SIERRA GEOTECHNICAL SERVICES INC.

GEOTECHNICAL • GEOLOGY • HYDROGEOLOGY • MATERIALS TESTING • INSPECTION

January 31, 2014 Project No. 3.04027

Matt Schober
Triad/Holmes Associates
873 North Main Street #150
Bishop, CA 93514

Subject: **GEOTECHNICAL PAVEMENT DESIGN RECOMMENDATIONS**
June Lake Streets Rehabilitation Project
June Lake, California

Dear Mr. Schober:

Sierra Geotechnical Services, Inc. (SGSI) is pleased to submit our geotechnical pavement rehabilitation recommendations for the subject streets. It is our understanding that the proposed improvements will include the rehabilitation and/or reconstruction of the existing roadways, and the addition of some storm drainage.

Reconstruction and/or improvement of the pavement areas are practical from a geotechnical standpoint. No geologic hazards were observed. Shallow groundwater was noted in the Silver Lake Pines Tract I and Dream Mountain Drive areas, which will hinder any over excavation of subgrade soils, and will impact the construction of any proposed drainage features.

This project is currently in the design process and detailed plans for construction are not available. SGSI should review plans prior to construction in order to assure that they will be in conformance with our recommendations.

MAMMOTH OFFICE: 549 OLD MAMMOTH ROAD, MAMMOTH LAKES, CA 93546 • Phn: (760) 934-3992 Fax: (760) 934-8832
BISHOP OFFICE: 873 NORTH MAIN STREET, SUITE 150, BISHOP, CA 93514 • Phn: (760) 873-6800 Fax: (760) 873-6888

www.sgsi.us

PURPOSE AND SCOPE

SGSI was retained to evaluate the existing condition of the paved roadways and to provide pavement reconstruction recommendations for several locations within the June Lake area, including: Big Rock Road, Dream Mountain Drive, Forest Road, Lakeview Drive, Lyle Terrace Road, North Shore Drive, June Lake Beach Road, a portion of Mountain Vista Drive, and multiple streets within the Silver Lake Pines I tract. The asphalt in these locations was placed within at least the last 10 to 40 years and is in various states of common distress which include cracking and deterioration.

The scope of this investigation included a site reconnaissance, a review of readily available geotechnical literature, a subsurface field investigation, geotechnical evaluation and analysis of the collected field data, and preparation of this report presenting the results of our findings and recommendations and rehabilitation/reconstruction considerations for the proposed project.

The field investigation was performed on January 9th and 10th, 2014 and included the coring of forty-four 6" diameter cores within the pavement areas. The investigation was also supplemented by a review and inclusion herein, of test pit logs and associated laboratory data from several previous investigations in the subject areas. Locations of the cores and previous exploratory excavations are shown on the Field Investigation Location Maps (Figures 1 through 9).

EXISITING CONDITIONS AND RECOMMENDATIONS

The following includes a brief synopsis of type and predominance of roadway cracking, pavement and Base thickness (if any), as well as subgrade and groundwater conditions. Recommendations for reconstruction and/or alternatives too, are also included in the descriptions as well as on the attached Table I. The sections are presented in correlation with the Core # locations.

North Shore Drive

Few to moderate pavement cracks, predominantly transverse and edge, were noted in multiple areas along North Shore Drive. Cracking was worse from the intersection of Highway 158 to the intersection of North Shore and June Lake Beach Road (east section). Many areas of cracking had been previously in-filled with rubberized crack filler but have subsequently reopened.

The east section has at least 3" of AC, but no Class II Base, while the remainder of North Shore west of June Lake Beach Road (west section) has a minimum 3½" AC over 6" of Class II Base (Cores C-1 to C-4, and C-9 to C-15; Figures 1, and 3 to 5). Subgrade soils consist of silty sands with gravels and cobbles. Groundwater is not a factor.

The increased cracking on the east section relative to the west is a predominant function of age and traffic loading, and to a lesser degree the lack of Base. At least three episodes of paving were exposed in the easterly cores, and the lack of Base is consistent with our findings on other older (+40 years) Mono County roads. This section of road also sees a larger amount of traffic transiting to the beach and campgrounds, relative to the western portion of the road. Further, a review of aerial photos indicates that the western portion of the roadway is much younger and was constructed circa 1993 - 1998.

Full depth reconstruction is recommended for the east section (Core Location areas C-1 to C-4). Based on condition and usage, reconstruction of the remainder of North Shore is not warranted at this time. This area should however be periodically maintained via crack filling, and/or a rock or chip seal preservation program.

June Lake Beach Road (formerly Pine Cliff Road)

Moderate to severe pavement cracks, predominantly transverse and edge, with some Alligator were noted along the entire length of the roadway. Here too a majority of major cracks (greater than ½") had been previously in-filled with rubberized crack filler but have subsequently reopened in areas.

AC thickness varied from 2.5" to 4.5" and little to no Base was encountered (Cores C-5 to C-8; Figures 1 and 2). Subgrade soils consist of silty sands with gravels and cobbles. Groundwater is not a factor.

Based on condition and traffic loading, full depth reconstruction is recommended.

Dream Mountain Drive

Moderate pavement cracks, predominantly transverse and edge, were noted along the entire length of the roadway. AC thickness varied from 4" to 5" and no Base was encountered (Cores C-16 to C-18; Figure 6). Approximately 4" of Pit Run fill was noted below the AC. Subgrade soils consist of organic rich topsoil and alluvium. From past investigations groundwater is known to be shallow, from 3 to 7', throughout the area (Figure 10).

Based on condition, traffic loading, subgrade conditions, and depth to groundwater, a full depth reconstruction is not desirable. A 3" grind and overlay should be considered at this time.

Big Rock and Lakeview Roads

Moderate to severe pavement cracks, predominantly transverse and edge, as well as some alligator cracking and raveling were noted along these roads. AC thickness varied from 3½" to 6" and little to no Class II Base was encountered (Cores C-19 to C-23; Figure 7). Subgrade soils consist of silty sands with gravels and cobbles. Groundwater is not a factor.

Based on condition and usage, full reconstruction is recommended for Lakeview Road. Though the pavement condition on Big Rock Road is considered poor, usage is limited and therefore a 2" overlay or a preservation seal may be more appropriate.

Lyle Terrace Road

Moderate to severe pavement cracks, predominantly transverse and edge, as well as some alligator cracking were noted along the entire length of the roadway. AC thickness varied from 2" to 4" on top of a gravel/oil substructure (Cores C-24 to C-26; Figure 8). Subgrade soils consist of silty sands with gravels and cobbles. Groundwater is not a factor.

Based on condition and usage, a full depth reconstruction is recommended for Lyle Terrace Road.

Silver Lake Pines Tract I (Village Area)

Roadways in this section include: Gull Lake Road, Granite Ave, Crawford Avenue, Foster Avenue, Alderman Street, Howard Avenue, Bruce Street, Knoll Avenue, and Brenner Street.
Few to moderate pavement cracks, predominantly transverse and edge, as well as some alligator cracking were noted along these roadways. AC thickness varied from 2" (Howard Avenue) to 7½" (Bruce Street). The vast majority of these streets did not have Class II Base below the AC (Cores C-27 to C-37, and C-40 to C-42; Figures 7 and 9). Cracking was predominantly worse at intersection turn areas, especially those where water was impounded due to poor drainage.

Subgrade soils generally consist of silty fine to coarse sands. From past investigations, groundwater is known to be shallow, from 3 to 5', and does not vary in depth significantly

throughout the year (Figures 11 and 12). As a result, roadways could be destabilized due to equipment vibration if a full depth reconstruction is planned. Drainage improvements maybe problematic as these areas are relatively flat.

Based on conditions and depth to groundwater, a full depth reconstruction of the roadways is not desirable. With exception of intersection areas, a 3" grind and overlay should be considered. Where exposed, subgrade can be rolled for compaction, but this should include non-vibratory techniques. Intersections will need full replacement and drainage improvements.

Forest Road

Severe pavement cracks, transverse, edge, and alligator, were noted along the entire length of the roadway. AC thickness varied from 1.5" to 1.75" on top of native soils (Cores C-38 to C-38; Figure 9). Subgrade soils consist of silty sands with gravels and cobbles. Groundwater is not a factor.

Based on condition and usage, a full depth reconstruction is recommended for Forest Road.

Mountain Vista

Few transverse and edge cracks were noted in this area. AC thickness was 3" on top of 6" of Class II Base (Core C-44; Figure 4). Subgrade soils consist of silty sands with gravels and cobbles. Groundwater is not a factor.

Based on condition, reconstruction is not warranted at this time. This area should however be periodically maintained via crack filling, and/or a rock or chip seal preservation program.

DRAINAGE

The vast majority of the roadways will not be impacted by shallow groundwater and/or poor drainage conditions. However, within the SLP I village area and Dream Mountain Drive, the depth to groundwater is shallow and these areas are relatively flat which will impact any translocation of storm water. Shallow groundwater is omnipresent and does not exhibit much seasonal variation in depth. Depth to water from previous investigations is included on Figures 10 to 12. Any drainage improvements will need to account for the shallow water.

ASPHALT PLACEMENT

The Hot Mix Asphalt (HMA) construction process should follow the "method" process as described in Section 39 of the Caltrans Standard Specifications. HMA should be Type A using the Standard construction process complying with Section 39, "Hot Mix Asphalt" of the Standard Specifications. Asphalt binder to be mixed with the aggregate should conform to the provisions of Section 92, "Asphalts", of the Standard Specifications and should l be Performance Graded Polymer Modified (PG Polymer Modified) Asphalt Binder PG 64-28 PM, if available. HMA shall be compacted to 92-96%.

Class II Aggregate Base or recycled AC, shall all be compacted to a minimum of 95-percent of the material's maximum dry density as determined by ASTM D1557. Class II aggregate base should conform to Section 26 of the CSS.

Prepared subgrade shall be scarified and re-compacted to 90-percent. The subgrade shall be smooth and uniform, and true to the required grade and cross section, and shall be within the tolerances specified in Section 19-1.03C of the CSS.

We recommend that any curbs and gutters be designed by the project civil engineer. For any proposed curbs and gutters, a minimum 4-inch section of reinforced concrete (minimum 5,000 psi with fiber) may be used. We suggest control joints, at appropriate intervals, as determined Mono County Standards and the project civil engineer.

We appreciate the opportunity to be of service to you. Should you have any questions regarding this report, please do not hesitate to contact us.

Respectfully,

SIERRA GEOTECHNICAL SERVICES, INC.

Joseph A. Adler
Principal Geologist
CEG 2198 (exp 3/31/2015)

PROFESSIONAL GEOLOGIST
JOSEPH AARON ADLER
NO 2198
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

Thomas A. Platz
Principal Engineer
PE C41039 (exp 3/31/2015)

REGISTERED PROFESSIONAL ENGINEER
THOMAS A. PLATZ
No. C 41039
CIVIL
STATE OF CALIFORNIA

TABLE I

JUNE LAKE ROADWAYS REHABILITATION RECOMMENDATIONS

Project No. 3.04027

Location	Full Reconstruction	Grind and Overlay	Maintainence Seal	Crack Fill	Traffic Index	AC Pavement Thickness (in)	Class II AB Thickness (in)
North Shore East	X				8	4	6
North Shore West			X	X			
June Lake Beach Road	X				8	4	6
Dream Mountain Drive		X				3	
Big Rock Road		X				2	
Lakeview Road	X				6	4	4
Lyle Terrace Road	X				6	4	4
SLP I		X				3	
SLP I Intersections	X				8	4	6
Forest Road	X				6	4	4
Mountain Vista			X	X			
Leonard Avenue			X	X			

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APPENDIX A

PREVIOUS EXPLORATORY INVESTIGATIONS

This investigation was supplemented by a review and inclusion herein, of test pit logs and associated laboratory data from several previous investigations in the subject areas. Locations of the exploratory excavations are shown on the Field Investigation Location Maps (Figures 1 through 9).

SIERRA GEOTECHNICAL SERVICES INC.
P.O. BOX 5024
MAMMOTH LAKES, CA 93546
(760) 934-3992

APPENDIX A

TEST PIT LOGS

JOB NO: **3.31093**
DATE: **7/22/11**

PROJECT: **32 N. Brenner St.**
LOGGED BY: **JAA**

TEST PIT	DEPTH (FT)	U.S.C.S. GROUP SYMBOL	SAMPLE DEPTH	PERCENT MOISTURE	DRY DENSITY (pcf)	DESCRIPTION
1	0 - 3	SP-SM				**Alluvium** Dark brown, moist, loose to medium dense, silty, very fine to medium grained SAND. Few gravels, few roots.
	3 - 4	SM				Dark grayish-brown, saturated, medium dense, silty, fine to coarse grained SAND. ---------- *Total Depth 4-feet. No seepage or free water encountered.*

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P.O. BOX 5024
MAMMOTH LAKES, CA 93546
(760) 934-3992

APPENDIX A

TEST PIT LOGS

JOB NO: **3.02510**
DATE: **4/5/04**
ELEV: **7618' MSL**

PROJECT: **Lots 1-3 and 25-26, Block 5, SLP 1**
LOGGED BY: **P.S.**

TEST PIT	DEPTH (FT)	U.S.C.S. GROUP SYMBOL	SAMPLE DEPTH	PERCENT MOISTURE	DRY DENSITY (pcf)	DESCRIPTION
1	0 - 2	SP	1	14.7	105	**Undocumented Fill** Grayish-brown, medium-dense, moist, very fine- to coarse SAND, few boulders to approximately 18-inches diameter.
	2 - 4 ½	SP-CL	3	54.7	61	**Alluvium** Black, loose to soft, wet, fine- to coarse SAND with thin interbeds of fine sandy CLAY, organic rich.
	4 ½ - 6	SM				Dark to light gray, medium-dense, silty, very fine to fine SAND.
	6 - 11	SM				Blueish-gray, medium-dense, wet, silty, fine- to coarse SAND, with thin interbeds of fine SAND.
	11	SP				Very fine to medium SAND, few cobbles. ---------- *Heavy groundwater seepage at approximately 3-feet. Caving at 6½-feet. Backfilled 4/5/04.*

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P.O. BOX 5024
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(760) 934-3992

APPENDIX A

TEST PIT LOGS

JOB NO: **3.02510**
DATE: **4/5/04**
ELEV: **7616' MSL**

PROJECT: **Lots 1-3 and 25-26, Block 5, SLP 1**
LOGGED BY: **P.S.**

TEST PIT	DEPTH (FT)	U.S.C.S. GROUP SYMBOL	SAMPLE DEPTH	PERCENT MOISTURE	DRY DENSITY (pcf)	DESCRIPTION
2	0 - 2½	SP				**Undocumented Fill** Grayish-brown, loose to medium-dense, moist, to wet, fine- to coarse SAND, few cobbles.
	2½ - 4	SP-CL				**Alluvium** Black, loose to soft, wet, fine- to coarse SAND with thin interbeds of fine sandy CLAY, organic rich.
	4 - 6½	SP				Dark to light gray, wet, medium-dense, very fine to coarse SAND.
	6½ - 7½					Dark gray to grayish-brown.
	7½ - 9½	SM-SC				Dark gray to blueish-gray, medium-dense, wet, silty, fine- to coarse SAND, with thin interbeds of clayey fine SAND.

Heavy groundwater seepage at approximately 4½-feet. Caving between 1 and 5-feet. Backfilled 4/5/04.

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APPENDIX A

TEST PIT LOGS

JOB NO: **3.02510**
DATE: **4/5/04**
ELEV: **7617' MSL**

PROJECT: **Lots 1-3 and 25-26, Block 5, SLP 1**
LOGGED BY: **P.S.**

TEST PIT	DEPTH (FT)	U.S.C.S. GROUP SYMBOL	SAMPLE DEPTH	PERCENT MOISTURE	DRY DENSITY (pcf)	DESCRIPTION
3	0 - 2½	SP				**Undocumented Fill** Grayish-brown, loose to medium-dense, moist, to wet, fine- to coarse SAND, few cobbles.
	2½ - 5	SP-CL	3½	35	82	**Alluvium** Black, loose to soft, wet, fine- to coarse SAND with thin interbeds of fine sandy CLAY, organic rich.
	5 - 11	SM	5	46.5	77	Blueish-gray, medium-dense, wet, silty, fine- to coarse SAND, with thin interbeds of fine SAND.
	11 - 12	SP				Very fine to medium SAND, few cobbles. ---------- *Heavy groundwater seepage at approximately 4½-feet. Caving between at 6-feet. Backfilled 4/5/04.*

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APPENDIX A

TEST PIT LOGS

JOB NO: **3.02510**
DATE: **4/5/04**
ELEV: **7616' MSL**

PROJECT: **Lots 1-3 and 25-26, Block 5, SLP 1**
LOGGED BY: **P.S.**

TEST PIT	DEPTH (FT)	U.S.C.S. GROUP SYMBOL	SAMPLE DEPTH	PERCENT MOISTURE	DRY DENSITY (pcf)	DESCRIPTION
4	0 - 3	SP-SM				**Undocumented Fill** Grayish-brown, loose to medium-dense, moist, to wet, fine- to coarse SAND, few cobbles.
	3½ - 6	SP-CL				**Alluvium** Black to dark brown, loose to soft, wet, fine- to coarse SAND with thin interbeds of fine sandy CLAY, organic rich.
	6 - 9	SM-SC				Dark gray to gray, medium-dense to firm, silty, very fine to fine SAND, with thin interbeds of clayey fine SAND. ---------- *Heavy groundwater seepage at approximately 3-feet. Caving at 3-feet. Backfilled 4/5/04.*

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(760) 934-3992; (760) 934-8832 Fax

SIEVE ANALYSIS OF FINE AND COARSE AGGREGATES

Per CTM 202 / ASTM C136 (underline one)

Project:	Lots 1-3 and 25-26, Block 5, SLP 1	*Job No.:*	3.02510
Client:		*Tested by:*	PS
Sampled by:	PS	*Delivered by:*	PS
Sample Date/time:	4/9/04	*Delivered Date/time:*	
Sample Location:	TP- 3 @ 3.5'	*Test Date:*	4-17-04
Description:	Clayey to silty, very fine to coarse SAND		

Dry Sample Total Weight (g): 515			*#4 Minus Dry Wt. (g):*						*% Passing by Dry Weight:*	
Sieve Size			**Wt. Ret.**	**% Ret.**	**% Pass.**	**Wt. Ret.**	**% Ret.**	**% Pass.**	**Coarse + Fine**	**Specified**
Inches	**mm**	**Mesh**								
2.0	50.0	2"								
1.5	37.5	11/2"								
1.0	25.0	1"								
0.750	19.0	3/4"								
0.500	12.7	1/2"								
0.375	9.5	3/8"								
0.187	4.75	#4	12	2	98					
0.0937	2.36	#8	40	8	90					
0.0469	1.18	#16	53	10	80					
		#20								
0.0234	0.60	#30	61	12	68					
		#40								
0.0117	0.30	#50	85	17	51					
		#80								
0.0059	0.15	#100	97	19	32					
0.0029	0.075	#200	67	13	19					
PAN			100	19	0					
TOTAL			515							

Underline "WASH" if #200 wash analysis was done.

Remarks:

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(760) 934-3992

APPENDIX A

TEST PIT LOGS

JOB NO: 3.31234
DATE: 1/24/2014

PROJECT: Lot 24, Block 5, SLP I
LOGGED BY: JA

TEST PIT	DEPTH (FT)	U.S.C.S. GROUP SYMBOL	SAMPLE DEPTH	PERCENT MOISTURE	DRY DENSITY (pcf)	DESCRIPTION
1	0 - 2	SP	1	14.7	105	**Undocumented Fill** Grayish-brown, medium-dense, moist, very fine- to coarse SAND, few boulders to approximately 18-inches diameter.
	2 - 4	SP-CL	3	54.7	61	**Alluvium** Black, loose to soft, wet, fine- to coarse SAND with thin interbeds of fine sandy CLAY, organic rich.
	4 - 5	SM				Dark to light gray, medium-dense, silty, very fine to fine SAND. ---------- *Groundwater seepage at approximately 4½-feet. Backfilled 1/24/2014.*

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MAMMOTH LAKES, CA 93546
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APPENDIX A

TEST PIT LOGS

JOB NO: 3.31234
DATE: 1/24/2014

PROJECT: Lot 24, Block 5, SLP I
LOGGED BY: JA

TEST PIT	DEPTH (FT)	U.S.C.S. GROUP SYMBOL	SAMPLE DEPTH	PERCENT MOISTURE	DRY DENSITY (pcf)	DESCRIPTION
2	0 - 2½	SP				**Undocumented Fill** Grayish-brown, loose to medium-dense, moist, to wet, fine- to coarse SAND, few cobbles.
	2½ - 5	SP-CL	3½	35	82	**Alluvium** Black, loose to soft, wet, fine- to coarse SAND with thin interbeds of fine sandy CLAY, organic rich. ---------- *Groundwater seepage at approximately 4½-feet. Backfilled 1/24/2014.*

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P.O. BOX 5024
MAMMOTH LAKES, CA 93546
(760) 934-3992

APPENDIX A

TEST PIT LOGS

JOB NO: 3.30969
DATE: 10/22/2009

PROJECT: 189 Crawford
LOGGED BY: PS

TEST PIT	DEPTH (FT)	U.S.C.S. GROUP SYMBOL	SAMPLE DEPTH	PERCENT MOISTURE	DRY DENSITY (pcf)	DESCRIPTION
						Undocumented Fill
1	0 - 1½	SM				Grayish-brown, moist, loose, silty, very fine to medium SAND, with few gravels and cobbles.
	1½ -3½	SM	1½	11.6	107.7	Brown, medium dense, moist, silty, very fine to coarse SAND, with few gravels and cobbles.
						Alluvium
	3½ - 5	ML	3½	52.3	61.5	Black, moist, medium dense, very fine sandy SILT, organic rich. Thin interbeds of ash.
	5 - 6	ML-SM				Grayish-brown, saturated, medium dense, very fine to coarse grained SAND and SILT.

						Total Depth 6-feet. Groundwater encountered at 6-feet.
						Undocumented Fill
2	0 - 6”	SM	1	4.9	122.9	Grayish-brown, moist, loose, silty, very fine to medium SAND, with few gravels and cobbles.
	6” - 2	SM				Brown, medium dense, moist, silty, very fine to coarse SAND, with few gravels and cobbles.
						Alluvium
	2 - 3½	ML	2	11.6	82.9	Black, moist, medium dense, very fine sandy SILT, organic rich. Thin interbeds of ash.
	3½ - 4½	SM	3½	18.6	81.5	Dark gray to gray, moist, medium dense, silty, very fine to coarse grained SAND, few gravels.
	4½ - 5					6” thick ASH lense, gray.
	5 -5½	SM-SC				Dark brown, medium dense, wet, fine- to coarse SAND with thin interbeds of fine clayey SAND.

						Total Depth 5½-feet. Groundwater encountered at 5-feet.

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P.O. BOX 5024
MAMMOTH LAKES, CA 93546
(760) 934-3992

APPENDIX A

TEST PIT LOGS

JOB NO: **3.30969**
DATE: **10/22/2009**

PROJECT: **189 Crawford**
LOGGED BY: **PS**

TEST PIT	DEPTH (FT)	U.S.C.S. GROUP SYMBOL	SAMPLE DEPTH	PERCENT MOISTURE	DRY DENSITY (pcf)	DESCRIPTION
3	0 - 2	SM	1½	29.6	60.0	**Undocumented Fill** Grayish-brown, moist, loose to medium dense, silty, fine to coarse SAND. Upper 6" highly rooted.
	2 - 3	ML	3	23.4	80.2	**Alluvium** Black, moist, firm, very fine sandy SILT, organic rich. Thin interbeds of ash.
	3 - 4½	SM-ML				Dark brown to gray, moist, medium dense to firm, very fine to coarse grained SAND and SILT.
	4½ - 5½	SM-SC				Dark brown, medium dense, wet, fine- to coarse SAND with thin interbeds of fine clayey SAND.
						--- *Total Depth 5½-feet. Groundwater encountered at 5-feet.*

4	0 - 2	SM				**Undocumented Fill** Grayish-brown, moist, loose to medium dense, silty, fine to coarse SAND. Upper 6" highly rooted.
	2 - 3	SM				**Alluvium** Black, moist, firm, very fine sandy SILT, organic rich. Thin interbeds of ash.
	3 - 5½	SM-ML				Dark brown to gray, moist to wet, medium dense to firm, very fine to coarse grained SAND and SILT.
						--- *Total Depth 5-feet. Groundwater encountered at 5-feet.*

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P.O. BOX 5024
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(760) 934-3992

APPENDIX A

TEST PIT LOGS

JOB NO: **3.31015**
DATE: **5/12/2010**

PROJECT: **Bruce St.Addition**
LOGGED BY: **P. Stone**

TEST PIT	DEPTH (FT)	U.S.C.S. GROUP SYMBOL	SAMPLE DEPTH	PERCENT MOISTURE	DRY DENSITY (pcf)	DESCRIPTION
1	0 - 2	SP-SM	1	19.6	85.4	**Fill** Mottled-brown, moist, loose to medium dense, silty, fine to coarse SAND, with few gravels.
	2 -3	ML-OL				**Topsoil** Black, soft, moist to wet, silty, very fine to fine SAND and SILT, highly organic, abundant roots and voids.
	3 - 4	ML	3	37.5	93.5	**Alluvium** Gray to dark gray, moist, dense, silty, very fine to medium SAND and SILT, with few gravels.
	4 - 5½	SM	4½	31.1	98.2	Blueish-gray, saturated, dense, very fine to coarse grained SAND and SILT. ---------- *Total Depth 5½-feet. Groundwater seepage encountered at 2½-feet.*
2	0 - 2	SP-SM				**Fill** Mottled-brown, moist, loose to medium dense, silty, fine to coarse SAND, with few gravels.
	2 - 3½	SM	28”	30.7	90.9	**Alluvium** Gray to dark gray, moist, dense, silty, very fine to medium SAND and SILT, with few gravels.
	3½ - 4	ML				Blueish-gray, saturated, dense, fine to coarse grained SAND, abundant gravels, cobbles, and boulders. ---------- *Total Depth 4-feet. Groundwater encountered at 3½-feet.*

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P.O. BOX 5024, MAMMOTH LAKES, CALIFORNIA 93546
(760) 934-3992; (760) 934-8832 Fax

SIEVE ANALYSIS OF FINE AND COARSE AGGREGATES

Per CTM 202 / ASTM C136 (underline one)

Project:	Bruce St. Addition	*Job No.:*	3.31015
Client:		*Tested by:*	PS
Sampled by:	PS	*Delivered by:*	PS
Sample Date/time:	5/12/2010	*Delivered Date/time:*	5/12/2010
Sample Location:	TP-1 @ 3-4'	*Test Date:*	5/28/2010
Description:	Alluvium - Very fine to medium SAND and SILT (ML)		

Dry Sample Total Weight (g): 515					*#4 Minus Dry Wt. (g):* 329/204				*% Passing by Dry Weight:*	
Sieve Size			**Wt. Ret.**	**% Ret.**	**% Pass.**	**Wt. Ret.**	**% Ret.**	**% Pass.**	**Coarse + Fine**	**Specified**
Inches	**mm**	**Mesh**								
2.0	50.0	2"								
1.5	37.5	11/2"								
1.0	25.0	1"								
0.750	19.0	3/4"								
0.500	12.7	1/2"								
0.375	9.5	3/8"								
0.187	4.75	#4	0	0	100				100	
0.0937	2.36	#8	16	5	95				95	
0.0469	1.18	#16	43	13	87				87	
		#20								
0.0234	0.60	#30	69	21	79				79	
		#40								
0.0117	0.30	#50	103	31	69				69	
		#80								
0.0059	0.15	#100	145	44	56				56	
0.0029	0.075	#200	184	56	44				44	
PAN			204							
TOTAL										

Underline "WASH" if #200 wash analysis was done.

Remarks:

SGSI

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(760) 934-3992

TEST PIT LOGS

JOB NO: **3.02734** **PROJECT:** **Silver Lake Pines I, Foster/Crawford Lot 13**
DATE: **5/11/06** **LOGGED BY:** **PS**

TEST PIT	DEPTH (FT)	U.S.C.S. GROUP SYMBOL	SAMPLE DEPTH	PERCENT MOISTURE	DRY DENSITY (pcf)	DESCRIPTION
1	0 - 3	SP-SM				**Undocumented Fill** Mottled brown to grayish-brown, loose, moist to saturated, silty, very fine to coarse grained SAND.
	3 - 7½	CL				**Alluvium** Grey to black, moist to saturated, soft to firm very fine sandy CLAY, odorous.
	7½ - 8½	SP-SM				Gray, saturated, medium dense, fine to coarse grained SAND with few cobbles.
						Total depth = 8½-feet. Groundwater seepage encountered at approximately 7½ to 8-feet. Backfilled 5/11/06.
2	0 - 3	SP				**Undocumented Fill** Mottled brown to reddish-brown, loose, moist to saturated, fine to coarse grained SAND, with minor trash and debris.
	3 - 9	CL				**Alluvium** Grey to black, moist to saturated, soft to firm, very fine sandy CLAY, odorous.
	9 - 9½	SP-SM				Bluish-gray, moist to saturated, medium dense, very fine to fine grained SAND with very fine to fine grained silty SAND.
						Total depth = 9½-feet. Groundwater seepage encountered at approximately 4-feet. Backfilled 5/11/06.

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(760) 934-3992; (760) 934-8832 Fax

SIEVE ANALYSIS OF FINE AND COARSE AGGREGATES

Per CTM 202 / ASTM C136 (underline one)

Project:	Silver Lake Pines I, Lot 13	*Job No.:*	3.02734
Client:		*Tested by:*	PS
Sampled by:	PS	*Delivered by:*	PS
Sample Date/time:		*Delivered Date/time:*	
Sample Location:	TP # 1 @ 5 ½	*Test Date:*	5/16/06
Description:	SM		

Dry Sample Total Weight (g): 260			*#4 Minus Dry Wt. (g):*						*% Passing by Dry Weight:*	
Sieve Size			**Fine Wt. Ret.**	**Fine % Ret.**	**Fine % Pass.**	**Coarse Wt. Ret.**	**Coarse % Ret.**	**Coarse % Pass.**	**Coarse + Fine**	**Specified**
Inches	**mm**	**Mesh**								
2.0	50.0	2”								
1.5	37.5	11/2”								
1.0	25.0	1”								
0.750	19.0	3/4”								
0.500	12.7	1/2”								
0.375	9.5	3/8”								
0.250	6.3	1/4”								
0.187	4.75	#4	0	0	100					
0.0937	2.36	#8	4	2	98					
0.0469	1.18	#16	20	8	92					
		#20								
0.0234	0.60	#30	49	19	81					
		#40								
0.0117	0.30	#50	86	33	67					
		#80								
0.0059	0.15	#100	134	52	48					
0.0029	0.075	#200	183	70.4	29.6					
PAN	198									
TOTAL										

Underline “WASH” if #200 wash analysis was done.

Remarks:

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TEST PIT LOGS

JOB NO: **3.30810** **PROJECT:** **Silver Lake Pines 1, Foster Ave., Lot 19**
DATE: **6/5/07** **LOGGED BY:** **JA**

TEST PIT	DEPTH (FT)	U.S.C.S. GROUP SYMBOL	SAMPLE DEPTH	PERCENT MOISTURE	DRY DENSITY (pcf)	DESCRIPTION
						Alluvium
1	0 - 3	CL				Grey to black, moist to saturated, soft to firm very fine sandy CLAY, odorous.
	3 - 5	SM-CL				Dark brown to gray, moist to saturated, firm to medium dense, silty to clayey very fine SAND with thin interbeds of sandy CLAY.
	5 - 6	SM				Gray, saturated, medium dense, fine to coarse grained SAND with few cobbles.
						Total depth = 8½-feet. Groundwater seepage encountered at approximately 3-feet. Backfilled 6/5/2007.

						Alluvium
1	0 - 3	CL				Grey to black, moist to saturated, soft to firm very fine sandy CLAY, odorous.
	3 - 5	SM-CL				Dark brown to gray, moist to saturated, firm to medium dense, silty to clayey very fine SAND with thin interbeds of sandy CLAY.
	5 - 6	SM				Gray, saturated, medium dense, fine to coarse grained SAND with few cobbles.
						Total depth = 8½-feet. Groundwater seepage encountered at approximately 3-feet. Backfilled 6/5/2007.

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MAMMOTH LAKES, CA 93546
(760) 934-3992

TEST PIT LOGS

JOB NO. 3.02122 BY PS

ROJECT: GULL LAKE ROAD, JUNE LAKE DATE 9/12/02

TEST PIT	DEPTH (FT)	U.S.C.S. GROUP SYMBOL	SAMPLE DEPTH	DRY PERCENT MOISTURE	DENSITY (pcf)	DESCRIPTION
4	0-1 ½	SP/SM				SURFICIAL SOIL LIGHT TO MEDIUM BROWN, VERY FINE TO COARSE GRAINED SAND AND ASH WITH NUMEROUS PEBBLES, INTENSLY ROOTED, LOOSE, SLIGHTLY MOIST.
	1 ½-4 ½	SM	3	7.4	81	GLACIAL TILL LIGHT BROWN, VERY FINE TO FINE GRAINED SILTY SAND (ROCK FLOUR) WITH A FEW COBBLES AND PEBBLES, LOOSE TO MODERATLY FIRM, SLIGHTLY MOIST.
	4 ½ -6	SM				LIGHT BROWN, VERY FINE TO FINE GRAINED SLIGHTLY SILTY SAND WITH MANY COBBLES AND BOULDERS, FIRM, SLIGHTLY MOIST.

NOTE: MODERATE CAVING IN UPPER 4 ½ FEET, HEAVY CAVING BELOW 4 ½FEET

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TEST PIT LOGS

JOB NO. 3.02122 BY PS

ROJECT: GULL LAKE ROAD, JUNE LAKE DATE 9/12/02

TEST PIT	DEPTH (FT)	U.S.C.S. GROUP SYMBOL	SAMPLE DEPTH	DRY PERCENT MOISTURE	DENSITY (pcf)	DESCRIPTION
5	0-1 ½	SP				SURFICIAL SOIL LIGHT BROWN,VERY FINE TO COARSE GRAINED SAND AND ASH WITH A FEW ROCK FRAGMENTS, INTENSLY ROOTED, LOOSE, SLIGHTLY MOIST.
	1 ½-3 ½	SP/SM	2 ½	6.6	95	GLACIAL TILL LIGHT BROWN, VERY FINE TO MEDIUM GRAINED SLIGHTLY SILTY TO SILTY SAND (ROCK FLOUR) WITH FEW PEBBLES AND COBBLES, MODERATLY FIRM, SLIGHTLY MOIST.
	3 ½ -6	SP	4	6.5	108	LIGHT GRAY-BROWN, FINE TO COARSE GRAINED SAND AND ASH WITH A FEW GRAVELY SAND LENSES AND SCATTERED COBBLES AND BOULDERS, MEDIUM DENSE, SLIGHTLY MOIST.

NOTE: MODERATE CAVING OF HOLE

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TEST PIT LOGS

JOB NO. 3.02122 BY PS

ROJECT: GULL LAKE ROAD, JUNE LAKE DATE 9/12/02

TEST PIT	DEPTH (FT)	U.S.C.S. GROUP SYMBOL	SAMPLE DEPTH	DRY PERCENT MOISTURE	DENSITY (pcf)	DESCRIPTION
6	0-1	SP				SURFICIAL SOIL LIGHT BROWN, FINE TO COARSE GRAINED SAND WITH SLIGHT AMOUNTS OF VERY FINE SAND AND MANY PEBBLES TO COBBLES AND ROCK, ROOTED, LOOSE.
	1-5	SP	2	3.7	122	GLACIAL TILL LIGHT GRAY, MEDUIM TO COARSE GRAINED SAND WITH SCATTERED PEBLES AND COBBLES AND A FEW GRAVELLY SAND LENSES, FIRM, SLIGHTLY MOIST.

NOTE: MODERATLY TO HEAVY SLOUGHING AND CAVING

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P.O. BOX 5024
MAMMOTH LAKES, CA 93546
(760) 934-3992

APPENDIX A

TEST PIT LOGS

JOB NO: 3.30992
DATE: 5/5/2010

PROJECT: 247 Lakeview Dr.
LOGGED BY: PS

TEST PIT	DEPTH (FT)	U.S.C.S. GROUP SYMBOL	SAMPLE DEPTH	PERCENT MOISTURE	DRY DENSITY (pcf)	DESCRIPTION
1	0 - 2½	SM				**Topsoil/Colluvium** Black to dark brown, moist, loose, silty, very fine to medium SAND, with abundant boulders, organic rich.
	2½ -5	SP-SM	3	9.0	109.0	**Glacial Deposits** Medium brown, moist, medium dense to dense, silty, fine to coarse SAND, with abundant cobbles and boulders, moderate roots. Rock content comprises up to 40% of deposit. Boulders to 36" diameter. ---------- *Total Depth 5-feet. Groundwater not encountered.*
2	0 - 1½	SM				**Topsoil/Colluvium** Dark gray to brown, moist, loose, silty, very fine to medium SAND, with abundant gravels, cobbles, and boulders, organic rich.
	1½ -3½	SP-SM	2	12.0	103.0	**Glacial Deposits** Grayish-brown to brown, moist, medium dense to dense, silty, fine to coarse SAND, with abundant cobbles and boulders, moderate roots. Rock content comprises up to 50% of deposit. Boulders to 36" diameter. ---------- *Total Depth 5-feet. Groundwater not encountered.*

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(760) 934-3992; (760) 934-8832 Fax

SIEVE ANALYSIS OF FINE AND COARSE AGGREGATES

Per CTM 202 / ASTM C136 (underline one)

Project:	247 Lakeview Drive	*Job No.:*	3.30992
Client:		*Tested by:*	PS
Sampled by:	PS	*Delivered by:*	PS
Sample Date/time:	5/6/2010	*Delivered Date/time:*	
Sample Location:	TP- 1 @ 3½-4½'	*Test Date:*	5/10/2010
Description:	Silty, fine to coarse SAND		

Dry Sample Total Weight (g): 19073			*#4 Minus Dry Wt. (g):* 404						*% Passing by Dry Weight:*	
Sieve Size			**Wt. Ret.**	**% Ret.**	**% Pass.**	**Wt. Ret.**	**% Ret.**	**% Pass.**	**Coarse + Fine**	**Specified**
Inches	**mm**	**Mesh**								
2.0	50.0	2"								
1.5	37.5	11/2"								
1.0	25.0	1"								
0.750	19.0	3/4"				5291	28	72	72	
0.500	12.7	1/2"								
0.375	9.5	3/8"								
0.187	4.75	#4				9392	49	51	51	
0.0937	2.36	#8	68	14	86				44	
0.0469	1.18	#16	147	31	69				35	
		#20								
0.0234	0.60	#30	216	46	54				28	
		#40								
0.0117	0.30	#50	284	60	40				20	
		#80								
0.0059	0.15	#100	346	73	27				14	
0.0029	0.075	#200	387	53	17				9	
PAN			404							
TOTAL										

Underline "WASH" if #200 wash analysis was done.

Remarks:

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P.O. BOX 5024
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(760) 934-3992

TEST PIT LOGS

JOB NO: 3.30357.1
DATE: 9/22/04
ELEV: 7118' MSL
EQUIP: CASE 580

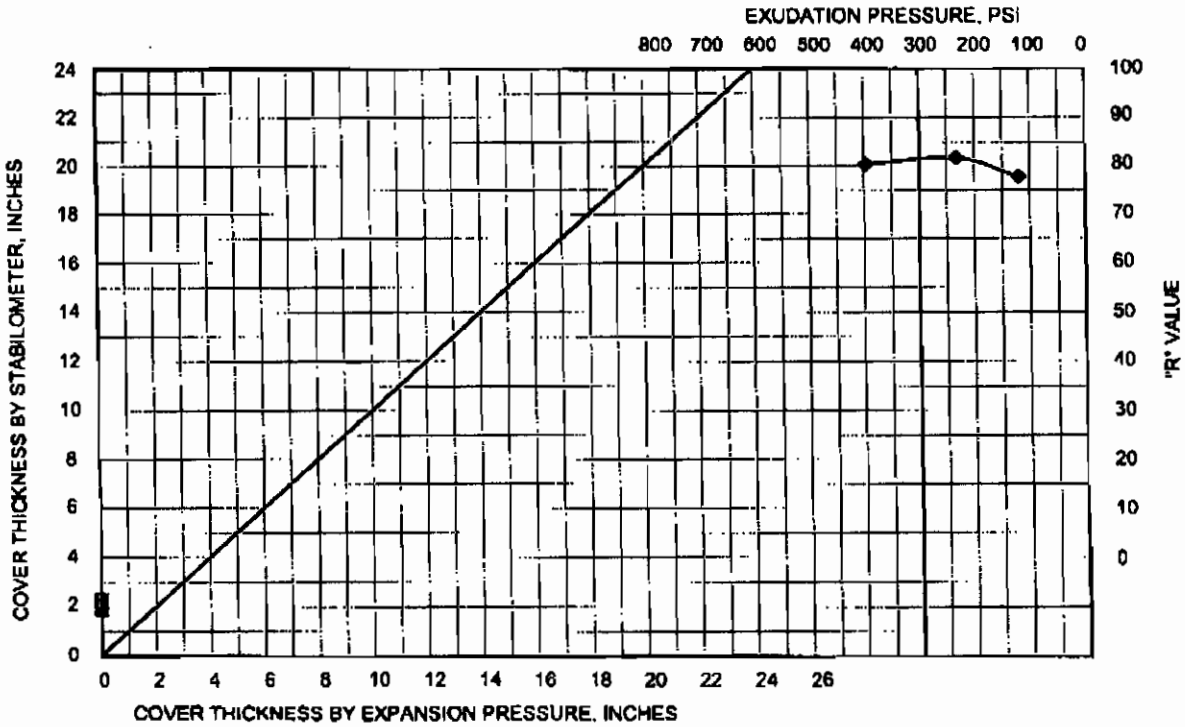
PROJECT: JUNE LAKE HIGHLANDS PHASE 2
LOGGED BY: PS

TEST PIT	DEPTH (ft)	U.S.C.S. GROUP SYMBOL	SAMPLE DEPTH (ft)	PERCENT MOISTURE	DRY DENSITY (pcf)	DESCRIPTION
2	0 - 2½	SM				**COLLUVIUM** Light brown, moist, loose, silty, very fine to medium SAND, few subangular cobble clasts and boulders to approximately 13-inches diameter, massive, abundant roots. Rock content approximately 30 percent.
	2½ - 5½	SP-SM				**GLACIAL TILL** Light gray, moist, medium-dense to dense, silty, fine to medium SAND, abundant subangular to subrounded gravels, moderate to well indurated. ---------- *Total depth = 5½-feet. No groundwater encountered. Backfilled 9/22/04.*

BSK Project Name: Sierra Geotech.
BSK Project No.: G03-302-10B

Report Date: 10/13/04
Sample Date:
Test Date: 10/05/04

RESISTANCE VALUE TEST RESULTS
Sample No.: TP #6 @ 1-2', Larson June Lake (3.30327.1)



Sample Description: Silty Sand: brown; fine to medium grained.

SPECIMEN	A	B	C
EXUDATION PRESSURE, LOAD (lb)	4982	2912	1504
EXUDATION PRESSURE, PSI	397	232	120
EXPANSION, * 0.0001 IN			
EXPANSION PRESSURE, PSF	0	0	0
STABILOMETER PH AT 2000 LBS	17	17	22
DISPLACEMENT	5.14	4.73	4.48
RESISTANCE VALUE "R"	80	82	78
% MOISTURE AT TEST	13.6	14.2	14.5
DRY DENSITY AT TEST, PCF	105.6	104.7	106.0
"R" VALUE AT 300 PSI EXUDATION PRESSURE	81		
"R" VALUE BY EXPANSION PRESSURE TI=4.0, GF=1.50			

APPENDIX B

GENERAL EARTHWORK

AND

GRADING RECOMMENDATIONS

GENERAL EARTHWORK AND GRADING

These general earthwork and grading specifications are for the grading and earthwork shown on the approved grading or construction plan(s) and/or indicated in the geotechnical report(s). Earthwork and grading should be conducted in accordance with applicable grading ordinances, the current California Building Code, and the recommendations of this report. The following recommendations are provided regarding specific aspects of the proposed earthwork construction. These recommendations should be considered subject to revision based on field conditions observed by the geotechnical consultant during grading.

Geotechnical Consultant of Record

Prior to commencement of work, the owner shall employ the Geotechnical Consultant of Record. The Geotechnical Consultant shall be responsible for reviewing the approved geotechnical report(s) and accepting the adequacy of the preliminary geotechnical findings, conclusions, and recommendations prior to the commencement of grading or construction.

During grading and earthwork operations, the Geotechnical Consultant shall observe, map, and document the subsurface exposures to verify the geotechnical design assumptions. If the observed conditions are found to be significantly different than the interpreted assumptions during the design phase, the Geotechnical Consultant shall inform the owner, recommend appropriate changes in design to accommodate the observed conditions, and notify the review agency where required. Subsurface areas to be geotechnically observed, mapped, elevations recorded, and/or tested include natural ground, after it has been cleared for receiving fill but before it has been placed, bottoms of all "remedial removal areas, all key bottoms, and benches made on sloping ground to receive fill.

The Geotechnical Consultant shall observe the moisture-conditioning and processing of the subgrade and fill materials and perform relative compaction testing of fill to determine the attained level of compaction. The Geotechnical Consultant shall provide the test results to the owner and the contractor on a routine and frequent basis.

The Earthwork Contractor

The Earthwork Contractor shall be solely responsible for performing the grading in accordance with the plans and specifications. The Earthwork Contractor shall review and accept the plans, geotechnical report(s) and these Specifications prior to the commencement of grading. The Earthwork Contractor shall have the sole responsibility to provide adequate equipment and methods to accomplish the earthwork in accordance with applicable grading codes and agency ordinances, these Specifications, and the recommendations in the approved geotechnical report(s) and grading plan(s). If, in the opinion of the Geotechnical Consultant unsatisfactory conditions, such as unstable soil, improper moisture condition, inadequate compaction, adverse weather, etc… are resulting in a quality of work less than required in these Specifications, the Geotechnical Consultant shall reject the work and may recommend to the owner that construction be stopped until the conditions are rectified.

Site Preparation

General: Site preparation includes removal of deleterious materials, unsuitable materials, and existing improvements from areas where new improvements or new fills are planned. Deleterious materials, which include vegetation, trash, and debris, should be removed from the site and legally disposed of off-site. Unsuitable materials include loose or disturbed soils, undocumented fills, contaminated soils, or other unsuitable materials. The Geotechnical Consultant shall evaluate the extent of these removals depending on specific site conditions. Earth fill material shall not contain more than 1-percent of organic materials (by volume). Nesting of the organic materials shall not be allowed.

If potentially hazardous materials are encountered, the contractor shall stop work in the affected area, and a hazardous material specialist shall be informed immediately for proper evaluation and handling of these materials prior to continuing to work in that area.

As presently defined by the State of California, most refined petroleum products (gasoline, diesel fuel, motor oil, grease, coolant etc…) have chemical constituents that are considered to be hazardous waste. As such, the indiscriminate dumping or spillage of these fluids onto the ground may constitute a misdemeanor, punishable by fine and/or imprisonment and shall not be allowed.

Any existing subsurface utilities that are to be abandoned should be removed and the trenches backfilled and compacted. If necessary, abandoned pipelines may be filled with grout or slurry cement as recommended by, and under the observation of, the Geotechnical Consultant.

Excavation

Excavations, as well as over-excavation for remedial purposes, shall be evaluated by the Geotechnical Consultant during grading. Remedial removal depths shown on geotechnical plans are estimates only. The actual extent of removal shall be determined by the Geotechnical Consultant based on the field evaluation of exposed conditions during grading. Where fill-over-cut slopes are to be graded, the cut portion of the slope shall be made, evaluated, and accepted by the Geotechnical Consultant prior to placement of materials for construction of the fill portion of the slope, unless otherwise recommended by the Geotechnical Consultant.

In addition to removals and overexcavations recommended in the approved geotechnical report(s) and the grading plan, soft, loose, dry, saturated, spongy, organic-rich, highly fractured, or otherwise unsuitable ground shall be overexcavated to competent ground as evaluated by the Geotechnical Consultant during grading.

All areas to receive fill, including removal and processed areas, key bottoms, and benches, shall be observed, mapped, elevations recorded, and/or tested prior to being accepted by the Geotechnical Consultant as suitable to receive fill. The Contractor shall obtain a written acceptance from the Geotechnical Consultant prior to fill placement. A licensed surveyor shall provide the survey control for determining elevations of processed areas, keys, and benches.

Compaction

The onsite soils are suitable for placement as compacted fill provided the organics, oversized rock (greater than 6-inches in diameter) and deleterious materials are removed. Rocks greater than 6-inches and less than 2-feet in diameter can be placed in the bottom of deeper fills or approved areas provided they are selectively placed in such a manner that no large voids are created. All rocks shall be placed a minimum of 4-feet below finish grade elevation unless used for landscaping purposes. Any import soils shall be tested for suitability in advance by the project Geotechnical Engineer.

Prepared subgrade shall be scarified and re-compacted to 90-percent. The subgrade shall be smooth and uniform, and true to the required grade and cross section, and shall be within the tolerances specified in Section 19-1.03C of the CSS.

Class II Aggregate Base or recycled AC, shall all be compacted to a minimum of 95-percent of the material's maximum dry density as determined by ASTM D1557. Class II aggregate base should conform to Section 26 of the CSS.

All fill and backfill to be placed in association with the proposed construction should be accomplished slightly over optimum moisture content using equipment that is capable of producing a uniformly compacted product throughout the entire fill lift. Fill materials at less than optimum moisture should have water added and the fill mixed to result in material that is uniformly above optimum moisture content. Fill materials that are too wet can be aerated by blading or other satisfactory methods until the moisture content is as required. The wet soils may be mixed with drier materials in order to achieve acceptable moisture content.

The fill and backfill should be placed in horizontal lifts at a thickness appropriate for equipment spreading, mixing, and compacting the material, but generally should not exceed 8-inches in loose thickness. Retaining wall backfill shall be composed of a granular material (maximum ≤ 3-inch rock) with an expansion index (EI) of no greater than 50 and a sand equivalent (SE) greater than 30.

No fill soils shall be placed during unfavorable weather conditions. When work is interrupted by rains or snow, fill operations shall not be resumed until the field tests by the geotechnical engineer indicate that the moisture content and density of the fill are as previously specified.

Slopes

All slopes shall be compacted in a single continuous operation upon completion of grading by means of sheepsfoot or other suitable equipment, or all loose soils remaining on the slopes shall be trimmed back until a firm compacted surface is exposed. Slope compaction tests shall be made within one foot of slope surface.

Cut and fill slopes shall be a maximum of 2:1 (horizontal to vertical) unless approved by the Geotechnical Consultant.

Planting and irrigation of cut and fill slopes and/or installation of erosion control and drainage devices should be completed due to the erosion potential of the soil.

Temporary Excavations

Temporary excavation shall be made no steeper than 1:1 (horizontal to vertical). The recommended slope for temporary excavations does not preclude local raveling and sloughing. Where wet soils are exposed, flatter excavation of slopes and dewatering may be necessary. In areas of insufficient space for slope cuts, or where soils with little or no binder are encountered, shoring shall be used.

All large rocks exposed above temporary cuts shall be removed prior to foundation excavation. In addition any rocks exposed during development from raveling and sloughing should be removed immediately.

All excavations should comply with the requirements of the California Construction and General Industry Safety Orders and the Occupational Safety and Health Act and other public agencies having jurisdiction.

Trench Backfill

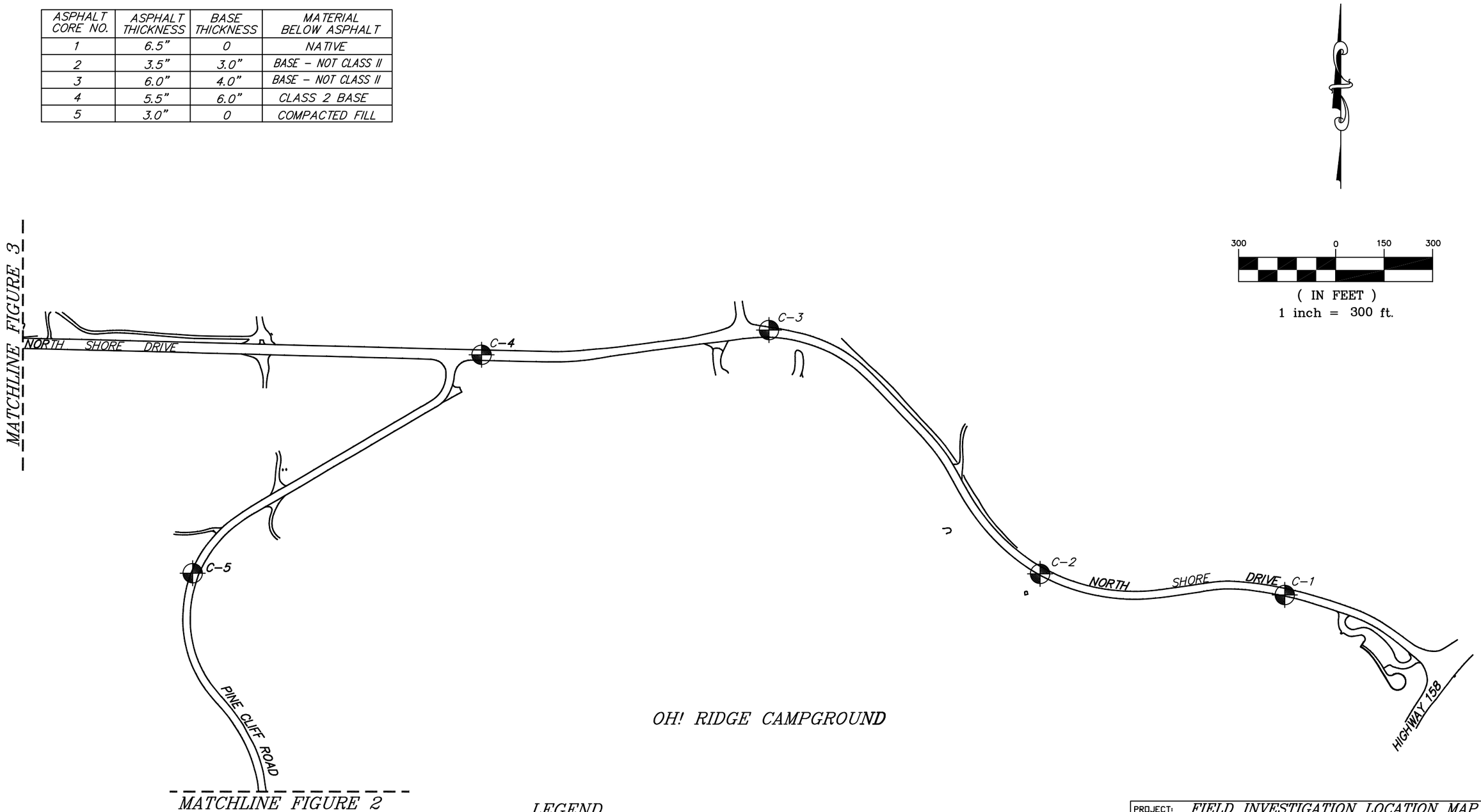
Exterior trenches, paralleling a footing and extending below a 1:1 plane projected from the outside bottom edge of the footing, shall be compacted to a minimum of 95-percent per ASTM D1557. All trenches in structural areas and under concrete flatwork shall be compacted to a minimum of 95-percent per ASTM D1557. All trenches in non-structural areas shall be compacted to a minimum of 85-percent per ASTM D1557.

All material used for trench backfill shall be approved by the Geotechnical Engineer prior to placement. All bedding and backfill of utility trenches shall be done in accordance with the applicable provisions of Standard Specifications of Public Works Construction. Bedding material shall have a Sand Equivalent greater than 30 (SE>30). The bedding shall be placed to 1-foot over the top of the conduit and densified by jetting. Backfill shall be placed and densified to a minimum of 95-percent of maximum from 1-foot above the top of the conduit to the surface.

Lift thickness of trench backfill shall not exceed those allowed in the Standard Specifications of Public Works Construction unless the Contractor can demonstrate to the Geotechnical Consultant that the fill lift can be compacted to the minimum relative compaction by his alternative equipment and method.

Regulations of the governing agency may supersede the above, and all trench excavations should conform to all applicable safety codes. The Contractor shall follow all OSHA and Cal/OSHA requirements for safety of trench excavations.

ASPHALT CORE NO.	ASPHALT THICKNESS	BASE THICKNESS	MATERIAL BELOW ASPHALT
1	6.5"	0	NATIVE
2	3.5"	3.0"	BASE – NOT CLASS II
3	6.0"	4.0"	BASE – NOT CLASS II
4	5.5"	6.0"	CLASS 2 BASE
5	3.0"	0	COMPACTED FILL

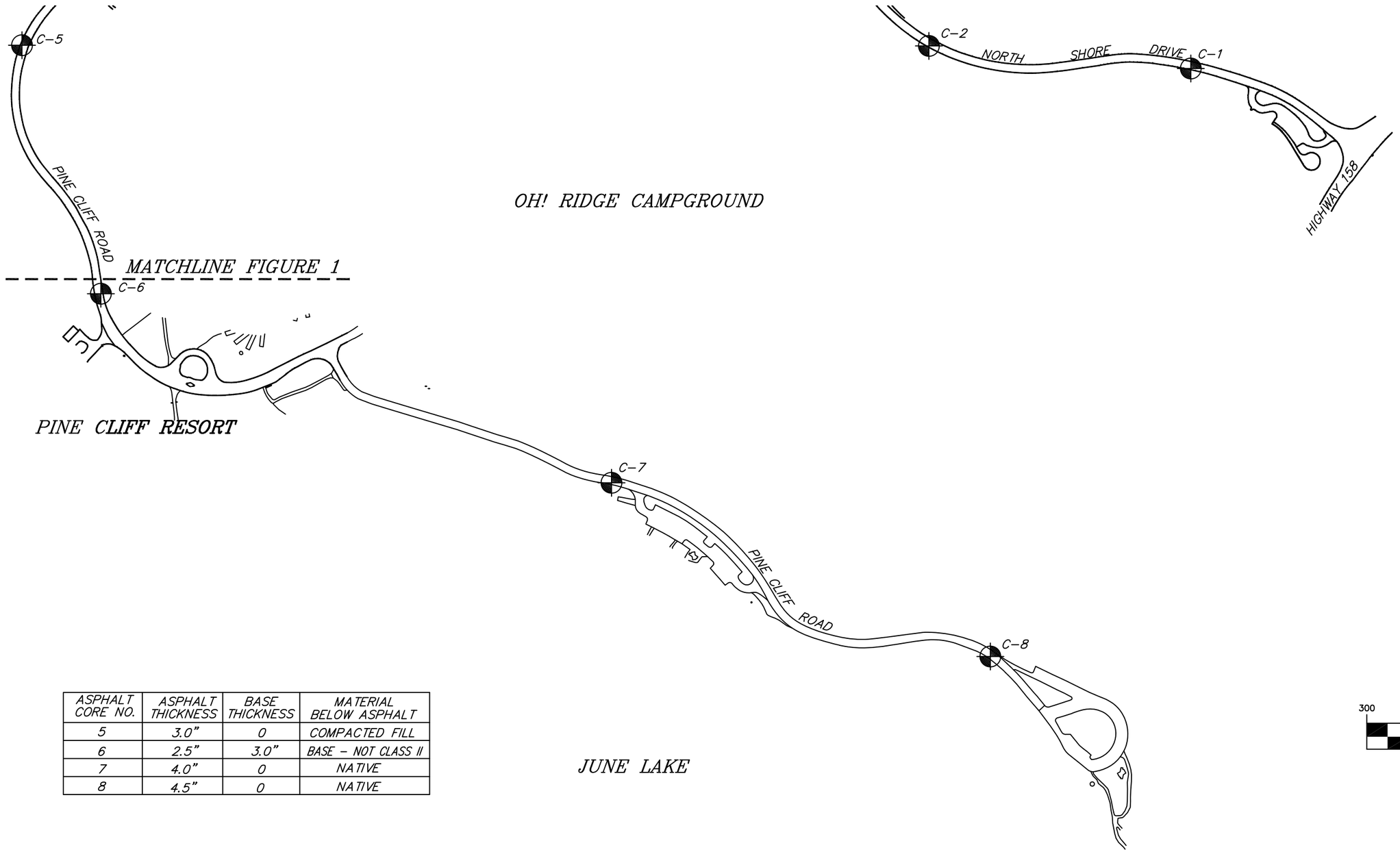


LEGEND

C-5 APPROXIMATE LOCATION OF ASPHALT CORE C-1 TO C-5

Sierra Geotechnical Services

PROJECT: FIELD INVESTIGATION LOCATION MAP JUNE LAKE STREETS REHABILITATION NORTH SHORE DRIVE	
SCALE: 1"=300'	DATE: January 2014
DRAWING: Core Location Map.dwg	DRAWN BY: CS
JOB NO.: 3.04027	FIGURE: FIGURE 1



ASPHALT CORE NO.	ASPHALT THICKNESS	BASE THICKNESS	MATERIAL BELOW ASPHALT
5	3.0"	0	COMPACTED FILL
6	2.5"	3.0"	BASE - NOT CLASS II
7	4.0"	0	NATIVE
8	4.5"	0	NATIVE

300 0 150 300

(IN FEET)
1 inch = 300 ft.

LEGEND

C-8 APPROXIMATE LOCATION OF ASPHALT CORE C-5 TO C-8

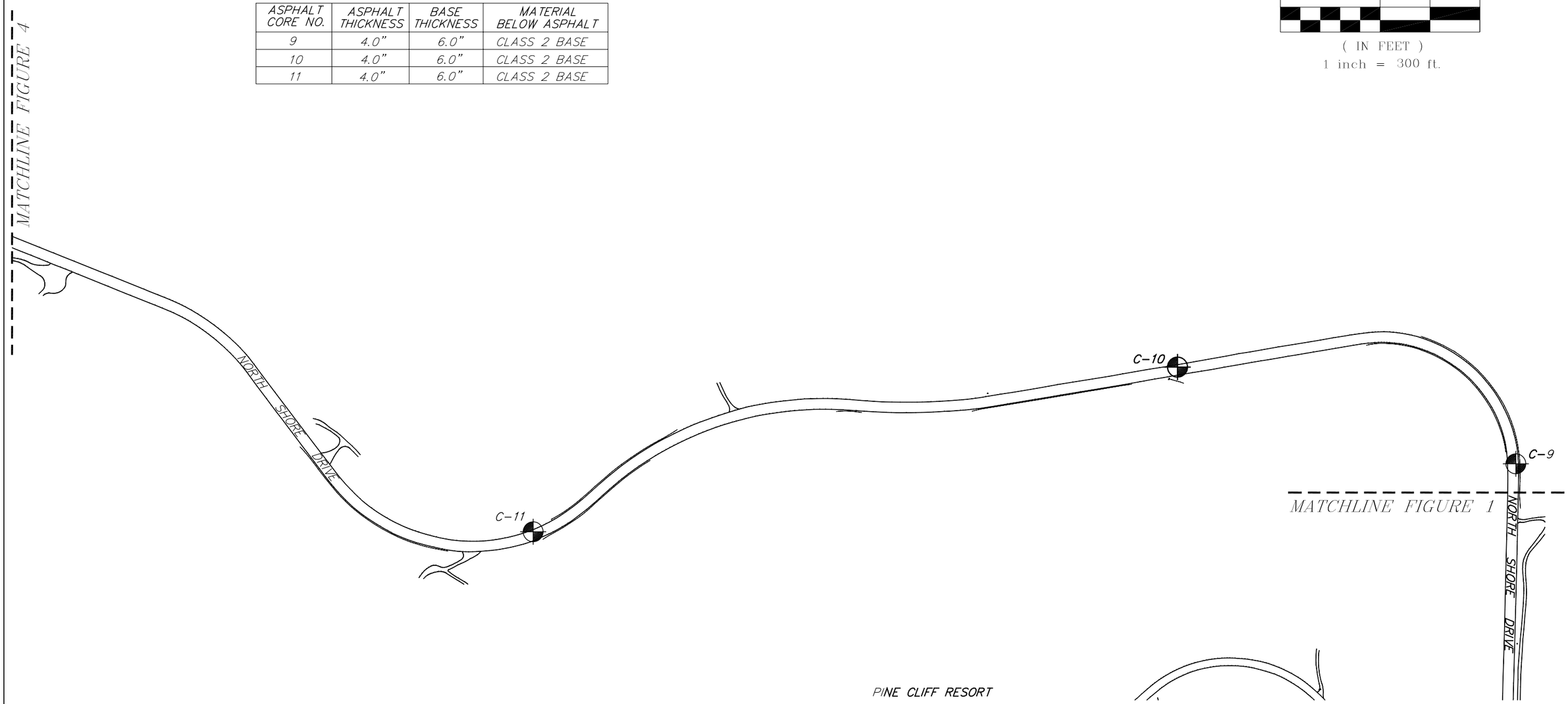
Sierra Geotechnical Services

PROJECT: FIELD INVESTIGATION LOCATION MAP JUNE LAKE STREETS REHABILITATION PINE CLIFF ROAD	
SCALE: 1"=300'	DATE: January 2014
DRAWING: Core Location Map.dwg	DRAWN BY: CS
JOB NO.: 3.04027	FIGURE: FIGURE 2

ASPHALT CORE NO.	ASPHALT THICKNESS	BASE THICKNESS	MATERIAL BELOW ASPHALT
9	4.0"	6.0"	CLASS 2 BASE
10	4.0"	6.0"	CLASS 2 BASE
11	4.0"	6.0"	CLASS 2 BASE

300 0 150 300

(IN FEET)
1 inch = 300 ft.

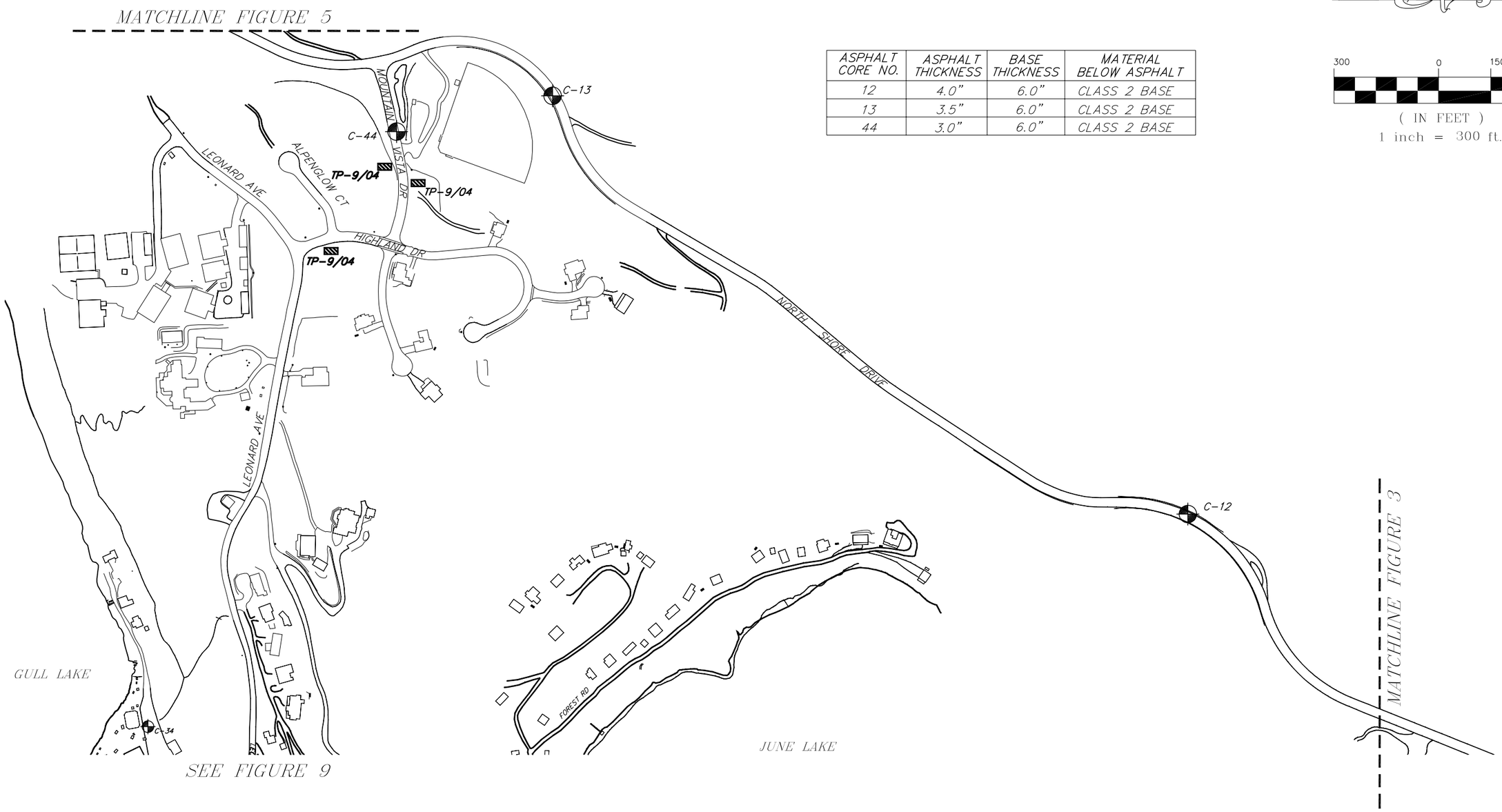


LEGEND

C-11 APPROXIMATE LOCATION OF ASPHALT CORE C-9 TO C-11

Sierra Geotechnical Services

PROJECT: FIELD INVESTIGATION LOCATION MAP JUNE LAKE STREETS REHABILITATION NORTH SHORE DRIVE	
SCALE: 1"=300'	DATE: January 2014
DRAWING: Core Location Map.dwg	DRAWN BY: CS
JOB NO.: 3.04027	FIGURE: FIGURE 3



ASPHALT CORE NO.	ASPHALT THICKNESS	BASE THICKNESS	MATERIAL BELOW ASPHALT
12	4.0"	6.0"	CLASS 2 BASE
13	3.5"	6.0"	CLASS 2 BASE
44	3.0"	6.0"	CLASS 2 BASE

300 0 150 300

(IN FEET)
1 inch = 300 ft.

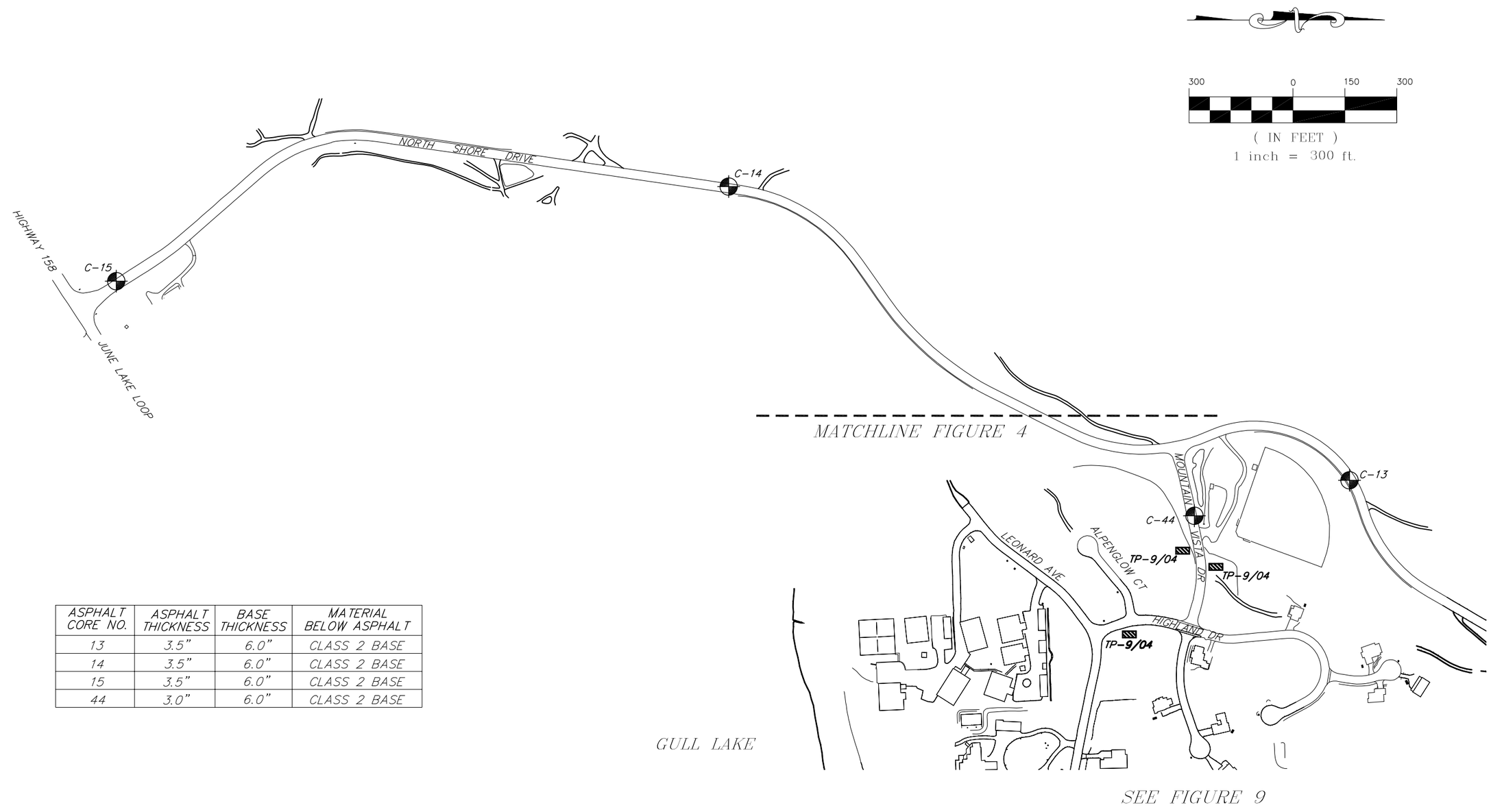
LEGEND

C-44 — APPROXIMATE LOCATION OF ASPHALT CORE C-12, C-13, C-44

TP-XX/XX — APPROXIMATE LOCATION OF TEST PIT (MONTH/YEAR COMPLETED)

Sierra Geotechnical Services

PROJECT: FIELD INVESTIGATION LOCATION MAP JUNE LAKE STREETS REHABILITATION NORTH SHORE DR. & MOUNTAIN VISTA DR.	
SCALE: 1"=300'	DATE: January 2014
DRAWING: Core Location Map.dwg	DRAWN BY: CS
JOB NO.: 3.04027	FIGURE: FIGURE 4



ASPHALT CORE NO.	ASPHALT THICKNESS	BASE THICKNESS	MATERIAL BELOW ASPHALT
13	3.5"	6.0"	CLASS 2 BASE
14	3.5"	6.0"	CLASS 2 BASE
15	3.5"	6.0"	CLASS 2 BASE
44	3.0"	6.0"	CLASS 2 BASE

LEGEND

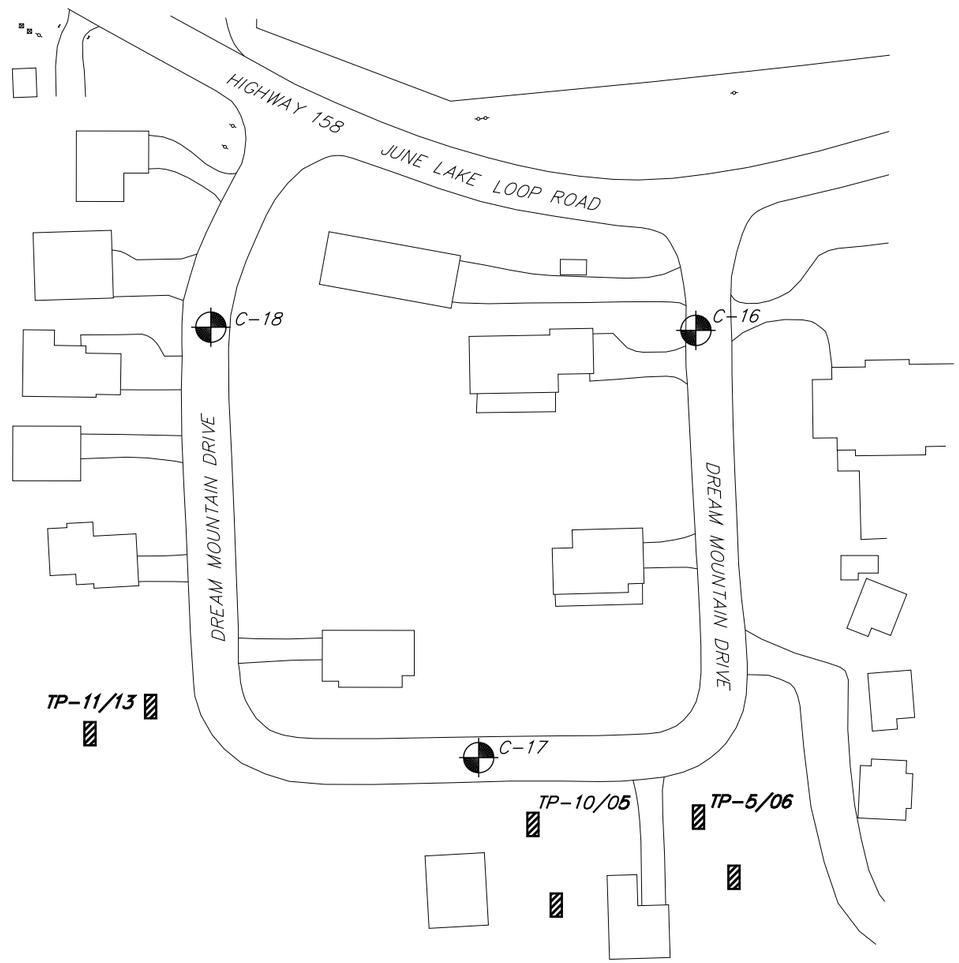
C-15 — APPROXIMATE LOCATION OF ASPHALT CORE C-13 TO C-15

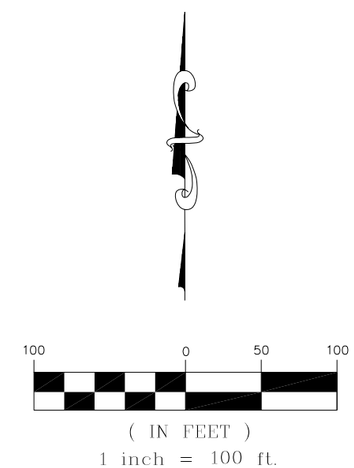
TP-XX/XX — APPROXIMATE LOCATION OF TEST PIT (MONTH/YEAR COMPLETED)

Sierra Geotechnical Services

PROJECT: FIELD INVESTIGATION LOCATION MAP JUNE LAKE STREETS REHABILITATION NORTH SHORE DRIVE	
SCALE: 1"=300'	DATE: January 2014
DRAWING: Core Location Map.dwg	DRAWN BY: CS
JOB NO.: 3.04027	FIGURE: FIGURE 5

ASPHALT CORE NO.	ASPHALT THICKNESS	BASE THICKNESS	MATERIAL BELOW ASPHALT
16	5.0"	4.0"	PIT RUN
17	4.0"	4.0"	PIT RUN
18	5.0"	4.0"	PIT RUN





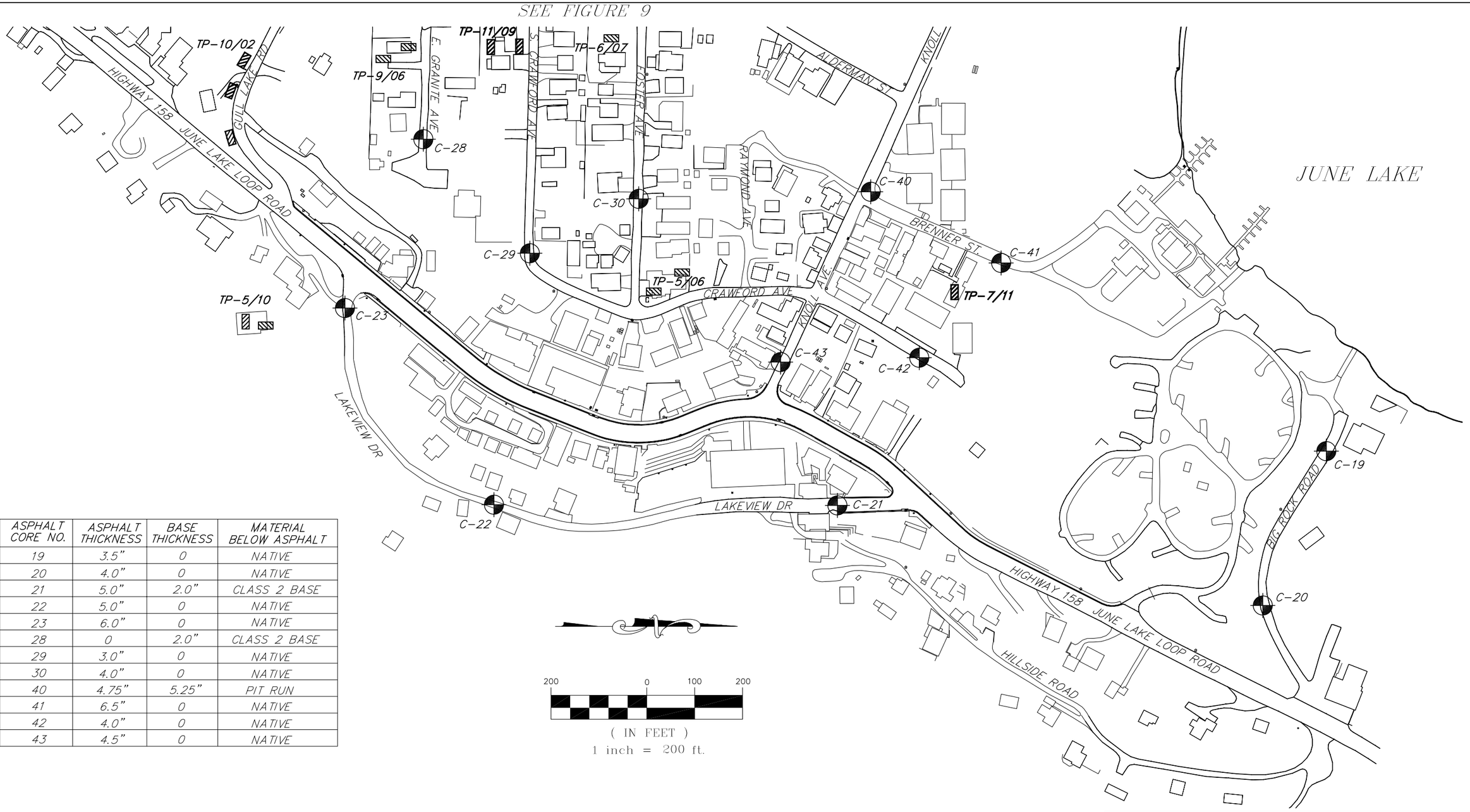
LEGEND

C-18 — APPROXIMATE LOCATION OF ASPHALT CORE C-16 TO C-18

TP-XX/XX — APPROXIMATE LOCATION OF TEST PIT (MONTH/YEAR COMPLETED)

Sierra Geotechnical Services

PROJECT: FIELD INVESTIGATION LOCATION MAP JUNE LAKE STREETS REHABILITATION DREAM MOUNTAIN DRIVE	
SCALE: 1"=100'	DATE: January 2014
DRAWING: Core Location Map.dwg	DRAWN BY: CS
JOB NO.: 3.04027	FIGURE: FIGURE 6



ASPHALT CORE NO.	ASPHALT THICKNESS	BASE THICKNESS	MATERIAL BELOW ASPHALT
19	3.5"	0	NATIVE
20	4.0"	0	NATIVE
21	5.0"	2.0"	CLASS 2 BASE
22	5.0"	0	NATIVE
23	6.0"	0	NATIVE
28	0	2.0"	CLASS 2 BASE
29	3.0"	0	NATIVE
30	4.0"	0	NATIVE
40	4.75"	5.25"	PIT RUN
41	6.5"	0	NATIVE
42	4.0"	0	NATIVE
43	4.5"	0	NATIVE

LEGEND

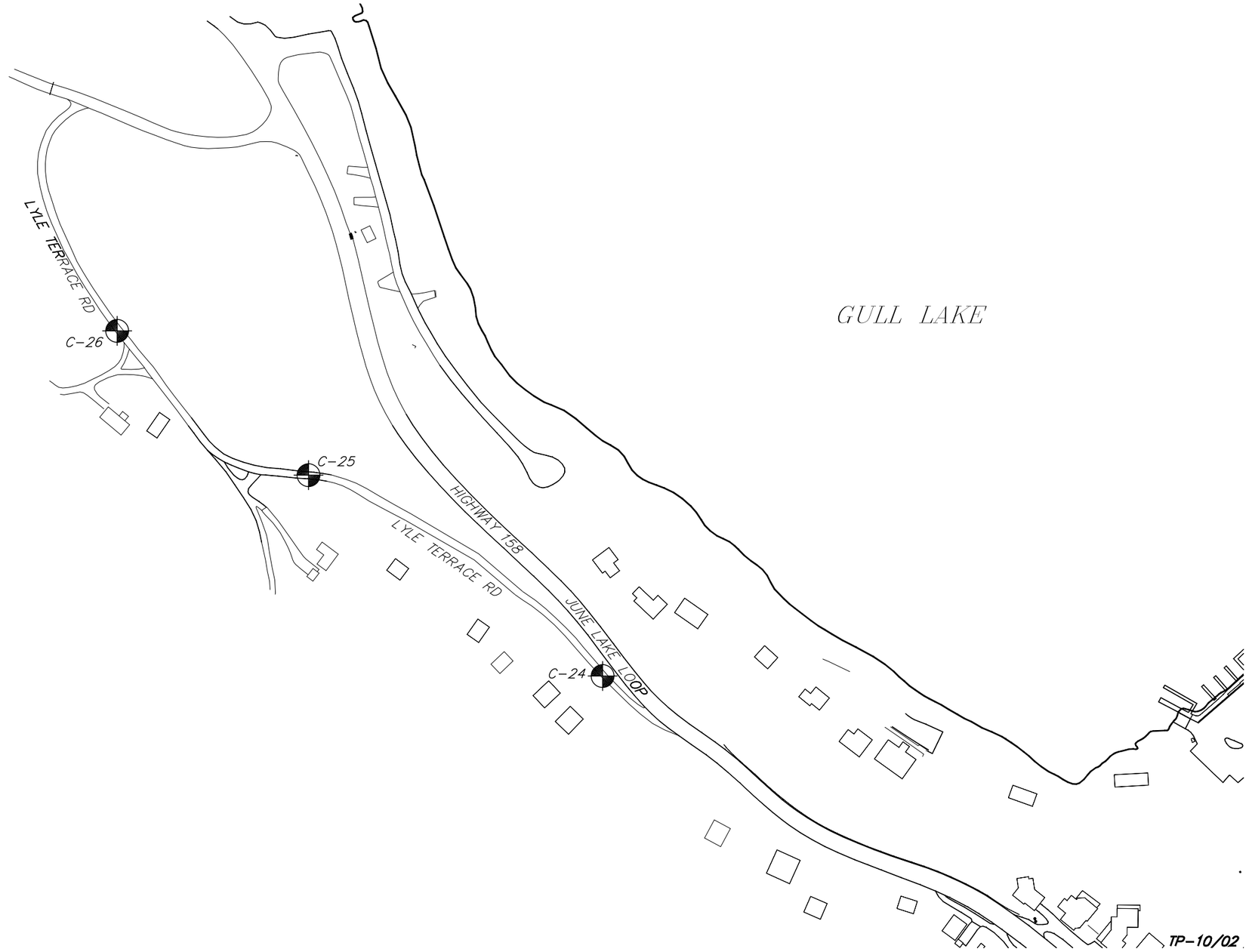
C-43 — APPROXIMATE LOCATION OF ASPHALT CORE C-19 TO C-23, C-28 TO C-30, AND C-40 TO C-43

TP-XX/XX — APPROXIMATE LOCATION OF TEST PIT (MONTH/YEAR COMPLETED)

Sierra Geotechnical Services

PROJECT: FIELD INVESTIGATION LOCATION MAP JUNE LAKE STREETS REHABILITATION JUNE LAKE CENTER	
SCALE: 1"=200'	DATE: January 2014
DRAWING: Core Location Map.dwg	DRAWN BY: CS
JOB NO.: 3.04027	FIGURE: FIGURE 7

ASPHALT CORE NO.	ASPHALT THICKNESS	BASE THICKNESS	MATERIAL BELOW ASPHALT
24	2.0"	6.0"	GRAVEL/OIL
25	2.0"	2.0"	SOIL/GRAVEL/OIL
26	4.0"	1.0"	GRAVEL



200 0 100 200

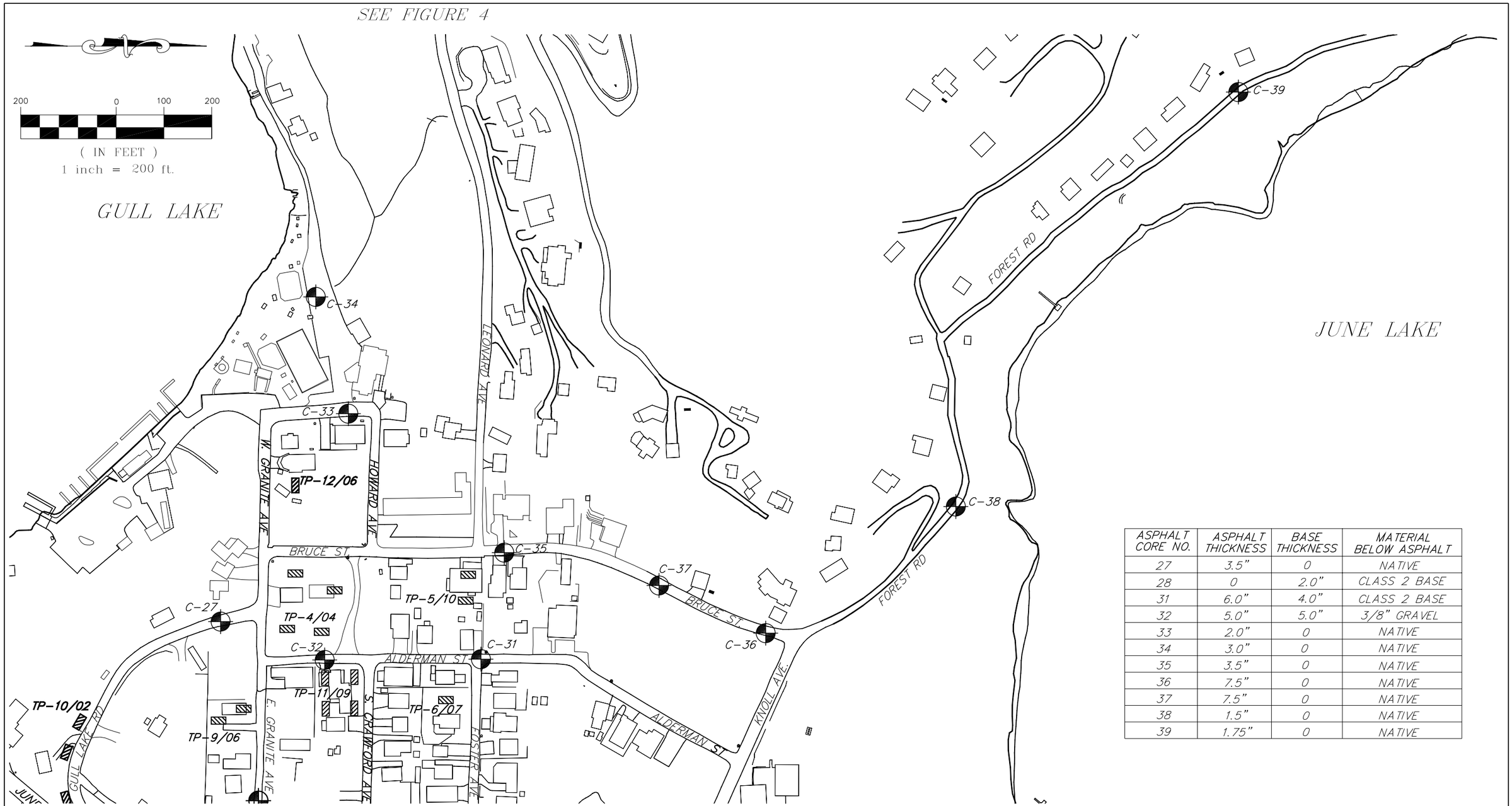
(IN FEET)
1 inch = 200 ft.

LEGEND

C-26 APPROXIMATE LOCATION OF ASPHALT CORE C-24 TO C-26

Sierra Geotechnical Services

PROJECT: FIELD INVESTIGATION LOCATION MAP JUNE LAKE STREETS REHABILITATION LYLE TERRACE ROAD	
SCALE: 1"=200'	DATE: January 2014
DRAWING: Core Location Map.dwg	DRAWN BY: CS
JOB NO.: 3.04027	FIGURE: FIGURE 8



ASPHALT CORE NO.	ASPHALT THICKNESS	BASE THICKNESS	MATERIAL BELOW ASPHALT
27	3.5"	0	NATIVE
28	0	2.0"	CLASS 2 BASE
31	6.0"	4.0"	CLASS 2 BASE
32	5.0"	5.0"	3/8" GRAVEL
33	2.0"	0	NATIVE
34	3.0"	0	NATIVE
35	3.5"	0	NATIVE
36	7.5"	0	NATIVE
37	7.5"	0	NATIVE
38	1.5"	0	NATIVE
39	1.75"	0	NATIVE

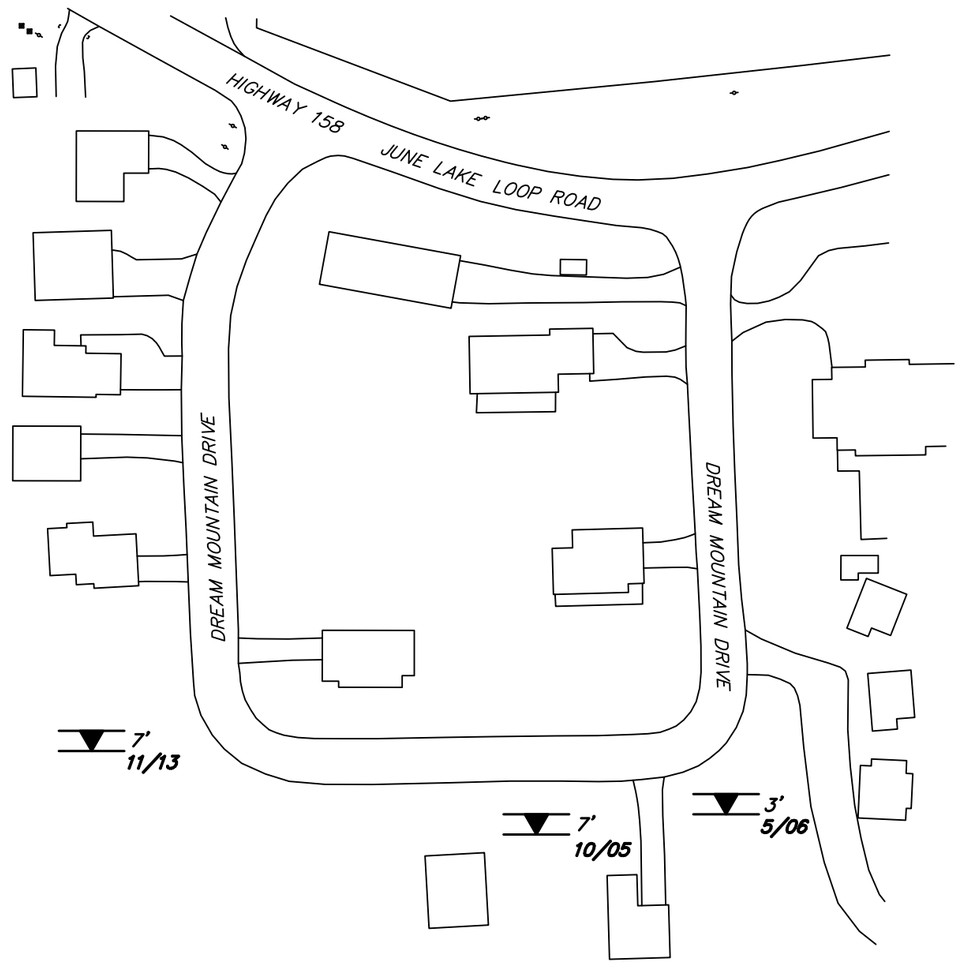
LEGEND

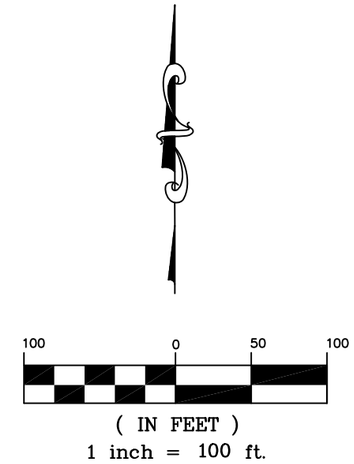
C-39 — APPROXIMATE LOCATION OF ASPHALT CORE C-27 TO C-28 AND C-31 TO C-39

TP-XX/XX — APPROXIMATE LOCATION OF TEST PIT (MONTH/YEAR COMPLETED)

Sierra Geotechnical Services

PROJECT: FIELD INVESTIGATION LOCATION MAP JUNE LAKE STREETS REHABILITATION JUNE LAKE CENTER	
SCALE: 1"=200'	DATE: January 2014
DRAWING: Core Location Map.dwg	DRAWN BY: CS
JOB NO.: 3.04027	FIGURE: FIGURE 9





LEGEND

X'
XX/XX — APPROXIMATE DEPTH TO GROUNDWATER (MONTH/YEAR)

Sierra Geotechnical Services

PROJECT: DEPTH TO WATER PLAN JUNE LAKE STREETS REHABILITATION DREAM MOUNTAIN DRIVE	
SCALE: 1"=100'	DATE: January 2014
DRAWING: Core Location Map.dwg	DRAWN BY: CS
JOB NO.: 3.04027	FIGURE: FIGURE 10

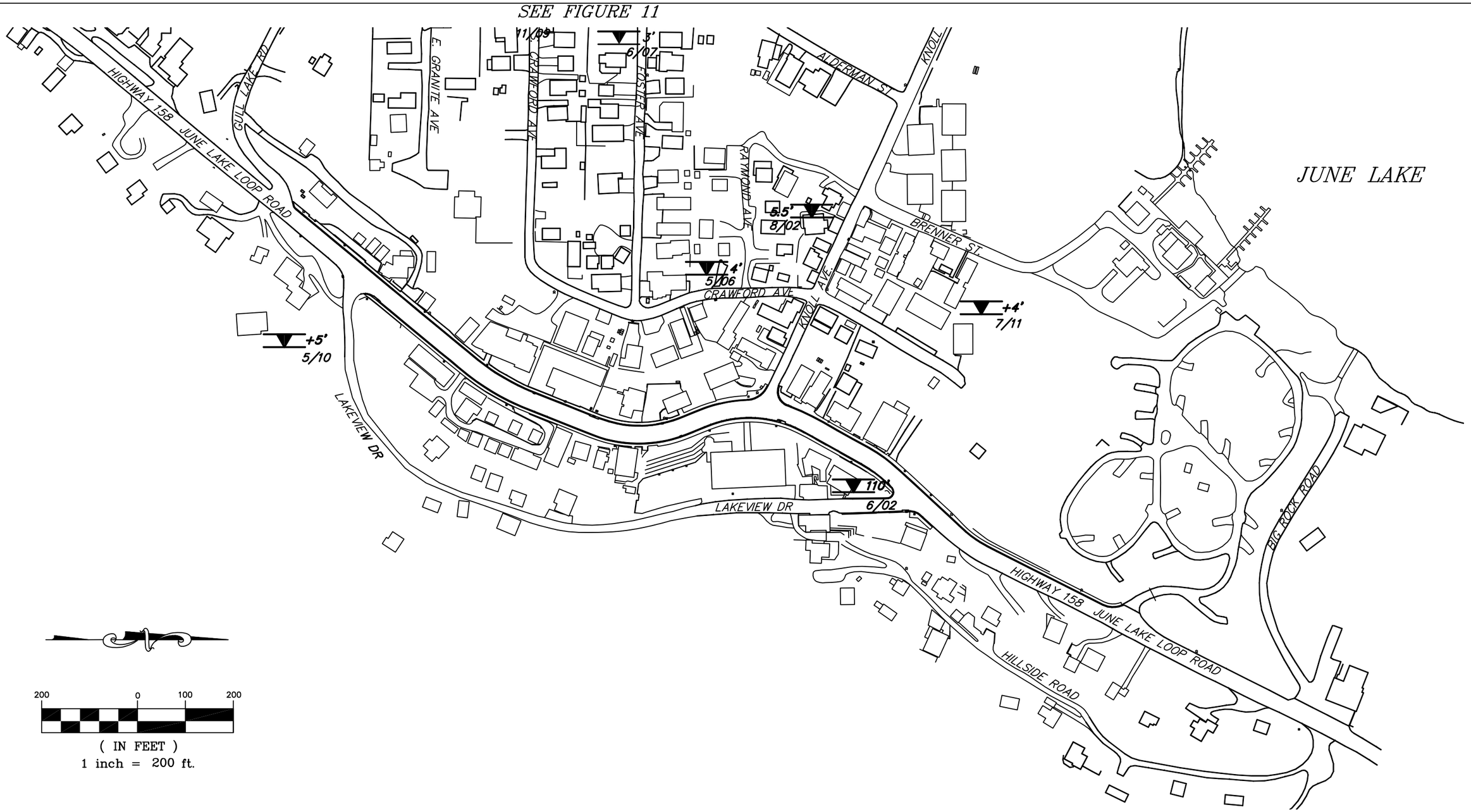
SEE FIGURE 10

LEGEND

X'
XX/XX — APPROXIMATE DEPTH TO GROUNDWATER (MONTH/YEAR)

Sierra Geotechnical Services

PROJECT: DEPTH TO WATER PLAN JUNE LAKE STREETS REHABILITATION JUNE LAKE CENTER	
SCALE: 1"=200'	DATE: January 2014
DRAWING: Core Location Map.dwg	DRAWN BY: CS
JOB NO.: 3.04027	FIGURE: FIGURE 11



Sierra Geotechnical Services

LEGEND

X'
XX/XX — APPROXIMATE DEPTH TO GROUNDWATER (MONTH/YEAR)

PROJECT: DEPTH TO WATER PLAN JUNE LAKE STREETS REHABILITATION JUNE LAKE CENTER	
SCALE: 1"=200'	DATE: January 2014
DRAWING: Core Location Map.dwg	DRAWN BY: CS
JOB NO.: 3.04027	FIGURE: FIGURE 12