

Central Florida Testing Laboratories, Inc.*Testing Development and Research*

12625 - 40TH STREET NORTH • CLEARWATER, FL 33762

ENGINEERING BUSINESS NO. 1066

GEOLOGY BUSINESS NO. 224

TAMPA BAY AREA (727) 572-9797

FLORIDA 1-800-248-CFTL

FAX (727) 299-0023

June 12, 2013

Solana Bay Homeowners Association
c/o Rampart Properties, Inc. AAMC
3550 Buschwood Park Drive, Ste 150
Tampa, Florida 33618

Re: Ground Stabilization Monitoring Solana Bay Townhomes
Bldg. #13, Tampa, Florida
Unit Nos. 8447, 8449, 8451, 8453, 8455, and 8457
American Capital Assurance Corp. Claim No. 141079-111005
CFTL Report No. 209803

Gentlemen,

Please note that our office issued a preliminary report on April 10th, 2013 in order to keep all parties informed about the status of the work efforts. At that point in time the scheduling of the shallow chemical grouting program was not known. With the issuance of this report, the work efforts for Building #13 (with regards only to the subsurface sinkhole stabilization efforts) are now complete and this report should be considered FINAL.

Our office was present on location to monitor the work performed by LRE Ground Services, Inc. (LRE), the Contractor retained to complete the dual phase subsurface grouting programs for the sinkhole-stabilization project undertaken at Solana Bay, Building #13.

As a result of reported settlement damage to the units within Building #13, our company (CFTL) completed a comprehensive geotechnical investigation of this structure in March of 2012 on behalf of American Capital Assurance Corporation. Based on that evaluation, it was our professional opinion that the damage we observed to this building was the result of a combination of factors including initial minor settlement of the structure, material shrinkage, and the expansion/contraction of building materials. However, evidence of sinkhole activity was encountered during the course of our investigation that could not be reasonably eliminated as contributing to the observed damage. A report detailing our testing methods, the data produced through those methods, and our conclusions as to the cause of damage to the property was issued on March 7th, 2012 under our Lab No. 206869.

Our recommendations for the stabilization program consisted of deep subsurface grouting to be performed around the building in order to stabilize the sinkhole-weakened soils followed by a secondary program of shallow chemical grouting. The primary phase of deep subsurface grouting was intended to address the deeper soil profiles affected by sinkhole activity using a moderate slump cementitious grout, while a secondary program of shallow grouting using a chemical type grout was necessary to further densify the remaining upper loose soils not addressed by the deep grouting program.

Prior to the start of grouting, we reviewed the mix design of the grout supplier, Florida Rock Industries, Inc. for this project. The mix design supplied had the specified design strength of achieving at least 1,500 psi at 28 days of age, as well as a known history of meeting or exceeding this specified compressive strength. It is our opinion that the grout material used for this stabilization project meets our strength specifications when used within the recommended slump range.

The primary, deep subsurface grouting of the sinkhole remediation program for Building #13 was performed by LRE in a total number of 21 working days between the dates of January 15th, 2013 and February 25th, 2013. This consisted of the deep grouting around the perimeter of the structure through 55 deep injection locations. Alternating injection points forming the perimeter of the building were angled towards the center to better address the raveled soil zones beneath the existing footprint of the building. Our monitoring efforts recorded the specific depths, grout quantities, and locations of each of these 55 locations. This data is presented in graphic form on the attached schematic and in tabular form on the deep grouting summary sheet. While initial recommendations called for 56 deep injection locations, it should be noted that a single location, DG-41, placed near the northwest corner of the building, was eliminated as a result of a conflict with underground utilities.

A total of 451.0 cubic yards of cementitious grout were pumped under low to moderate pressures through grout pipes DG-1 through DG-56 at starting depths ranging from 40 to 96 feet below the surface. The average starting depth for all 55 points was approximately 57 feet below the surface, remaining within our original estimate of 40 to 65 feet based upon the boring data produced during our comprehensive geotechnical investigation. A total of 3,140 linear feet of grouting pipe (not including the 152 feet worth of redrilling at locations DG-7 and DG-8), through which the grout was pumped, was installed and removed from beneath the property. Limiting criteria used in this phase of the remediation project was (1) injection pressure and/or (2) structure lift.

After final review and correlation of the deep grouting data, two isolated areas of interest were identified as requiring an increase in the amount of injected grout necessary to affect stabilization. Adjacent deep injection locations DG-7 through DG-10 and DG-47 through DG-49, located near the middle of the east wall of the building, accepted a total grout take of 215.7 cubic yards of cementitious grout while deep injection location DG-21, placed along the southern wall near the southwest corner of the building required a total quantity of 40.8 cubic yards of grout. These two areas accounted for approximately 56.9% of the total volume of injected grout while only accounting for approximately 14.5% of the total number of injection locations. The volume of grout used to complete the deep grouting phase of the stabilization program was above our initial estimate of 300 cubic yards. As discussed above, the amount of grout utilized along the east wall of the building was not anticipated in our original estimates and if known this finding would have increased the estimated amount of grout needed to affect full stabilization. Adhering to the limiting criteria of pressure and/or structure lift allows us to conclude the grout quantity was sufficient to affect full stabilization.

The referenced secondary program of final shallow chemical grouting, utilized to further consolidate and densify the near-surface, loose soils not entirely addressed by the deep stabilization grouting program, was completed by LRE in 5 working days between the dates of May 6th, 2013 and May 10th, 2013. Our monitoring efforts show that a total of approximately 5,413.1 pounds of PolyLEVEL™ 400H, a two-

Sinkhole Stabilization Report for Solana Bay, Building #13
CFTL Report No. 209803

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component polyurethane grout, were injected through 155 shallow grouting locations placed around the perimeter of the foundation of the main building, along the interior common bearing walls between the units and around the perimeter of the rear porches of Building #13. The locations of the shallow grouting are designated with a solid red line on the attached Grout As-built sheet.

The pumping of these locations was commenced at depths of approximately 6 feet below the surface and spaced approximately 3 to 5 feet apart on center, meeting our recommendations as to depth and center to center spacing. The actual quantity of injected chemical grout was somewhat above our projected values, indicating that the loose soil conditions present in these near surface soils were more extensive than our initial testing indicated. Probing of the upper soils in various locations around the building before and after the chemical grouting displayed an increase in density as expected.

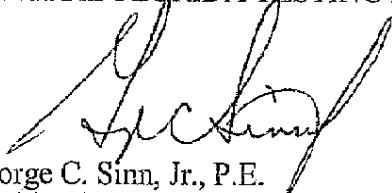
After completion of the deep and shallow grouting of Building #13, it is our opinion that the sinkhole activity previously identified has been stabilized and bearing capacity has been restored to the soils supporting the foundation lines of the building.

A post grout inspection of the exterior of the building revealed no obvious additional damage beyond that typical of collateral damage associated with minor structure movement which would occur during the stabilization efforts and that typically seen to the surrounding concrete slabs. It was noted that the exterior of the building had been recently painted at the time of the inspection. **However, we still maintain our recommendation that no cosmetic repairs should have been undertaken until after completion of the shallow chemical grouting program.**

We appreciate the opportunity to have been of service and look forward to continuing our efforts on this project. If any questions arise concerning this report, please do not hesitate to contact our office.

Sincerely,

CENTRAL FLORIDA TESTING LABORATORIES, INC.

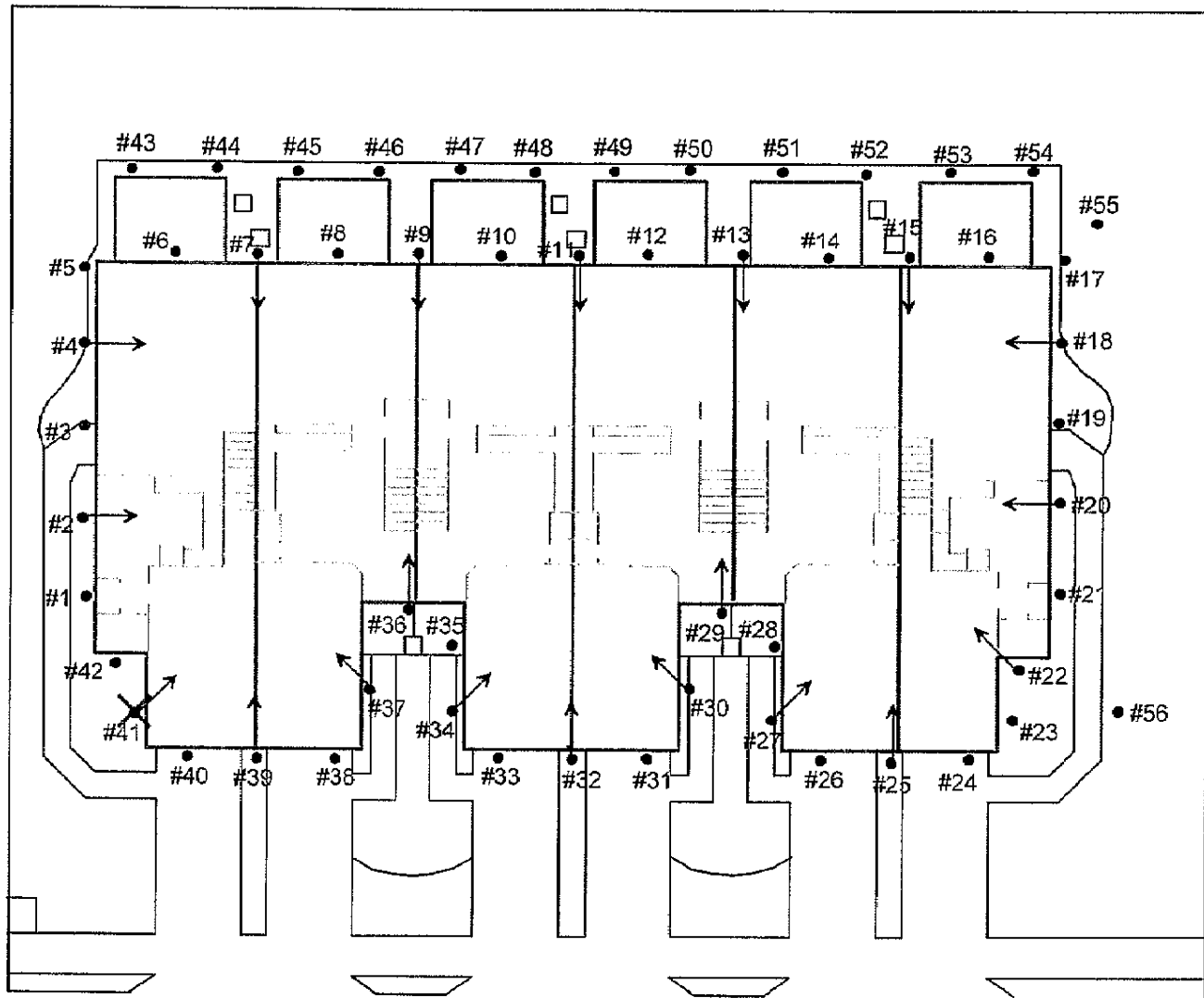


George C. Sinn, Jr., P.E.
President/Principal Engineer
FLN16911 6-13-13

GCS/sls
Attachments

cc: American Capital Assurance Corporation – Mr. Brian Gesiorski
LRE Ground Services, Inc. (2)

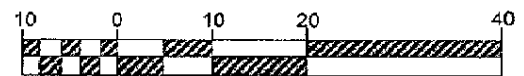
GROUT AS-BUILT



- ✕ ELIMINATED DUE TO PRESENCE OF UTILITIES
- DESIGNATES GROUT POINT LOCATIONS AND ORIENTATIONS
- DESIGNATES AREAS OF SHALLOW GROUTING

Approximate Scale

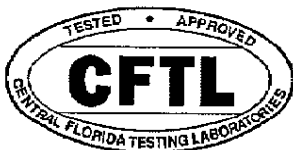
1 inch = 20 feet



Central Florida Testing Labs, Inc.

EB No. 1066

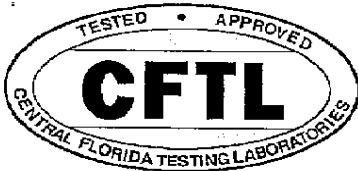
GB No. 224



Solana Bay #13
8447-8457 Sandy Beach Street
Tampa, Florida
Report No. 209803

Grouting Totals

NUMBER OF DEEP GROUT POINTS	55
TOTAL LINEAR FEET DRILLED	3,140 Feet
ACTUAL QUANTITY INJECTED	451.0 Cubic Yards
QUANTITY OF GROUT RETURNED	0.0 Cubic Yards
QUANTITY OF CHEMICAL GROUT	5413.05 Pounds



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Testing Development and Research

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Tampa Bay Area: (727) 572-9797 Florida: 1-800-248-CFTL Fax: (727) 299-0023

Lab No.:	209803	Monitored By:	RM, RS
Project:	Solana Bay Bldg. #13	Start Date:	1/15/2013
Address:	8447-8457 Sandy Beach St.	End Date:	2/25/2013
City / State:	Tampa, FL 33634	Grout Company:	LRE Ground Services, Inc.
Client:	Solana Bay Townhome Owners Assoc.	Date Reported:	6/12/2013

DEEP GROUTING SUMMARY

Grout Point No.	Grout Pt. Depth (ft.)	Quantity Pumped (yd. ³)	Notes
DG-1	54	5.1	
DG-2	64	12.3	
DG-3	80	20.6	
DG-4	52	6.0	
DG-5	55	3.5	
DG-6	53	1.6	
DG-7	84	44.3	
DG-8	96	44.9	
DG-9	77	11.6	
DG-10	80	34.5	
DG-11	52	2.3	
DG-12	60	0.7	
DG-13	53	5.2	
DG-14	48	1.3	
DG-15	48	1.8	
DG-16	47	1.7	
DG-17	55	4.7	
DG-18	63	8.9	
DG-19	62	9.9	
DG-20	63	8.9	
DG-21	72	40.8	
DG-22	53	4.5	
DG-23	55	2.1	
DG-24	65	3.7	
DG-25	54	2.1	
DG-26	48	1.6	
DG-27	51	1.4	
DG-28	51	3.0	
DG-29	53	1.5	
DG-30	47	1.4	

SEE PAGE TWO

Totals listed on Page 2

Lab No.:	209803	Monitored By:	RM, RS
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City / State:	Tampa, FL 33634	Grout Company:	LRE Ground Services, Inc.
Client:	Solana Bay Townhome Owners Assoc.	Date Reported:	6/12/2013

DEEP GROUTING SUMMARY

Grout Point No.	Grout Pt. Depth (ft.)	Quantity Pumped (yd. ³)	Notes
DG-31	50	3.0	
DG-32	52	1.0	
DG-33	50	1.4	
DG-34	47	1.8	
DG-35	47	0.6	
DG-36	49	1.4	
DG-37	48	1.8	
DG-38	45	0.7	
DG-39	51	1.2	
DG-40	40	1.0	
DG-41	Eliminated		
DG-42	51	5.4	
DG-43	63	5.5	
DG-44	53	9.4	
DG-45	63	3.0	
DG-46	66	4.4	
DG-47	93	15.7	
DG-48	67	46.7	
DG-49	48	18.0	
DG-50	47	2.2	
DG-51	48	2.3	
DG-52	52	1.9	
DG-53	51	5.6	
DG-54	52	12.7	
DG-55	58	2.9	
DG-56	54	9.5	
			NO RETURNED GROUT
			NO REDRILLS
			DG-7 redrilled to 67'
			DG-8 redrilled to 85'
			Total redrilled pipe: 152 ft.

TOTAL POINTS	TOTAL FEET DRILLED	TOTAL QUANTITY (YD. ³)
55	3140	451.0

Project: Solana Bay Bldg. #13

Monitored By: RM

Lab No.: 209803

Start Date: 5/6/2013

Address: 8447-8457 Sandy Beach St.

End Date: 5/10/2013

City/State: Tampa, FL 33634

Contractor: LRE Ground Services, Inc.

SHALLOW GROUTING SUMMARY

Pt. No.	Pt. Depth (ft.)	Counter Start	Clicks	Quantity (lbs.)	Stop Reason	Pt. No.	Pt. Depth (ft.)	Counter Start	Clicks	Quantity (lbs.)	Stop Reason
SG-1	6	474 528	54	37.26	M	SG-51	6	1326 1349	23	15.87	E
SG-2	6	528 600	72	49.68	Q	SG-52	6	1300 1326	26	17.94	E
SG-3	6	600 639	39	26.91	E	SG-53	6	1048 1120	72	49.68	Q
SG-4	6	639 711	72	49.68	Q	SG-54	6	1120 1155	35	24.15	E
SG-5	6	711 759	48	33.12	M	SG-55	6	1155 1184	29	20.01	E
SG-6	6	759 804	45	31.05	E	SG-56	6	1184 1189	5	3.45	M
SG-7	6	804 821	17	11.73	M	SG-57	6	1189 1256	67	46.23	E
SG-8	6	821 869	48	33.12	E	SG-58	6	1256 1328	72	49.68	Q
SG-9	6	869 879	10	6.90	M	SG-59	6	1328 1400	72	49.68	Q
SG-10	6	879 951	72	49.68	Q	SG-60	6	1400 1472	72	49.68	Q
SG-11	6	951 1000	49	33.81	M	SG-61	6	1472 1528	56	38.64	E
SG-12	6	1000 1016	16	11.04	E	SG-62	6	1528 1549	21	14.49	E
SG-13	6	1016 1071	55	37.95	E	SG-63	6	40 78	38	26.22	E
SG-14	6	1071 1105	34	23.46	M	SG-64	6	78 150	72	49.68	Q
SG-15	6	1105 1132	27	18.63	E	SG-65	6	150 209	59	40.71	M
SG-16	6	1132 1160	28	19.32	E	SG-66	6	209 281	72	49.68	Q
SG-17	6	1160 1232	72	49.68	ME	SG-67	6	281 353	72	49.68	Q
SG-18	6	1232 1298	66	45.54	E	SG-68	6	353 411	58	40.02	E
SG-19	6	1298 1346	48	33.12	M	SG-69	6	411 451	40	27.60	E
SG-20	6	1346 1437	72	49.68	Q	SG-70	6	451 456	5	3.45	M
SG-21	6	1437 1462	25	17.25	M	SG-71	6	456 528	72	49.68	Q
SG-22	6	1462 1519	57	39.33	M	SG-72	6	528 600	72	49.68	Q
SG-23	6	0 40	40	27.60	M	SG-73	6	600 658	58	40.02	M
SG-24	6	1636 1694	58	40.02	E	SG-74	6	658 730	72	49.68	Q
SG-25	6	1578 1636	58	40.02	E	SG-75	6	730 765	35	24.15	E
SG-26	6	1513 1578	65	44.85	E	SG-76	6	765 837	72	49.68	Q
SG-27	6	630 702	72	49.68	Q	SG-77	6	837 855	18	12.42	M
SG-28	6	702 774	72	49.68	Q	SG-78	6	855 927	72	49.68	Q
SG-29	6	1474 1513	39	26.91	E	SG-79	6	927 934	7	4.83	M
SG-30	6	1464 1474	10	6.90	M	SG-80	6	934 1006	72	49.68	Q
SG-31	6	1392 1464	72	49.68	Q	SG-81	6	1006 1039	33	22.77	M
SG-32	6	1363 1392	29	20.01	E	SG-82	6	0 10	10	6.90	M
SG-33	6	1519 1547	28	19.32	E	SG-83	6	10 82	72	49.68	Q
SG-34	6	1629 1676	47	32.43	M	SG-84	6	72 154	82	56.58	Q
SG-35	6	1676 1686	10	6.90	M	SG-85	6	154 226	72	49.68	Q
SG-36	6	1547 1604	57	39.33	E	SG-86	6	0 71	71	48.99	E
SG-37	6	1604 1629	25	17.25	E	SG-87	6	71 143	72	49.68	Q
SG-38	6	1686 1758	72	49.68	Q	SG-88	6	143 149	6	4.14	M
SG-39	6	1758 1768	10	6.90	M	SG-89	6	149 221	72	49.68	Q
SG-40	6	1768 1791	23	15.87	E	SG-90	6	221 271	50	34.50	E
SG-41	6	1791 1834	43	29.67	M	SG-91	6	271 343	72	49.68	Q
SG-42	6	1487 1503	16	11.04	E	SG-92	6	343 415	72	49.68	Q
SG-43	6	1482 1487	5	3.45	M	SG-93	6	1010 1052	42	28.98	E
SG-44	6	1461 1482	21	14.49	E	SG-94	6	1052 1084	32	22.08	E
SG-45	6	1441 1461	20	13.80	E	SG-95	6	1084 1156	72	49.68	Q
SG-46	6	1421 1441	20	13.80	E	SG-96	6	1156 1228	72	49.68	Q
SG-47	6	1349 1421	72	49.68	Q	SG-97	6	1228 1300	72	49.68	Q
SG-48	6	0 72	72	49.68	Q	SG-98	6	985 1010	25	17.25	E
SG-49	6	72 144	72	49.68	Q	SG-99	6	963 985	22	15.18	M
SG-50	6	72 144	72	49.68	Q	SG-100	6	0 46	46	31.74	E

Project: Solana Bay Bldg. #13

Monitored By: RM

Lab No.: 209803

Start Date: 5/6/2013

Address: 8447-8457 Sandy Beach St.

End Date: 5/10/2013

City/State: Tampa, FL 33634

Contractor: LRE Ground Services, Inc.

SHALLOW GROUTING SUMMARY

Pt. No.	Pt. Depth (ft.)	Counter Start	Clicks	Quantity (lbs.)	Stop Reason	
SG-101	6	283	330	47	32.43	M
SG-102	6	211	283	72	49.68	Q
SG-103	6	171	241	40	27.60	E
SG-104	6	99	171	72	49.68	Q
SG-105	6	61	99	38	26.22	E
SG-106	6	46	61	15	10.35	M
SG-107	6	0	72	72	49.68	Q
SG-108	6	72	95	23	15.87	E
SG-109	6	95	167	72	49.68	Q
SG-110	6	167	190	23	15.87	M
SG-111	6	190	221	31	21.39	E
SG-112	6	221	293	72	49.68	Q
SG-113	6	293	365	72	49.68	Q
SG-114	6	330	402	72	49.68	Q
SG-115	6	402	474	72	49.68	Q
SG-116	6	977	1048	71	48.99	Q
SG-117	6	904	976	72	49.68	Q
SG-118	6	872	904	32	22.08	M
SG-119	6	800	872	72	49.68	Q
SG-120	6	728	800	72	49.68	Q
SG-121	6	656	728	72	49.68	Q
SG-122	6	584	656	72	49.68	Q
SG-123	6	540	584	44	30.36	I
SG-124	6	468	540	72	49.68	Q
SG-125	6	415	468	53	36.57	I
SG-126	6	365	425	60	41.40	I
SG-127	6	425	486	61	42.09	I
SG-128	6	486	558	72	49.68	Q
SG-129	6	558	630	72	49.68	Q
SG-130	6	1312	1363	51	35.19	M
SG-131	6	1253	1312	59	40.71	M
SG-132	6	1109	1181	72	49.68	Q
SG-133	6	1037	1109	72	49.68	Q
SG-134	6	1020	1037	17	11.73	I
SG-135	6	948	1020	72	49.68	Q
SG-136	6	774	790	16	11.04	M
SG-137	6	790	826	36	24.84	M
SG-138	6	826	876	50	34.50	I
SG-139	6	876	948	72	49.68	Q
SG-140	6	1181	1253	72	49.68	Q
SG-141	6	891	963	72	49.68	Q
SG-142	6	819	891	72	49.68	Q
SG-143	6	786	819	33	22.77	I
SG-144	6	755	786	31	21.39	I
SG-145	6	709	755	46	31.74	I
SG-146	6	685	709	24	16.56	M
SG-147	6	585	627	42	28.98	I
SG-148	6	548	585	37	25.53	I
SG-149	6	504	548	44	30.36	I
SG-150	6	432	504	72	49.68	Q

Pt. No.	Pt. Depth (ft.)	Counter Start	Clicks	Quantity (lbs.)	Stop Reason	
SG-151	6	144	216	72	49.68	Q
SG-152	6	216	288	72	49.68	Q
SG-153	6	288	360	72	49.68	Q
SG-154	6	360	432	72	49.68	Q
SG-155	6	627	685	58	40.02	I

Final Click Count:7845

Grout Type

PolyLEVEL 400H

LEGEND

E = Exterior Lift
I = Interior Lift
M = Material to Surface
Q = Quantity (not valid for final unless probed)
X = Incomplete for reason noted in daily notes.

Clicks	Multiplier	Total Quantity
7845	x 0.69	= 5413.05 lbs.

Final Click Count: 7845

Grout Type

PolyLEVEL 400H

LEGEND

E = Exterior Lift

I = Interior Lift

M = Material to Surface

Q = Quantity (not valid for final unless probed)

X = Incomplete for reason noted in daily notes.

Clicks

Multiplier

Total Quantity

7845

x

0.69

=

5413.05 lbs.