERY IN PERCENT
- RQD IN PERCENT
- PT-1 PACKER TEST INTERVAL

- NOTES**
- MATERIAL DESCRIPTIONS AND INTERFACES ARE INTERPRETIVE AND ACTUAL CHANGES MAY BE GRADUAL.
 - WATER LEVEL IS FOR DATE SHOWN AND MAY VARY WITH TIME OF YEAR.
 - MEASURAND SAAV SHAPEARRAY (S/N 306399) INSTALLED INSIDE 27-MM DIAMETER PVC CASING TO A DEPTH OF 99.7 FEET; VIBRATING WIRE PIEZOMETERS INSTALLED AT 33.0 FEET (S/N 2123097) AND AT 58.0 (S/N 2123105) ON OUTSIDE OF PVC CASING.
 - BACKFILL DETAILS: BENTONITE-CEMENT GROUT FROM 0.0 TO 101 FEET. 3-INCH ABOVE-GROUND MONUMENT INSTALLED.

HAMMER ASSEMBLY: AUTO TRIP SPT SAMPLER: NO LINER - CONSTANT ID RECOVERY/RQD (%)

DRILL ROD USED: NWJ BOREHOLE DIAM.: 4.5" (0.0'-21.0'); 3.78" (21.0'-101.0')

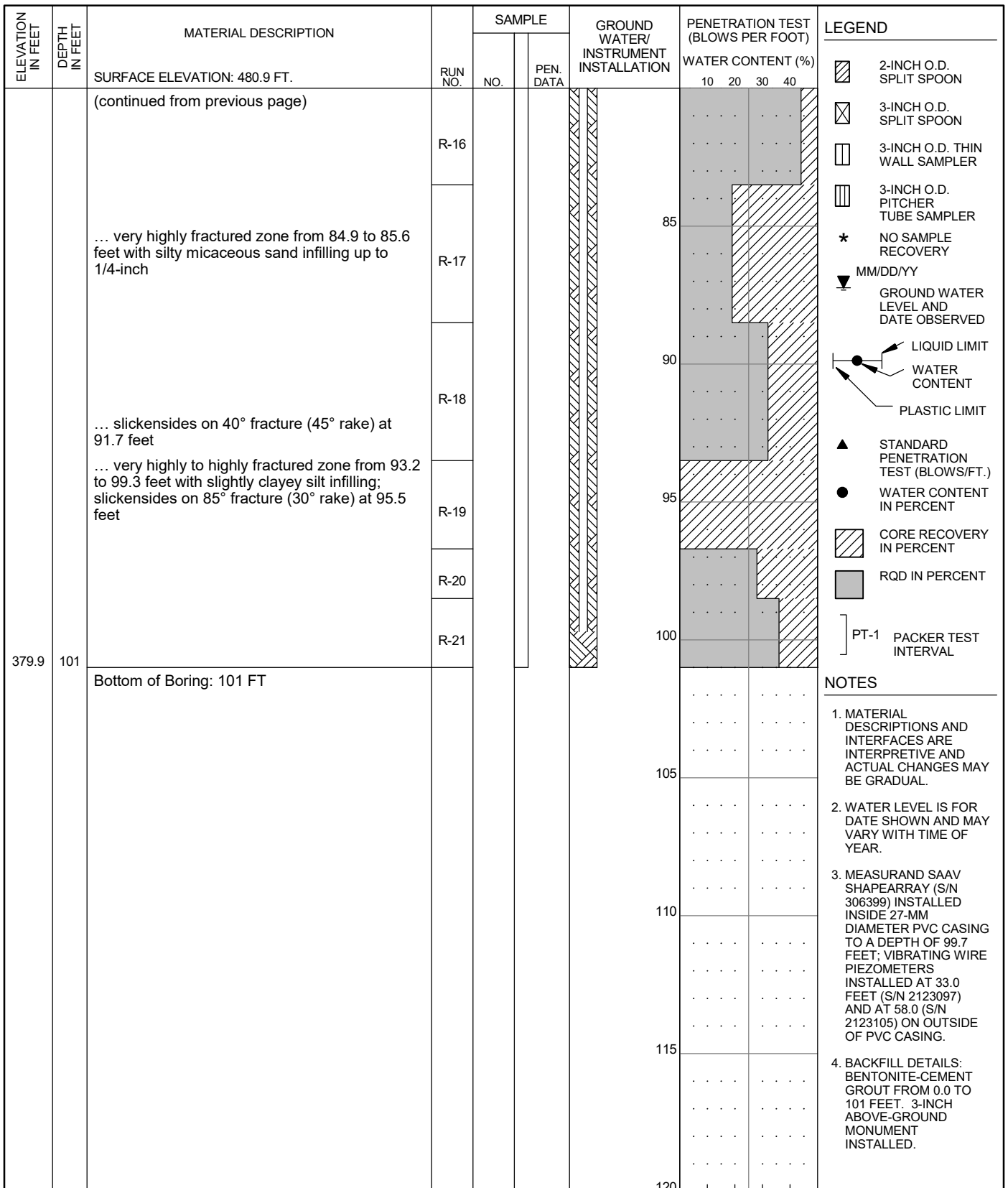
DRILLER: DISCOVERY
DATE START: 10/18/2021 FINISH: 10/21/2021
DRILLING TECHNIQUE: HWT CASING
ADVANCER/HQ3 CORING

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Phone 503-452-1200 Fax 503-452-1528

SUMMARY BORING LOG
LT-5 (2 of 3)

BEACH RD LANDSLIDE
HAINES, AK

MAR 2022
PROJ 2930
FIG. **A-5**



HAMMER ASSEMBLY: AUTO TRIP
 DRILL ROD USED: NWJ

SPT SAMPLER: NO LINER - CONSTANT ID
 BOREHOLE DIAM.: 4.5" (0.0'-21.0'); 3.78" (21.0'-101.0')

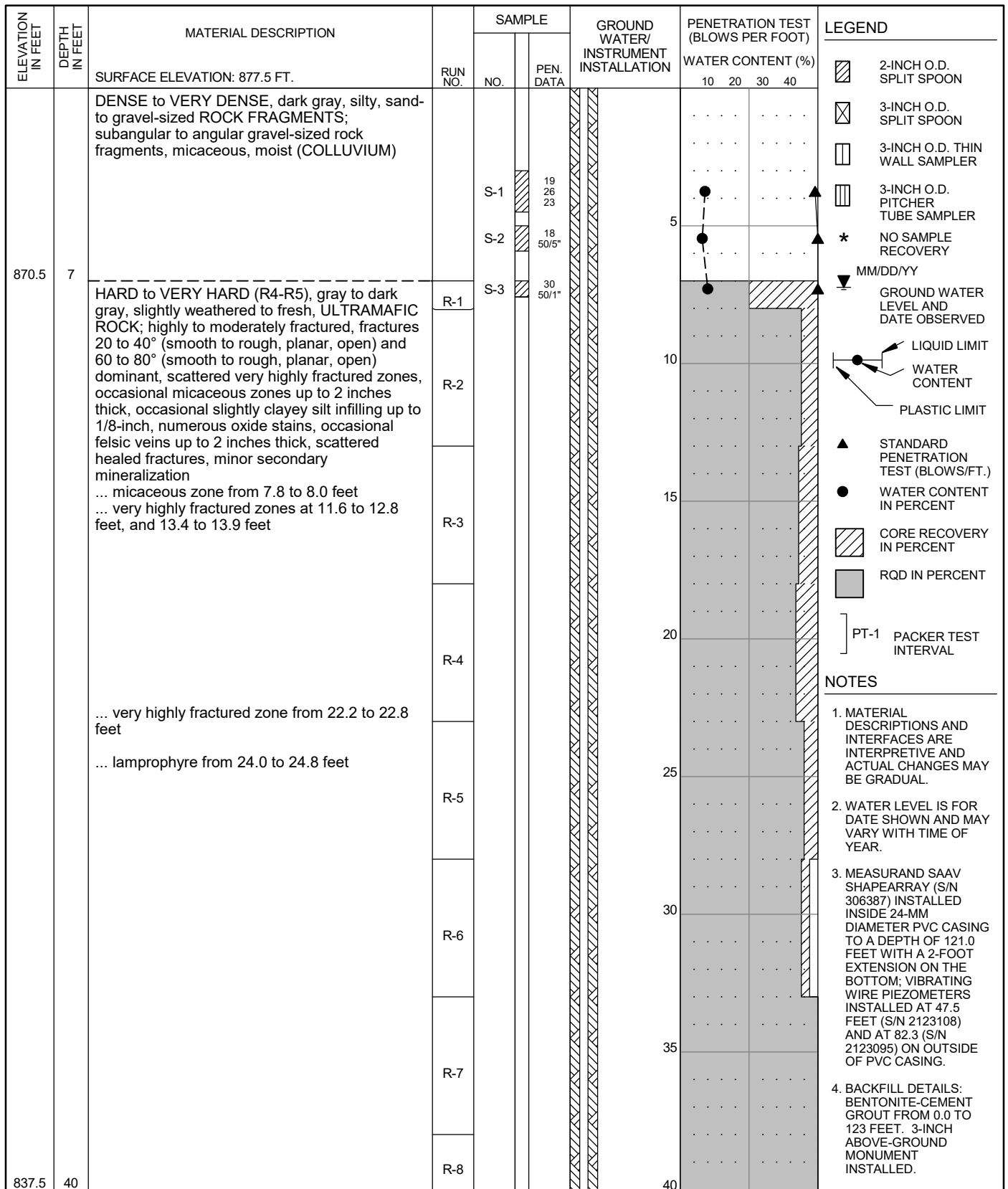
RECOVERY/RQD (%)

DRILLER: DISCOVERY
 DATE START: 10/18/2021 FINISH: 10/21/2021
 DRILLING TECHNIQUE: HWT CASING
 ADVANCER/HQ3 CORING




**SUMMARY BORING LOG
 LT-5 (3 of 3)**
 BEACH RD LANDSLIDE
 HAINES, AK

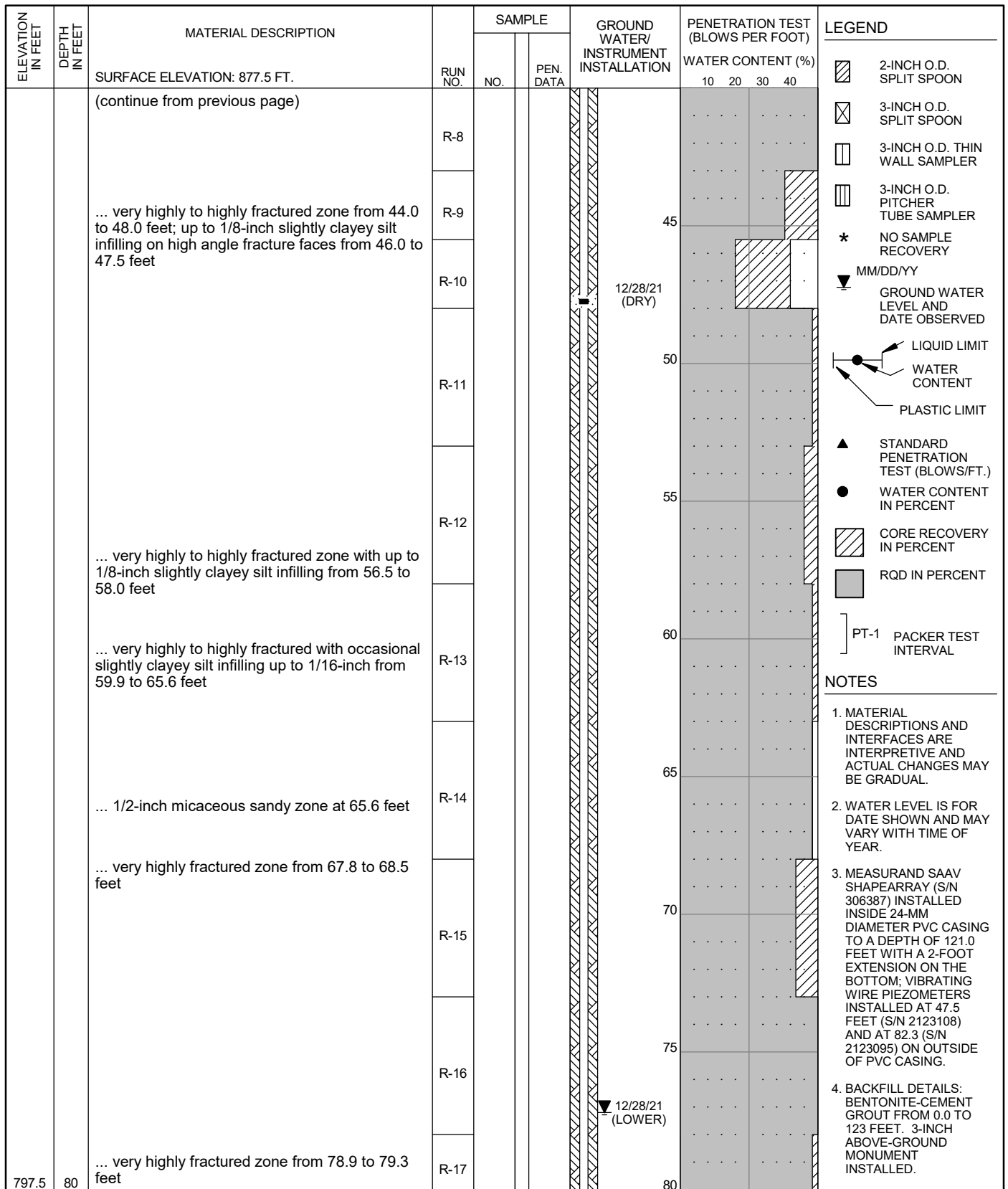
MAR 2022
 PROJ 2930
 FIG. **A-5**



HAMMER ASSEMBLY: AUTO TRIP SPT SAMPLER: NO LINER - CONSTANT ID RECOVERY/RQD (%)

DRILL ROD USED: NWJ BOREHOLE DIAM.: 4.5" (0.0'-7.0'); 3.78" (7.0'-123.0')

DRILLER: DISCOVERY DATE START: 9/18/2021 FINISH: 9/20/2021 DRILLING TECHNIQUE: HWT CASING ADVANCER/HQ3 CORING	 10250 S.W. Greenburg Road, Suite 111 Portland, Oregon 97223 Phone 503-452-1200 Fax 503-452-1528	SUMMARY BORING LOG LT-6 (1 of 4) BEACH RD LANDSLIDE HAINES, AK	MAR 2022 PROJ 2930 FIG. A-6
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- LEGEND**
- 2-INCH O.D. SPLIT SPOON
 - 3-INCH O.D. SPLIT SPOON
 - 3-INCH O.D. THIN WALL SAMPLER
 - 3-INCH O.D. PITCHER TUBE SAMPLER
 - * NO SAMPLE RECOVERY
 - MM/DD/YY GROUND WATER LEVEL AND DATE OBSERVED
 - LIQUID LIMIT
 - WATER CONTENT
 - PLASTIC LIMIT
 - STANDARD PENETRATION TEST (BLOWS/FT.)
 - WATER CONTENT IN PERCENT
 - CORE RECOVERY IN PERCENT
 - RQD IN PERCENT
 - PT-1 PACKER TEST INTERVAL

- NOTES**
1. MATERIAL DESCRIPTIONS AND INTERFACES ARE INTERPRETIVE AND ACTUAL CHANGES MAY BE GRADUAL.
 2. WATER LEVEL IS FOR DATE SHOWN AND MAY VARY WITH TIME OF YEAR.
 3. MEASURAND SAAV SHAPEARRAY (S/N 306387) INSTALLED INSIDE 24-MM DIAMETER PVC CASING TO A DEPTH OF 121.0 FEET WITH A 2-FOOT EXTENSION ON THE BOTTOM; VIBRATING WIRE PIEZOMETERS INSTALLED AT 47.5 FEET (S/N 2123108) AND AT 82.3 (S/N 2123095) ON OUTSIDE OF PVC CASING.
 4. BACKFILL DETAILS: BENTONITE-CEMENT GROUT FROM 0.0 TO 123 FEET. 3-INCH ABOVE-GROUND MONUMENT INSTALLED.

HAMMER ASSEMBLY: AUTO TRIP SPT SAMPLER: NO LINER - CONSTANT ID RECOVERY/RQD (%)

DRILL ROD USED: NWJ BOREHOLE DIAM.: 4.5" (0.0"-7.0"); 3.78" (7.0"-123.0")

DRILLER: DISCOVERY
 DATE START: 9/18/2021 FINISH: 9/20/2021
 DRILLING TECHNIQUE: HWT CASING
 ADVANCER/HQ3 CORING

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 Phone 503-452-1200 Fax 503-452-1528

SUMMARY BORING LOG
LT-6 (2 of 4)

BEACH RD LANDSLIDE
 HAINES, AK

MAR 2022
 PROJ 2930
 FIG. **A-6**

ELEVATION IN FEET	DEPTH IN FEET	MATERIAL DESCRIPTION	RUN NO.	SAMPLE		GROUND WATER/ INSTRUMENT INSTALLATION	PENETRATION TEST (BLOWS PER FOOT)				LEGEND
				NO.	PEN. DATA		WATER CONTENT (%)				
		SURFACE ELEVATION: 877.5 FT.					10	20	30	40	
		(continue from previous page)									
		... very highly to highly fractured zone from 81.0 to 81.8 feet; slickensides on 60° fracture (80° rake) at 81.4 feet	R-17								
			R-18				85				
		... very highly fractured zone from 87.4 to 88.2 feet									
			R-19				90				
		... very highly to highly fractured zone from 92.0 to 93.2 feet									
			R-20				95				
		... very highly to highly fractured zone from 98.3 to 102.7 feet; 1/8-inch slightly clayey silt infilling at 101.5 feet; micaceous zone from 102.2 to 102.7 feet	R-21				100				
		... very highly to highly fractured zone from 106.2 to 108.0 feet	R-22				105				
		... very highly to highly fractured zone from 110.4 to 113.0 feet	R-23				110				
		... very highly fractured zone from 116.5 to 116.8	R-24				115				
757.5	120		R-25				120				

- LEGEND**
- 2-INCH O.D. SPLIT SPOON
 - 3-INCH O.D. SPLIT SPOON
 - 3-INCH O.D. THIN WALL SAMPLER
 - 3-INCH O.D. PITCHER TUBE SAMPLER
 - * NO SAMPLE RECOVERY
 - MM/DD/YY GROUND WATER LEVEL AND DATE OBSERVED
 - LIQUID LIMIT
 - WATER CONTENT
 - PLASTIC LIMIT
 - STANDARD PENETRATION TEST (BLOWS/FT.)
 - WATER CONTENT IN PERCENT
 - CORE RECOVERY IN PERCENT
 - RQD IN PERCENT
 - PT-1 PACKER TEST INTERVAL

- NOTES**
1. MATERIAL DESCRIPTIONS AND INTERFACES ARE INTERPRETIVE AND ACTUAL CHANGES MAY BE GRADUAL.
 2. WATER LEVEL IS FOR DATE SHOWN AND MAY VARY WITH TIME OF YEAR.
 3. MEASURAND SAAV SHAPEARRAY (S/N 306387) INSTALLED INSIDE 24-MM DIAMETER PVC CASING TO A DEPTH OF 121.0 FEET WITH A 2-FOOT EXTENSION ON THE BOTTOM; VIBRATING WIRE PIEZOMETERS INSTALLED AT 47.5 FEET (S/N 2123108) AND AT 82.3 (S/N 2123095) ON OUTSIDE OF PVC CASING.
 4. BACKFILL DETAILS: BENTONITE-CEMENT GROUT FROM 0.0 TO 123 FEET. 3-INCH ABOVE-GROUND MONUMENT INSTALLED.

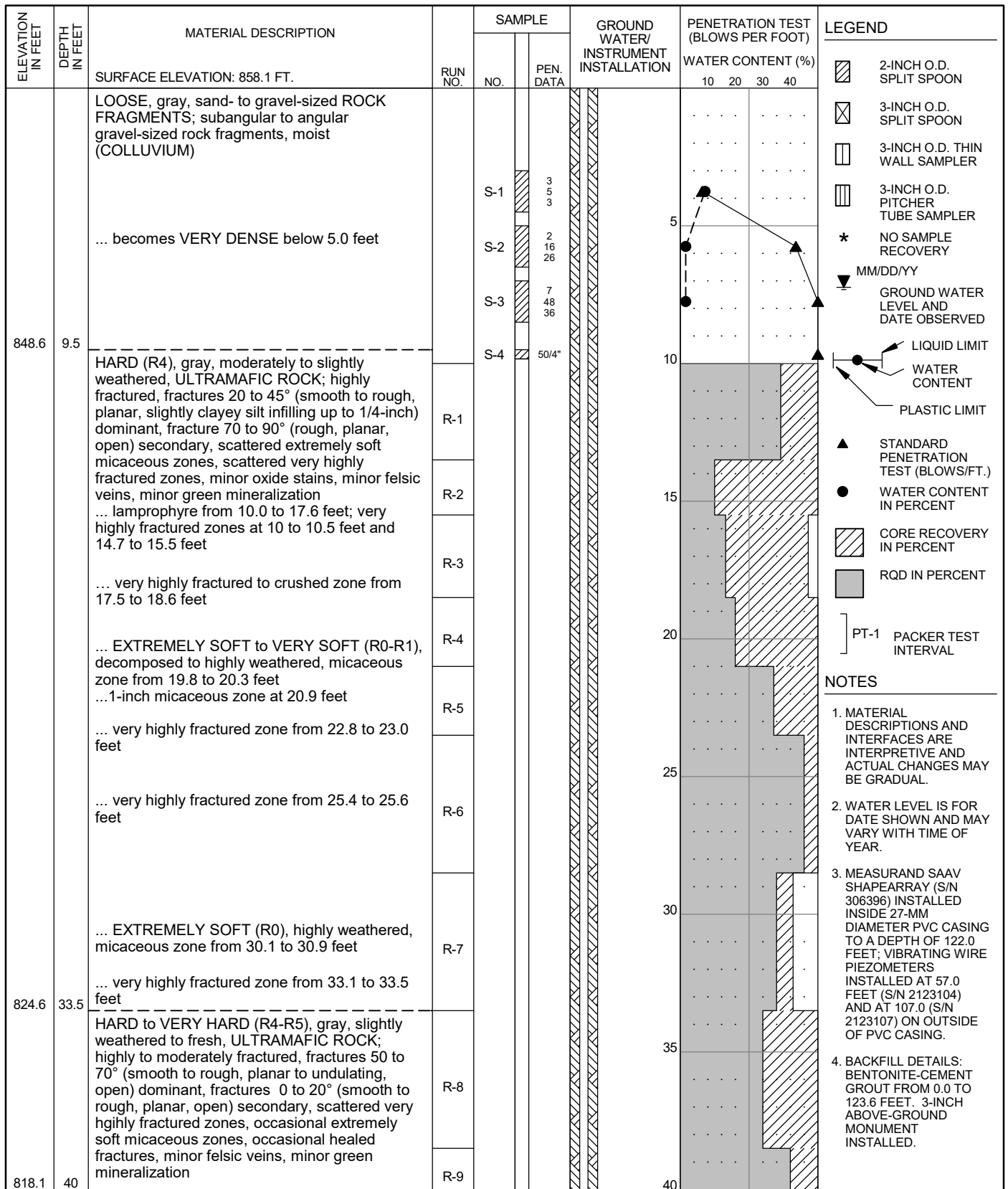
HAMMER ASSEMBLY: AUTO TRIP SPT SAMPLER: NO LINER - CONSTANT ID RECOVERY/RQD (%)
 DRILL ROD USED: NWJ BOREHOLE DIAM.: 4.5" (0.0'-7.0'); 3.78" (7.0'-123.0')

DRILLER: DISCOVERY DATE START: 9/18/2021 FINISH: 9/20/2021 DRILLING TECHNIQUE: HWT CASING ADVANCER/HQ3 CORING	 10250 S.W. Greenburg Road, Suite 111 Portland, Oregon 97223 Phone 503-452-1200 Fax 503-452-1528	SUMMARY BORING LOG LT-6 (3 of 4) BEACH RD LANDSLIDE HAINES, AK	MAR 2022
			PROJ 2930
			FIG. A-6

ELEVATION IN FEET	DEPTH IN FEET	MATERIAL DESCRIPTION	RUN NO.	SAMPLE		GROUND WATER/ INSTRUMENT INSTALLATION	PENETRATION TEST (BLOWS PER FOOT)				LEGEND			
				NO.	PEN. DATA		WATER CONTENT (%)							
		SURFACE ELEVATION: 877.5 FT.					10	20	30	40				
754.5	123	(continue from previous page)	R-25								2-INCH O.D. SPLIT SPOON 3-INCH O.D. SPLIT SPOON 3-INCH O.D. THIN WALL SAMPLER 3-INCH O.D. PITCHER TUBE SAMPLER * NO SAMPLE RECOVERY MM/DD/YY GROUND WATER LEVEL AND DATE OBSERVED LIQUID LIMIT WATER CONTENT PLASTIC LIMIT STANDARD PENETRATION TEST (BLOWS/FT.) WATER CONTENT IN PERCENT CORE RECOVERY IN PERCENT RQD IN PERCENT] PT-1 PACKER TEST INTERVAL			
		Bottom of Boring: 123 FT												

HAMMER ASSEMBLY: AUTO TRIP SPT SAMPLER: NO LINER - CONSTANT ID RECOVERY/RQD (%)
DRILL ROD USED: NWJ BOREHOLE DIAM.: 4.5" (0.0'-7.0'); 3.78" (7.0'-123.0')

DRILLER: DISCOVERY DATE START: 9/18/2021 FINISH: 9/20/2021 DRILLING TECHNIQUE: HWT CASING ADVANCER/HQ3 CORING	 10250 S.W. Greenburg Road, Suite 111 Portland, Oregon 97223 Phone 503-452-1200 Fax 503-452-1528	SUMMARY BORING LOG LT-6 (4 of 4) BEACH RD LANDSLIDE HAINES, AK	MAR 2022
			PROJ 2930
			FIG. A-6



HAMMER ASSEMBLY: AUTO TRIP SPT SAMPLER: NO LINER - CONSTANT ID RECOVERY/RQD (%)

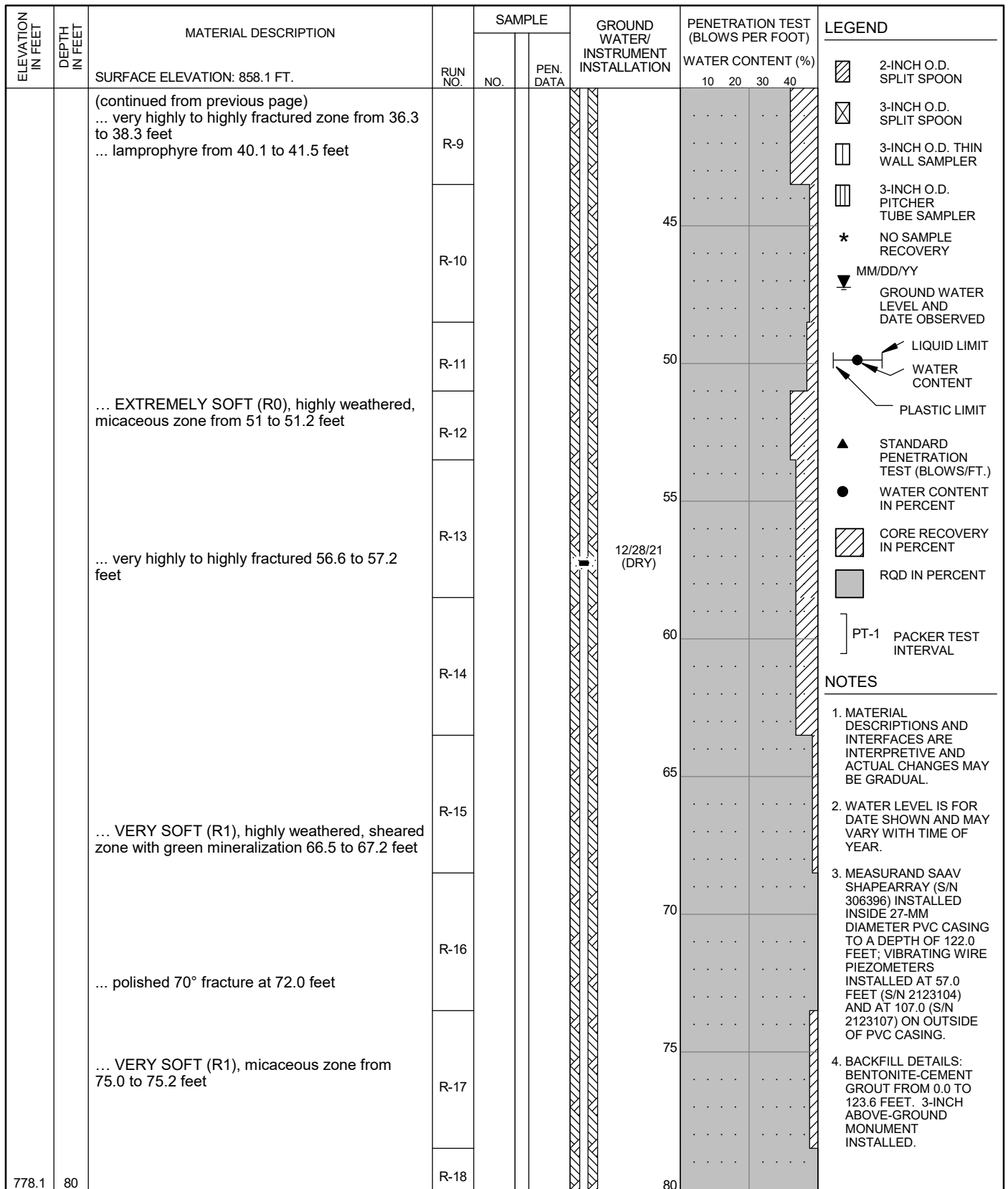
DRILL ROD USED: NWJ BOREHOLE DIAM.: 4.5" (0.0'-10.0'); 3.78" (10.0'-123.6')

DRILLER: DISCOVERY
 DATE START: 9/26/2021 FINISH: 9/28/2021
 DRILLING TECHNIQUE: HWT CASING
 ADVANCER/HQ3 CORING



SUMMARY BORING LOG
 LT-7 (1 of 4)
 BEACH RD LANDSLIDE
 HAINES, AK

MAR 2022
 PROJ 2930
 FIG. A-7



20 40 60 80 RECOVERY/RQD (%)

HAMMER ASSEMBLY: AUTO TRIP

SPT SAMPLER: NO LINER - CONSTANT ID

DRILL ROD USED: NWJ

BOREHOLE DIAM.: 4.5" (0.0'-10.0'); 3.78" (10.0'-123.6')

DRILLER: DISCOVERY

DATE START: 9/26/2021 FINISH: 9/28/2021

DRILLING TECHNIQUE: HWT CASING

ADVANCER/HQ3 CORING



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SUMMARY BORING LOG
LT-7 (2 of 4)

BEACH RD LANDSLIDE
HAINES, AK

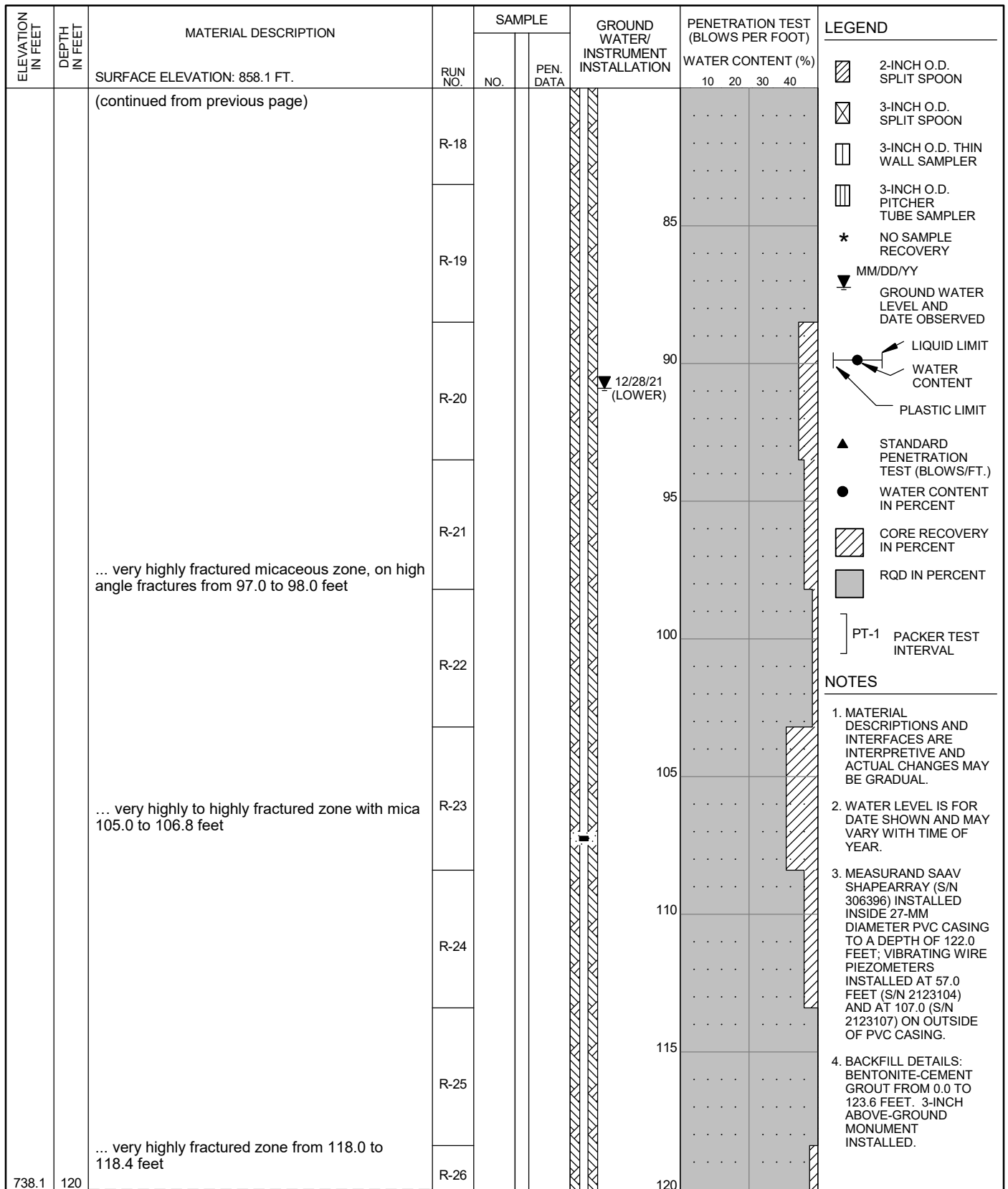
MAR 2022

PROJ 2930

FIG. A-7

NOTES

- MATERIAL DESCRIPTIONS AND INTERFACES ARE INTERPRETIVE AND ACTUAL CHANGES MAY BE GRADUAL.
- WATER LEVEL IS FOR DATE SHOWN AND MAY VARY WITH TIME OF YEAR.
- MEASURAND SAAV SHAPEARRAY (S/N 306396) INSTALLED INSIDE 27-MM DIAMETER PVC CASING TO A DEPTH OF 122.0 FEET; VIBRATING WIRE PIEZOMETERS INSTALLED AT 57.0 FEET (S/N 2123104) AND AT 107.0 (S/N 2123107) ON OUTSIDE OF PVC CASING.
- BACKFILL DETAILS: BENTONITE-CEMENT GROUT FROM 0.0 TO 123.6 FEET. 3-INCH ABOVE-GROUND MONUMENT INSTALLED.

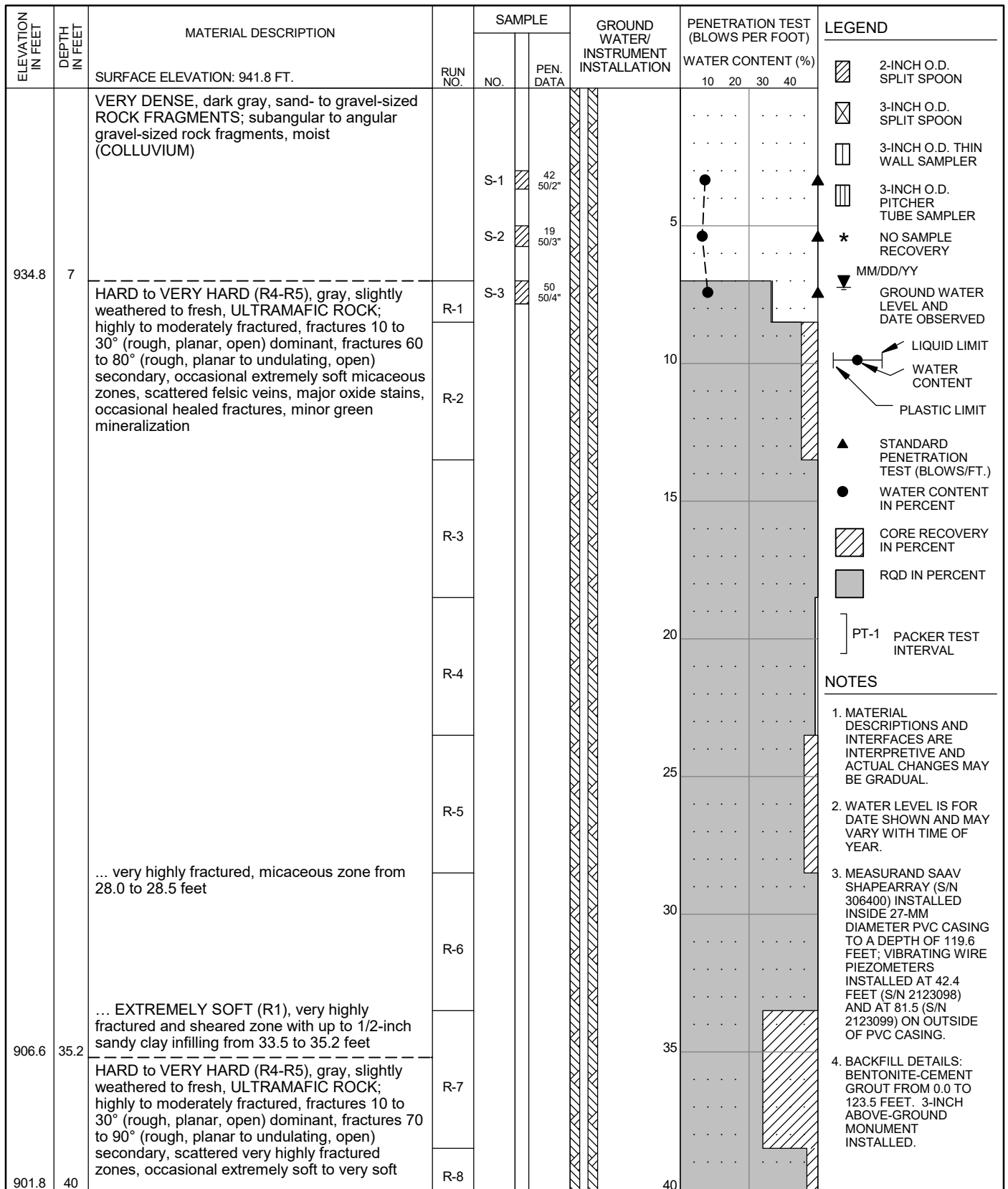


- NOTES**
- MATERIAL DESCRIPTIONS AND INTERFACES ARE INTERPRETIVE AND ACTUAL CHANGES MAY BE GRADUAL.
 - WATER LEVEL IS FOR DATE SHOWN AND MAY VARY WITH TIME OF YEAR.
 - MEASURAND SAAV SHAPEARRAY (S/N 306396) INSTALLED INSIDE 27-MM DIAMETER PVC CASING TO A DEPTH OF 122.0 FEET; VIBRATING WIRE PIEZOMETERS INSTALLED AT 57.0 FEET (S/N 2123104) AND AT 107.0 (S/N 2123107) ON OUTSIDE OF PVC CASING.
 - BACKFILL DETAILS: BENTONITE-CEMENT GROUT FROM 0.0 TO 123.6 FEET. 3-INCH ABOVE-GROUND MONUMENT INSTALLED.

HAMMER ASSEMBLY: AUTO TRIP SPT SAMPLER: NO LINER - CONSTANT ID RECOVERY/RQD (%)


DRILL ROD USED: NWJ BOREHOLE DIAM.: 4.5" (0.0'-10.0'); 3.78" (10.0'-123.6')

DRILLER: DISCOVERY DATE START: 9/26/2021 FINISH: 9/28/2021 DRILLING TECHNIQUE: HWT CASING ADVANCER/HQ3 CORING	 10250 S.W. Greenburg Road, Suite 111 Portland, Oregon 97223 Phone 503-452-1200 Fax 503-452-1528	SUMMARY BORING LOG LT-7 (3 of 4) BEACH RD LANDSLIDE HAINES, AK	MAR 2022 PROJ 2930 FIG. A-7
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HAMMER ASSEMBLY: AUTO TRIP SPT SAMPLER: NO LINER - CONSTANT ID RECOVERY/RQD (%)

DRILL ROD USED: NWJ BOREHOLE DIAM.: 4.5" (0.0'-7.0'); 3.78" (7.0'-123.5')

DRILLER: DISCOVERY DATE START: 10/3/2021 FINISH: 10/5/2021 DRILLING TECHNIQUE: HWT CASING ADVANCER/HQ3 CORING	 10250 S.W. Greenburg Road, Suite 111 Portland, Oregon 97223 Phone 503-452-1200 Fax 503-452-1528	SUMMARY BORING LOG LT-8 (1 of 4) BEACH RD LANDSLIDE HAINES, AK	MAR 2022 PROJ 2930 FIG. A-8
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ELEVATION IN FEET	DEPTH IN FEET	MATERIAL DESCRIPTION	RUN NO.	SAMPLE		GROUND WATER/ INSTRUMENT INSTALLATION	PENETRATION TEST (BLOWS PER FOOT)				LEGEND
				NO.	PEN. DATA		WATER CONTENT (%)				
		SURFACE ELEVATION: 941.8 FT.					10	20	30	40	
		sheared zones, occasional slickensides, occasional micaceous zone, occasional felsic veins, minor oxide stains, occasional healed fractures, minor green mineralization ... very highly to highly fractured 37.5 to 38.5 feet ... very highly fractured zone from 41.3 to 41.6 feet; slickensides on 10° fracture (90° rake) at 41.6 feet	R-8			12/28/21 (UPPER)					
		... very highly to highly fractured zone from 45.8 to 48.3 feet	R-9				45				
		... very highly to highly fractured zone from 52.0 to 57.1 feet	R-10				50				
		... EXTREMELY SOFT to VERY SOFT (R0-R1), highly weathered and sheared zone from 56.1 to 57.1 feet ... slickensides on 50° fracture (70° rake) at 57.9 feet	R-11				55				
			R-12				60				
			R-13				65				
		... numerous healed fractures from 66.5 to 69.8 feet	R-14				70				
		... EXTREMELY SOFT (R0), sheared zone with silty sand infilling from 68.8 to 69.3 feet	R-15				75				
		... very highly fractured, micaceous zone from 78.2 to 78.3 feet	R-16				80				
861.8	80		R-17								
			R-18			12/28/21					

LEGEND

- 2-INCH O.D. SPLIT SPOON
- 3-INCH O.D. SPLIT SPOON
- 3-INCH O.D. THIN WALL SAMPLER
- 3-INCH O.D. PITCHER TUBE SAMPLER
- NO SAMPLE RECOVERY
- MM/DD/YY GROUND WATER LEVEL AND DATE OBSERVED
- LIQUID LIMIT
- WATER CONTENT
- PLASTIC LIMIT
- STANDARD PENETRATION TEST (BLOWS/FT.)
- WATER CONTENT IN PERCENT
- CORE RECOVERY IN PERCENT
- RQD IN PERCENT
- PT-1 PACKER TEST INTERVAL

- NOTES**
- MATERIAL DESCRIPTIONS AND INTERFACES ARE INTERPRETIVE AND ACTUAL CHANGES MAY BE GRADUAL.
 - WATER LEVEL IS FOR DATE SHOWN AND MAY VARY WITH TIME OF YEAR.
 - MEASURAND SAAV SHAPEARRAY (S/N 306400) INSTALLED INSIDE 27-MM DIAMETER PVC CASING TO A DEPTH OF 119.6 FEET; VIBRATING WIRE PIEZOMETERS INSTALLED AT 42.4 FEET (S/N 2123098) AND AT 81.5 (S/N 2123099) ON OUTSIDE OF PVC CASING.
 - BACKFILL DETAILS: BENTONITE-CEMENT GROUT FROM 0.0 TO 123.5 FEET. 3-INCH ABOVE-GROUND MONUMENT INSTALLED.

20 40 60 80
RECOVERY/RQD (%)

HAMMER ASSEMBLY: AUTO TRIP
DRILL ROD USED: NWJ

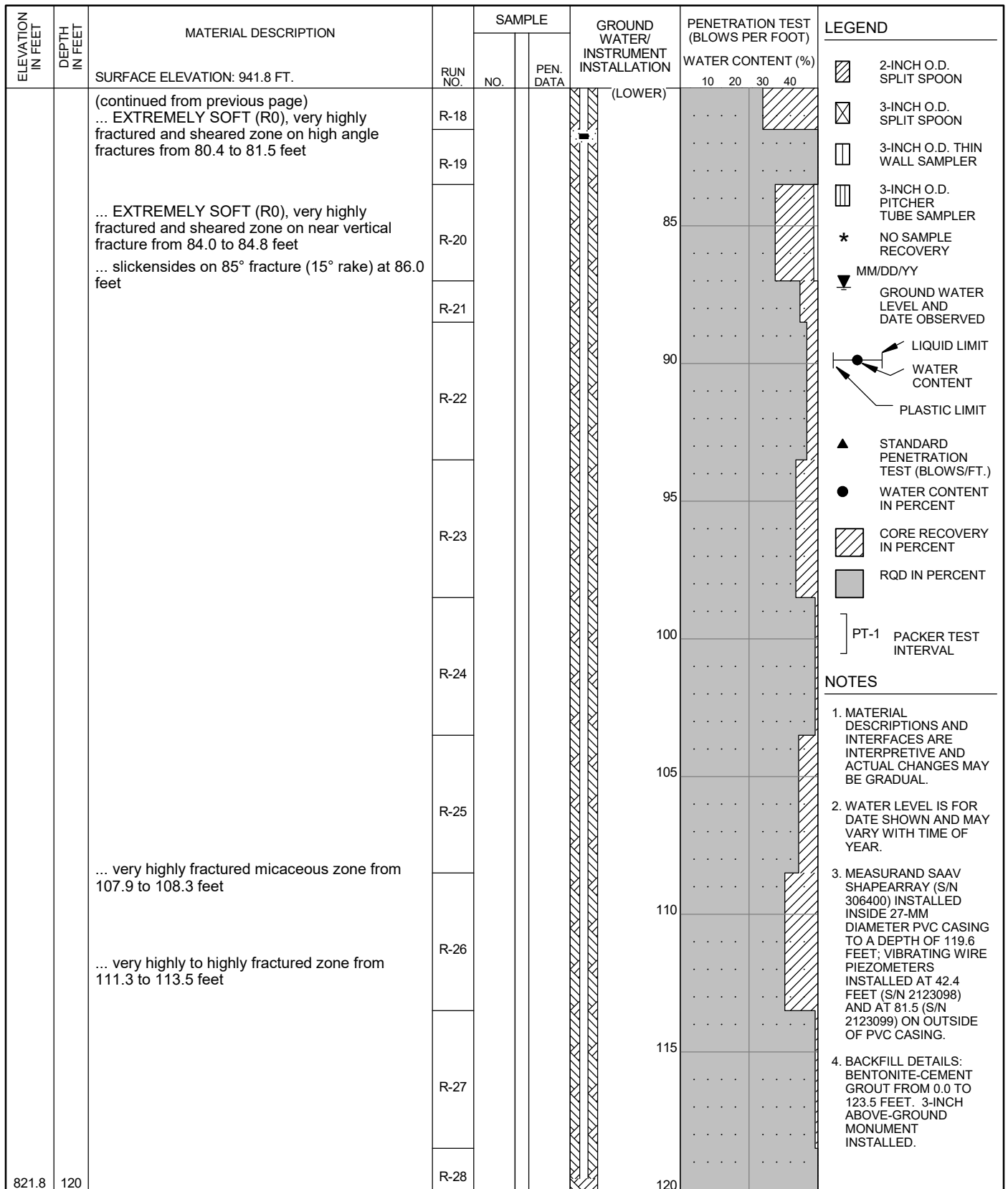
SPT SAMPLER: NO LINER - CONSTANT ID
BOREHOLE DIAM.: 4.5" (0.0'-7.0'); 3.78" (7.0'-123.5')

DRILLER: DISCOVERY
DATE START: 10/3/2021 FINISH: 10/5/2021
DRILLING TECHNIQUE: HWT CASING
ADVANCER/HQ3 CORING

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SUMMARY BORING LOG
LT-8 (2 of 4)
BEACH RD LANDSLIDE
HAINES, AK

MAR 2022
PROJ 2930
FIG. **A-8**



- NOTES**
- MATERIAL DESCRIPTIONS AND INTERFACES ARE INTERPRETIVE AND ACTUAL CHANGES MAY BE GRADUAL.
 - WATER LEVEL IS FOR DATE SHOWN AND MAY VARY WITH TIME OF YEAR.
 - MEASURAND SAAV SHAPEARRAY (S/N 306400) INSTALLED INSIDE 27-MM DIAMETER PVC CASING TO A DEPTH OF 119.6 FEET; VIBRATING WIRE PIEZOMETERS INSTALLED AT 42.4 FEET (S/N 2123098) AND AT 81.5 (S/N 2123099) ON OUTSIDE OF PVC CASING.
 - BACKFILL DETAILS: BENTONITE-CEMENT GROUT FROM 0.0 TO 123.5 FEET. 3-INCH ABOVE-GROUND MONUMENT INSTALLED.

HAMMER ASSEMBLY: AUTO TRIP SPT SAMPLER: NO LINER - CONSTANT ID RECOVERY/RQD (%)

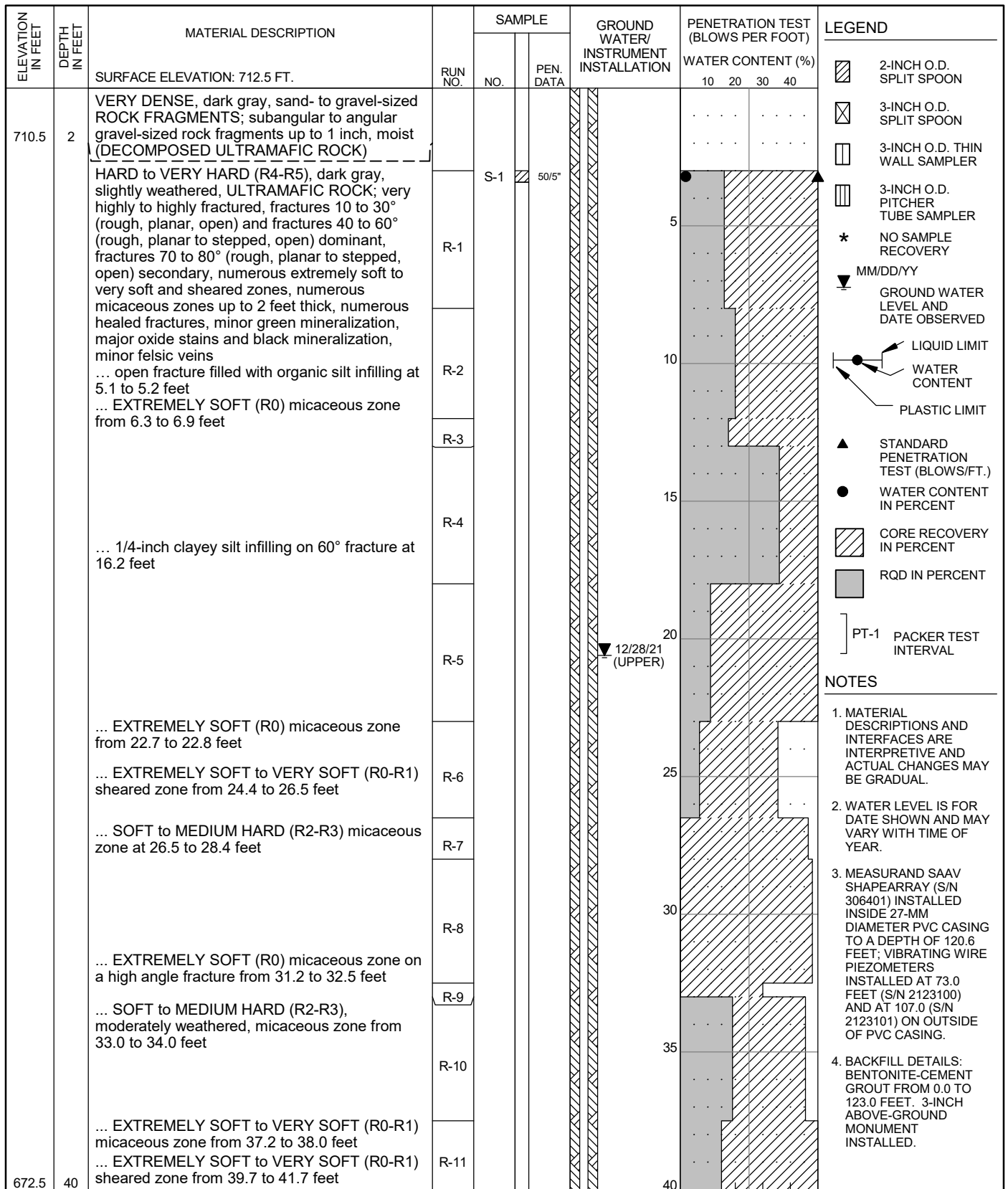
DRILL ROD USED: NWJ BOREHOLE DIAM.: 4.5" (0.0'-7.0'); 3.78" (7.0'-123.5')

DRILLER: DISCOVERY DATE START: 10/3/2021 FINISH: 10/5/2021 DRILLING TECHNIQUE: HWT CASING ADVANCER/HQ3 CORING	 10250 S.W. Greenburg Road, Suite 111 Portland, Oregon 97223 Phone 503-452-1200 Fax 503-452-1528	SUMMARY BORING LOG LT-8 (3 of 4) BEACH RD LANDSLIDE HAINES, AK	MAR 2022 PROJ 2930 FIG. A-8
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ELEVATION IN FEET	DEPTH IN FEET	MATERIAL DESCRIPTION	RUN NO.	SAMPLE		GROUND WATER/ INSTRUMENT INSTALLATION	PENETRATION TEST (BLOWS PER FOOT)				LEGEND			
				NO.	PEN. DATA		WATER CONTENT (%)							
		SURFACE ELEVATION: 941.8 FT.					10	20	30	40				
818.3	123.5	(continued from previous page)	R-28									2-INCH O.D. SPLIT SPOON 3-INCH O.D. SPLIT SPOON 3-INCH O.D. THIN WALL SAMPLER 3-INCH O.D. PITCHER TUBE SAMPLER * NO SAMPLE RECOVERY MM/DD/YY GROUND WATER LEVEL AND DATE OBSERVED LIQUID LIMIT WATER CONTENT PLASTIC LIMIT STANDARD PENETRATION TEST (BLOWS/FT.) WATER CONTENT IN PERCENT CORE RECOVERY IN PERCENT RQD IN PERCENT] PT-1 PACKER TEST INTERVAL		
		Bottom of Boring: 123.5 FT												
		125												
		130												
		135												
		140												
		145												
		150												
		155												
		160												

HAMMER ASSEMBLY: AUTO TRIP SPT SAMPLER: NO LINER - CONSTANT ID RECOVERY/RQD (%)
DRILL ROD USED: NWJ BOREHOLE DIAM.: 4.5" (0.0'-7.0'); 3.78" (7.0'-123.5')

DRILLER: DISCOVERY DATE START: 10/3/2021 FINISH: 10/5/2021 DRILLING TECHNIQUE: HWT CASING ADVANCER/HQ3 CORING	 10250 S.W. Greenburg Road, Suite 111 Portland, Oregon 97223 Phone 503-452-1200 Fax 503-452-1528	SUMMARY BORING LOG LT-8 (4 of 4) BEACH RD LANDSLIDE HAINES, AK	MAR 2022
			PROJ 2930
			FIG. A-8



- NOTES**
- MATERIAL DESCRIPTIONS AND INTERFACES ARE INTERPRETIVE AND ACTUAL CHANGES MAY BE GRADUAL.
 - WATER LEVEL IS FOR DATE SHOWN AND MAY VARY WITH TIME OF YEAR.
 - MEASURAND SAAV SHAPEARRAY (S/N 306401) INSTALLED INSIDE 27-MM DIAMETER PVC CASING TO A DEPTH OF 120.6 FEET; VIBRATING WIRE PIEZOMETERS INSTALLED AT 73.0 FEET (S/N 2123100) AND AT 107.0 (S/N 2123101) ON OUTSIDE OF PVC CASING.
 - BACKFILL DETAILS: BENTONITE-CEMENT GROUT FROM 0.0 TO 123.0 FEET. 3-INCH ABOVE-GROUND MONUMENT INSTALLED.

HAMMER ASSEMBLY: AUTO TRIP SPT SAMPLER: NO LINER - CONSTANT ID RECOVERY/RQD (%)

DRILL ROD USED: NWJ BOREHOLE DIAM.: 4.5" (0.0'-3.0'); 3.78" (3.0'-123.0')

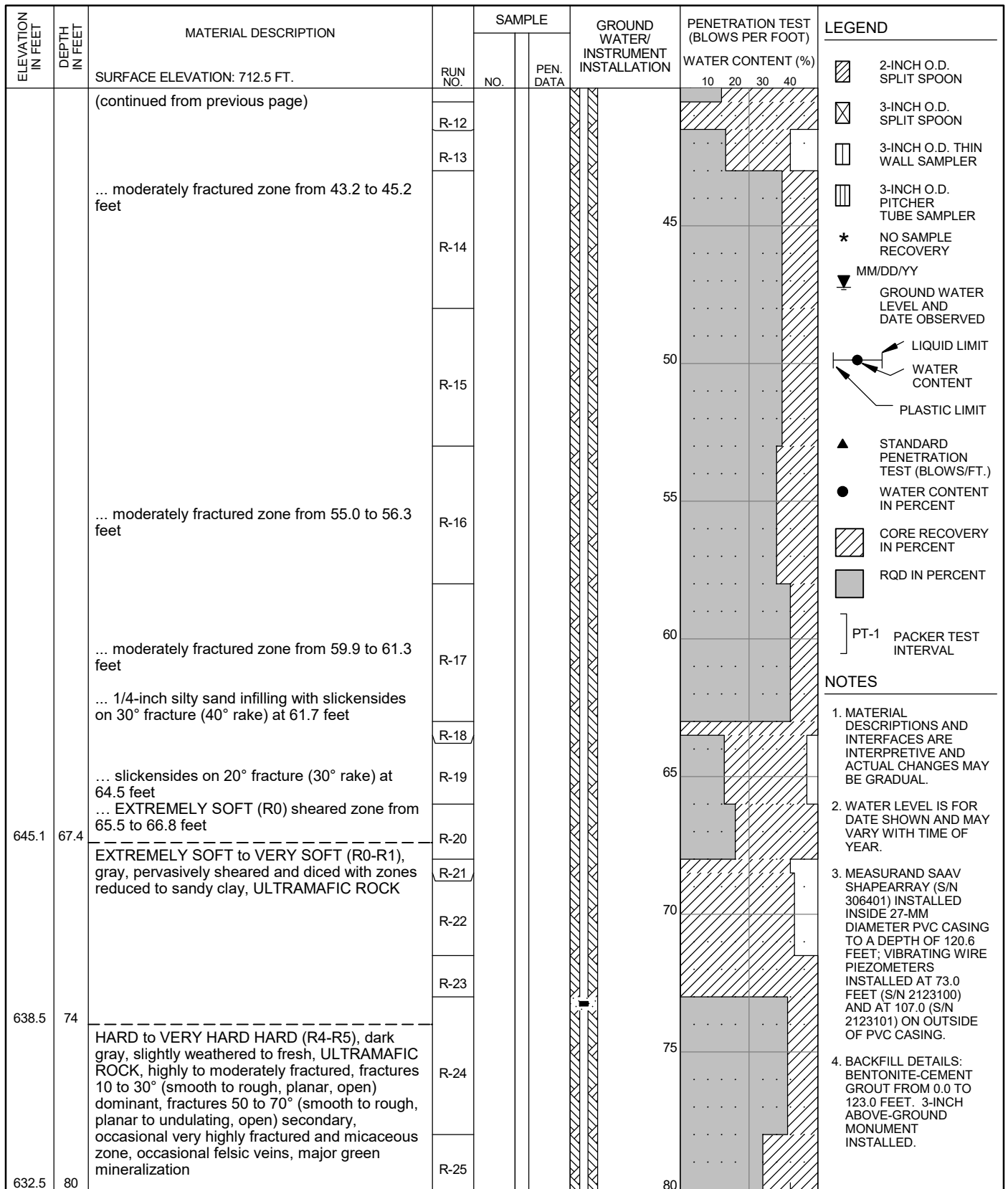
DRILLER: DISCOVERY
 DATE START: 10/10/2021 FINISH: 10/15/2021
 DRILLING TECHNIQUE: HWT CASING
 ADVANCER/HQ3 CORING



SUMMARY BORING LOG
 LT-9 (1 of 4)

BEACH RD LANDSLIDE
 HAINES, AK

MAR 2022
 PROJ 2930
 FIG. A-9



- LEGEND**
- 2-INCH O.D. SPLIT SPOON
 - 3-INCH O.D. SPLIT SPOON
 - 3-INCH O.D. THIN WALL SAMPLER
 - 3-INCH O.D. PITCHER TUBE SAMPLER
 - * NO SAMPLE RECOVERY
 - MM/DD/YY GROUND WATER LEVEL AND DATE OBSERVED
 - LIQUID LIMIT
 - WATER CONTENT
 - PLASTIC LIMIT
 - STANDARD PENETRATION TEST (BLOWS/FT.)
 - WATER CONTENT IN PERCENT
 - CORE RECOVERY IN PERCENT
 - RQD IN PERCENT
 - PT-1 PACKER TEST INTERVAL

- NOTES**
1. MATERIAL DESCRIPTIONS AND INTERFACES ARE INTERPRETIVE AND ACTUAL CHANGES MAY BE GRADUAL.
 2. WATER LEVEL IS FOR DATE SHOWN AND MAY VARY WITH TIME OF YEAR.
 3. MEASURAND SAAV SHAPEARRAY (S/N 306401) INSTALLED INSIDE 27-MM DIAMETER PVC CASING TO A DEPTH OF 120.6 FEET; VIBRATING WIRE PIEZOMETERS INSTALLED AT 73.0 FEET (S/N 2123100) AND AT 107.0 (S/N 2123101) ON OUTSIDE OF PVC CASING.
 4. BACKFILL DETAILS: BENTONITE-CEMENT GROUT FROM 0.0 TO 123.0 FEET. 3-INCH ABOVE-GROUND MONUMENT INSTALLED.

HAMMER ASSEMBLY: AUTO TRIP SPT SAMPLER: NO LINER - CONSTANT ID RECOVERY/RQD (%)

DRILL ROD USED: NWJ BOREHOLE DIAM.: 4.5" (0.0'-3.0'); 3.78" (3.0'-123.0')

DRILLER: DISCOVERY
 DATE START: 10/10/2021 FINISH: 10/15/2021
 DRILLING TECHNIQUE: HWT CASING
 ADVANCER/HQ3 CORING

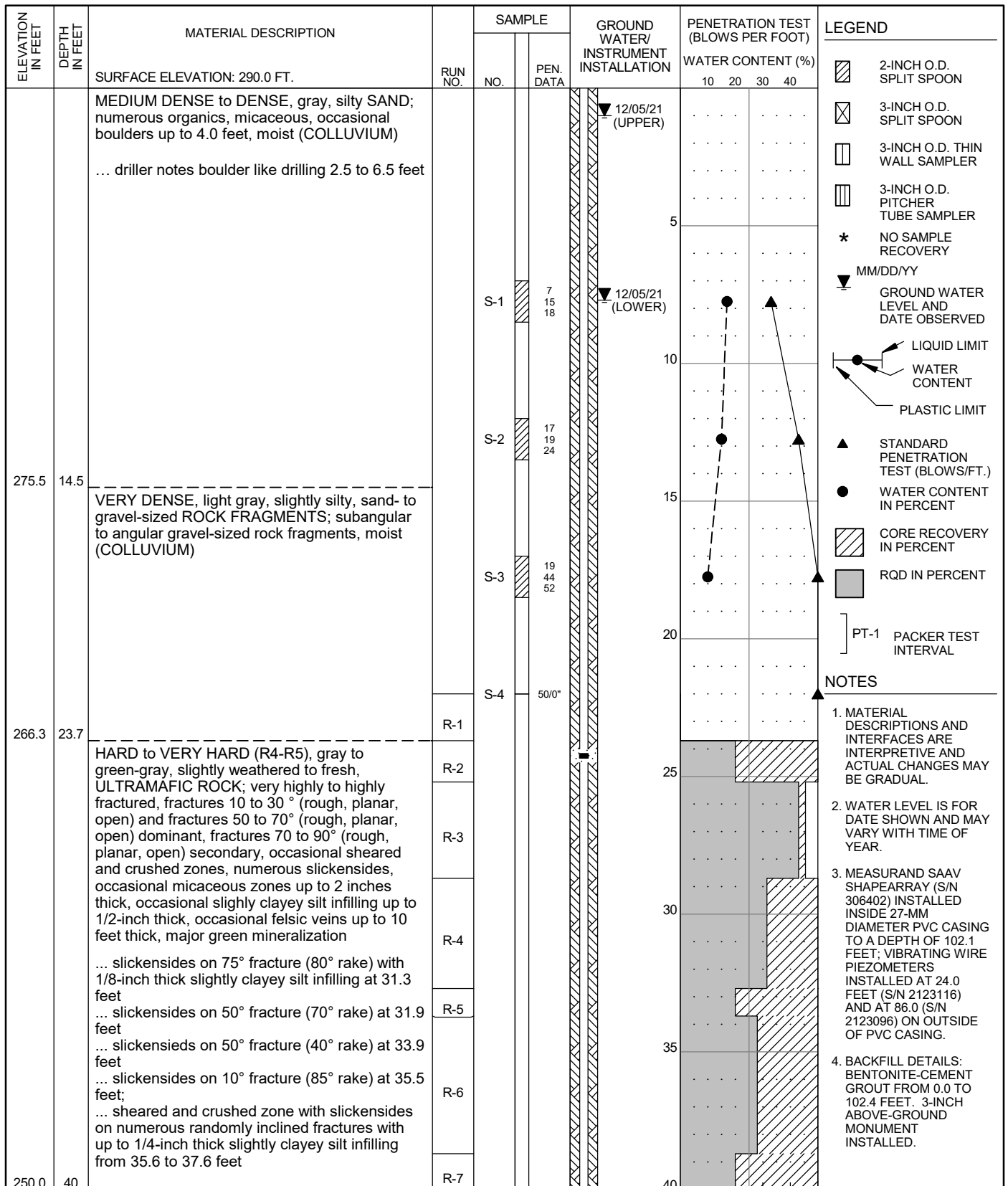


SUMMARY BORING LOG
LT-9 (2 of 4)

BEACH RD LANDSLIDE
 HAINES, AK


MAR 2022
 PROJ 2930
 FIG. **A-9**

ELEVATION IN FEET	DEPTH IN FEET	MATERIAL DESCRIPTION	RUN NO.	SAMPLE		GROUND WATER/ INSTRUMENT INSTALLATION	PENETRATION TEST (BLOWS PER FOOT)	WATER CONTENT (%)	LEGEND	
				NO.	PEN. DATA					10
589.5	123	SURFACE ELEVATION: 712.5 FT.	R-33						<ul style="list-style-type: none"> 2-INCH O.D. SPLIT SPOON 3-INCH O.D. SPLIT SPOON 3-INCH O.D. THIN WALL SAMPLER 3-INCH O.D. PITCHER TUBE SAMPLER * NO SAMPLE RECOVERY MM/DD/YY GROUND WATER LEVEL AND DATE OBSERVED LIQUID LIMIT WATER CONTENT PLASTIC LIMIT STANDARD PENETRATION TEST (BLOWS/FT.) WATER CONTENT IN PERCENT CORE RECOVERY IN PERCENT RQD IN PERCENT PT-1 PACKER TEST INTERVAL 	
		(continued from previous page)								
		Bottom of Boring: 123 FT								
							<p>NOTES</p> <ol style="list-style-type: none"> 1. MATERIAL DESCRIPTIONS AND INTERFACES ARE INTERPRETIVE AND ACTUAL CHANGES MAY BE GRADUAL. 2. WATER LEVEL IS FOR DATE SHOWN AND MAY VARY WITH TIME OF YEAR. 3. MEASURAND SAAV SHAPEARARRAY (S/N 306401) INSTALLED INSIDE 27-MM DIAMETER PVC CASING TO A DEPTH OF 120.6 FEET; VIBRATING WIRE PIEZOMETERS INSTALLED AT 73.0 FEET (S/N 2123100) AND AT 107.0 (S/N 2123101) ON OUTSIDE OF PVC CASING. 4. BACKFILL DETAILS: BENTONITE-CEMENT GROUT FROM 0.0 TO 123.0 FEET. 3-INCH ABOVE-GROUND MONUMENT INSTALLED. 			
							<p>20 40 60 80</p> <p>RECOVERY/RQD (%)</p>			
HAMMER ASSEMBLY: AUTO TRIP			SPT SAMPLER: NO LINER - CONSTANT ID							
DRILL ROD USED: NWJ			BOREHOLE DIAM.: 4.5" (0.0'-3.0'); 3.78" (3.0'-123.0')							
DRILLER: DISCOVERY DATE START: 10/10/2021 FINISH: 10/15/2021 DRILLING TECHNIQUE: HWT CASING ADVANCER/HQ3 CORING			 10250 S.W. Greenburg Road, Suite 111 Portland, Oregon 97223 Phone 503-452-1200 Fax 503-452-1528			SUMMARY BORING LOG LT-9 (4 of 4)		MAR 2022 PROJ 2930 FIG. A-9		
						BEACH RD LANDSLIDE HAINES, AK				



HAMMER ASSEMBLY: AUTO TRIP SPT SAMPLER: NO LINER - CONSTANT ID RECOVERY/RQD (%)

DRILL ROD USED: NWJ BOREHOLE DIAM.: 4.5" (0.0'-22.0'); 3.78" (22'-102.4')

DRILLER: DISCOVERY DATE START: 10/16/2021 FINISH: 10/18/2021 DRILLING TECHNIQUE: HWT CASING ADVANCER/HQ3 CORING	 10250 S.W. Greenburg Road, Suite 111 Portland, Oregon 97223 Phone 503-452-1200 Fax 503-452-1528	SUMMARY BORING LOG LT-10 (1 of 3) BEACH RD LANDSLIDE HAINES, AK	MAR 2022 PROJ 2930 FIG. A-10
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ELEVATION IN FEET	DEPTH IN FEET	MATERIAL DESCRIPTION	RUN NO.	SAMPLE		GROUND WATER/ INSTRUMENT INSTALLATION	PENETRATION TEST (BLOWS PER FOOT)	LEGEND
				NO.	PEN. DATA			
		SURFACE ELEVATION: 290.0 FT.						
		(continued from previous page)						
		... slickensides on 70° fracture (25° rake) at 42.4 feet	R-7					
		... micaceous sand zone from 43.3 to 43.5 feet; slickensides on 50° fracture (70° rake) at 43.3 feet; slickensides with 1/16-inch clay infilling on 40° fracture (70° rake) at 43.5 feet	R-8				45	
		... slickensides on 55° fracture (10° rake) at 51.5 feet	R-9				50	
		... slickensides on 50° fracture (60° rake), and on 30° fracture (80° rake) at 53.7 and 54.4 feet	R-10				55	
		... moderately fractured zone from 56.1 to 57.3 feet	R-10					
		... slickensides on 20° fracture (50° rake) at 58.6 feet	R-11				60	
		... slickensides on 30° fracture (90° rake), and on 70° fracture (85° rake) at 59.5 and 60.1 feet	R-11					
		... crushed zone from 62.0 to 62.4 feet	R-12					
		... slickensides on 30° fracture (40° rake) at 63.0 feet	R-12					
		... slickensides on 50° fracture (75° rake) at 63.6 feet	R-13				65	
		... slickensides on 50° fracture (80° rake) at 63.9 feet	R-13					
		... slickensides on 80° fracture (10° rake) at 64.2 feet	R-13					
		... crushed zone from 64.7 to 64.9 feet	R-14				70	
		... slickensides on 60° fracture (60° rake) with 1/8-inch thick clay infilling at 66.4 feet	R-14					
		... slickensides on 50° fracture (40° rake) at 67.0 feet	R-14					
218.2	71.8	VERY SOFT to SOFT (R1-R2), green-gray, highly to moderately weathered, ULTRAMAFIC ROCK; very highly to highly fractured, fractures 10 to 30° (smooth to slickensided, planar, open) dominant, fractures 50 to 70° (rough, planar to undulating, open) secondary, pervasively sheared with major clay infilling that is EXTREMELY SOFT (R0), numerous slickensides on randomly oriented fractures, scattered fragments of HARD (R4) rock up to 1.0-foot thick between sheared zones, occasional lamprophyre dikes up to 0.6-foot thick, major green mineralization	R-15				75	
210.0	80		R-16				80	

LEGEND

- 2-INCH O.D. SPLIT SPOON
- 3-INCH O.D. SPLIT SPOON
- 3-INCH O.D. THIN WALL SAMPLER
- 3-INCH O.D. PITCHER TUBE SAMPLER
- NO SAMPLE RECOVERY
- MM/DD/YY GROUND WATER LEVEL AND DATE OBSERVED
- LIQUID LIMIT
- WATER CONTENT
- PLASTIC LIMIT
- STANDARD PENETRATION TEST (BLOWS/FT.)
- WATER CONTENT IN PERCENT
- CORE RECOVERY IN PERCENT
- RQD IN PERCENT
- PT-1 PACKER TEST INTERVAL

- NOTES**
- MATERIAL DESCRIPTIONS AND INTERFACES ARE INTERPRETIVE AND ACTUAL CHANGES MAY BE GRADUAL.
 - WATER LEVEL IS FOR DATE SHOWN AND MAY VARY WITH TIME OF YEAR.
 - MEASURAND SAAV SHAPEARRAY (S/N 306402) INSTALLED INSIDE 27-MM DIAMETER PVC CASING TO A DEPTH OF 102.1 FEET; VIBRATING WIRE PIEZOMETERS INSTALLED AT 24.0 FEET (S/N 2123116) AND AT 86.0 (S/N 2123096) ON OUTSIDE OF PVC CASING.
 - BACKFILL DETAILS: BENTONITE-CEMENT GROUT FROM 0.0 TO 102.4 FEET. 3-INCH ABOVE-GROUND MONUMENT INSTALLED.

HAMMER ASSEMBLY: AUTO TRIP SPT SAMPLER: NO LINER - CONSTANT ID RECOVERY/RQD (%)

DRILL ROD USED: NWJ BOREHOLE DIAM.: 4.5" (0.0'-22.0'); 3.78" (22'-102.4')

DRILLER: DISCOVERY
DATE START: 10/16/2021 FINISH: 10/18/2021
DRILLING TECHNIQUE: HWT CASING
ADVANCER/HQ3 CORING

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Portland, Oregon 97223
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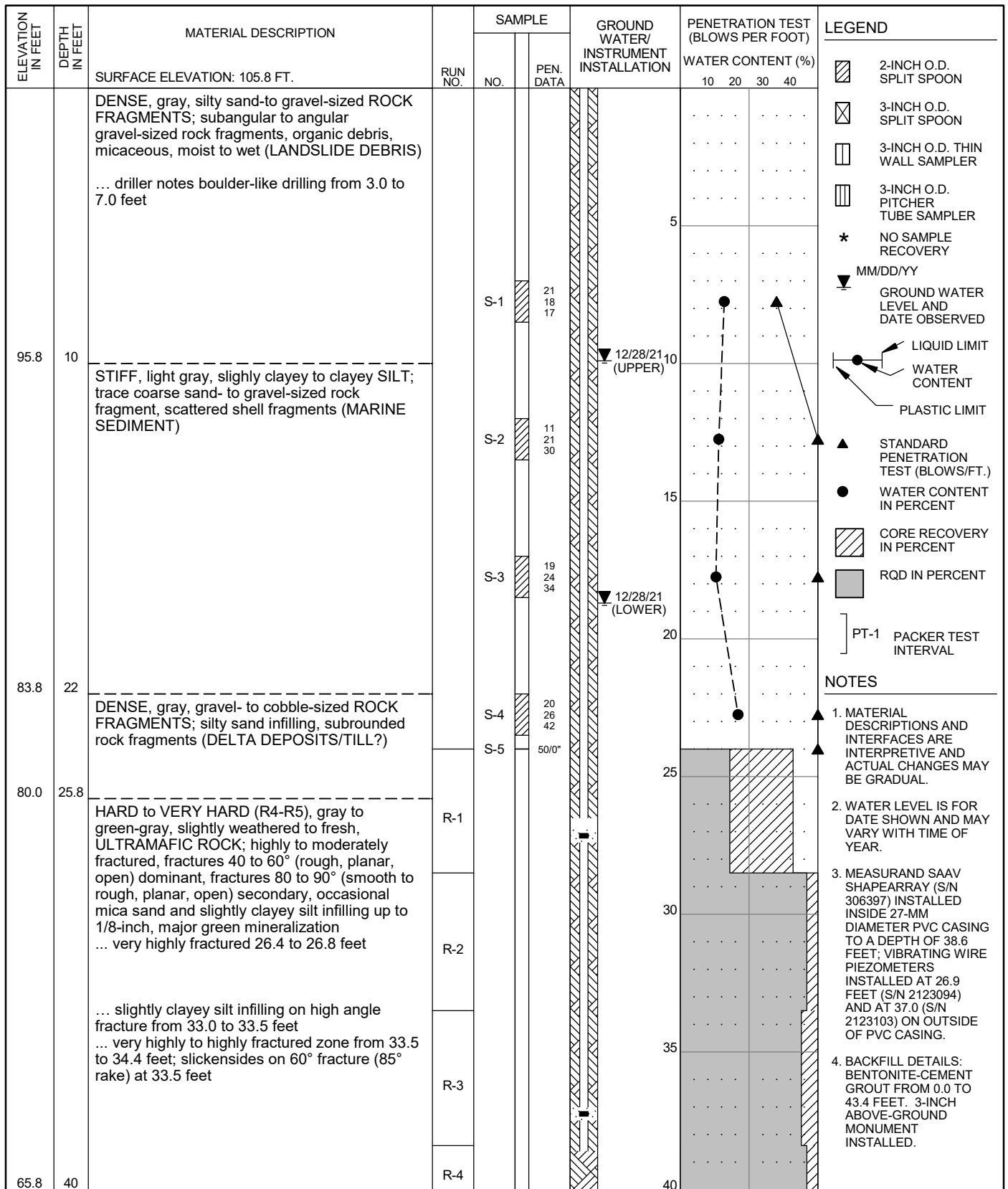
SUMMARY BORING LOG
LT-10 (2 of 3)

BEACH RD LANDSLIDE
HAINES, AK

MAR 2022
PROJ 2930
FIG. **A-10**

ELEVATION IN FEET	DEPTH IN FEET	MATERIAL DESCRIPTION	RUN NO.	SAMPLE		GROUND WATER/ INSTRUMENT INSTALLATION	PENETRATION TEST (BLOWS PER FOOT)		LEGEND	
				NO.	PEN. DATA		WATER CONTENT (%)			
		SURFACE ELEVATION: 290.0 FT.					10 20 30 40			
187.6	102.4	(continued from previous page) ... slickensides on 70° fracture (80° rake) at 72.0 feet	R-16						<ul style="list-style-type: none"> 2-INCH O.D. SPLIT SPOON 3-INCH O.D. SPLIT SPOON 3-INCH O.D. THIN WALL SAMPLER 3-INCH O.D. PITCHER TUBE SAMPLER * NO SAMPLE RECOVERY MM/DD/YY GROUND WATER LEVEL AND DATE OBSERVED LIQUID LIMIT WATER CONTENT PLASTIC LIMIT STANDARD PENETRATION TEST (BLOWS/FT.) WATER CONTENT IN PERCENT CORE RECOVERY IN PERCENT RQD IN PERCENT PT-1 PACKER TEST INTERVAL 	
		... slickensides on 30° fracture (85° rake), and on 20° fracture (40° rake) at 74.1 and 74.7 feet	R-17							
			R-18							
			R-19							
			R-20							
			R-21							
			R-22							
				Bottom of Boring: 102.4 FT						
							20 40 60 80			
HAMMER ASSEMBLY: AUTO TRIP							SPT SAMPLER: NO LINER - CONSTANT ID			
DRILL ROD USED: NWJ							BOREHOLE DIAM.: 4.5" (0.0'-22.0'); 3.78" (22'-102.4')		RECOVERY/RQD (%)	
DRILLER: DISCOVERY			<p>10250 S.W. Greenburg Road, Suite 111 Portland, Oregon 97223 Phone 503-452-1200 Fax 503-452-1528</p>			SUMMARY BORING LOG LT-10 (3 of 3)			MAR 2022	
DATE START: 10/16/2021 FINISH: 10/18/2021									PROJ 2930	
DRILLING TECHNIQUE: HWT CASING									FIG. A-10	
ADVANCER/HQ3 CORING			BEACH RD LANDSLIDE HAINES, AK							

- NOTES**
1. MATERIAL DESCRIPTIONS AND INTERFACES ARE INTERPRETIVE AND ACTUAL CHANGES MAY BE GRADUAL.
 2. WATER LEVEL IS FOR DATE SHOWN AND MAY VARY WITH TIME OF YEAR.
 3. MEASURAND SAAV SHAPEARRAY (S/N 306402) INSTALLED INSIDE 27-MM DIAMETER PVC CASING TO A DEPTH OF 102.1 FEET; VIBRATING WIRE PIEZOMETERS INSTALLED AT 24.0 FEET (S/N 2123116) AND AT 86.0 (S/N 2123096) ON OUTSIDE OF PVC CASING.
 4. BACKFILL DETAILS: BENTONITE-CEMENT GROUT FROM 0.0 TO 102.4 FEET. 3-INCH ABOVE-GROUND MONUMENT INSTALLED.



- NOTES**
1. MATERIAL DESCRIPTIONS AND INTERFACES ARE INTERPRETIVE AND ACTUAL CHANGES MAY BE GRADUAL.
 2. WATER LEVEL IS FOR DATE SHOWN AND MAY VARY WITH TIME OF YEAR.
 3. MEASURAND SAAV SHAPEARRAY (S/N 306397) INSTALLED INSIDE 27-MM DIAMETER PVC CASING TO A DEPTH OF 38.6 FEET; VIBRATING WIRE PIEZOMETERS INSTALLED AT 26.9 FEET (S/N 2123094) AND AT 37.0 (S/N 2123103) ON OUTSIDE OF PVC CASING.
 4. BACKFILL DETAILS: BENTONITE-CEMENT GROUT FROM 0.0 TO 43.4 FEET. 3-INCH ABOVE-GROUND MONUMENT INSTALLED.

HAMMER ASSEMBLY: AUTO TRIP SPT SAMPLER: NO LINER - CONSTANT ID RECOVERY/RQD (%)

DRILL ROD USED: NWJ BOREHOLE DIAM.: 4.5" (0.0'-24.0'); 3.78" (24.0'-43.4)

DRILLER: DISCOVERY
 DATE START: 10/22/2021 FINISH: 10/23/2021
 DRILLING TECHNIQUE: HWT CASING
 ADVANCER/HQ3 CORING



SUMMARY BORING LOG
 LT-11 (1 of 2)
 BEACH RD LANDSLIDE
 HAINES, AK

MAR 2022
 PROJ 2930
 FIG. **A-11**

ELEVATION IN FEET	DEPTH IN FEET	MATERIAL DESCRIPTION	RUN NO.	SAMPLE		GROUND WATER/ INSTRUMENT INSTALLATION	PENETRATION TEST (BLOWS PER FOOT)				LEGEND								
				NO.	PEN. DATA		WATER CONTENT (%)												
		SURFACE ELEVATION: 105.8 FT.					10	20	30	40									
62.4	43.4	(continued from previous page)	R-4								<ul style="list-style-type: none"> 2-INCH O.D. SPLIT SPOON 3-INCH O.D. SPLIT SPOON 3-INCH O.D. THIN WALL SAMPLER 3-INCH O.D. PITCHER TUBE SAMPLER NO SAMPLE RECOVERY MM/DD/YY GROUND WATER LEVEL AND DATE OBSERVED LIQUID LIMIT WATER CONTENT PLASTIC LIMIT STANDARD PENETRATION TEST (BLOWS/FT.) WATER CONTENT IN PERCENT CORE RECOVERY IN PERCENT RQD IN PERCENT PT-1 PACKER TEST INTERVAL 								
		... very highly fractured zone from 42.8 to 43.1 feet																	
		Bottom of Boring: 43.4 FT																	

HAMMER ASSEMBLY: AUTO TRIP SPT SAMPLER: NO LINER - CONSTANT ID RECOVERY/RQD (%)

DRILL ROD USED: NWJ BOREHOLE DIAM.: 4.5" (0.0'-24.0'); 3.78" (24.0'-43.4)

DRILLER: DISCOVERY DATE START: 10/22/2021 FINISH: 10/23/2021 DRILLING TECHNIQUE: HWT CASING ADVANCER/HQ3 CORING	 10250 S.W. Greenburg Road, Suite 111 Portland, Oregon 97223 Phone 503-452-1200 Fax 503-452-1528	SUMMARY BORING LOG LT-11 (2 of 2) BEACH RD LANDSLIDE HAINES, AK	MAR 2022
			PROJ 2930
			FIG. A-11

