TOWN OF DISCOVERY BAY

A COMMUNITY SERVICES DISTRICT

SDLF Gold-Level of Governance

President – Bill Mayer • Vice-President – Bill Pease • Director – Kevin Graves • Director – Robert Leete • Director – Bryon Gutow

NOTICE OF THE REGULAR MEETING
OF THE PARKS AND RECREATION COMMITTEE
OF THE TOWN OF DISCOVERY BAY
WEDNESDAY, February 20, 2019
STANDING PARKS AND RECREATION COMMITTEE REGULAR
MEETING 3:30 P.M.
Community Center
1601 Discovery Bay Boulevard, Discovery Bay, California
Website address: www.todb.ca.gov

Parks and Recreation Committee Board Members
Kevin Graves
Bryon Gutow

A. ROLL CALL
1. Call business meeting to order 3:30 P.M.
2. Roll Call.

B. PUBLIC COMMENTS (Individual Public Comments will be limited to a 3-minute time limit)

During Public Comments, the public may address the Committee on any issue within the District's jurisdiction which is not on the Agenda. The public may comment on any item on the Agenda at the time the item is before the Committee for consideration by filling out a comment form. The public will be called to comment in the order the comment forms are received. Any person wishing to speak will have 3 minutes to make their comment. There will be no dialog between the Committee and the commenter as the law strictly limits the ability of Committee members to discuss matters not on the agenda. We ask that you refrain from personal attacks during comment, and that you address all comments to the Committee only. Any clarifying questions from the Committee must go through the Chair. Comments from the public do not necessarily reflect the view point of the Committee members.

C. DRAFT MINUTES TO BE APPROVED
1. December 19, 2018 Parks and Recreation DRAFT meeting minutes.

D. DISCUSSION ITEMS
1. Discussion Regarding Chair and Vice-Chair.
2. Discussion Regarding 2019 Parks and Recreation Public Event Calendar.
3. Discussion Regarding the 2019 Program, Activities, and Event Fee Waivers.
4. Discussion Regarding the DRAFT Administrative Revisions to both the Facility and Parks Rental Fee Schedules.
5. Discussion Regarding Attendance at the CPRS State Conference.
6. Discussion Regarding the River Otters Contract Update.
7. Discussion Regarding the Paws on Parade Event Update.
8. Discussion Regarding the Terracon Report on Pool Expansion Site Assessment and Geotech Report.

E. FUTURE DISCUSSION/AGENDA ITEMS

F. ADJOURNMENT
1. Adjourn to the next Standing Parks and Recreation Committee meeting at the Community Center located at 1601 Discovery Bay Boulevard.

"This agenda shall be made available upon request in alternative formats to persons with a disability, as required by the American with Disabilities Act of 1990 (42 U.S.C. § 12132) and the Ralph M. Brown Act (California Government Code § 54954.2). Persons requesting a disability related modification or accommodation in order to participate in the meeting should contact the Town of Discovery Bay, at (925) 634-1131, during regular business hours, at least forty-eight hours prior to the time of the meeting."

"Materials related to an item on the Agenda submitted to the Town of Discovery Bay after distribution of the agenda packet are available for public inspection in the District Office located at 1800 Willow Lake Road during normal business hours."

TOWN OF DISCOVERY BAY

A COMMUNITY SERVICES DISTRICT

SDLF Gold-Level of Governance

President – Kevin Graves • Vice-President – Bill Mayer • Director – Bill Pease • Director – Robert Leete • Director – Bryon Gutow

MINUTES OF THE REGULAR MEETING
OF THE PARKS AND RECREATION COMMITTEE
OF THE TOWN OF DISCOVERY BAY
WEDNESDAY, December 19, 2018
STANDING PARKS AND RECREATION COMMITTEE REGULAR MEETING 3:30 P.M.
Community Center
1601 Discovery Bay Boulevard, Discovery Bay, California
Website address: www.todb.ca.gov

Parks and Recreation Committee Board Members
Chair Bill Pease
Vice-Chair Chris Steele

A. ROLL CALL

1. Call business meeting to order 3:30 P.M. – By Chair Pease.
2. Roll Call – All Present.

B. PUBLIC COMMENTS (Individual Public Comments will be limited to a 3-minute time limit)

None.

C. DRAFT MINUTES TO BE APPROVED

1. October 17, 2018 Parks and Recreation DRAFT meeting minutes – Approved.

D. DISCUSSION ITEMS

1. Update on the Lighting and Landscape Zone Strategies.

General Manager Davies – Provided an update regarding the Lighting and Landscape zone strategies.
Dennis Klingelhofer and Rick Clark Harris & Associates – Provided a handout and the details regarding zone strategies related to key issues, assessments, and revenues, along with the 3 options;

- Option 1 — Form New TODB LMD to Replace CCC LMD
- Option 2 — Overlay LMD for Community Center and Parks
- Option 3 — Form New LMD for Zone 8

There was discussion regarding the current property taxes, the options, revenues, assessment districts, and the different zone strategies.
Dennis Klingelhofer and Rick Clark Harris & Associates – Provided other details regarding outreach to the residents, community outreach, online survey, and the timeframe for the financial needs analysis (1st or 2nd week in January). The discussion continued regarding the zone strategies, a study session with the full Board, and the figures for the District formation process.

2. Discussion Regarding Updates to the Park Rules and Regulations Policy 012.

Recreation Programs Supervisor Kaiser – Provided update regarding the Park Rules and Regulation Policy 012. There was discussion regarding the updated Parks Rules and Regulations Policy 012. The recommendation from the Parks and Recreation Committee to the Board is to approve Park Rules and Regulations Policy 012.

3. Discussion Regarding New and Updated Park and Recreation Forms.

Recreation Programs Supervisor Kaiser – Provided an update regarding the Park and Recreation forms. There was discussion regarding the forms.

4. Discussion Regarding a Bob Abbadie Memorial Dedication.

Recreation Programs Supervisor Kaiser – Provided an update regarding the Bob Abbadie memorial dedication. There was discussion regarding the plaque for Bob Abbadie. The recommendation from the Parks and Recreation Committee to the Board is to approve a plaque in memory of Bob Abbadie at a future Board meeting.

5. Discussion Regarding Front Entrance Lighting and Landscaping.

Parks and Landscape Manager Miller – Provided an update regarding the front entrance lighting and landscaping. There was discussion regarding the different kinds of lighting and the timeframe to bring the item back to the Committee (next Parks and Recreation meeting)

E. FUTURE DISCUSSION/AGENDA ITEMS

Front Entrance Lighting and Landscaping.

F. ADJOURNMENT

1. The meeting adjourned at 4:50 p.m. to the next Standing Parks and Recreation Committee meeting at the Community Center located at 1601 Discovery Bay Boulevard.

//cmc – 12-20-18
http://www.todb.ca.gov/agendas-minutes

Town of Discovery Bay

"A Community Services District"

PARKS AND RECREATION STAFF REPORT

Meeting Date

February 20, 2019

Prepared By: Mac Kaiser, Recreation Programs Supervisor
Submitted By: Michael R. Davies, General Manager

MRD

Agenda Title

2019 Parks and Recreation Public Event Calendar.

Recommended Action

Board Approve Parks and Recreation Public Event Calendar for 2019.

Executive Summary

2019 represents the 6th full year of event programming at the Community Center and the 7th full year of summer programming. The Community Center continues to offer a variety of programming for all age groups, not only at the Community Center itself, but also at other Town facilities.

The Community Center continues to develop as a hub of activity and staff continues to offer or partner with various community groups to provide a variety of free as well as paid programming throughout the year. There also continues to be a variety of private parties that occur year-round including birthdays, family reunions, and many others that schedule the Center for their events.

Staff has developed the attached event schedule for Board consideration. The events listed are those which have been held in the past, as well as new ones for 2019 for a total of 19 events. If the schedule is approved, these events will not come back before the Board for further authorization. Once each date and event type is accepted by the Board, Staff will then block those times and provide the event sponsor approval to proceed with their event planning.

All other events are subject to the terms and conditions in the Park Usage Rental Policy (Policy #013) and District Recreation Facilities Alcohol Policy (Policy #022). Both Policies are attached.

Fiscal Impact:

Amount Requested $ N/A
Sufficient Budgeted Funds Available?: (If no, see attached fiscal analysis)
Prog/Fund # Category: Pers. Optg. Cap. -or- CIP# Fund#

Previous Relevant Board Actions for This Item

N/A

Attachments

Proposed 2019 Parks and Recreation Public Event Calendar.
Board Policies #013 and #022.

AGENDA ITEM: D-2

2019 Parks and Recreation Public Event Calendar

2019 Event Dates	Times	Location	Event Title	Event Description	Approximate Attendance Numbers	Event Sponsors	Vendors on site	Food on site	Alcohol on site	Town/County Licenses Required	Fees Charged/Waived
March 2	9-4PM	Cornell Park	Pony Jamboree	Pony Seaonal Opening Scrimmage Games	100+	Brentwood Pony	No	No	No	TODB Facility Permit	Fees Charged
April 20	8-12PM	DBCC	Easter Egg Hunt	DB Lions Club Easter Egg Hunt	500+	DB Lions Club	No	No	No	TODB Facility Permit	Fees Waived
April 27	8AM-12PM	DBCC	Pet's on Parade	Family friendly event for dogs	100-200	Town & DB Lions Joint Event	Yes	No	No	TOBD Facility Permit CCC Health permit	Fees Waived/Lions to donate net proceeds back for dog park specific improvements
May 8	3:00-9:00PM	DBCC	Food Truck Round-Up	Family friendly event. "Off the Grid" style event featuring a variety of unique/gourment dinner trucks, live music and vendor booths.	200-400	Discovery Bay Chamber of Commerce	Yes	Yes	Yes	TODB Facility Permit CCC Health permit ABC License ECCFPD Event Permit	Fees Charged
May	8AM-4PM	Cornell Park	Fund Raising Pickleball Tournament	Pickleball Tournament to raise funding for Tennis Court converstion	75-150	Discovery Bay Pickleball Club	No	No	No	TODB Facility Permit	Fees Waived
June 1	8AM-11PM	DBCC	Summer Jam Concert in the Park	Family friendly event featuring live music, food and alcohol in partnership with the DB Lions Club.	500-1,000	Town & DB Lions Joint Event	Yes	Yes	Yes	TODB Facility Permit CCC Health Permit ABC License	Fees Waived/Lions to donate 50% of net proceeds back to Town for specific Park/Facility project
June 12	3:00-9:00PM	DBCC	Food Truck Round-Up	Family friendly event. "Off the Grid" style event featuring a variety of unique/gourment dinner trucks, live music and vendor booths.	200-400	Discovery Bay Chamber of Commerce	Yes	Yes	Yes	TODB Facility Permit CCC Health permit ABC License ECCFPD Event Permit	Fees Charged
June 14	6:30-10:30PM	DBCC	Friday Night Movie in the Park	Family friendly movies on the event lawn at the Community Center	50-75	Town Event	No	Yes	No	CCC Health Permit Movie Licensing	N/A Town Event
June 21	7PM-10PM	DBCC	Friday Night Movie in the Park	Family friendly evening swim and music under the stars	50-75	Town Event	No	No	No	TODB Facility Permit	N/A Town Event
June 26	3:00PM-6:00PM	DBCC	Library Program	Family friendly event with a focus on childrens entertainment	30-75	Town & CCC Library	No	No	No	TODB Facility Permit	Fees Waived
July 10	3:00-9:00PM	DBCC	Food Truck Round-Up	Family friendly event. "Off the Grid" style event featuring a variety of unique/gourment dinner trucks, live music and vendor booths.	200-400	Discovery Bay Chamber of Commerce	Yes	Yes	Yes	TODB Facility Permit CCC Health permit ABC License ECCFPD Event Permit	Fees Charged
July	6:30-10:30PM	DBCC	Friday Night Movie in the Park	Family friendly movies on the event lawn at the Community Center	50-75	Town Event	No	Yes	No	CCC Health Permit Movie Licensing	N/A Town Event

2019 Parks and Recreation Public Event Calendar

2019 Event Dates	Times	Location	Event Title	Event Description	Approximate Attendance Numbers	Event Sponsors	Vendors on site	Food on site	Alcohol on site	Town/County Licenses Required	Fees Charged/Waived
July 15-19	8:30-3:30PM	DBCC	R.A.D. Program	This is a free Contra Costa County Sheriff's program for children ages 5-7 years that provides education on personal safety.	20-40	CCC Sheriff	No	No	No	TODB Facility Permit	Fees Waived
August	6:30-10:30PM	DBCC	Friday Night Movie in the Park	Family friendly movies on the event lawn at the Community Center	50-75	Town Event	No	Yes	No	CCC Health Permit Movie Licensing	N/A Town Event
September	8AM-8PM	DBCC	Car Show	Classic, Hot Rod, Motorcycle Car show, food/beer, and vendors	300-400	DB Lions	Yes	Yes	Yes	TODB Facility Permit CCC Health Permit ABC License	Fees Charged
September 21	8:00AM - 8:00PM	DBCC	Summer Jam	Kids zone, possible car show, business vendors, food vendors, concert and petting zoo. Alcohol Sales	500-1,000	DB Lions	Yes	Yes	Yes	TPDB Facility Permit CCC Health Permit ABC Permit ECCFPD	N/A Town Event
October	8AM-4PM	Cornell Park	Fund Raising Pickleball Tournament	Pickleball Tournament to raise funding for Tennis Court converstion	75-100	Discovery Bay Pickleball Club	No	No	No	TODB Facility Permit	Fees Waived
October 23	3:00PM-6:00PM	DBCC	Library Program	Family friendly event with a focus on childrens entertainment	30-50	Town & CCC Library	No	No	No	TODB Facility Permit	Fees Waived
December	TBD	DBCC	Holiday Parade & Breakfast with Santa	Judging, Breakfast with Santa, vendors for event located in the CC parking lot	1000+	Delta Sun Times/DB Lions/ Chamber of Commerce Joint Event	Yes	Yes	No	TODB Facility Permit CCC Health Permit ECCFPD Event Permit	Fees Waived for use of parking lot only

Town of Discovery Bay

Program Area:	Policy Name:	Policy Number:
Parks and Landscaping	Park & Facility Usage & Rental Policy	013
Date Established:	**Date Amended:**	**Resolution:**
April 20, 2011	May 3, 2017	2016-17

I. GENERAL INFORMATION

The Park & Facility Usage and Rental Policy outlines specific regulations and requirements associated with the permitted rental of a public facility and/or area within the Town of Discovery Bay Community Services District (District) owned or operated park. Obtaining a permit shall grant the user basic usage and access rights for the approved purpose and time only. Any fees or deposits established by the District Board of Directors shall be paid by the applicant prior to the approval of the permit. All users shall comply with County, State and Federal laws.

The District reserves the right to cancel, revoke or suspend any and all reservations, permits and applications if deemed inappropriate, flagrantly disrespectful or if harmful activities are taking place in the park or facility. No notice is required and, in some cases, the Sheriff will be notified and enforcement action will be requested. Violations of this policy may result is forfeiture of fees and/ or deposit.

Facilities and parks available for rental include:

1. Cornell Park, Tennis Court
2. Cornell Park, Pickle Ball Courts
3. Cornell Park, Baseball Field
4. Cornell Park, Soccer Field
5. Cornell Park, Shaded Picnic Area
6. Cornell Park, Horse Shoe Pits or Bocce Courts
7. Ravenswood Park, Covered Picnic Area 1
8. Ravenswood Park, Covered Picnic Area 2
9. Ravenswood Park, Soccer Field
10. Community Center, Tennis Court(s)
11. Community Center, BBQ Area
12. Community Center, Reception Area
13. Community Center, Arts and Crafts/Meeting Room
14. Community Center, Multi-Purpose Room
15. Community Center, Event lawn
16. Community Center, Swimming Pool

II. ELIGIBILITY & PRIORITY

The District reserves the right to exclude or remove activities it deems inappropriate for public use. District business will take precedence over any and all other meetings. Groups that have a reservation in advance are subject to cancellations, in rare circumstances, to accommodate this priority. All fees will be returned to the user if the District requires a cancellation or relocation of the reserved event.

In issuing permits, priority shall be given to Discovery Bay residents and events serving the Discovery Bay community.

III. RESERVATION REQUIREMENTS

The renter must be over 18 years of age, and submit a complete Reservation Form to the Community Center, a refundable damage deposit, and all applicable user fees and insurance as described in Insurance Requirements. Renters are required to provide the name and phone number of the principal contact person and a secondary contact. This person must be present onsite during the approved rental period and will be the emergency contact, and is responsible for ensuring compliance with the policies outlined. A copy of the permit must be onsite and available upon request by District staff or representatives during approved rental period.

Single day reservation may be made up to one (1) year in advance. Long-term league reservations may be made up to four (4) months in advance, unless previously approved by the Town of Discovery Bay CSD Board of Directors.

No reservation or agreement will be approved or signed until the requesting user has paid the applicable deposits and fees.

Insurance Requirements: All sports leagues, organizations, or inflatable play equipment operators are required to provide the District with a CERTIFICATE OF LIABILITY INSURANCE showing valid liability coverage in the amount of $1,000,000. A separate ADDITIONAL INSURED ENDORSEMENT must be submitted listing the "Town of Discovery Bay CSD, its officers, officials, employees, and volunteers" as additional insured on the policy. Insurance Certificates must be submitted to the District at least five (5) days prior to the scheduled reservation.

Cancellations: Park Rental cancellations occurring five (5) business days or more prior to the event will be refunded all fees and deposits. Cancellations occurring four (4) business days or less prior to the event will forfeit all applicable fees but be refunded all of the deposit.

Cancellation for Indoor Facility Rentals at the Community Center occurring sixty (60) days or more prior to the event will be refunded all fees and deposits. Cancellations less than sixty (60) days, but more than thirty (30) days prior to the event date will forfeit 25% of the total fees. Cancellations less than thirty (30) days prior to the event date, but more than fifteen (15) days prior to the event date will forfeit 50% of the total fees. Cancellations occurring less than fifteen (15) days prior to the event date will forfeit all applicable fees. In all cases of cancellation, the deposit shall be returned.

Cancellation fees above do not reflect any cancellation processing fees. Processing fees are in addition to the cancellation fees described here.

Clean Up: Renters are required to clean up and return the park or area to the original condition. Trash must be placed in the receptacles provided. Trash that does not fit in the trash receptacle must be disposed of properly by the renter.

Reasonable party decorations are permitted. However, users may not put staples or nails into any tree, sign, wall or table for any purpose. All decorations must be taken down and removed from the facility.

Deposit Forfeiture: Renter agrees to take full responsibility for the behavior of their guests during the rental period. Children must be supervised at all times by adults. Any charges for damage to the park or facility or its furnishings will be deducted from the deposit. Rentals that exceed the reserved time period will be charged the hourly rate to be deducted from the deposit. Failure to leave the rented area in satisfactory condition will result in deposit forfeiture. Upon a satisfactory inspection of the premises by District staff, the deposit check will be destroyed or returned to the applicant.

Prohibited Activities: No person shall consume, possess, sell, serve or cause to be served, any alcoholic beverage of any kind within any park area, unless expressly authorized in advance of the event by the Board of Directors. The General Manager, or designee, is authorized to approve service of alcoholic beverages for private events taking place at the Discovery Bay Community Center once a complete and approved application is received and all insurance requirements and other conditions of approval are approved. See Special Conditions regarding the serving and or/sale of Alcoholic beverages, below. Fires and barbecues (BBQ) shall be permitted only in grills already provided in the park. There shall be no overnight events or camping at any Discovery Bay park facility unless expressly authorized in advance of the event by the Board of Directors.

Gambling activities are expressly prohibited at all Town of Discovery Bay Parks and Recreation facilities. Individuals or groups of individuals in violation of this prohibited activity shall immediately cease the prohibited activity. Failure to cease shall result in the immediate notification of local law enforcement authorities.

Renter agrees that they will comply with all state and local laws including but not limited to activities that require a state or local permit. At the discretion of the General Manager, or designee, security may be required on a case by case basis.

Special Conditions regarding the serving and or/sale of Alcoholic beverages:

If alcohol is to be served or sold, it must be indicated on the rental application. The General Manager or Board of Directors, as identified above, must approve any application which includes consumption or sale of alcohol. Once approved, it is the responsibility and liability of the Renter and/or organization renting the facility. At the discretion of the General Manager, or designee, security may be required on a case by case basis.

To sell alcoholic beverages at your event, a valid alcohol permit from the California Department of Alcoholic Beverage Control Board (A.B.C.) must be obtained. The permit must be on file with the District offices at least ten (10) days prior to your event.

Food and Alcohol may be consumed without an Alcohol permit from the A.B.C. when there is no monetary exchange for the food, beverages or admission charged for the event.

Violation of any of these requirements will result in immediate termination of Renter's event and will result in forfeiture of the damage deposit.

The District may require additional deposits, insurance and/or security for events where alcohol is served. These additional requirements will be determined by the circumstances of each rental request.

Food Preparation: Food and non-alcoholic beverages may be served, but not prepared on site for any indoor facility rentals at the Community Center.

Exhibitions, Events, Festivals, Meeting and Assemblies: Any person, group, society, club or organization wishing to set up or maintain any exhibition, place of amusement, concert, picture show, bandstand, performance, entertainment or other form of amusement or function where the expected attendance is fifty (50) people or more occupying the park at any one time, must first obtain written authorization from the District's General Manager. These types of requests must be submitted no less than sixty (60) days prior to the event.

IV. MISCELLANEOUS

Any policy listed herein may be waived or modified on a case-by-case basis and at the discretion of the Board of Directors.

Requirements listed herein, except those identified as "prohibited", may be waived or modified on a case-by-case basis by the General Manager, or designee, upon the finding of public interest; any such modification (including modification to fees) shall be summarized on the next available board agenda.

Policy Established:

April 20, 2011

Policy Amended:

July 16, 2013
January 8, 2014
December 16, 2015
October 19, 2016
May 3, 2017

Town of Discovery Bay

Program Area:	Policy Name:	Policy Number:
Parks & Recreation	Alcohol Policy	022
Date Established:	**Date Amended:**	**Resolution:**
September 3, 2014	N/A	2014-21

POLICY STATEMENT

The Town of Discovery Bay Community Services District supports the ability to allow renters of District facilities the ability to host private parties and to serve or consume alcohol during facility rentals when it is determined by staff to be feasible and age appropriate. This policy provides the framework to guide renters in the process to be able to serve or consume alcohol for private parties and events. The Policy outlines the procedural structure that adjusts to the different types of facility rentals based on the number of planned attendees. Management within the District must determine the appropriateness for alcohol consumption during all potential rentals to maintain consistency with this policy.

APPLICATION, AGREEMENT, & SPECIAL ALCOHOL PERMIT

Each potential renter that would like to serve or consume alcohol during a facility rental must fill out the appropriate application and agreement as well as the special alcohol permit. The rental applicant must also meet all guidelines listed in the agreement. The District reserves the right to accept or reject an individual or group's offer to serve or consume alcohol. It is strictly prohibited to sell or barter alcohol, and will be cause for immediate revocation of the permit and the cancellation of the event.

SPECIAL ALCOHOL PERMIT QUALIFICATIONS

- Age - Any person seeking to rent a District facility who intends on serving or consuming alcohol must be 21 years of age with a valid ID, and anyone who wishes to serve or consume alcohol during the rental must be 21 years of age and have a valid ID. Special Alcohol permits will not be issued if the guest of honor is a minor or if the majority of the attendees are minors.

- Applications & Fees - All applicants must fill out a rental application for the facility they would like to rent. All rental fees and deposits must be paid in full prior to the event. The Special Alcohol permit must be filled out completely and submitted at least (2) weeks prior to the rental. The alcohol permit fee for the Special Alcohol Permit is based on the number of attendees who will be present during the rental period.

  1-50 Attendees - $50
  51-100 Attendees - $75
  100+ Attendees - $100

- Insurance - Applicants are required to provide a certificate of insurance that names the Town of Discover Bay as an additional insured providing general liability insurance in and amount of not less than $1,000,000 for each occurrence and $1,000,000 general aggregate. The Town of Discovery Bay may be able to obtain a certificate of insurance for the event at the expense of the applicant.

DETERMINING AND APPROVAL – SPECIAL ALCOHOL PERMIT

Once the District has received a Special Alcohol permit application, the Department Manager will review the permit and make sure that all qualifications have been met. Completed forms will be reviewed for approval by the General Manager, or designee, prior to issuance of a Special Alcohol Permit.

FACILITIES

The following are the District facilities at which serving or consumption of alcohol may be approved during facility rentals with the required permits and fees

Indoor Facilities

Discovery Bay Community Center's Cabrillo Room
Discovery Bay Community Center's Marina Room
Discovery Bay Community Center's Discovery Room

Outdoor Facilities

Discovery Bay Community Center's Event Lawn
Discovery Bay Community Center's BBQ Area

RULES AND REGULATIONS

1. A District facility attendant will be present for rentals with 50+ attendees. An added fee of $15.00/hour or partial will be assessed prior to the event based upon the anticipated timeframes. Any additional expenses shall be paid in full at the conclusion of the event or may be deducted from the security deposit .
2. All guests who will be served alcohol must be at least 21 years old and be able to provide a valid ID. Guests who cannot provide a valid ID will be acknowledged as a minor. There are No Exceptions.
3. Alcohol service includes beer, wine, & champagne. Liquor and other distilled spirits are prohibited (Glass beer bottles are prohibited).
4. Alcohol may only be brought in by the person or organization responsible for the rental or a licensed caterer. Guests may not bring their own beverages to the event. Non-Compliance may result in the cancellation of the event at the discretion of Town staff.
5. Alcohol is not to be consumed outside of the rental area(s), and shall not be consumed in entry ways or parking lots.
6. All rentals that request alcohol must have a certificate of insurance that names Town of Discovery Bay as an additional insured, as described above.
7. Alcohol will not be permitted when the guest of honor is a minor, or when a majority of the attendees are minors.
8. Alcohol service must stop (30) minutes before the designated end time of the rental.
9. There may be additional requirements for rentals with more than (50) attendees including but not limited to necessity of security, at the discretion of Town staff.
10. Alcohol service or consumption that has not been approved or fails to comply with all requirements of the agreement will result in termination of rental, and forfeiture of rental deposit.
11. The event host is responsible to fulfill all requirements of the agreement. The District is not responsible for any loss of the rental expense due to the requirements not being met.

Town of Discovery Bay

"A Community Services District"

PARKS AND RECREATION STAFF REPORT

Meeting Date

February 20, 2019

Prepared By: Mac Kaiser, Recreation Programs Supervisor
Submitted By: Michael R Davies, General Manager

Agenda Title

2019 Program, Activities, and Event Fee Waivers.

Recommended Action

Board Acceptance of Fees Waivers approved by the General Manager for the following 2019 Program, Activities, and Events.

Executive Summary

The Town of Discovery Bay Community Services District Board of Directors (Board) established the Park & Facility Usage and Rental Policy #13 on July 16, 2013; and

Whereas the Park & Facility Usage and Rental Policy was revised on October 19, 2016 to more adequately respond to the needs of the community; and

Whereas requirements, except those identified as "prohibited", may now be waived or modified on a case-by-case basis by the General Manager, or designee upon the finding of public interest; and any such modification (including modification to fees) shall be summarized on the next available board agenda.

Therefore, Staff is submitting for acceptance the following 2019 Programs, Activities, and Events whose "Fees" were waived by the General Manager upon the finding of public interest per the Park & Facility Usage and Rental Policy #13.

"Bridge on the Lake" Senior Duplicate Bridge games held every Saturday throughout the year at the Discovery Bay Community Center from 12PM to 4:30PM for a fee waiver total amount of $8,190. Effective July 2017, the Town entered into a Memorandum of Understanding with the "Bridge on the Lake" duplicate bridge participants, requiring a fee of $1 per person/per week in an effort to offset this direct cost to the Town. For calendar year 2018 the Town recovered a total of $1,024 from the "Bridge on the Lake" group that reduced the actual total fee waiver in 2018 to $7,166.

"Hand and Foot" Senior Duplicate Bridge games held every Wednesday throughout the year at the Discovery Bay Community Center from 12PM to 4PM for a fee waiver total amount of $5,200.

"Boy Scouts of America Troop 514" weekly Monday meetings held throughout the year at the Discovery Bay Community Center from 6:30PM to 8PM for a fee total waiver amount of $1,750. The Boy Scouts Troop 514 annually provides an agreed upon in-kind service project for the Town.

The "Discovery Bay Garden Club" will host a free Community Workshop on the Blue-Green Algae issue that has impacted the Discovery Bay Community the past several years. This workshop will be featuring an Environmental Health Specialist from Contra Costa County which is scheduled for April 12th, from 11:30AM – 12:30PM at the Discovery Bay Community Center. The fee waiver total amount is $30.

A Contra Costa County Library Program for children utilizing the Discovery Bay Community Center on a Wednesday afternoon from 3PM-6PM once in June and once in October. The fee waiver total amount is $180

"Resisting Aggression Defensively (R.A.D.) Kids" is a Contra Costa County Sheriff's program to be held at the Discovery Bay Community Center July 15-19 from 9AM to 4PM. This free community event for children ages 5-7 years, provides safety topics that include; Home Safety, School Safety, Out and About Safety, Good and Bad Strangers, and What to do in an emergency and then helping them understand how to react. This is a one-week program for a total fee waiver amount of $875.

"Continued to the next page"

"Annual Easter Egg Hunt" conducted by the Discovery Bay Lions Club scheduled for April 20 at the Discovery Bay Community Center from 7AM to 12PM for a fee waiver total amount of $80.

"Holiday Day Parade" and "Breakfast with Santa" conducted by the Discovery Bay Chamber of Commerce and the Discovery Bay Lions Club utilizing the parking lot in front of the Discovery Bay Community Center. There is currently no fee schedule for the use of just the parking lot in front of the Discovery Bay Community Center.

Staff recommends acceptance of the above 2019 Programs, Activities, and Events Fee Waivers by the General Managers for a total amount of $16,305

Fiscal Impact:

Amount Requested $ None
Sufficient Budgeted Funds Available? (If no, see attached fiscal analysis)
Prog/Fund # Category: Pers. Optg. Cap. -or- CIP# Fund#

Previous Relevant Board Actions for This Item

None

Attachments

Parks & Facility Usage & Rental Policy.

AGENDA ITEM: D-3

Town of Discovery Bay

Program Area:	Policy Name:	Policy Number:
Parks and Landscaping	Park & Facility Usage & Rental Policy	013
Date Established:	**Date Amended:**	**Resolution:**
April 20, 2011	May 3, 2017	2016-17

I. GENERAL INFORMATION

The Park & Facility Usage and Rental Policy outlines specific regulations and requirements associated with the permitted rental of a public facility and/or area within the Town of Discovery Bay Community Services District (District) owned or operated park. Obtaining a permit shall grant the user basic usage and access rights for the approved purpose and time only. Any fees or deposits established by the District Board of Directors shall be paid by the applicant prior to the approval of the permit. All users shall comply with County, State and Federal laws.

The District reserves the right to cancel, revoke or suspend any and all reservations, permits and applications if deemed inappropriate, flagrantly disrespectful or if harmful activities are taking place in the park or facility. No notice is required and, in some cases, the Sheriff will be notified and enforcement action will be requested. Violations of this policy may result is forfeiture of fees and/ or deposit.

Facilities and parks available for rental include:

1. Cornell Park, Tennis Court
2. Cornell Park, Pickle Ball Courts
3. Cornell Park, Baseball Field
4. Cornell Park, Soccer Field
5. Cornell Park, Shaded Picnic Area
6. Cornell Park, Horse Shoe Pits or Bocce Courts
7. Ravenswood Park, Covered Picnic Area 1
8. Ravenswood Park, Covered Picnic Area 2
9. Ravenswood Park, Soccer Field
10. Community Center, Tennis Court(s)
11. Community Center, BBQ Area
12. Community Center, Reception Area
13. Community Center, Arts and Crafts/Meeting Room
14. Community Center, Multi-Purpose Room
15. Community Center, Event lawn
16. Community Center, Swimming Pool

II. ELIGIBILITY & PRIORITY

The District reserves the right to exclude or remove activities it deems inappropriate for public use. District business will take precedence over any and all other meetings. Groups that have a reservation in advance are subject to cancellations, in rare circumstances, to accommodate this priority. All fees will be returned to the user if the District requires a cancellation or relocation of the reserved event.

In issuing permits, priority shall be given to Discovery Bay residents and events serving the Discovery Bay community.

III. RESERVATION REQUIREMENTS

The renter must be over 18 years of age, and submit a complete Reservation Form to the Community Center, a refundable damage deposit, and all applicable user fees and insurance as described in Insurance Requirements. Renters are required to provide the name and phone number of the principal contact person and a secondary contact. This person must be present onsite during the approved rental period and will be the emergency contact, and is responsible for ensuring compliance with the policies outlined. A copy of the permit must be onsite and available upon request by District staff or representatives during approved rental period.

Single day reservation may be made up to one (1) year in advance. Long-term league reservations may be made up to four (4) months in advance, unless previously approved by the Town of Discovery Bay CSD Board of Directors.

No reservation or agreement will be approved or signed until the requesting user has paid the applicable deposits and fees.

Insurance Requirements: All sports leagues, organizations, or inflatable play equipment operators are required to provide the District with a CERTIFICATE OF LIABILITY INSURANCE showing valid liability coverage in the amount of $1,000,000. A separate ADDITIONAL INSURED ENDORSEMENT must be submitted listing the "Town of Discovery Bay CSD, its officers, officials, employees, and volunteers" as additional insured on the policy. Insurance Certificates must be submitted to the District at least five (5) days prior to the scheduled reservation.

Cancellations: Park Rental cancellations occurring five (5) business days or more prior to the event will be refunded all fees and deposits. Cancellations occurring four (4) business days or less prior to the event will forfeit all applicable fees but be refunded all of the deposit.

Cancellation for Indoor Facility Rentals at the Community Center occurring sixty (60) days or more prior to the event will be refunded all fees and deposits. Cancellations less than sixty (60) days, but more than thirty (30) days prior to the event date will forfeit 25% of the total fees. Cancellations less than thirty (30) days prior to the event date, but more than fifteen (15) days prior to the event date will forfeit 50% of the total fees. Cancellations occurring less than fifteen (15) days prior to the event date will forfeit all applicable fees. In all cases of cancellation, the deposit shall be returned.

Cancellation fees above do not reflect any cancellation processing fees. Processing fees are in addition to the cancellation fees described here.

Clean Up: Renters are required to clean up and return the park or area to the original condition. Trash must be placed in the receptacles provided. Trash that does not fit in the trash receptacle must be disposed of properly by the renter.

Reasonable party decorations are permitted. However, users may not put staples or nails into any tree, sign, wall or table for any purpose. All decorations must be taken down and removed from the facility.

Deposit Forfeiture: Renter agrees to take full responsibility for the behavior of their guests during the rental period. Children must be supervised at all times by adults. Any charges for damage to the park or facility or its furnishings will be deducted from the deposit. Rentals that exceed the reserved time period will be charged the hourly rate to be deducted from the deposit. Failure to leave the rented area in satisfactory condition will result in deposit forfeiture. Upon a satisfactory inspection of the premises by District staff, the deposit check will be destroyed or returned to the applicant.

Prohibited Activities: No person shall consume, possess, sell, serve or cause to be served, any alcoholic beverage of any kind within any park area, unless expressly authorized in advance of the event by the Board of Directors. The General Manager, or designee, is authorized to approve service of alcoholic beverages for private events taking place at the Discovery Bay Community Center once a complete and approved application is received and all insurance requirements and other conditions of approval are approved. See Special Conditions regarding the serving and or/sale of Alcoholic beverages, below. Fires and barbecues (BBQ) shall be permitted only in grills already provided in the park. There shall be no overnight events or camping at any Discovery Bay park facility unless expressly authorized in advance of the event by the Board of Directors.

Gambling activities are expressly prohibited at all Town of Discovery Bay Parks and Recreation facilities. Individuals or groups of individuals in violation of this prohibited activity shall immediately cease the prohibited activity. Failure to cease shall result in the immediate notification of local law enforcement authorities.

Renter agrees that they will comply with all state and local laws including but not limited to activities that require a state or local permit. At the discretion of the General Manager, or designee, security may be required on a case by case basis.

Special Conditions regarding the serving and or/sale of Alcoholic beverages:

If alcohol is to be served or sold, it must be indicated on the rental application. The General Manager or Board of Directors, as identified above, must approve any application which includes consumption or sale of alcohol. Once approved, it is the responsibility and liability of the Renter and/or organization renting the facility. At the discretion of the General Manager, or designee, security may be required on a case by case basis.

To sell alcoholic beverages at your event, a valid alcohol permit from the California Department of Alcoholic Beverage Control Board (A.B.C.) must be obtained. The permit must be on file with the District offices at least ten (10) days prior to your event.

Food and Alcohol may be consumed without an Alcohol permit from the A.B.C. when there is no monetary exchange for the food, beverages or admission charged for the event.

Violation of any of these requirements will result in immediate termination of Renter's event and will result in forfeiture of the damage deposit.

The District may require additional deposits, insurance and/or security for events where alcohol is served. These additional requirements will be determined by the circumstances of each rental request.

Food Preparation: Food and non-alcoholic beverages may be served, but not prepared on site for any indoor facility rentals at the Community Center.

Exhibitions, Events, Festivals, Meeting and Assemblies: Any person, group, society, club or organization wishing to set up or maintain any exhibition, place of amusement, concert, picture show, bandstand, performance, entertainment or other form of amusement or function where the expected attendance is fifty (50) people or more occupying the park at any one time, must first obtain written authorization from the District's General Manager. These types of requests must be submitted no less than sixty (60) days prior to the event.

IV. MISCELLANEOUS

Any policy listed herein may be waived or modified on a case-by-case basis and at the discretion of the Board of Directors.

Requirements listed herein, except those identified as "prohibited", may be waived or modified on a case-by-case basis by the General Manager, or designee, upon the finding of public interest; any such modification (including modification to fees) shall be summarized on the next available board agenda.

Policy Established:

April 20, 2011

Policy Amended:

July 16, 2013
January 8, 2014
December 16, 2015
October 19, 2016
May 3, 2017

Town of Discovery Bay

"A Community Services District"

PARKS AND RECREATION STAFF REPORT

Meeting Date

February 20, 2019

Prepared By: Mac Kaiser, Recreation Supervisor
Submitted By: Michael Davies, General Manager

MRD

Agenda Title:

Approval of DRAFT Administrative Revisions to both the Facility and Parks Rental Fee Schedules.

Recommended Action

Board Approve the DRAFT administrative revisions to both the Facility and Parks Rental Fee Schedules including; 1) the removal of the discount for the reservation of multiple rooms or items at the Community Center; 2) updating the definition of the term "Commercial"; 3) and eliminating the waiver of deposits on facilities reserved for less than three (3) hours as recommended by the Standing Parks and Recreation Committee at the February 20, 2019 meeting.

Executive Summary

Annually, or as needed, staff has reviewed both the Facility and Park Rental Fee Schedule (Facility Rental Fee Schedule – last revised 10/19/2016 and Parks Rental Fee Schedule – last revised 11/16/2016.)

Attached hereto, are the relevant sections of the Facility and Park Rental Fee Schedules, with Administrative revisions including; 1) the removal of the discount for the reservation of multiple rooms or items at the Community Center; 2) updating the definition of the term "Commercial"; 3) and eliminating the waiver of deposits on facilities reserved for less than three (3) hours as recommended by staff.

The DRAFT revisions were reviewed and discussed at the February 20, 2019 Standing Park and Recreation Committee meeting. The committee's recommendation is for Board approval of the DRAFT revisions for the Facility and Park Rental Fee Schedules.

Previous Relevant Board Actions for This Item

Attachments

Facility Rental Fee Schedule; Parks Rental Fee Schedule.

AGENDA ITEM: D-4

TOWN OF DISCOVERY BAY
COMMUNITY SERVICES DISTRICT
FACILITY RENTAL FEE SCHEDULE

Indoor Facilities	Week Day (M-F) 2 Hour Minimum	Week End 2 Hour Minimum	Deposit
Community Center – Arts Room or Multi-Purpose Room Capacity: 35	Resident $25.00/Hour Non-Resident $35.00/Hour Commercial $40.00/Hour	Resident $30.00/Hour Non-Resident $40.00/Hour Commercial $50.00/Hour	$250.00
Community Center – Swimming Pool Up to 60 People	Resident $120.00/Hour Non-Resident $150.00/Hour Commercial $195.00/Hour	Resident $120.00/Hour Non-Resident $150.00/Hour Commercial $195.00/Hour	$250.00
Community Center – Swimming Pool 60 - 140 People	Resident $135.00/Hour Non-Resident $165.00/Hour Commercial $210.00/Hour	Resident $135.00/Hour Non-Resident $165.00/Hour Commercial $210.00/Hour	$250.00
Combo Facilities	**Week Day (M-F) 2 Hour Minimum**	**Week End 2 Hour Minimum**	**Deposit**
Entire Community Center – Indoor Only	Resident $80.00/Hour Non-Resident $110.00/Hour Commercial $130.00/Hour	Resident $95.00/Hour Non-Resident $125.00/Hour Commercial $160.00/Hour	$500
Entire Community Center Indoor/Outdoor NO POOL	Resident $100.00/Hour Non-Resident $140.00/Hour Commercial $170.00/Hour	Resident $115.00/Hour Non-Resident $155.00/Hour Commercial $200.00/Hour	$500
Entire Community Center Indoor/Outdoor plus, Pool (less than 60)	Resident $220.00/Hour Non-Resident $290.00/Hour Commercial $365.00/Hour	Resident $235.00/Hour Non-Resident $305.00/Hour Commercial $395.00/Hour	$500
Entire Community Center Indoor/Outdoor plus, Pool (60+)	Resident $235.00/Hour Non-Resident $305.00/Hour Commercial $380.00/Hour	Resident $250.00/Hour Non-Resident $320.00/Hour Commercial $410.00/Hour	$500
Community Center Event Lawn & BBQ Area	Resident $20.00/Hour Non-Resident $30.00/Hour Commercial $40.00/Hour	Resident $20.00/Hour Non-Resident $30.00/Hour Commercial $40.00/Hour	$250
Community Center Event Lawn	Resident $10.00hr/$50 up to 6 hrs. Non-Resident $15.00hr/$75 up to 6 hrs.	Resident $80.00 Non-Resident $150.00	$250

TOWN OF DISCOVERY BAY
COMMUNITY SERVICES DISTRICT
FACILITY RENTAL FEE SCHEDULE

Facilities	Hourly/Half Day (6 hrs.)	Daily (Operating hrs.)	Deposit
Community Center BBQ Area	Resident $10.00hr/$50 up to 6 hrs. Non-Resident $15.00hr/$75 up to 6 hrs.	Resident $80.00 Non-Resident $150.00	$250
Community Center Tennis Courts (Individual Court Fees)	Resident $5.00hr/$25 up to 6 hrs. Non-Resident $8.00hr/$40 up to 6 hrs.	Resident $50.00 Non-Resident $75.00	$100 (total rental)

Long-term, or reoccurring rentals (more than 16 hours) will be considered only if space and schedule allow. Pricing and terms will be negotiated by Staff, with final approval by General Manager.

~~Reservations for multiple items (ex., two rooms) will receive a 15% discount off the second rental. Rental must be for the same time period and will apply to the room with the lowest rate.~~

All indoor Facility Rentals require a 2-hour minimum.

"Commercial" shall be defined as ~~include~~ those individuals and/or groups which operate trainings, lessons or games for profit.

Swimming pool rentals are only available during non-recreational swim and/or aquatics programming hours.

Swimming pool rentals require a 2-hour minimum.

Town of Discovery Bay Lifeguards are required for pool rentals.

The General Manager may, on the finding that it is in public interest, waive part or the entire facility fee. Such a fee waiver shall be summarized on the next available board agenda.

TOWN OF DISCOVERY BAY
COMMUNITY SERVICES DISTRICT
PARKS RENTAL FEE SCHEDULE

Park Area	Hourly	Half Day (6 Hour)	Daily (Operating Hours)	Deposit
Cornell Park – Tennis Court **OR** Pickle Ball (Single Courts)	Resident: $5.00 Non-Resident: $8.00	Resident: $25.00 Non-Resident: $40.00	Resident: $50.00 Non-Resident: $75.00	$50.00*
Cornell Park – Baseball Field	Resident: $5.00 Non-Resident: $8.00	Resident: $25.00 Non-Resident: $40.00	Resident: $50.00 Non-Resident: $75.00	$100.00
Cornell Park – Soccer Field	Resident: $4.00 Non-Resident: $6.00	Resident: $20.00 Non-Resident: $30.00	Resident: $35.00 Non-Resident: $50.00	$50.00
Cornell Park – Shaded Picnic Area	Resident: $10.00 Non-Resident: $15.00	Resident: $50.00 Non-Resident: $75.00	Resident: $80.00 Non-Resident: $150.00	$50.00
Cornell Park – Bocce Ball Courts	Resident: $4.00 Non-Resident: $6.00	Resident: $20.00 Non-Resident: $30.00	Resident: $35.00 Non-Resident: $50.00	$50.00*
Cornell Park – Horse Shoe Pits	Resident: $4.00 Non-Resident: $6.00	Resident: $20.00 Non-Resident: $30.00	Resident: $35.00 Non-Resident: $50.00	$50.00*
Ravenswood Park - Covered Picnic Tables Area 1 **or** Area 2	Resident: $6.00 Non-Resident: $9.00	Resident: $30.00 Non-Resident: $45.00	Resident: $60.00 Non-Resident: $90.00	$50.00
Ravenswood Park – Soccer Field	Resident: $4.00 Non-Resident: $6.00	Resident: $20.00 Non-Resident: $30.00	Resident: $35.00 Non-Resident: $50.00	$50.00

Park use is on a first come, first served basis. Reservations are strongly encouraged and are REQUIRED by Sports Leagues/Organizations (regardless if use is for organized practice or game play), for groups over 50, and any time a user intends to bring inflatable play equipment into the park.

Any user who has made a reservation has priority over a user that has not made a reservation.

Residents must show proof of residency at time of reservation request.

Long-term rentals: Fees and other terms will be outlined in a separate Memorandum of Understanding.

~~"Commercial" shall be defined as those individuals and/or groups which operate trainings, lessons or games for profit.~~

~~* Deposits on Horse Shoe Pits, Bocce Courts and Tennis Courts shall be waived if reserved for less than 3 hours; unless equipment is requested.~~

Fee for Cancellation Processing. 50% of the total Rental fee or $35, whichever is less.

Town of Discovery Bay

"A Community Services District"

PARKS AND RECREATION STAFF REPORT

Meeting Date

February 20, 2019

Prepared By: Mac Kaiser, Recreation Supervisor
Submitted By: Michael R. Davies, General Manager MRD

Agenda Title

Board Member attendance and participation at the 2019 Annual California Parks & Recreation Conference in Sacramento, March 21, 2019.

Recommended Action

Board Authorize Members of the Board of Directors, Parks and Recreation Standing Committee attendance and participation at the Annual California Parks & Recreation Conference (CPRS) located in Sacramento, March 21, 2019.

Executive Summary

This year's Annual CPRS Conference is taking place in Sacramento, March 21, 2019. The Annual CPRS Conference brings Parks and Recreation Professionals, Board Members, and exhibitors from across California together in a collaborative and educational environment intended to become better informed on issues and trends facing Parks and Recreation state-wide.

Pursuant to Government Code §61047(e) (5), the Board must previously authorize a Board member's presence at a training program. The Board Member must also deliver a written report at the next available meeting concerning the training session(s) attended. Pursuant to this section, Board Members are permitted a stipend for attending this conference.

Costs for registration, activities, and mileage are listed below:

- Registration – Daily Rate (includes lunch & admission to the exhibition hall) - $425

R/T Mileage/Parking: Approximately $100

This action authorizes members of the Board of Directors assigned to the Park & Recreation Standing Committee attendance at the CPRS Annual Conference.

Previous Relevant Board Actions for This Item

None

Attachments

CPRS-Conference-Brochure 2019.

AGENDA ITEM: D-5

Conference Registration Form

Save Time! Register online at www.cprsmembers.org

1. Print carefully. Your badge will be printed with this information. ❑ First-time Attendee

Full Name _____ Badge _____

Member # (required for member rate) _____

Member Type: ❑ CPRS ❑ CAPRCBM ❑ Other State Park & Recreation Association Member

Agency _____

Address to mail tickets _____

City/State/Zip _____

Phone _____ Fax _____

E-Mail _____

2. Conference Registration Fees:

All **Pre-registration** forms with fees must be postmarked by January 23, 2019. Late registration must be postmarked by February 20, 2019. After February 20, 2019, registration must take place onsite at the Sacramento Convention Center, 1400 J Street, Sacramento, CA 95814.

Please check ALL applicable boxes	**Preregistration By 1/23/19**		**After 1/23/19 and On-site**	
	MEMBER	**NONMBR**	**MEMBER**	**NONMBR**
Full Registration (excluding intensive and some special events)	❑ $490	❑ $660	❑ $540	❑ $710
CPRS Student Member *	❑ $100		❑ $130	
Active Retiree Member	❑ $130		❑ $150	
Daily Rate:				
❑ Wednesday (includes lunch & Expo)	❑ $270	❑ $395	❑ $300	❑ $425
❑ Thursday (includes lunch & Expo)	❑ $270	❑ $395	❑ $300	❑ $425
❑ Friday	❑ $135	❑ $200	❑ $150	❑ $215

* New student members must provide proof of full-time student status

More on next page

For Housing Information visit the CPRS Website: www.cprs.org

3. INSTITUTES/INTENSIVES:

	By 1/23/19			After 1/23/19 and Onsite		
	CPRS MEMBER	NONMEMBER	STUDENT MEMBER	CPRS MEMBER	NONMEMBER	STUDENT MEMBER
NAYS Youth Sports Administrators Academy (3/19/19)	❑ $314	❑ $392	❑ $165	❑ $392	❑ $490	❑ $165
Park Development & Operations Symposium: A "Hands-On" Experience (3/19/19)	❑ $40	❑ $50	❑ $30	❑ $55	❑ $68	❑ $30
Aging Intensive: Building Momentum with the Aging Services Profession (3/19/19)	❑ $40	❑ $50	❑ $20	❑ $55	❑ $68	❑ $20
Aquatics Intensive: Building the Future Leadership of Aquatics (3/19/19)	❑ $40	❑ $50	❑ $20	❑ $55	❑ $68	❑ $20
Recreation Intensive: Leadership Challenge (3/19/19)	❑ $40	❑ $50	❑ $20	❑ $55	❑ $68	❑ $20
Offsite Tour: A Technical and Practical Approach to Understanding Project Drawings (3/19/19)	❑ $40	❑ $50	❑ $30	❑ $55	❑ $68	❑ $30
Citizen Advocacy - What Really Works? (3/20/19)	❑ $25	❑ $31		❑ $39	❑ $49	
Public Art Walking Tour (3/20/19)	❑ $5	❑ $5		❑ $5	❑ $5	
Recreation Therapy Intensive: (3/21/19)	❑ $30	❑ $35	❑ $15	❑ $40	❑ $45	❑ $20
Recreation Therapy Institute (3/22/19) CEU fee included	❑ $180	❑ $225	❑ $55	❑ $230	❑ $280	❑ $70

4. SPECIAL EVENTS/TOURS/ADDITIONAL TICKETS:

Parks Make Life Better!® Park & Facility Tour, Tuesday, March 19, 7:00 a.m. - 5:00 p.m. (see page 21)
❑ $40 per CPRS Member; ❑ $47 per Non-Member; includes bus, snacks and lunch

2019 Welcome Reception, Wednesday, March 20, 6:00 p.m. - 10:00 p.m. (see page 22)
❑ $35 for additional ticket, Free to fully registered or Wednesday only attendees

Wake Up Wellness, Thursday, March 21, 7:00 a.m. - 8:00 a.m. (see page 23)
❑ $5

CPRS Annual Awards Reception and Banquet, Friday, March 22, 6:00 p.m. - 8:30 p.m. (see page 23)
❑ Preregistration by January 23, 2019, $80/person ❑ After January 23, 2019, $85/person

5. Payment: (MUST accompany form)

❑ Check payable to CPRS ❑ VISA ❑ MasterCard ❑ American Express

Credit Card Number _____ Exp. Date_____

Cardholder's Name _____

Cardholder's Address_____

CARDHOLDER'S SIGNATURE_____

6. SPECIAL ASSISTANCE

Accessibility and English as Second Language accommodations must be received by CPRS by **January 31, 2019**. If a specific accommodation is not requested in advance, it may not be provided onsite. Please contact CPRS 916-665-2777 to discuss your request in detail.

Name of Attendee_____ Phone Number _____

Please indicate the accommodations requested:_____

7. RETURN FORM AND PAYMENT:

MAIL
CPRS, 7971 Freeport Blvd.
Sacramento, CA 95832-9701
E-MAIL cprs@cprs.org

TOTAL FEES

Conference Registration Fees (#2) $_____

CEU Fees ❑ $20 member ❑ $40 nonmember $_____

Institutes/Intensives (#3) $_____

Special Events/Additional Tickets (#4) $_____

Attendee Transfer ($50) $_____

TOTAL DUE $_____

CONNECTIONS

CPRS
Conference & Expo

Sacramento Convention Center
March 19-22, 2019

Education Sessions

Thursday
11:00 a.m. – 12:15 p.m.

2017 WildFIRES – Lessons Learned, Response & Recovery

- Explain the lessons at Sonoma County Regional Parks of being caught off guard during the shock and disorientation of the compounding emergencies
- Identify the triage and need for emergency preparedness while showcasing tangible impacts

Brandon Bredo, Regent, CPRS Maintenance Management School, Administrative Supervising Ranger, Sonoma County Regional Parks

A Systems Approach to Assessing Parks

- List the defining characteristics of the Complete Parks approach
- Describe the importance of intersectionality and disaggregating data when assessing a parks system and their value for parks and recreation professionals

Gregory Miao, Staff Attorney, ChangeLab Solutions

Jessica Nguyen, Staff Planner, ChangeLab Solutions

Benita Tsao, Senior Policy Analyst, ChangeLab Solutions

Creating a Community Engagement Process Tailored to Your Community

- Demonstrate and create an implementable outreach plan that reflects your community personality
- Consider a tailored strategy to collect input from unrepresented groups

Linda Gates, Co-Founder, Gates and Associates

Kimberly Castro, Recreation Manager, City of Santa Clara

Kelly Lotosky, Partner, Gates and Associates

Engaging Youth Voices through Art, Media and Design

- Explore innovative approaches including art, visual storytelling, multi-media and design to successfully engage youth in planning processes
- Identify strategies to empower young people to tackle real-world problems in their communities through project-based civic learning experiences

Jamillah Jordan, Director of Social Equity, MIG, Inc.

Lillian Jacobson, Project Associate, MIG, Inc.

Patricia Algara, Co-Founder and Principal, BASE Landscape Architecture

Essential Services: Inclusive Practices & the ADA for Aging Adults

- Define and articulate what the ADA is, what inclusion is (broadly), and what your responsibility is within that mandate
- Identify what is and what is not a reasonable accommodation

Jessica Reaber, CTRS, RTC, Recreation Coordinator, City of San Ramon

From Dirty Dirt to Parks and People: Land Recycling in California

- Explore how redevelopment creates opportunities for new parks, for activating space, improving quality of life in existing neighborhoods and incorporating green infrastructure
- Examine catalytic funding sources, such as EPA brownfields grants (planning, assessment, revolving loan fund, cleanup), and learn how they were applied to make transformations possible

Ignacio Dayrit, Program Director, Center for Creative Land Recycling

Brian Fletcher, ASLA, PLA, Principal, Callander Associates

Nova Blazej, Brownfields Program Manager, U.S. EPA

How can Recreation Therapy Complement Your Programs?

- Define recreation therapy and the therapeutic process
- Identify how therapeutic processes complement your community-based program

Dr. Erick Kong, CTRS, RTC, Assistant Professor, California State University, East Bay

Alivia Gok, CTRS, RTC, Lecturer, California State University, Sacramento

It's Time: How to Lead AS a Millennial

- Identify ways to improve communication with existing leaders, who are likely not of the same generation
- Identify solutions for resolving conflict professionally

Nicole Van Winkle, Recreation Services Manager, City of Colton

Supervisory Skills for Success

- Discuss the most recommended characteristics of good supervisors as they relate to public agency employment
- Identify 3 reasons supervisors fail and demonstrate ways to avoid that failure

Ruby Newell-Legner, Fan Experience Expert, 7 Star Service

Teambuilding Activities & Games on a Shoestring Budget

- Generate interactive activities that encourage positive group dynamics, have implications for leadership development, communication and conflict resolution
- Communicate how the activities are adaptable to multiple age groups, inclusive and require very little materials or preparation time

Troy Selvey, Program Specialist, California Afterschool Network

Using the DiSC Assessment to be a More Effective Leader

- Generate an understanding that increases your self-knowledge including how you respond to conflict, what motivates you, what causes you stress and how you solve problems
- Consider ways to become a more self-knowledgeable, well-rounded and effective leader and improve working relationships by recognizing the communication needs of team members

Michael Shellito, Retired City Manager/ Consultant, Shellito Training and Consulting

Why Public Art Should Be in Your Community

- Identify a process for bringing a public art piece to your city
- Recognize the differences between purchasing permanent art vs. temporarily borrowing art and the differences between publicly or privately owned pieces

Michele Crose, Assistant Director of Library and Recreation, City of Pleasanton

Tamara Whitney, Program Supervisor, Cultural Arts and Marketing, Town of Danville

Erika Burg, Recreation Technician, City of San Ramon

Thursday
2:45 p.m. – 4:00 p.m.

Comprehensive Concussion Protocols and AB-2007

- Discuss the three necessary components of an effective agency-wide concussion protocol
- Develop a concussion protocol for your agency based on sample resources and recommendations

Adam Chow, MPA, CPRP, Recreation Supervisor, City of San Ramon

Connect the Dots to Create Greater Impact: Building Collaborative Networks

- Describe and assess how evidence-based "social impact network" theories and practices can help advance social change
- Develop and apply new skills in collaborative leadership in a way that improves your work the minute you return to your community

Carolyn Verheyen, MA, Vice President and Chief Operating Officer, MIG, Inc.

Jamillah Jordan, MA, Director of Social Equity, MIG, Inc.

EngageRoseville - A New Way to Prioritize Services

- Discuss innovative ways to engage the public in prioritizing city services
- Demonstrate how the "Balancing Act" was used in a unique way to help the city learn what the public's priorities were

Kathleen Marie Cullen, Administrative Analyst II, City of Roseville

Everything You Want to Know About Service Animals

- Correct common myths about service animals
- Describe the difference between service animals and emotional support animals

Ali Everett, Accessibility Issues Coordinator, City of Pasadena

Getting to the Top of the Jungle Gym

- Assess your current promotability factors and whether you are ready for the next level
- Discover the skills, talents and abilities that will put you on a path to promotion

Marie Knight, Director of Community Services, City of Huntington Beach

How to Develop an Effective Employee Training Program

- Provide the tools your employees need to do their job efficiently and effectively
- Identify key elements of an effective employee orientation program including the development of an employee-training checklist

Ruby Newell-Legner, Fan Experience Expert, 7 Star Service

Leverage Your Talents to Find Your Calling

- Explore and gain insight into the roles within your work and life that you love and are naturally good at, and how pursuing your calling will allow you to be more effective and happier in your career
- Identify unique talents and core competencies that you should leverage to grow personally and professionally

Michael Shellito, Retired City Manager/ Consultant, Shellito Training and Consulting

Optimistic Strategies for Addressing Urban Homelessness

- Develop optimistic strategies collaboratively to mitigate and minimize the incidence of homelessness, improve public perceptions of homelessness and invigorate public spaces
- Explore the different ways that homelessness is manifested in parks and recreation facilities

Brice Maryman, Senior Landscape Architect, MIG, Inc.

Cindy Mendoza, Senior Project Manager, MIG, Inc.

Education Sessions

Renovate or Replace? Dealing with My Aging Aquatic Facility

- Differentiate the costs/benefits of renovating versus replacing aging aquatics infrastructure
- Identify how programming and design considerations can enhance or change how your facility is used

Arash Izadi, Principal/Director of Sport + Recreation, LPA, Inc.

Laura Taylor, ASLA, Park Planning & Development Manager, Cordova Recreation & Park District

Dennis Berkshire, President, Aquatic Design Group

Surviving Storm Season

- Identify the four phases of storm preparations and how to apply this knowledge to develop a facility storm plan
- Communicate and demonstrate public government competencies and best management practices of hazard mitigation techniques

Susan Stoffel, Regent, Maintenance Management School, Maintenance Inspector Specialist, OC Parks

Patrick Vaughn, Regent, Maintenance Management School, Park Maintenance Supervisor, City of Las Vegas

Kyla Brown, CPRE, Regent, Maintenance Management School, Assistant Director, Riverside County Regional Park & Open Space District

Thursday
4:15 p.m. – 5:30 p.m.

Creating an Equitable Parks System

- List the defining characteristics of the Complete Parks approach
- Describe a role for parks and recreation professionals in creating a Complete Parks resolution or improving the city or county's readiness to do so

Gregory Miao, Staff Attorney, ChangeLab Solutions

Benita Tsao, Senior Policy Analyst, ChangeLab Solutions

Jessica Nguyen, Staff Planner, ChangeLab Solutions

Event Planning Lessons Learned from Tragedy in Las Vegas

- Identify how venue layout/logistics affects rapid egress of venue attendees considering issues faced during 2017 Las Vegas concert mass shooting
- Discuss the many issues that impact crowd behavior and safety during large events

Don Forsyth, Battalion Chief, 46 years in Fire Service/Disaster Response, Emergency Response Expert

Moderated by Marie Knight, Community Services Director, City of Huntington Beach

Funding 101: Revenue Enhancement for Park and Recreation Agencies

- Discuss the basics of various local funding mechanisms available to park and recreation agencies
- Discover some of the basic issues, opportunities and steps involved in establishing new or increasing each type of local funding

Blair Aas, Director of Planning Services, SCI Consulting Group

Help Children Eat Better and Move More

- Explain promising practices related to the Healthy Choices and Behaviors area of the Quality Standards for Expanded Learning in California
- Explore how to implement a Continuous Quality Improvement process related to Healthy Choices and Behaviors

Troy Selvey, Program Specialist, California Afterschool Network

Move Over Millennials... Make Room for Gen Z

- Identify strategies that will help you adapt your leadership style to work with both Millennials and Gen Z more effectively
- Analyze the difference between Millennials and Gen Z to supervise both groups efficiently to avoid a one-size-fits-all approach that is unappealing to younger generations

Whitney Kahn, Recreation Supervisor, El Dorado Hills Community Services District

Park & Facility Operations Solution Space

Special Feature

Facilitated by Dan Williams and Katy Coss, Fair Oaks Recreation & Park District

We understand that every agency must prioritize park and facility maintenance and learn to better articulate these priorities as few agencies have enough funding to maintain all their parks and facilities. Join us for this peer-led, round table formatted learning exchange to:

- Identify and recognize effective professional techniques (procedures, methods, systems) of maintenance management to improve your efficiency
- Demonstrate a broader knowledge of maintenance management and further develop specific skills for effective operations

People First Language and Thinking: Train Staff to See Abilities

- Recognize newer terms that demonstrate people first language to others
- Demonstrate use of guidelines for people first language during practice sessions

Dr. Susan Ross, CTRS, RTC, Professor, San Jose State University

Start at the Beginning: Scoping Study vs Feasibility Study

- Enable yourself to understand and articulate the different types of studies available to plan and program new recreation facilities
- Describe the pros and cons of using planning tools and community input to generate grassroots support for projects

John Courtney, PLA, ASLA, QSP, QSD, LEED AP, Senior Project Manager, Landscape Architecture, LPA, Inc.

Jeff Schaub, Senior Design Director, Landscape Architecture, LPA, Inc.

Jennifer Liu, Director, City of Foster City

Swim Team: The Film--Accommodations for Youth on the Autism Spectrum

Special Feature

~Held at the Crest Theatre

Swim Team chronicles the overwhelming struggles and extraordinary triumphs of 3 young athletes with autism and shows how a swim team can bring hope to a community. The film also deals with the boys' transition into adult life and the difficulties they face.

Three important considerations used by the City of Folsom will be discussed during program design, development and staff training for a program specific to children on the autism spectrum

We'll also communicate the why and how this decision was made to partner with outside agencies and secure other community support (Doing what is right vs. not acting at all/committing to services that may not meet financial goals)

Chad Gunter, CPRP, Recreation Supervisor, City of Folsom

What's Hot in Sacramento

- Expand knowledge regarding the legislative process and CPRS's legislative priorities and efforts
- Summarize the current bills affecting the field of parks and recreation, as well as what WE need to do to positively impact our communities

Pilar Alcivar McCoy, Chair, CPRS Legislative Committee

Douglas Houston, CPRS Advocate, Houston Magnani & Associates

Memorandum of Understanding
Between
The Town of Discovery Bay CSD, California
and the
River Otters Parent Booster Club

I Purpose

This Memorandum of Understanding ("MOU") is entered into by and between the Town of Discovery Bay ("Town") and the River Otters Parent Booster Club ("ROPBC"). The purpose of this MOU is to establish the framework of cooperation between the Town and the ROPBC for the development and operation of a summer youth swim team program. Cooperation is in the interest of both parties because it would enable both parties to fulfill their common missions and goals, in the development of a Community-wide, family-friendly summer youth swim team program benefiting the residents of the Town of Discovery Bay.

Whereas, the Property is owned by and under the jurisdiction of the Town, and

Whereas, the Town has authority to operate and administer the property under its jurisdiction for the use and enjoyment of the public, including for recreation purposes, and

Whereas, the Town and the ROPBC President are authorized to enter into this MOU,

Now, therefore in consideration of the mutual promises and covenants contained herein, the Town and the ROPBC mutually agree as follows:

A. Town Responsibilities

1. Provide use of the Discovery Bay Community Center Pool, along with access to a pre-designated portion of the Tuff Shed equipment building during the time period between April 1 and July 31 and/or as mutually agreed to each year in September.

2. Provide administrative support tasks that include; promotion of the River Otters Swim Team in the Town's "Winter/Spring" Recreation Guide, administration and processing of all registration fees, and updating and printing all participant registration packets in coordination with ROPBC.

3. Process each season's coaching staff as 1099 contractors through the Town's payroll system with seasonal contract amounts determined by ROPBC. Seasonal coaching contract amounts shall not at any time exceed total gross registrations collected.

4. The Town shall collect, as a facility use fee, 20% from the total gross registrations collected. Any participant registrations waived by ROPBC shall be counted as a fully paid registration for the purpose of calculating the 20% facility use fee.

5. The total remaining gross revenues collected, minus all coaching staff costs, and including any additional direct costs incurred by the Town related to the operation of the aquatic facility and agreed to in this MOU, will be paid to the ROPBC following a Board of Directors meeting in May of each year.

B. ROPBC Responsibilities

1. Responsibility for all direct tasks related to the successful operation of a youth summer swim team program that includes, but not limited to: fundraising; purchasing swim team uniforms; providing transportation to away meets; participant equipment such as swim caps, goggles, swim fins, and various team and individual awards; and the scheduling and supervision of various family activities, special events, and/or team related functions.

2. Coordination with the Town by September of each proceeding year, the dates, days, and times of use during the time period between April 1 and July 31 and/or as mutually agreed to each year.

3. Provide to the Town by November 1st of each year, updated information for inclusion into the Town's annual "Winter/Spring" Recreation Guide.

4. Provide to the Town by February 15th of each year, updates and/or changes to Town provided participant registration packets for distribution at the March Pre-season parents meeting.

5. The selection and negotiation of annual contract amounts of each season's coaching staff, ensuring that all coaches have a valid American Red Cross Lifeguarding Certification and CPR/First Aide Certification, and forwarding all this information by March 1st to the Town for processing as 1099 contractors.

6. Coordination with Town ensuring that no participants are allowed to begin practice without all required documentation complete and all fees paid in full.

7. Regular daily supervision, including if necessary, implementing disciplinary action with any participants, and/or non-participating family members, parents/guardians failing to abide by the Town's Park and Recreation Activity Code of Conduct.

8. Daily pick up of all trash, including lost and found items, in and around the pool area, parent observation areas, including restrooms and common areas within the Community Center utilized by the swim team. These areas shall be left in a neat and orderly condition.

9. After a one (1) verbal and one (1) written warning of failure to abide by the terms of seven (7) and/or eight (8) above, ROPBC shall reimburse Town for all costs associated with obtaining compliance. Such costs may include the Town providing additional staffing and supervision, cleaning services, and/or repairing damages to facility and/or equipment incurred by the use of the swim team during the course of the season.

10. Shared responsibility for the removal and replacement of lane lines and/or pool covers in coordination with Town related aquatic activities and events throughout the season.

11. As a booster club of the Town's swim team, any team equipment purchased by the ROPBC for use by the River Otters Swim Team shall be deemed the property of the Town. The equipment shall be stored in a designated area as determined by the Town. Equipment includes, but is not limited to popups, starting blocks, and kick boards. As storage space is limited, any equipment to be stored must first be approved by the Town.

12. ROPBC understands that the Discovery Bay pool is an older facility, and pool equipment failure or other conditions requiring short-term or long-term closure is possible at any time throughout the course of the season. In the event of such closure, the Town will assist the ROPBC, to the extent practical and possible, in locating an alternate facility; however, the Town does not guarantee the availability of such a facility. The Town shall not be liable to ROPBC for any loss of use or any other damages whatsoever resulting from pool closure. All costs related to the use of an alternate facility shall be the responsibility of ROPBC and not the Town. The Town shall reimburse ROPBC for any daily loss of use on a pro-rata basis.

I. General Provisions:

A. Details for implementation of the provisions of the MOU that are not specified herein may be specified at a later, appropriate time in written addenda to the MOU, signed by both Parties. Upon execution, the addenda shall automatically be incorporated into this MOU.

B. This MOU shall be governed by the applicable laws of California. Should any provision of the MOU be found void or unenforceable, it shall be severable from the rest of the MOU and the remaining term shall be enforced as if the unenforceable term had not existed.

C. Except as specifically provided in this MOU, nothing in this MOU shall be construed as giving either ROPBC or the Town the right or ability to bind the other and nothing in this MOU shall be construed to create a joint liability with regard to, or as a result of, the activities undertaken by either Party, their employees, officers and/or agents, to implement this MOU. All employees, officers and/or agents of a Party shall remain employees, officers and/or agents of that Party and shall be subject to the laws, procedures, rules and policies governing that Party's employees, officers and/or agents.

D. Neither Party may assign any rights or obligations granted to it by this MOU to a third party without prior approval of the other Party.

E. Neither Party waives any of the privileges and immunities from liability, exception from laws, ordinances, and rules, or any pension, relief, disability, workers' compensation, and/or other benefits that it would otherwise have.

F. This MOU shall not affect any existing agreements between the Parties, or between a Party and third parties.

G. The Town agrees to protect, hold harmless, indemnify and defend ROPBC, its employees, officers and/or agents against any and all clams for injury or damage to persons or property resulting from the sole negligence or willful misconduct of the Town, its employees, officers and/or agents arising from and in connection with the Town's implementation of this MOU. ROPBC agrees to protect, hold harmless, indemnify and defend the Town, its employees, officers and/or agents against any and all claims for injury or damage to persons or property resulting from the sole negligence or willful misconduct of ROPBC, its employees, officers and/or agents arising from and in connection with ROPBC's implementation of this MOU.

H. Each Party shall be responsible for its own costs incurred in implementing this MOU.

I. This MOU contains the complete agreement of ROPBC and the Town in regards to the subject matter of this MOU and there are no other agreements, oral or written, except as are included in the terms of this MOU.

J. This MOU shall be deemed to have been drafted by both Parties.

III. Term, Modification, Termination

A. This MOU shall become effective when signed by authorized representative of the Town and ROPBC. It shall remain in effect until terminated by one or both of the Parties.

B. This MOU may be modified by written mutual agreement of the Parties.

C. Either Party may terminate this MOU thirty (30) days in writing after giving notice to the other Party, or the Parties may terminate this MOU at any time by mutual agreement. Upon termination of this MOU, the indemnity provisions shall remain in effect until the applicable statute of limitations has expired on any possible pending claims and until a final resolution is reached with regard to any claims that may have arisen as a result of and during the effective dates of this MOU.

Signatures:

Town of Discovery Bay CSD	River Otters Parent Booster Club
_____	_____
Michael R. Davies, General Manager	Richard Pierce, ROPBC President

2019 River Otters Budget Proposal:

Estimated Total Swimmers: 100 @ $400/each = $40,000

[Town recovers a 20% Administrative Overhead expense on the total number of swimmers both paid and River Otters Board comps.] 20% of $40,000 = $8,000

Estimated Total Revenue $32,000

Estimated Coaching Staff Seasonal Expenses:

Heidi McMillan	$13,000
Hannah Murray	$ 3,000
Emma Brownrigg	$ 3,000
Stephanie Vosicka	$ 2,400

Estimated DOJ Expenses:

Heidi McMillan	$49
Hannah Murray	$49
Emma Brownrigg	$49
Stephanie Vosicka	$49

Estimated Sub-Total Town Expenses: $21,596.000

Total Revenue received is $32,000 less expenses $21,596 = $10,404

Town will make the check payable to "Discovery Bay River Otters Booster Club"
In the amount of $10,404**

River Otters Parents Booster Club proposal for loss of Town Pool is as follows: Estimated expense of rental of Freedom High School Pool is $5,200. Proposal is for Town to pay the approximate $5,200 from Town's $8,000 Administrative Overhead Fee leaving Town $2,800

** See next page

** Typical sample of expenses River Otters Parents Booster Club incur:

Car decals	$ 236
Swim caps	$1,045
Swim meet awards	$ 354
Swimmer t-shirts	$ 887
Live Scan	$ 140
Sponsor Banners	$ 140
Swim meet awards	$ 376
EZ UP customization	$ 297
Temp Tattoos	$ 137
Banquet Awards	$ 644
Banquet Awards	$ 851
Swim League dues	$ 300
Host meet in Tracy	$1,247
Host meet in Turlock	$ 357
Banquet Awards	$ 309
Coaches/Board gifts acknowledgement	$ 665
Banquet food	$ 409
Meet of Champions dinner	$ 170
Banquet Face painter	$ 325
Banquet Awards	$ 160
Banquet swimmer/sponsor food	$1,224
Banquet game truck	$ 475
Total	$10,748

Geotechnical Engineering Report

Discovery Bay Community Center Swimming Pool
Discovery Bay, Contra Costa County, California
January 30, 2019
Terracon Project No. ND185167

Prepared for:
Town of Discovery Bay
Discovery Bay, California

Prepared by:
Terracon Consultants, Inc.
Concord, California

January 30, 2019

Town of Discovery Bay
1800 Willow Lake Road
Discovery Bay, California 94505

Attn: Mr. Mike Davies
P: (925) 634 1131
E: mdavies@todb.ca.gov

Re: Geotechnical Engineering Report
Discovery Bay Community Center Swimming Pool
1601 Discovery Bay Boulevard
Discovery Bay, Contra Costa County, California
Terracon Project No. ND185167

Dear Mr. Davies:

We have completed the Geotechnical Engineering services for the above referenced project. This study was performed in general accordance with Terracon Proposal No. PND185167 dated November 29, 2018. This report presents the findings of the subsurface exploration and provides geotechnical recommendations concerning earthwork and the design and construction of a new swimming pool and foundations for the proposed project.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further service, please contact us.

Sincerely,
Terracon Consultants, Inc.

Hoda Alinasabbaboli, E.I.T.
Staff Geotechnical Engineer

Noah T. Smith, P.E., G.E.
Principal

REPORT TOPICS

Note: This report was originally delivered in a web-based format. **Orange Bold** text in the report indicates a referenced section heading. The PDF version also includes hyperlinks which direct the reader to that section and clicking on the ***GeoReport*** logo will bring you back to this page. For more interactive features, please view your project online at client.terracon.com.

ATTACHMENTS

Note: Refer to each individual Attachment for a listing of contents.

REPORT SUMMARY

Topic [1]	Overview Statement [2]
Project Description	The project will consist of the demolition of the existing 3-lane irregular shaped swimming pool and construction of a 6-lane L-shaped swimming pool that is 3.5 to 7 feet deep. Development will also include new decking and an expansion to the existing swimming pool mechanical room which is a single-story structure.
Geotechnical Characterization	Subgrade soil conditions generally consist of 3 to 4 feet of sand and clay fill underlain by medium stiff to stiff lean clay with variable amounts of sand and interbedded layers of very loose to medium dense sand with variable amounts of clay to the maximum explored depth of 26½ below the existing ground surface (bgs). Similar lithology was encountered in the CPT soundings to a depth of 45 feet bgs beyond which was predominantly clay to a depth of 100 feet bgs. Groundwater was encountered in the borings at depths ranging from 7 to 8 feet bgs while drilling. Groundwater was also encountered in CPT soundings ranging from 9 to 13 feet bgs. Dewatering could be required for construction of the new pool and excavations and should be planned for during construction.
Earthwork	The existing pool will be demolished to accommodate the proposed improvements. Up to 7 feet of cuts and fills are anticipated associated with construction of the new pool and backfill of the existing pool in some areas. Surface clays are moderately to highly plastic and are sensitive to moisture variation. Grading should be conducted in accordance with the **Earthwork** section of this report.
Swimming Pool	The swimming pool may be constructed utilizing conventional in-ground construction. We have assumed the pool shells will extend approximately 3½ to 7 feet deep. The swimming pool shell should extend through all fill and bear into firm native medium stiff to stiff sandy lean clay. Pool areas where over-excavation may be required due to the presence of fill or where the new pool shell may be shallower than the existing pool shell may be backfilled with a 2 sack lean concrete mix or ¾ inch clean crushed gravel wrapped in a geotextile fabric and compacted by vibratory methods as needed.
Shallow Foundations	The mechanical room expansion may be supported by a **Shallow Foundation** spread footing system provided the footings extend a minimum 18 inches bgs and are underlain by a minimum 18 inches of LVC that extends to firm native soil. Allowable bearing pressure = 1,500 psf Expected settlements: < 1-inch total, < ½ inch differential
Floor Slabs	The upper 18 inches of subgrade below slabs should consist of Low Volume Change (LVC) material to help protect the slabs from the swelling pressure of the surface moderate to high volume change soils.
General Comments	This section contains important information about the limitations of this geotechnical engineering report.

1. If the reader is reviewing this report as a pdf, the topics above can be used to access the appropriate section of the report by simply clicking on the topic itself.
2. This summary is for convenience only. It should be used in conjunction with the entire report for design purposes.

Geotechnical Engineering Report

Discovery Bay Community Center Swimming Pool
1601 Discovery Bay Boulevard
Discovery Bay, Contra Costa County, California

Terracon Project No. ND185167

January 30, 2019

INTRODUCTION

This report presents the results of our subsurface exploration and geotechnical engineering services performed for the proposed swimming pool and mechanical room expansion to be located at 1601 Discovery Bay Boulevard in Discovery Bay, Contra Costa County, California. The purpose of these services is to provide information and geotechnical engineering recommendations relative to:

- Subsurface soil conditions
- Groundwater conditions
- Site preparation and earthwork
- Swimming pool design and construction
- Foundation design and construction
- Seismic site classification per 2016 CBC
- Liquefaction analysis
- Soil corrosivity

The geotechnical engineering Scope of Services for this project included the advancement of three test borings to depths ranging from approximately 21½ to 26½ feet below existing site grades (bgs). Additionally, two Cone Penetration Test (CPT) soundings were advanced to a depth of 100½ feet bgs.

Maps showing the site and boring locations are shown in the **Site Location** and **Exploration Plan** sections, respectively. The results of the laboratory testing performed on soil samples obtained from the site during the field exploration are included on the boring logs as separate graphs in the **Exploration Results** section.

SITE CONDITIONS

The following description of site conditions was derived from our site visit in association with the field exploration and our review of publicly available geologic and topographic maps.

Item	Description
Parcel Information	The project is located at 1601 Discovery Bay Boulevard in Discovery Bay, Contra Costa County, California. 37.9026°N 121.6010°W See **Site Location**.

Item	Description
Existing Improvements	The site is developed with an existing community center, tennis courts, swimming pool, mechanical room, hardscape, landscaping, and paved parking lot.
Current Ground Cover	Concrete hardscape, grass, and pavement.
Existing Topography (from Google Earth Pro)	The project site is relatively flat with an approximate elevation of 5 feet above mean sea level (MSL).
Geology	Geologic maps indicate subsurface conditions consist of Holocene age alluvial fan deposits.[1] The surface conditions encountered in our borings and CPTs were consistent with the mapped geology.

We also collected photographs at the time of our field exploration program. Representative photos are provided in our **Photography Log**.

PROJECT DESCRIPTION

Our initial understanding of the project was provided in our proposal and was discussed during project planning. A period of collaboration has transpired since the project was initiated, and our final understanding of the project conditions is as follows:

Item	Description
Information Provided	A description of the proposed improvements was provided to Terracon by Mike Davies with the Town of Discovery Bay via email
Project Description	The project will consist of the demolition of the existing 3-lane irregular shaped swimming pool and construction of a 6-lane L-shaped swimming pool. Development will also include new decking and an expansion to the swimming pool mechanical room.
Proposed Structures	The project will include (1) 6-lane L-shaped swimming pool approximately 3.5 to 7 feet deep and an expansion to the single-story, wood frame, mechanical room building.
Finished Floor Elevation	Unknown
Grading	Up to 7 feet of cuts and fills are anticipated associated with construction of the new pool and backfill of the existing pool in some areas.
Estimated Start of Construction	Unknown

[1] *Wagner, D.L., Bortugno, E.J., and McJunkin, R.D., 1991, Geologic map of the San Francisco-San Jose quadrangle, California, 1:250,000: California Division of Mines and Geology, Regional Geologic Map 5A, scale 1:250,000*

GEOTECHNICAL CHARACTERIZATION

We have developed a general characterization of the subsurface conditions based upon our review of the subsurface exploration, laboratory data, geologic setting and our understanding of the project. This characterization, termed GeoModel, forms the basis of our geotechnical calculations and evaluation of site preparation and foundation options. Conditions encountered at each exploration point are indicated on the individual logs. The individual logs can be found in the **Exploration Results** section and the GeoModel can be found in the **Figures** section of this report.

As part of our analyses, we identified the following model layers within the subsurface profile. For a more detailed view of the model layer depths at each boring location, refer to the GeoModel.

Model Layer	Layer Name	General Description
1	**Fill**	Medium stiff to stiff sandy lean clay and lean clay with sand and medium dense sand.
2	**Lean Clay**	Medium stiff to stiff sandy lean clay.
3	**Poorly Graded Sand**	Very loose to medium dense poorly graded sand and poorly graded sand with clay.

Groundwater Conditions

The boreholes were observed while drilling and after completion for the presence and level of groundwater. Pore pressure dissipation tests were also performed in the CPTs to help determine groundwater levels. The water levels observed in the boreholes and CPTs can be found on the boring/CPT logs in **Exploration Results** and are summarized below.

Boring/CPT Number	Approximate Depth to Groundwater while Drilling (feet) [1]	Approximate Depth to Groundwater after Drilling (feet) [1]
B1	8	8
B2 and B3	7	7
CPT1	13	N/A
CPT2	9	N/A

1. Below ground surface

Since the borings were backfilled relatively soon after completion, the water levels summarized above are not stable groundwater levels. Due to the low permeability of the soils encountered in the borings, a relatively long period may be necessary for a groundwater level to develop and stabilize in a borehole and CPT. Long term observations in piezometers or observation wells sealed from the influence of surface water are often required to define groundwater levels in materials of this type.

Groundwater level fluctuations occur due to tide, seasonal variations in the amount of rainfall, runoff and other factors not evident at the time the borings and CPTs were performed. Therefore, groundwater levels during construction or at other times in the life of the structures may be higher or lower than the levels indicated on the boring/CPT logs. The possibility of groundwater level fluctuations should be considered when developing the design and construction plans for the project.

Dewatering should be considered and planned for in proposed excavations. The depth of dewatering below the bottom of excavations should be determined by the contractor/and or designer. Pump tests for dewatering were not included in the scope of work for this report. However, Terracon can perform pump tests for an additional fee if desired.

GEOTECHNICAL OVERVIEW

The subject site has several geotechnical considerations that will affect the construction and performance of the proposed swimming pool, mechanical room expansion, and hardscape. The following geotechnical considerations have been identified at the subject site:

- Moderately to Highly Plastic Soil Considerations
- Existing Undocumented Fill Considerations
- Swimming Pool Considerations

Moderately to Highly Plastic Soil Considerations

The surficial soils across the project site are generally moderately to highly plastic (expansive). Additional areas of localized moderately to highly plastic clays may be present where borings/CPTs were not performed.

These plastic clays are prone to volume change with variations in moisture which may lead to excessive shrinking and swelling of foundations and hardscapes. In order to address the effects of the moderate to high volume change soils, we recommend floor slabs and exterior hardscapes be underlain by a minimum 18 inches of low volume change (LVC) material and foundations extend to a minimum depth of 18 inches bgs and be underlain by a minimum 18 inches of LVC. Using an LVC zone as recommended in this report may not eliminate all future subgrade volume change and resultant slab and foundation movements. However, the procedures outlined herein should help to reduce the potential for subgrade volume changes.

This report provides recommendations to help mitigate the effects of soil shrinkage and expansion. However, even if these procedures are followed, some movement and cracking in the slabs and mechanical room expansion should be anticipated. The severity of cracking and other

(cosmetic) damage such as uneven slabs will likely increase if any modification of the site results in excessive wetting or drying of the expansive soils. Eliminating the risk of movement and distress may not be feasible, but it may be possible to further reduce the risk of movement if significantly more expensive measures are used during construction such as utilizing deep foundations. We would be pleased to discuss other construction alternatives with you upon request.

Existing Undocumented Fill Considerations

Approximately 3 to 4 feet of fill consisting of sandy lean clay, lean clay with sand, and sand was encountered in our borings. Compaction records for the fill could not be obtained or reviewed to confirm the fill was placed under controlled conditions. The density/consistency of the fill encountered in our borings varied from medium stiff to stiff and loose to dense. Such undocumented fill conditions can result in differential settlement and damage to proposed structures relying on the fill for structural support. As a result, the undocumented fill is not suitable to support the proposed swimming pool or mechanical room expansion. The swimming pool should extend through all fill and derive support from the underlying firm native medium stiff to stiff sandy lean clay. The mechanical room expansion footings should extend a minimum 18 inches bgs and be underlain by a minimum 18 inches of LVC extending down to firm native soil.

While the undocumented fill is not suitable to support the proposed swimming pool and building expansion, the fill should be adequate to support proposed slabs and hardscapes provided **Earthwork** is conducted per the recommendations provided herein. The fill below slab and hardscape areas should be over-excavated to a depth of 18 inches and the resulting subgrade should be scarified to a minimum depth of 12 inches, moisture conditioned, and compacted per the recommendations in the **Earthwork** section of this report. Following compaction of the subgrade, the over-excavated areas should be backfilled with compacted LVC structural fill.

Even with the recommended earthwork procedures, there is an inherent risk for the owner that compressible fill or unsuitable material within or buried by the undocumented fill will not be discovered. This risk of unforeseen conditions cannot be eliminated without completely removing all the existing undocumented fill but can be reduced by following the recommendations contained in this report. To take advantage of the cost benefit of not removing the entire amount of undocumented fill, the owner must be willing to accept the risk associated with building over the undocumented fill following the recommended reworking of the material.

Swimming Pool Considerations

The pool may be constructed using a conventional pool shell provided the pool extends through all fill and bears into the underlying firm naïve medium stiff to stiff sandy lean clay. We have assumed the new pool depths will extend from 3½ up to 7 feet bgs. Terracon should be contacted to provide additional recommendations, if needed, if this is not the case.

Due to the presence of shallow groundwater, the pool should be underlain by a 6-inch thick layer of 3/4-inch clean gravel underlain by Mirafi 140N filter fabric or Caltrans Class II permeable material. A 4-inch diameter perforated Schedule 40 PVC or ABS pipe should be installed in the gravel at the deepest point. The perforated pipe should slope at a 2 percent minimum grade to a tight line at the edge of the pool that carries the drainage to an existing drainage system or to an observation well where water can be removed by pumping. A hydrostatic pressure relief system should be installed at the deepest point of the pool.

The **General Comments** section provides an understanding of the report limitations.

EARTHWORK

We anticipate grading for this project may consist of cuts and fills up to 7 feet mainly associated with backfill of the existing pool and construction of the new pool. If greater cuts and fills are required, Terracon should be contacted to provide supplemental recommendations. We understand site grades will remain at the current elevation. If site grades will be elevated, Terracon should be contacted to provide additional recommendations as elevating the site grades may generate additional settlement of the site. Earthwork will include demolition of existing pool, clearing and grubbing, excavations and fill placement. The following sections provide recommendations for use in the preparation of specifications for the work. Recommendations include critical quality criteria as necessary to render the site in the state considered in our geotechnical engineering evaluation for the swimming pool, foundations and slabs.

Site Preparation

Prior to placing fill, all existing debris, debris generated from demolition of the existing pool shells and hardscape, underground utilities, existing vegetation and root mat, debris, and any otherwise unsuitable material should be removed. Complete stripping of the topsoil should be performed in the proposed pool and mechanical room expansion areas.

If possible, the subgrade should be proof-rolled with an adequately loaded vehicle such as a fully loaded tandem axle dump truck. The proof-rolling should be performed under the direction of the Geotechnical Engineer. Areas excessively deflecting under the proof-roll should be delineated and subsequently addressed by the Geotechnical Engineer. Such areas should either be removed or modified by stabilizing as noted in the following section **Soil Stabilization**. Excessively wet or dry material should either be removed, or moisture conditioned and recompacted. Exposed surfaces should be free of mounds and depressions which could prevent uniform compaction.

Subgrade Preparation

After clearing any required cuts should be made. Any fill below the swimming pool and foundation areas should be over-excavated to firm native soil. Terracon should be present during over-excavation to verify all fill has been removed in the excavation. If needed, a geotextile fabric may be used as a separator between the native soil and engineered fill. Once any required cuts and over-excavations have been made, and prior to placing any fill, the subgrade soil should be scarified and compacted. Scarification is not required in the bottom of the pool excavation. The depth of scarification of subgrade soils and moisture conditioning of the subgrade is highly dependent on the time of year of construction and the site conditions that exist immediately prior to construction. If construction occurs during the winter or spring, when the subgrade soils are typically already in a moist condition, scarification and compaction may only be 12 inches. If construction occurs during the summer or fall when the subgrade soils have been allowed to dry out deeper, the depth of scarification and moisture conditioning may be as much as 18 inches. Due to shallow groundwater, the subgrade soil at over-excavated depths is likely to be in an elevated moisture condition and compaction will likely require some drying before it can be compacted. A representative from Terracon should be present to observe the exposed subgrade and specify the depth of scarification and moisture conditioning required.

Following scarification and compaction of the subgrade, the footing excavations may be backfilled with compacted LVC structural fill and the swimming pool may be backfilled with a 2 sack lean concrete mix or ¾ inch clean crushed gravel wrapped in geotextile fabric and compacted by vibratory methods as needed.

The moisture content and compaction of subgrade soils should be maintained until poo/foundation/slab construction. Care should be taken to prevent wetting or drying of the bearing materials during construction.

Soil Stabilization

Methods of subgrade improvement, as described below, could include scarification, moisture conditioning and recompaction, and removal of unstable materials and replacement with granular fill (with or without geosynthetics). The appropriate method of improvement, if required, would be dependent on factors such as schedule, weather, the size of the area to be stabilized, and the nature of the instability. More detailed recommendations can be provided during construction as the need for subgrade stabilization occurs. Performing site grading operations during warm seasons and dry periods would help to reduce the amount of subgrade stabilization required.

If the exposed subgrade is unstable during proof rolling operations, it could be stabilized using one of the methods outlined below.

- **Scarification and Compaction** – It may be feasible to scarify, dry, and compact the exposed soils. The success of this procedure would depend primarily upon favorable weather and

sufficient time to dry the soils. Stable subgrades likely would not be achievable if the thickness of the unstable soil is greater than about 1 foot, if the unstable soil is at or near groundwater levels, or if construction is performed during a period of wet or cool weather when drying is difficult.

- **Aggregate Base** – The use of Caltrans Class II aggregate base is the most common procedure to improve subgrade stability. Typical undercut depths would be expected to range from about 6 to 18 inches below finished subgrade elevation with this procedure. The use of high modulus geotextiles (i.e., engineering fabric or geogrid) could also be considered after underground work such as utility construction is completed. Prior to placing the fabric or geogrid, we recommend that all below-grade construction, such as utility line installation, be completed to avoid damaging the fabric or geogrid. Equipment should not be operated above the fabric or geogrid until one full lift of aggregate base is placed above it. The maximum particle size of granular material placed over geotextile fabric or geogrid should meet the manufacturer's specifications.

Further evaluation of the need and recommendations for subgrade stabilization can be provided during construction as the geotechnical conditions are exposed.

Existing Undocumented Fill

As noted in **Geotechnical Characterization**, 3 to 4 feet of fill was encountered in our borings. Compaction records for the fill could not be obtained or reviewed to confirm the fill was placed under controlled conditions. The fill is considered undocumented as we have no records to indicate the degree of control that was performed during placement. Support of floor slabs and hardscapes on or above existing undocumented fill soils is discussed in this report.

The density/consistency of the undocumented fill encountered in our borings varied from medium stiff to stiff and loose to medium dense. Such undocumented fill conditions can result in differential settlement and damage to proposed structures relying on the undocumented fill for structural support. As a result, the undocumented fill is not suitable to support the proposed swimming pool and mechanical room expansion. While the undocumented fill is not suitable to support the proposed pool and mechanical room expansion, the fill should be adequate to support proposed floor slabs and exterior hardscapes provided **Earthwork** is conducted per the recommendations provided herein. If the owner elects to construct floor slabs and hardscapes on the existing undocumented fill, the following protocol should be followed. The fill below floor slabs and hardscape areas should be over-excavated to a depth of 18 inches and the resulting subgrade should be scarified to a minimum depth of 12 inches, moisture conditioned, and compacted per the recommendations in the **Earthwork** section of this report. Following compaction of the subgrade, the over-excavated areas may be backfilled with compacted LVC structural fill.

Even with the recommended earthwork procedures, there is an inherent risk for the owner that compressible fill or unsuitable material within or buried by the undocumented fill will not be discovered. This risk of unforeseen conditions cannot be eliminated without completely removing all the existing undocumented fill but can be reduced by following the recommendations contained in this report. To take advantage of the cost benefit of not removing the entire amount of undocumented fill, the owner must be willing to accept the risk associated with building over the undocumented fill following the recommended reworking of the material.

Fill Material Types

Fill required to achieve design grade should be classified as structural fill and general fill. Structural fill is material used below, or within 5 feet of structures, pavements or constructed slopes. General fill is material used to achieve grade outside of these areas. Earthen materials used for structural and general fill should meet the following material property requirements:

Fill Type[1]	USCS Classification	Acceptable Location for Placement
Lean Clay	CL (LL<40)	All locations and elevations, except as LVC material unless material explicitly meets LVC requirements.
Moderate Plasticity Material[2]	CL (50>LL≥40 or 30>PI≥25)	General fill locations
Well-graded Granular[3]	GM, GC, SP, SW, SM	All structural and general fill locations and elevations
Low Volume Change (LVC) Material[4]	CL (LL<30 & PI<10) or Well-graded Granular Material [3]	All structural and general fill locations and elevations
On-site Soils[5]	CL, SP	As indicated above

1. Compacted structural fill should consist of approved materials that are free of organic matter and debris. A sample of each material type should be submitted to Terracon for evaluation at least 2 weeks prior to construction.
2. Delineation of moderate to highly plastic clays should be performed in the field by a qualified geotechnical engineer or their representative and could require additional laboratory testing.
3. Caltrans Class II aggregate base may be used for this material.
4. Low plasticity cohesive soil or granular soil having low plasticity fines. Material should be approved by the geotechnical engineer.
5. This material should be removed and recompacted if used as an engineered or structural fill as described in section **Fill Compaction Requirements**.

Fill Compaction Requirements

Structural and general fill should meet the following compaction requirements.

Item	Structural Fill	General Fill
Maximum Lift Thickness[2]	8 inches or less in loose thickness when heavy, self-propelled compaction equipment is used 4 to 6 inches in loose thickness when hand-guided equipment (i.e. jumping jack or plate compactor) is used	Same as Structural fill
Minimum Compaction Requirements [1,3]	95% of max. below foundations and floor slabs, for fills deeper than 5 feet, and for aggregate base. 90% of max above foundations and below exterior hardscape.	95% of max. for fills deeper than 5 feet. 90% of max. all other locations.
Water Content Range [1]	Low plasticity cohesive: +1% to +3% above optimum High plasticity cohesive: +2% to +4% above optimum Granular: -2% to +2% of optimum	As required to achieve min. compaction requirements[4]

1. Maximum density and optimum water content as determined by the Modified Proctor test (ASTM D 1557).
2. Reduced lift thicknesses are recommended in confined areas (e.g., utility trenches, foundation excavations, and foundation backfill) and when hand-operated compaction equipment is used.
3. We recommend that engineered fill be tested for moisture content and compaction during placement. Should the results of the in-place density tests indicate the specified moisture or compaction limits have not been met, the area represented by the test should be reworked and retested as required until the specified moisture and compaction requirements are achieved. This procedure is intended for soils with 30 percent or less material larger than ¾ inch. Accordingly, we recommend full time proof roll observation be performed instead of moisture density testing for materials containing more than 30 percent aggregate retained on the ¾-inch sieve.
4. Specifically, moisture levels should be maintained low enough to allow for satisfactory compaction to be achieved without the cohesionless fill material pumping when proof rolled.

Utility Trench Backfill

Depending on the planned depth of utilities, groundwater and/or soft soil conditions may be encountered in the bottom of the planned trench excavations and should be planned for. If the soils are unworkable, the contractor may utilize dry crushed rock or clean granular fill material placed over a geotextile such as Mirafi RS580i or equivalent to stabilize wet subgrade materials in the bottom of the excavation prior to backfill. If further soil stabilization is needed, Terracon should be consulted to evaluate the situation as needed.

All trench excavations should be made with sufficient working space to permit construction including backfill placement and compaction. If utility trenches are backfilled with relatively clean granular material, they should be capped with at least 18 inches of cementitious flowable fill or cohesive fill in non-pavement areas to reduce the infiltration and conveyance of surface water through the trench backfill. Attempts should also be made to limit the amount of fines migration

into the clean granular material. Fines migration into clean granular fill may result in unanticipated localized settlements over a period of time. To help limit the amount of fines migration, Terracon recommends the use of a geotextile fabric that is designed to prevent fines migration in areas of contact between clean granular material and fine-grained soils. Terracon also recommends that clean granular fill be tracked or tamped in place where possible to limit the amount of future densification which may cause localized settlements over time.

Utility trenches are a common source of water infiltration and migration. Utility trenches penetrating beneath the building should be effectively sealed to restrict water intrusion and flow through the trenches, which could migrate below the building and the expansion. The trench should provide an effective trench plug that extends at least 5 feet from the face of the building exterior. The plug material should consist of cementitious flowable fill or low permeability clay. The trench plug material should be placed to surround the utility line. If used, the clay trench plug material should be placed and compacted to comply with the water content and compaction recommendations for structural fill stated previously in this report.

Grading and Drainage

All grades must provide effective drainage away from the improvements during and after construction and should be maintained throughout the life of the structures. Water retained next to the improvements can result in soil movements greater than those discussed in this report. Greater movements can result in unacceptable differential slab and/or foundation/pool shell movements, cracked slabs and walls, and roof leaks. The roof should have gutters/drains with downspouts that discharge onto splash blocks at a distance of at least 10 feet from the building.

Exposed ground should be sloped and maintained at a minimum 5 percent away from the building for at least 10 feet beyond the perimeter of the building. Locally, flatter grades may be necessary to transition ADA access requirements for flatwork. After building construction and landscaping, final grades should be verified to document effective drainage has been achieved. Grades around the structures should also be periodically inspected and adjusted as necessary as part of the structures' maintenance program. Where paving or flatwork abuts the structures a maintenance program should be established to effectively seal and maintain joints and prevent surface water infiltration.

Planters or bio-swales located within 10 feet of the improvements should be self-contained or lined with an impermeable membrane to prevent water from accessing subgrade soils. Sprinkler mains and spray heads should be located a minimum of 5 feet away from the pool and building lines.

Trees or other vegetation whose root systems have the ability to remove excessive moisture from the subgrade and foundation soils should not be planted next to the structures. Trees and

shrubbery should be kept away from the exterior of the structures a distance at least equal to their expected mature height.

Earthwork Construction Considerations

Shallow excavations for the proposed structures are anticipated to be accomplished with conventional construction equipment. Upon completion of filling and grading, care should be taken to maintain the subgrade water content prior to construction of floor and exterior slabs. Construction traffic over the completed subgrades should be avoided. The site should also be graded to prevent ponding of surface water on the prepared subgrades or in excavations. Water collecting over, or adjacent to, construction areas should be removed. If the subgrade desiccates, saturates, or is disturbed, the affected material should be removed, or the materials should be scarified, moisture conditioned, and recompacted, prior to slab construction.

The groundwater table could affect over-excavation efforts, especially for over-excavation and replacement of lower strength soils. A temporary dewatering system consisting of sumps with pumps could be necessary to achieve the recommended depth of over-excavation for required excavations. **Dewatering should be anticipated and planned for in proposed excavations. The depth of dewatering below the bottom of excavations should be determined by the contractor and/or designer.** Pump tests for dewatering were not included in the scope of work for this report. However, Terracon can perform pump tests for an additional fee, if desired.

As a minimum, excavations should be performed in accordance with OSHA 29 CFR, Part 1926, Subpart P, “Excavations” and its appendices, and in accordance with any applicable local, and/or state regulations. Stockpiles of soil, construction materials, and construction equipment should not be placed near trenches or excavations.

We recommend that the earthwork portion of this project be completed during extended periods of dry weather if possible. If earthwork is completed during the wet season (typically November through April) it may be necessary to take extra precautionary measures to protect subgrade soils. Wet season earthwork operations may require additional mitigation measures beyond that which would be expected during the drier summer and fall months. This could include ground stabilization utilizing chemical treatment of the subgrade, diversion of surface runoff around exposed soils, and draining of ponded water on the site. Once subgrades are established, it may be necessary to protect the exposed subgrade soils from construction traffic.

Construction site safety is the sole responsibility of the contractor who controls the means, methods, and sequencing of construction operations. Under no circumstances shall the information provided herein be interpreted to mean Terracon is assuming responsibility for construction site safety, or the contractor's activities; such responsibility shall neither be implied nor inferred.

Construction Observation and Testing

The earthwork efforts should be monitored under the direction of the Geotechnical Engineer. Monitoring should include documentation of adequate removal of concrete debris, vegetation and top soil, proof-rolling and mitigation of areas delineated by the proof-roll to require mitigation.

Each lift of compacted fill should be tested, evaluated, and reworked as necessary until approved by the Geotechnical Engineer prior to placement of additional lifts. Each lift of fill should be tested for density and water content at a frequency of at least one test for every 1,000 square feet of compacted fill. One density and water content test per lift should be performed for every 20 linear feet of compacted utility trench backfill.

In areas of pool and foundation excavations and slabs, the bearing subgrade should be evaluated under the direction of the Geotechnical Engineer. In the event that unanticipated conditions are encountered, the Geotechnical Engineer should prescribe mitigation options.

In addition to the documentation of the essential parameters necessary for construction, the continuation of the Geotechnical Engineer into the construction phase of the project provides the continuity to maintain the Geotechnical Engineer's evaluation of subsurface conditions, including assessing variations and associated design changes.

SHALLOW FOUNDATIONS

If the site has been prepared in accordance with the requirements noted in **Earthwork**, the mechanical room expansion can be supported by spread footings designed per following design parameters.

Design Parameters – Compressive Loads

Item	Description
Maximum Net Allowable Bearing pressure [1, 2]	1,500 psf
Required Bearing Stratum	Minimum 18 inches of LVC material over firm native soil
Minimum Foundation Width	12 inches
Maximum Foundation Width	30 inches
Ultimate Passive Resistance (equivalent fluid pressures) [3,7]	300 pcf
Ultimate Coefficient of Sliding Friction [4,7]	0.35
Minimum Embedment below Finished Grade [5]	18 inches
Estimated Total Settlement from Structural Loads [1,8]	Less than about 1 inch
Estimated Differential Settlement [1, 6,8]	About 1/2 of total settlement

1. The maximum net allowable bearing pressure is the pressure in excess of the minimum surrounding overburden pressure at the footing base elevation. An appropriate factor of safety has been applied. These bearing pressures can be increased by 1/3 for transient loads unless those loads have been factored to account for transient conditions. Values assume that exterior grades are no steeper than 20% within 10 feet of structure.
2. Values provided are for maximum loads noted in **Project Description**.
3. Use of passive earth pressures require the sides of the excavation for the spread footing foundation to be nearly vertical and the concrete placed neat against these vertical faces or that the footing forms be removed and compacted structural fill be placed against the vertical footing face.
4. Can be used to compute sliding resistance where foundations are placed on suitable soil/materials. Should be neglected for foundations subject to net uplift conditions.
5. Embedment necessary to minimize the effects of seasonal water content variations. For sloping ground, maintain depth below the lowest adjacent exterior grade within 5 horizontal feet of the structure.
6. Differential settlements are as measured over a span of 40 feet.
7. Passive pressure and sliding friction may be combined to resist sliding provided the passive pressure is reduced by 50 percent.
8. Estimated settlements are for static loading only and do not include settlements due to dynamic loading such as seismically induced liquefaction.

Construction Adjacent to Existing Building

Differential settlement between the mechanical room expansion and the existing building is expected to approach the magnitude of the total settlement of the addition. Expansion joints should be provided between the existing building and the proposed expansion to accommodate differential movements between the structures. Underground piping between the two structures should be designed with flexible couplings and utility knockouts in foundation walls should be oversized, so minor deflections in alignment do not result in breakage or distress. Care should be taken during excavation adjacent to existing foundations, to avoid disturbing existing foundation bearing soils.

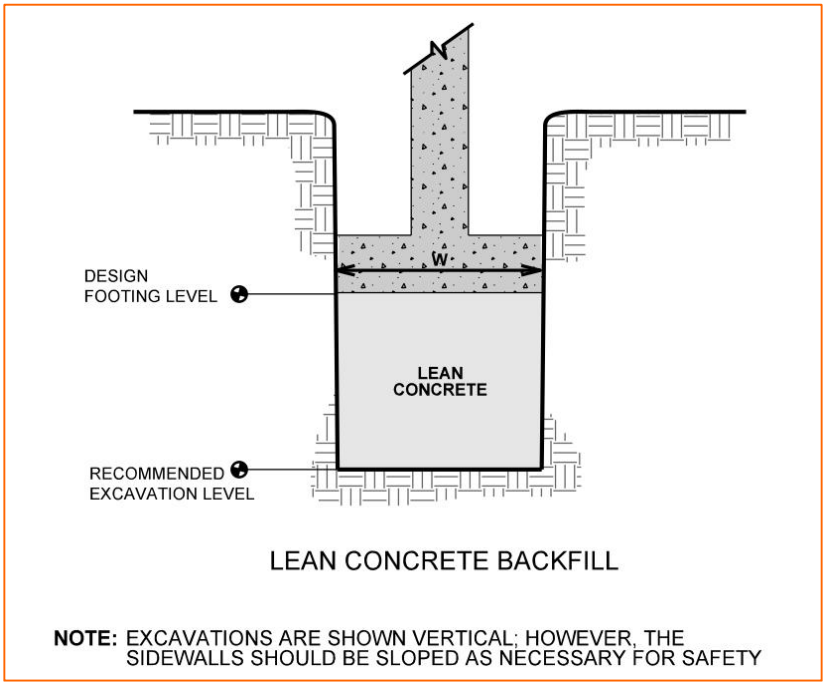
New footings should bear at or near the bearing elevation of immediately adjacent existing foundations. Depending upon their locations and current loads on the existing footings, footings for the new expansion could cause settlement of adjacent walls. To reduce this concern and risk, clear distances at least equal to the new footing widths should be maintained between the expansion's footings and footings supporting the existing building.

Foundation Construction Considerations

As noted in **Earthwork**, the footing excavations should be evaluated under the direction of the Geotechnical Engineer. The base of all foundation excavations should be free of water and loose soil, prior to placing concrete. Concrete should be placed soon after excavating to reduce bearing soil disturbance. Care should be taken to prevent wetting or drying of the bearing materials during construction. Excessively wet or dry material or any loose/disturbed material in the bottom of the footing excavations should be removed/reconditioned before foundation concrete is placed.

To ensure foundations have adequate support, special care should be taken when footings are located adjacent to trenches. The bottom of such footings should be at least 1 foot below an imaginary plane with an inclination of 1.5 horizontal to 1.0 vertical extending upward from the nearest edge of adjacent trenches.

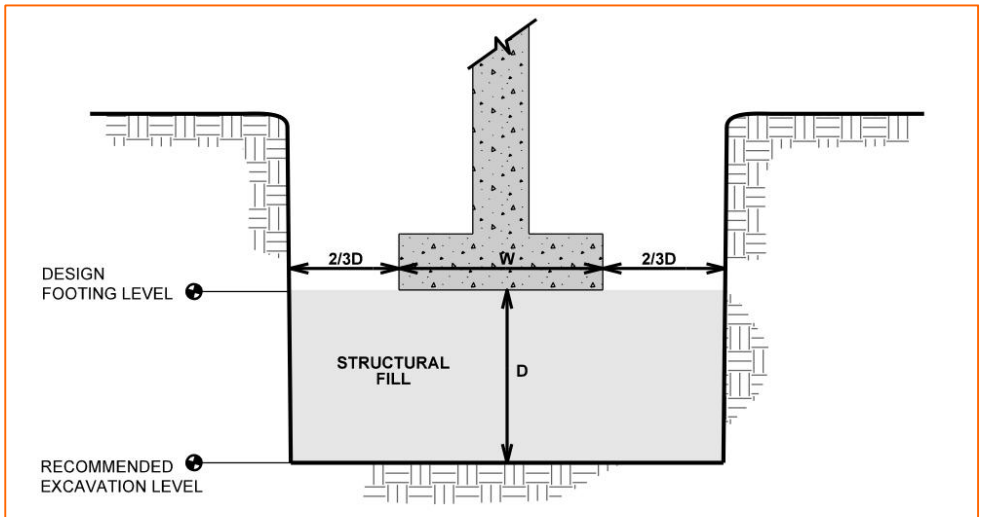
If unsuitable bearing soils are encountered at the base of the planned footing excavations, the excavations should be extended deeper to suitable soils, and the footings could bear directly on these soils at the lower level or on lean concrete backfill placed in the excavations. This is illustrated on the sketch below.



LEAN CONCRETE BACKFILL

NOTE: EXCAVATIONS ARE SHOWN VERTICAL; HOWEVER, THE SIDEWALLS SHOULD BE SLOPED AS NECESSARY FOR SAFETY

Over-excavation for structural fill placement below footings should be conducted as shown below. The over-excavation should be backfilled up to the footing base elevation, with structural fill placed, as recommended in the **Earthwork** section.



OVER-EXCAVATION / BACKFILL ZONE

NOTE: EXCAVATIONS ARE SHOWN VERTICAL; HOWEVER, THE SIDEWALLS SHOULD BE SLOPED AS NECESSARY FOR SAFETY

POOL RECOMMENDATIONS

The pool shell may be constructed as a conventional pool shell provided the pool extends through all fill and bears into the underlying native medium stiff to stiff sandy lean clay. We have assumed the new pool depths will be 3½ to 7 feet. Areas where over-excavation may be required due to the presence of fill or where the new pool shell may be shallower than the existing pool shell may be backfilled with a 2 sack lean concrete mix or ¾ inch clean crushed gravel wrapped in a geotextile fabric and compacted by vibratory methods as needed. Terracon should be contacted to provide additional recommendations, if this is not the case.

Pool walls should be designed for both retaining and free-standing conditions. Pool walls should be designed to resist a lateral earth pressure of 60 pounds per cubic foot (pcf) equivalent fluid pressure for walls with flat backfill. Pool walls should also be designed to resist an outward fluid pressure of 63 pcf.

The pool should be underlain by a 6-inch thick layer of 3/4-inch clean gravel underlain by Mirafi 140N filter fabric or Caltrans Class II permeable material. A 4-inch diameter perforated Schedule 40 PVC or ABS pipe should be installed in the gravel at the deepest point. The perforated pipe should slope at a 2 percent minimum grade to a tight line at the edge of the pool that carries the drainage to an existing drainage system or to an observation well where water can be removed by pumping. A hydrostatic pressure relief system should be installed at the deepest point of the pool.

Expansive soils within the pool excavation should be maintained at an elevated moisture content during construction.

Additional geotechnical design considerations for the swimming pool and items that may affect the future geotechnical stability of the pool system are listed below.

- **Isolate pool shell** – The proposed pool should be isolated from any source that could cause additional settlement of the pool. Foundations from buildings and other structures related to the pool should be kept a minimum distance equal to the depth of the pool from the pool's edge to reduce the effect of the foundation on the pool shell. Additionally, pool decks should not be tied into the pool shell.

- **Avoid fill material below the pool** – Fill material placed below the pools is to be avoided due to the potential for excessive differential settlements within the fill material. This includes documented fills that have been placed correctly.

- **Avoid surcharge loading on pool shell** – The addition of surcharge loads on the pool shells either during construction or after construction should be avoided to limit the possibility of damaging the pool walls.

SEISMIC CONSIDERATIONS

The seismic design requirements for buildings and other structures are based on Seismic Design Category. Site Classification is required to determine the Seismic Design Category for a structure. The Site Classification is based on the upper 100 feet of the site profile defined by a weighted average value of either shear wave velocity, standard penetration resistance, or undrained shear strength in accordance with Section 20.4 of ASCE 7-10.

Description	Value
2016 California Building Code Site Classification (CBC) [1]	F[4]
Site Latitude	37.9026°N
Site Longitude	121.6010°W
S_s, Spectral Acceleration for a Short Period[3]	1.378g
S_1, Spectral Acceleration for a 1-Second Period[3]	0.467g
F_a, Site Coefficient[3]	0.9
F_v, Site Coefficient (1-second period)[3]	2.4
S_{DS}, Spectral Acceleration for a Short Period[3]	0.827g
S_{D1}, Spectral Acceleration for a 1-Second Period[3]	0.748g

1. Seismic site classification in general accordance with the *2016 California Building Code*.
2. The 2016 California Building Code (CBC) requires a site soil profile determination extending a depth of 100 feet for seismic site classification. Two CPTs were extended to a maximum depth of approximately 100½ feet bgs.
3. These values were obtained using online seismic design maps and tools provided by the USGS (http://earthquake.usgs.gov/hazards/designmaps/).
4. This site qualifies as a site class F due to the presence of liquefiable soils. A site class E was used to develop the listed seismic design parameters due to the static in-situ soil conditions encountered in our CPTs. Structures may use the listed design parameters provided they have a period of 0.5s or less. Should the anticipated structures have a period greater than 0.5s, a site-specific ground motion analysis should be conducted to develop seismic design parameters. Terracon is qualified to perform such an analysis.

Faulting and Estimated Ground Motions

The site is located in the San Francisco Bay Area of California, which is a relatively high seismicity region. The type and magnitude of seismic hazards affecting the site are dependent on the distance to causative faults, the intensity, and the magnitude of the seismic event. The following table indicates the distance of the fault zones and the associated maximum credible earthquake

that can be produced by nearby seismic events, as calculated using the USGS Unified Hazard Tool. Segments of the Mount Diablo Thrust, which is located approximately 10 kilometers from the site, are considered to have the most significant effect at the site from a design standpoint.

Characteristics and Estimated Earthquakes for Regional Faults

Fault Name	Approximate Contribution (%)	Approximate Distance to Site (kilometers)	Maximum Credible Earthquake (MCE) Magnitude
Mount Diablo Thrust: bFault.ch	7.56	23.46	6.59
Great Valley 7: bFault.ch	4.84	21.08	6.71
PointSourceFinite: -121.601, 37.907: CAmap.21.ch.in (opt)	4.70	4.98	5.61

Based on the ASCE 7-10 Standard, the peak ground acceleration (PGA_M) at the subject site is approximately 0.434g. Based on the USGS 2008 interactive deaggregations, the PGA at the subject site for a 2% probability of exceedance in 50 years (return period of 2475 years) is expected to be about 0.551g. The site is not located within an Alquist-Priolo Earthquake Fault Zone based on our review of the State Fault Hazard Maps.[1]

LIQUEFACTION

Liquefaction is a mode of ground failure that results from the generation of high pore water pressures during earthquake ground shaking, causing loss of shear strength. Liquefaction is typically a hazard where loose sandy soils or low plasticity fine grained soils exist below groundwater. The California Geologic Survey (CGS) has designated certain areas within California as potential liquefaction hazard zones. These are areas considered at a risk of liquefaction-related ground failure during a seismic event, based upon mapped surficial deposits and the presence of a relatively shallow water table. The project site and surrounding area is located within an area designated as having a high susceptibility to liquefaction. Therefore, a liquefaction analysis was performed to determine the liquefaction induced settlement.

Groundwater was observed in our borings at the time of field exploration at depths varying from 7 to 8 feet bgs. Additionally, water was encountered in the CPT soundings at depths varying from 9 to 13 feet bgs.

[1] California Department of Conservation Division of Mines and Geology (CDMG), *"Digital Images of Official Maps of Alquist-Priolo Earthquake Fault Zones of California, Southern Region"*, CDMG Compact Disc 2000-003, 2000.

A liquefaction analysis was performed in general accordance with California Geologic Survey Special Publication 117. The liquefaction study utilized the software "CLiq" by GeoLogismiki Geotechnical Software. This analysis was based on the soil data from the CPT soundings. A Peak Ground Acceleration (PGA) of 0.434g and a mean magnitude of 6.35 for the project site was used. A groundwater level of 5 feet bgs was used in our analysis. Analysis were performed on data obtained from CPT1 and CPT 2. CPT calculations were assessed using the Idriss & Boulanger (2008), Moss et al. (2006), and Boulanger & Idriss (2014) methods.

A liquefaction potential analysis was calculated from a depth of 5 to 65 feet below the ground surface. Based on the analysis, liquefiable layers most susceptible to liquefaction potential were encountered between the depths of approximately 15 to 45 feet bgs. Due to the lithology consisting predominantly of clayey soils with thin sand layers, we believe the probability for liquefaction to occur is low with minor liquefaction manifestation to occur at the surface. However, based on our review of the calculations by the various methods, the anticipated potential total liquefaction-induced settlement is on the order of ¾ to 1½ inches. Actual settlement could vary by a factor of 2. The differential liquefaction-induced settlement may be about ¾ inch. Since the project site and surrounding area is relatively level ground, the potential for lateral spreading is considered to be low.

Based on our experience, swimming pools perform relatively well during a liquefaction event. However, some cracking and differential settlement could occur requiring repair and releveling of the pool. If the risk of some potential repair is not acceptable for the swimming pool, the effects of liquefaction settlement can be mitigated by supporting the proposed structures on **Deep Foundations** that derive support below the soils prone to these conditions. If supporting the pool on **Deep Foundations** is desired, Terracon can provide additional recommendations for the design of such a foundation system.

We anticipate a brief loss of shear strength during a significant seismic event where liquefaction may occur. The bearing strength and vertical and lateral stiffness of the subsurface soils will be reduced to the residual shear strength of the liquefiable layer, causing the anticipated settlement noted above.

Accurate evaluation of the effects of liquefaction-induced instability requires accurate estimation of the shear strength of the liquefied soils. Terracon should be consulted to evaluate the subsurface conditions and foundation capacities after a significant event where liquefaction has occurred.

FLOOR SLABS

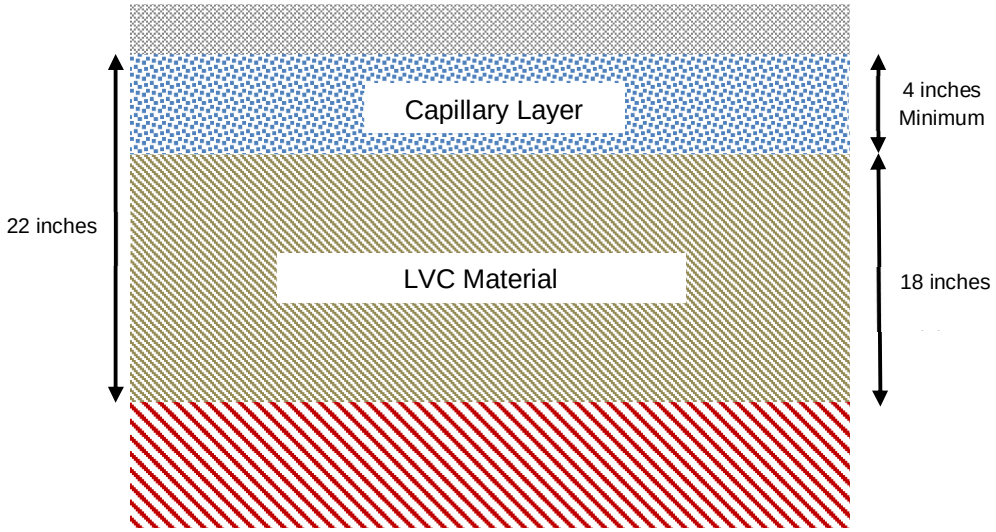
We understand that the mechanical room expansion will be constructed with a concrete slab-on-grade floor. The surficial soils are comprised of moderately to highly plasticity lean clay with variable amounts of sand exhibiting the potential for volume change with changes in moisture. Changes in water content could cause the subgrade soils to shrink and swell damaging the slabs. In order to help mitigate the effects of the moderately to highly plastic soils on the building slab we recommend an 18-inch, low volume change (LVC) zone be constructed beneath the at-grade slab.

Using an 18 inch, LVC zone as recommended in this report may not eliminate all future subgrade volume change and resultant slab movements. However, the procedures outlined herein should help to reduce the potential for subgrade volume change. LVC fill should meet the specifications and be placed and compacted as recommended in **Earthwork** section of this report.

Due to the potential for significant moisture fluctuations of subgrade material beneath floor slabs supported at-grade, the Geotechnical Engineer should evaluate the material within 12 inches of the bottom of the LVC zone immediately prior to placement of additional fill or floor slabs. Soils below the specified water contents within this zone should be moisture conditioned or replaced with structural fill as stated in our **Earthwork** section.

Even with the recommended earthwork procedures, there is an inherent risk for the owner that compressible fill or unsuitable material within or buried by the existing undocumented fill in slab or hardscape areas will not be discovered. This risk of unforeseen conditions cannot be eliminated without completely removing all the existing undocumented fill but can be reduced by following the recommendations contained in this report. To take advantage of the cost benefit of not removing the entire amount of undocumented fill, the owner must be willing to accept the risk associated with building over the undocumented fill following the recommended reworking of the material.

Concrete Slab-on-Grade



Design parameters for floor slabs assume the requirements for **Earthwork** have been followed. Specific attention should be given to positive drainage away from the structure.

Floor Slab Design Parameters

Item	Description
Floor Slab Support [1]	At least 18 inches of low volume change (LVC) material as described for structural fill in the **Fill Material Types** section
Estimated Modulus of Subgrade Reaction [2]	80 pounds per square inch per inch (psi/in)
Capillary Break Layer Thickness [3, 4]	Minimum 4 inches of free-draining (less than 6% passing the U.S. No. 200 sieve) crushed aggregate compacted to at least 95% of ASTM D 698

1. Floor slabs should be structurally independent of building foundations or walls to reduce the possibility of floor slab cracking caused by differential movements between the slab and foundation.
2. Modulus of subgrade reaction is an estimated value based upon our experience with the subgrade condition, the requirements noted in **Earthwork**, and the floor slab support as noted in this table.
3. Free-draining granular material should have less than 5 percent fines (material passing the #200 sieve). Other design considerations such as cold temperatures and condensation development could warrant more extensive design provisions.
4. These granular materials are in addition to the LVC zone.

The use of a vapor retarder should be considered beneath concrete slabs on grade covered with wood, tile, carpet, or other moisture sensitive or impervious coverings, or when the slab will support equipment sensitive to moisture. When conditions warrant the use of a vapor retarder,

the slab designer should refer to ACI 302 and/or ACI 360 for procedures and cautions regarding the use and placement of a vapor retarder.

Saw-cut control joints should be placed in the slab to help control the location and extent of cracking. For additional recommendations refer to the ACI Design Manual. Joints or cracks should be sealed with a water-proof, non-extruding compressible compound specifically recommended for heavy duty concrete pavement and wet environments.

Where floor slabs are tied to perimeter walls or turn-down slabs to meet structural or other construction objectives, our experience indicates differential movement between the walls and slabs will likely be observed in adjacent slab expansion joints or floor slab cracks beyond the length of the structural dowels. The Structural Engineer should account for potential differential settlement through use of sufficient control joints, appropriate reinforcing or other means.

Floor Slab Construction Considerations

Finished subgrade within and for at least 10 feet beyond the floor slab should be protected from traffic, rutting, or other disturbance and maintained in a relatively moist condition until the floor slab is constructed. If the subgrade should become damaged or desiccated prior to construction of the floor slab, the affected material should be removed, and structural fill should be added to replace the resulting excavation. Final conditioning of the finished subgrade should be performed immediately prior to placement of the floor slab support course.

The Geotechnical Engineer should approve the condition of the floor slab subgrades immediately prior to placement of the floor slab support course, reinforcing steel and concrete. Attention should be paid to high traffic areas that were rutted and disturbed earlier, and to areas where backfilled trenches are located.

Exterior Hardscape

The near surface soils in our borings consisted of 3 to 4 feet of medium stiff to stiff and loose to medium dense undocumented fill. We anticipate hardscape constructed at the site will be lightly loaded. Subsequently, we believe the fill should provide sufficient support for the hardscape. However, we recommend the subgrade soil below hardscape be over-excavated to a minimum depth of 18 inches and replaced with compacted LVC structural fill per the recommendations provided in this report.

Exterior hardscape, exterior architectural features, and utilities founded on, or in backfill may experience some movement due to the volume change of the backfill. To reduce the potential for damage caused by movement, we recommend:

- Slabs be underlain by a minimum 18 inches of compacted LVC material as indicated
- Minimizing moisture increases in the backfill;
- Controlling moisture-density during placement of backfill;

- Using designs which allow vertical movement between the exterior features and adjoining structural elements;
- Placing effective control joints on relatively close centers.
- Ensure clay subgrade soils are in a moist condition prior to slab construction.
- Reinforce exterior slabs and flatwork with a minimum No. 4 bars at 12 inches on center.
- Maintain slabs structurally independent from the swimming pool shell.

CORROSIVITY

The table below lists the results of laboratory soluble sulfate, soluble chloride, electrical resistivity, and pH testing. The values may be used to estimate potential corrosive characteristics of the on-site soils with respect to contact with the various underground materials which will be used for project construction.

Corrosivity Test Results Summary						
Boring	**Sample Depth (feet)**	**Soil Description**	**Soluble Sulfate (ppm)**	**Soluble Chloride (ppm)**	**Electrical Resistivity (Ω-cm)**	**pH**
B-2	2½	Sandy lean clay	286	623	475	8.46

These test results are provided to assist in determining the type and degree of corrosion protection that may be required for the project. We recommend that a certified corrosion engineer determine the need for corrosion protection and design appropriate protective measures.

Resistivity

The resistivity test results indicate that the sample tested exhibit a very high corrosive potential to buried metal pipes. Evaluation of the test results is based upon the guidelines of J.F. Palmer, "Soil Resistivity Measurements and Analysis", Materials Performance, Volume 13, January 1974. The following table outlines the guidelines for soil resistivity for corrosion potential.

Corrosion Potential of Soil on Steel	
Soil Resistivity (ohm-cm)	**Corrosion Potential**
0 to 1,000	Very High
1,000 to 2,000	High
2,000 to 5,000	Moderate
> 5,000	Mild

Sulfates

The sulfate test results indicate that the soil from boring B2 classify as Class S1 according to Table 19.3.1.1 of ACI 318-14. This indicates that the sulfate severity is moderate when considering corrosion to concrete. Based on the sulfate content test results, ACI 318-14, Section 19.3 requires the use of Type II cement, a maximum water/cement ratio of 0.50, and a minimum compressive strength of 4,000 psi. For further information, see ACI 318-14, Section 19.3.

Laboratory pH

Data suggests the soil pH should not be the dominant soil variable affecting soil corrosion if the soil has a pH in the 5 to 8 range. Based on our laboratory pH test, the soil sample tested has a pH value of 8.46. The pH of the sample is above the recommended range, and therefore should be considered when determining soil corrosion potential.

GENERAL COMMENTS

As the project progresses, we address assumptions by incorporating information provided by the design team, if any. Revised project information that reflects actual conditions important to our services is reflected in the final report. The design team should collaborate with Terracon to confirm these assumptions and to prepare the final design plans and specifications. This facilitates the incorporation of our opinions related to implementation of our geotechnical recommendations. Any information conveyed prior to the final report is for informational purposes only and should not be considered or used for decision-making purposes.

Our analysis and opinions are based upon our understanding of the project, the geotechnical conditions in the area, and the data obtained from our site exploration. Natural variations will occur between exploration point locations or due to the modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction. Terracon should be retained as the Geotechnical Engineer, where noted in this report, to provide observation and testing services during pertinent construction phases. If variations appear, we can provide further evaluation and supplemental recommendations. If variations are noted in the absence of our observation and testing services on-site, we should be immediately notified so that we can provide evaluation and supplemental recommendations.

Our Scope of Services does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

Our services and any correspondence or collaboration through this system are intended for the sole benefit and exclusive use of our client for specific application to the project discussed and

are accomplished in accordance with generally accepted geotechnical engineering practices with no third-party beneficiaries intended. Any third-party access to services or correspondence is solely for information purposes to support the services provided by Terracon to our client. Reliance upon the services and any work product is limited to our client and is not intended for third parties. Any use or reliance of the provided information by third parties is done solely at their own risk. No warranties, either express or implied, are intended or made.

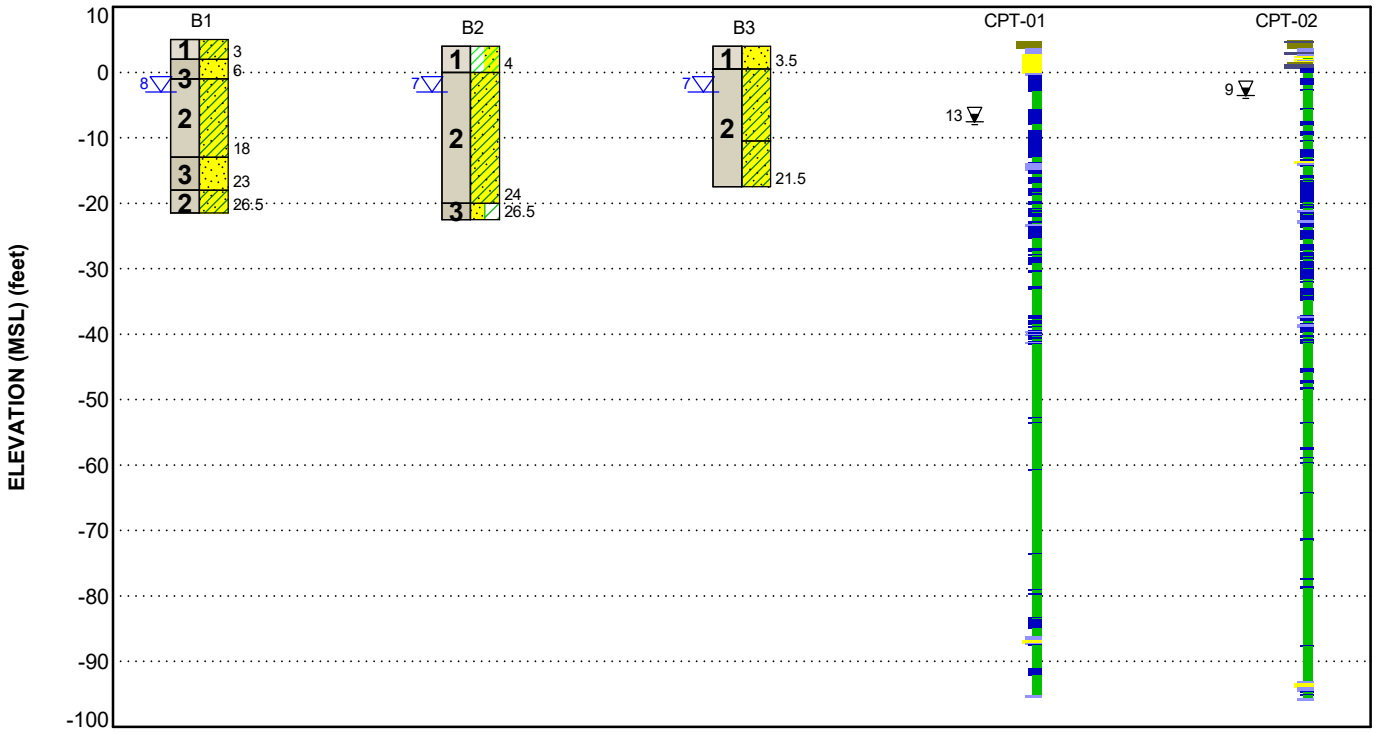
Site characteristics as provided are for design purposes and not to estimate excavation cost. Any use of our report in that regard is done at the sole risk of the excavating cost estimator as there may be variations on the site that are not apparent in the data that could significantly impact excavation cost. Any parties charged with estimating excavation costs should seek their own site characterization for specific purposes to obtain the specific level of detail necessary for costing. Site safety, and cost estimating including, excavation support, and dewatering requirements/design are the responsibility of others. If changes in the nature, design, or location of the project are planned, our conclusions and recommendations shall not be considered valid unless we review the changes and either verify or modify our conclusions in writing. This report should not be considered valid and used after 3 years without written permission from Terracon.

FIGURES

Contents:

GEOMODEL

Discovery Bay Community Center Swimming Pool ■ Discovery Bay, CA
1/30/2019 ■ Terracon Project No. ND185167



This is not a cross section. This is intended to display the Geotechnical Model only. See individual logs for more detailed conditions.

Model Layer	Layer Name	General Description
1	Fill	Medium stiff to stiff sandy lean clay and lean clay with sand and medium dense sand
2	Lean Clay	Medium stiff to stiff sandy lean clay
3	Poorly Graded Sand	Very loose to medium dense poorly graded sand and poorly graded sand with clay

LEGEND

Sandy Lean Clay
Poorly-graded Sand with Clay
Poorly-graded Sand
Lean Clay with Sand

Soil Behavior Type (SBT)

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

CPT Assumed Water Depth

First Water Observation
Second Water Observation
Third Water Observation

Groundwater levels are temporal. The levels shown are representative of the date and time of our exploration. Significant changes are possible over time. Water levels shown are as measured during and/or after drilling. In some cases, boring advancement methods mask the presence/absence of groundwater. See individual logs for details.

NOTES:
Layering shown on this figure has been developed by the geotechnical engineer for purposes of modeling the subsurface conditions as required for the subsequent geotechnical engineering for this project. Numbers adjacent to soil column indicate depth below ground surface.

ATTACHMENTS

EXPLORATION AND TESTING PROCEDURES

Field Exploration

Number of Borings/CPT	Boring Depth/CPT (feet)	Planned Location
3	21½ to 26½	Planned pool area
2	100½	Planned pool area

Boring/CPT Layout and Elevations: The boring/CPT layout was performed by Terracon. Coordinates were obtained with a handheld GPS unit (estimated horizontal accuracy of about ±20 feet) and approximate elevations were estimated using Google Earth Pro. If more precise boring/CPT locations and elevations are desired, we recommend borings/CPTs be surveyed.

Subsurface Exploration Procedures: We advanced the borings with a Superman Portable drill rig using continuous flight, solid stem augers. Two samples were obtained in the upper 10 feet of each boring and at intervals of 5 feet thereafter. Soil sampling was performed using split-barrel sampling. In the split-barrel sampling procedure, a standard 2-inch outer diameter split-barrel sampling spoon or 2.5-inch outer diameter Modified California split-barrel sampling spoon were driven into the ground by a 140-pound automatic hammer falling a distance of 30 inches. The number of blows required to advance the sampling spoon the last 12 inches of a normal 18-inch penetration is recorded as the Standard Penetration Test (SPT) resistance value. The SPT resistance values, also referred to as N-values, are indicated on the boring logs at the test depths. The values provided on our boring logs are uncorrected. Additionally, we observed and recorded groundwater levels during drilling and sampling. Per the requirements of the local health department and for safety purposes, all borings/CPTs were backfilled with grout after their completion.

For the cone penetrometer testing, the CPT rig hydraulically pushes an instrumented cone through the soil while nearly continuous readings are recorded to a portable computer. The cone is equipped with electronic load cells to measure tip resistance and sleeve resistance and a pressure transducer to measure the generated ambient pore pressure. The face of the cone has an apex angle of 60° and an area of 15 cm^2. Digital Data representing the tip resistance, friction resistance, pore water pressure, and probe inclination angle are recorded about every 2 centimeters while advancing through the ground at a rate between 1½ and 2½ centimeters per second. These measurements are correlated to various soil properties used for geotechnical design. No soil samples are gathered through this subsurface investigation technique. CPT testing was conducted in general accordance with ASTM D5778 “Standard Test Method for Performing Electronic Friction Cone and Piezocone Penetration Testing of Soils.”

The sampling depths, penetration distances, and other sampling information was recorded on the field boring logs. The samples were placed in appropriate containers and taken to our soil laboratory for testing and classification by a Geotechnical Engineer. Our exploration team prepared field boring logs as part of the drilling operations. These field logs included visual classifications of the materials encountered during drilling and our interpretation of the subsurface conditions between samples. Final boring logs were prepared from the field logs. The final boring logs represent the Geotechnical Engineer's interpretation of the field logs and include modifications based on observations and tests of the samples in our laboratory.

Laboratory Testing

The project engineer reviewed the field data and assigned laboratory tests to understand the engineering properties of the various soil strata, as necessary, for this project. Procedural standards noted below are for reference to methodology in general. In some cases, variations to methods were applied because of local practice or professional judgment. Standards noted below include reference to other, related standards. Such references are not necessarily applicable to describe the specific test performed.

- ASTM D2216 Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
- ASTM D4318 Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
- ASTM D1140 Standard Test Method for Determining the Amount of Material Finer than No. 200 Sieve by Soil Washing
- ASTM G162 – 99 Standard Practice for Conducting and Evaluating Laboratory Corrosion Tests in Soils

The laboratory testing program often included examination of soil samples by an engineer. Based on the material’s texture and plasticity, we described and classified the soil samples in accordance with the Unified Soil Classification System.

PHOTOGRAPHY LOG

Photo 1 – Northwest side of the pool (facing southeast)

Photo 2 – Southeast side of the pool (facing west)

Photo 3 – Southeast side of the pool (facing northwest)

Photo 4 – West side of the pool (facing east)

SITE LOCATION AND EXPLORATION PLANS

Contents:

Site Location Plan
Exploration Plan

Note: All attachments are one page unless noted above.

SITE LOCATION

Discovery Bay Community Center Swimming Pool ■ Discovery Bay, Contra Costa County, California
January 30, 2019 ■ Terracon Project No. ND185167

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS

EXPLORATION RESULTS

Contents:

Note: All attachments are one page unless noted above.

BORING LOG NO. B1

PROJECT: Discovery Bay Community Center Swimming Pool

CLIENT: Town of Discovery Bay
Discovery Bay, CA

SITE: 1601 Discovery Bay Boulevard
Discovery Bay, CA

LOCATION See Exploration Plan

Latitude: 37.9024° Longitude: -121.6011°

Approximate Surface Elev.: 5 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	LABORATORY HP (tsf)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1			**FILL - SANDY LEAN CLAY (CL)**, fine to medium grained, brown, stiff									
		3.0	2+/-				5-9-9	1.5 (HP)	25	94		
3			**POORLY GRADED SAND (SP)**, fine to medium grained, brown, loose	5								
		6.0	-1+/-				2-2-2		26	91		
2			**SANDY LEAN CLAY (CL)**, fine grained, brown, medium stiff to stiff		▽							
				10			3-2-8	1.5 (HP)	29	84		
				15			3-3-5		28		27-17-10	67
3			**POORLY GRADED SAND (SP)**, fine to medium grained, brown, medium dense	20			7-8-10 N=18		19			
		23.0	-18+/-									
2			**SANDY LEAN CLAY (CL)**, fine grained, brown, stiff	25			5-5-8 N=13		24			
		26.5	-21.5+/-									
			Boring Terminated at 26.5 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
4" Solid Stem Auger

Abandonment Method:
Boring backfilled with cement-bentonite grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *While drilling*

Terracon
5075 Commercial Cir, Ste E
Concord, CA

Boring Started: 01-03-2019 | Boring Completed: 01-03-2019

Drill Rig: Superman | Driller: Calgeo

Project No.: ND185167

BORING LOG NO. B2

PROJECT: Discovery Bay Community Center Swimming Pool

CLIENT: Town of Discovery Bay
Discovery Bay, CA

SITE: 1601 Discovery Bay Boulevard
Discovery Bay, CA

LOCATION See Exploration Plan

Latitude: 37.9025° Longitude: -121.6008°

Approximate Surface Elev.: 4 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	LABORATORY HP (tsf)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1			**FILL - LEAN CLAY WITH SAND (CL)**, fine grained, brown, medium stiff to stiff									
							4-4-6	1.5 (HP)	28	89	40-18-22	76
		4.0	0+/-									
2			**SANDY LEAN CLAY (CL)**, fine grained, brown to dark brown, medium stiff to stiff	5	▽							
							2-2-2	1.0 (HP)	26	88		
				10			4-5-7	1.0 (HP)				
				15			2-3-4 N=7		26			
				20			2-3-4 N=7		26			
		24.0	-20+/-									
3			**POORLY GRADED SAND WITH CLAY (SP)**, fine to medium grained, brown, loose	25			2-3-6 N=9		22			
		26.5	-22.5+/-									
			Boring Terminated at 26.5 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
4" Solid Stem Auger

Abandonment Method:
Boring backfilled with cement-bentonite grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *While drilling*

Terracon
5075 Commercial Cir, Ste E
Concord, CA

Boring Started: 01-03-2019 | Boring Completed: 01-03-2019

Drill Rig: Superman | Driller: Calgeo

Project No.: ND185167

BORING LOG NO. B3

PROJECT: Discovery Bay Community Center Swimming Pool

CLIENT: Town of Discovery Bay
Discovery Bay, CA

SITE: 1601 Discovery Bay Boulevard
Discovery Bay, CA

LOCATION See Exploration Plan

Latitude: 37.9026° Longitude: -121.6009°

Approximate Surface Elev.: 4 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	LABORATORY HP (tsf)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1			**FILL - POORLY GRADED SAND (SP)**, fine to medium grained, brown, medium dense				19-16-14		15	101		
		3.5	0.5+/-									
2			**SANDY LEAN CLAY (CL)**, fine grained, brown, medium stiff to stiff	5	▽		2-3-2 N=5		24			
				10			3-5-6	1.5 (HP)	25			
		14.5	-10.5+/-									
			SANDY LEAN CLAY (CL), fine grained, yellowish brown, medium stiff	15			3-3-5 N=8		29			
				20			3-3-4 N=7		21			
		21.5	-17.5+/-									
			Boring Terminated at 21.5 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
4" Solid Stem Auger

Abandonment Method:
Boring backfilled with cement-bentonite grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *While drilling*

Terracon
5075 Commercial Cir, Ste E
Concord, CA

Boring Started: 01-03-2019 | Boring Completed: 01-03-2019

Drill Rig: Superman | Driller: Calgeo

Project No.: ND185167

CPT LOG NO. CPT-01

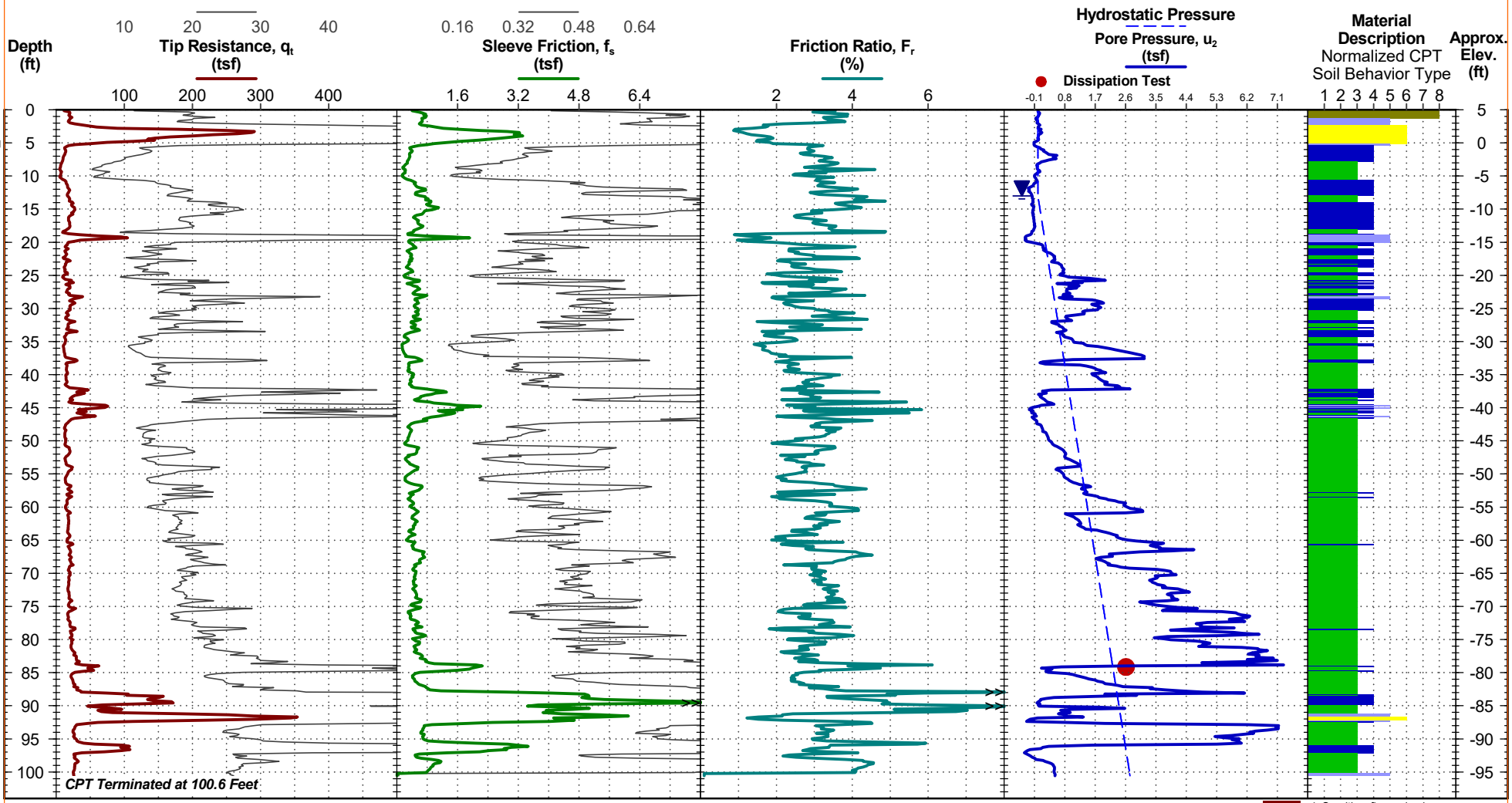
PROJECT: Discovery Bay Community Center Swimming Pool

CLIENT: Town of Discovery Bay
Discovery Bay, CA

SITE: 1601 Discovery Bay Boulevard
Discovery Bay, CA

TEST LOCATION: See Exploration Plan

Approx. Surface Elev: 5 ft +/-
Latitude: 37.90230449°
Longitude: -121.6009789°



See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

Dead weight of rig used as reaction force.
CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

WATER LEVEL OBSERVATION
13 ft estimated water depth
(used in normalizations and correlations; See Supporting Information)

Probe no. DDG1418

Terracon
5075 Commercial Cir, Ste E
Concord, CA

CPT Started: 1/3/2019
CPT Completed: 1/3/2019
Rig: CPT
Operator: Middle Earth
Project No.: ND185167

CPT LOG NO. CPT-02

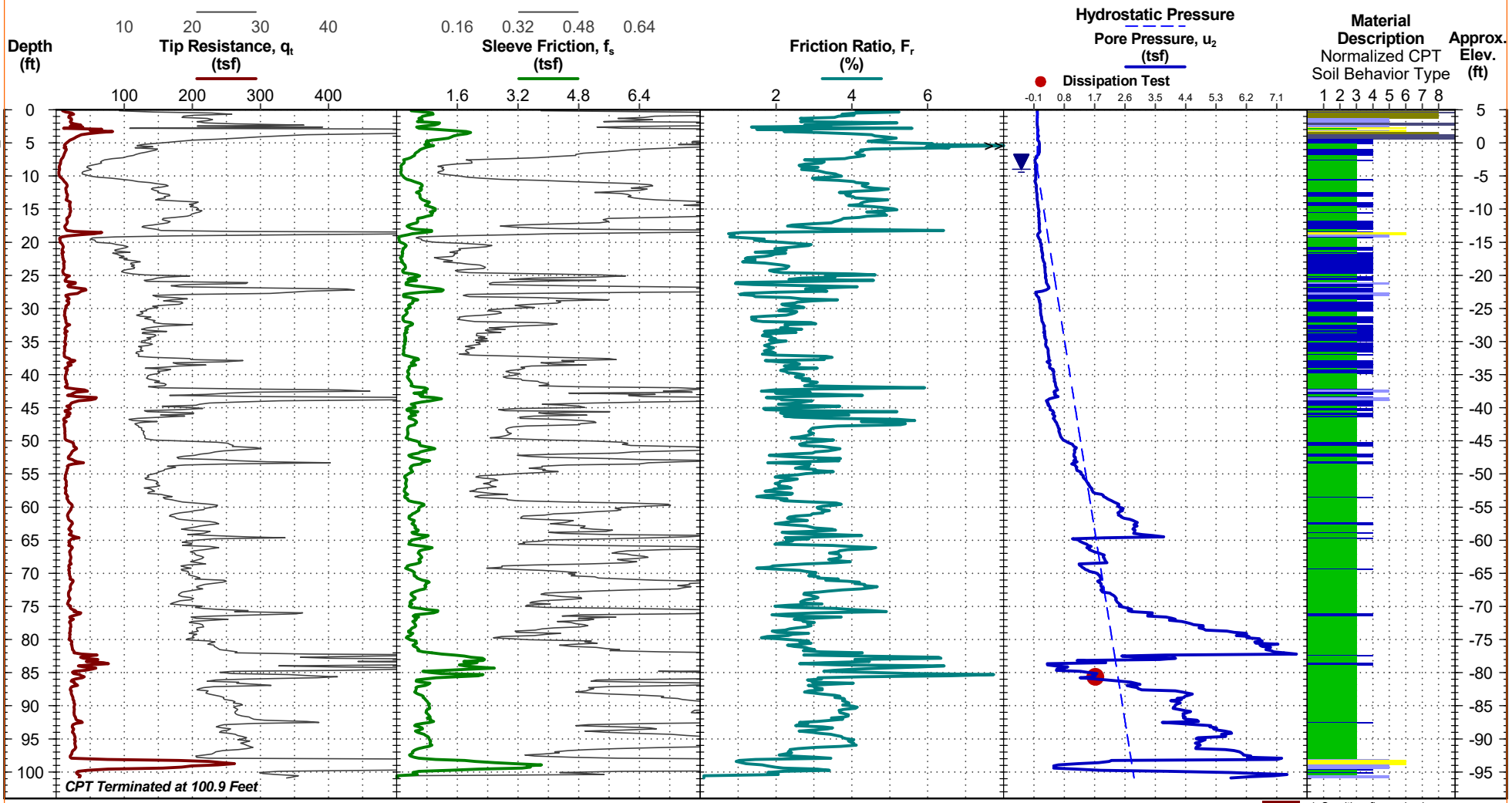
PROJECT: Discovery Bay Community Center Swimming Pool

CLIENT: Town of Discovery Bay
Discovery Bay, CA

SITE: 1601 Discovery Bay Boulevard
Discovery Bay, CA

TEST LOCATION: See Exploration Plan

Approx. Surface Elev: 5 ft +/-
Latitude: 37.90273527°
Longitude: -121.6009888°



See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

Dead weight of rig used as reaction force.
CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

WATER LEVEL OBSERVATION
▼ 9 ft estimated water depth
(used in normalizations and correlations; See Supporting Information)

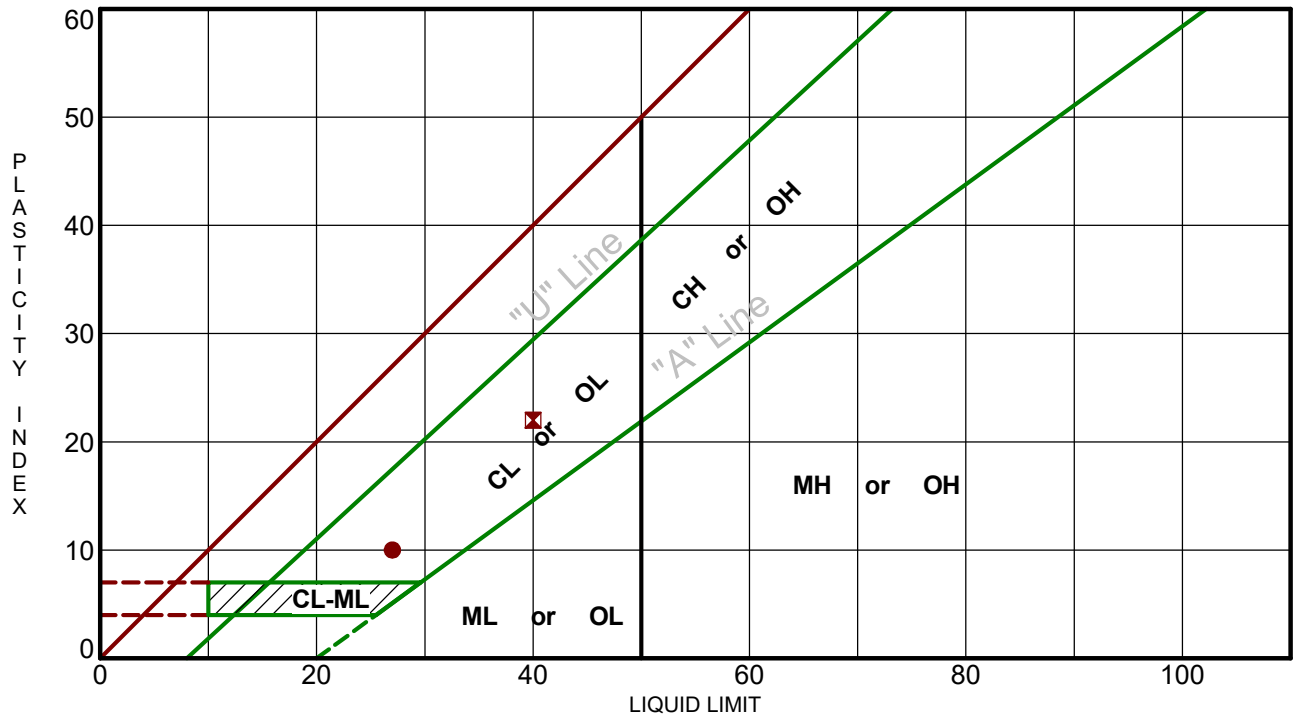
Probe no. DDG1418

Terracon
5075 Commercial Cir, Ste E
Concord, CA

CPT Started: 1/3/2019
CPT Completed: 1/3/2019
Rig: CPT
Operator: Middle Earth
Project No.: ND185167

ATTERBERG LIMITS RESULTS

ASTM D4318



Boring ID		Depth	LL	PL	PI	Fines	USCS	Description
●	B1	15 - 16.5	27	17	10	67	CL	SANDY LEAN CLAY
⊠	B2	2.5 - 4	40	18	22	76	CL	LEAN CLAY with SAND

PROJECT: Discovery Bay Community Center Swimming Pool

PROJECT NUMBER: ND185167

SITE: 1601 Discovery Bay Boulevard Discovery Bay, CA

Terracon
5075 Commercial Cir, Ste E
Concord, CA

CLIENT: Town of Discovery Bay Discovery Bay, CA

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ATTERBERG LIMITS ND185167 DISCOVERY BAY COM.GPJ TERRACON_DATATEMPLATE.GDT 1/15/19

CHEMICAL LABORATORY TEST REPORT

Project Number: ND185167
Service Date: 01/14/19
Report Date: 01/17/19
Task:

Terracon
750 Pilot Road, Suite F
Las Vegas, Nevada 89119
(702) 597-9393

Client

Town of Discovery Bay
Discovery Bay, CA

Project

Discovery Bay Community Center Swimming Pool

Sample Submitted By: Terracon (ND) **Date Received:** 1/11/2019 **Lab No.: 19-0035**

Results of Corrosion Analysis

Sample Number	B2-1
Sample Location	B2
Sample Depth (ft.)	2.5-4.0
pH Analysis, ASTM G 51	8.46
Water Soluble Sulfate (SO4), ASTM C 1580 (mg/kg)	286
Sulfides, AWWA 4500-S D, (mg/kg)	Nil
Chlorides, ASTM D 512, (mg/kg)	623
Red-Ox, AWWA 2580, (mV)	+687
Total Salts, AWWA 2520 B, (mg/kg)	3892
Resistivity, ASTM G 57, (ohm-cm)	475

Analyzed By:

Trisha Campo
Chemist

SUPPORTING INFORMATION

Contents:

Note: All attachments are one page unless noted above.

GENERAL NOTES

DESCRIPTION OF SYMBOLS AND ABBREVIATIONS

Discovery Bay Community Center Swimming Pool ■ Discovery Bay, CA

January 30, 2019 ■ Terracon Project No. ND185167

Terracon GeoReport

SAMPLING	WATER LEVEL	FIELD TESTS
Modified California Ring Sampler Standard Penetration Test	**Water Initially Encountered** **Water Level After a Specified Period of Time** **Water Level After a Specified Period of Time** Water levels indicated on the soil boring logs are the levels measured in the borehole at the times indicated. Groundwater level variations will occur over time. In low permeability soils, accurate determination of groundwater levels is not possible with short term water level observations.	**N** Standard Penetration Test Resistance (Blows/Ft.) **(HP)** Hand Penetrometer **(T)** Torvane **(DCP)** Dynamic Cone Penetrometer **UC** Unconfined Compressive Strength **(PID)** Photo-Ionization Detector **(OVA)** Organic Vapor Analyzer

DESCRIPTIVE SOIL CLASSIFICATION

Soil classification is based on the Unified Soil Classification System. Coarse Grained Soils have more than 50% of their dry weight retained on a #200 sieve; their principal descriptors are: boulders, cobbles, gravel or sand. Fine Grained Soils have less than 50% of their dry weight retained on a #200 sieve; they are principally described as clays if they are plastic, and silts if they are slightly plastic or non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse-grained soils are defined on the basis of their in-place relative density and fine-grained soils on the basis of their consistency.

LOCATION AND ELEVATION NOTES

Unless otherwise noted, Latitude and Longitude are approximately determined using a hand-held GPS device. The accuracy of such devices is variable. Surface elevation data annotated with +/- indicates that no actual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.

STRENGTH TERMS

RELATIVE DENSITY OF COARSE-GRAINED SOILS (More than 50% retained on No. 200 sieve.) Density determined by Standard Penetration Resistance			CONSISTENCY OF FINE-GRAINED SOILS (50% or more passing the No. 200 sieve.) Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance			
Descriptive Term (Density)	**Standard Penetration or N-Value Blows/Ft.**	**Ring Sampler Blows/Ft.**	**Descriptive Term (Consistency)**	**Unconfined Compressive Strength Qu, (tsf)**	**Standard Penetration or N-Value Blows/Ft.**	**Ring Sampler Blows/Ft.**
Very Loose	0 - 3	0 - 6	Very Soft	less than 0.25	0 - 1	< 3
Loose	4 - 9	7 - 18	Soft	0.25 to 0.50	2 - 4	3 - 4
Medium Dense	10 - 29	19 - 58	Medium Stiff	0.50 to 1.00	4 - 8	5 - 9
Dense	30 - 50	59 - 98	Stiff	1.00 to 2.00	8 - 15	10 - 18
Very Dense	> 50	> 99	Very Stiff	2.00 to 4.00	15 - 30	19 - 42
			Hard	> 4.00	> 30	> 42

RELATIVE PROPORTIONS OF SAND AND GRAVEL		RELATIVE PROPORTIONS OF FINES	
Descriptive Term(s) of other constituents	Percent of Dry Weight	**Descriptive Term(s) of other constituents**	**Percent of Dry Weight**
Trace	<15	Trace	<5
With	15-29	With	5-12
Modifier	>30	Modifier	>12

GRAIN SIZE TERMINOLOGY		PLASTICITY DESCRIPTION	
Major Component of Sample	**Particle Size**	**Term**	**Plasticity Index**
Boulders	Over 12 in. (300 mm)	Non-plastic	0
Cobbles	12 in. to 3 in. (300mm to 75mm)	Low	1 - 10
Gravel	3 in. to #4 sieve (75mm to 4.75 mm)	Medium	11 - 30
Sand	#4 to #200 sieve (4.75mm to 0.075mm	High	> 30
Silt or Clay	Passing #200 sieve (0.075mm)		

CPT GENERAL NOTES

DESCRIPTION OF SYMBOLS AND ABBREVIATIONS

Discovery Bay Community Center Swimming Pool ■ Discovery Bay, CA

1/30/2019 ■ Terracon Project No. ND185167

Terracon GeoReport

DESCRIPTION OF MEASUREMENTS AND CALIBRATIONS

To be reported per ASTM D5778:

Uncorrected Tip Resistance, q_c
Measured force acting on the cone divided by the cone's projected area

Corrected Tip Resistance, q_t
Cone resistance corrected for porewater and net area ratio effects
$q_t = q_c + u_2(1 - a)$

Where a is the net area ratio, a lab calibration of the cone typically between 0.70 and 0.85

Pore Pressure, u
Pore pressure measured during penetration
u_1 - sensor on the face of the cone
u_2 - sensor on the shoulder (more common)

Sleeve Friction, f_s
Frictional force acting on the sleeve divided by its surface area

Normalized Friction Ratio, F_r
The ratio as a percentage of f_s to q_t, accounting for overburden pressure

To be reported per ASTM D7400, if collected:

Shear Wave Velocity, V_s
Measured in a Seismic CPT and provides direct measure of soil stiffness

DESCRIPTION OF GEOTECHNICAL CORRELATIC

Normalized Tip Resistance, Q_{tn}
$Q_{tn} = ((q_t - \sigma_{v0})/P_a)(P_a/\sigma'_{v0})^n$
$n = 0.381(I_c) + 0.05(\sigma'_{v0}/P_a) - 0.15$

Over Consolidation Ratio, OCR
$OCR\ (1) = 0.25(Q_{tn})^{1.25}$
$OCR\ (2) = 0.33(Q_{tn})$

Undrained Shear Strength, S_u
$S_u = Q_{tn} \times \sigma'_{v0}/N_{kt}$
N_{kt} is a soil-specific factor (shown on S_u plot)

Sensitivity, S_t
$S_t = (q_t - \sigma_{v0}/N_{kt}) \times (1/f_s)$

Effective Friction Angle, ϕ'
$\phi'\ (1) = \tan^{-1}(0.373[\log(q_t/\sigma'_{v0}) + 0.29])$
$\phi'\ (2) = 17.6 + 11[\log(Q_{tn})]$

Unit Weight, γ
$\gamma = (0.27[\log(F_r)]+0.36[\log(q_t/atm)]+1.236) \times \gamma_{water}$
σ_{v0} is taken as the incremental sum of the unit weights

Small Strain Shear Modulus, G_0
$G_0\ (1) = \rho V_s^2$
$G_0\ (2) = 0.015 \times 10^{(0.55Ic + 1.68)}(q_t - \sigma_{v0})$

Soil Behavior Type Index, I_c
$I_c = [(3.47 - \log(Q_{tn}))^2 + (\log(F_r) + 1.22)^2]^{0.5}$

SPT N_{60}
$N_{60} = (q_t/atm) / 10^{(1.1268 - 0.2817Ic)}$

Elastic Modulus, E_s (assumes $q/q_{ultimate} \sim 0.3$, i.e. FS = 3)
$E_s\ (1) = 2.6\psi G_0$ where $\psi = 0.56 - 0.33\log Q_{tn,clean\ sand}$
$E_s\ (2) = G_0$
$E_s\ (3) = 0.015 \times 10^{(0.55Ic + 1.68)}(q_t - \sigma_{v0})$
$E_s\ (4) = 2.5q_t$

Constrained Modulus, M
$M = \alpha_M(q_t - \sigma_{v0})$
For $I_c > 2.2$ (fine-grained soils)
$\alpha_M = Q_{tn}$ with maximum of 14
For $I_c < 2.2$ (coarse-grained soils)
$\alpha_M = 0.0188 \times 10^{(0.55Ic + 1.68)}$

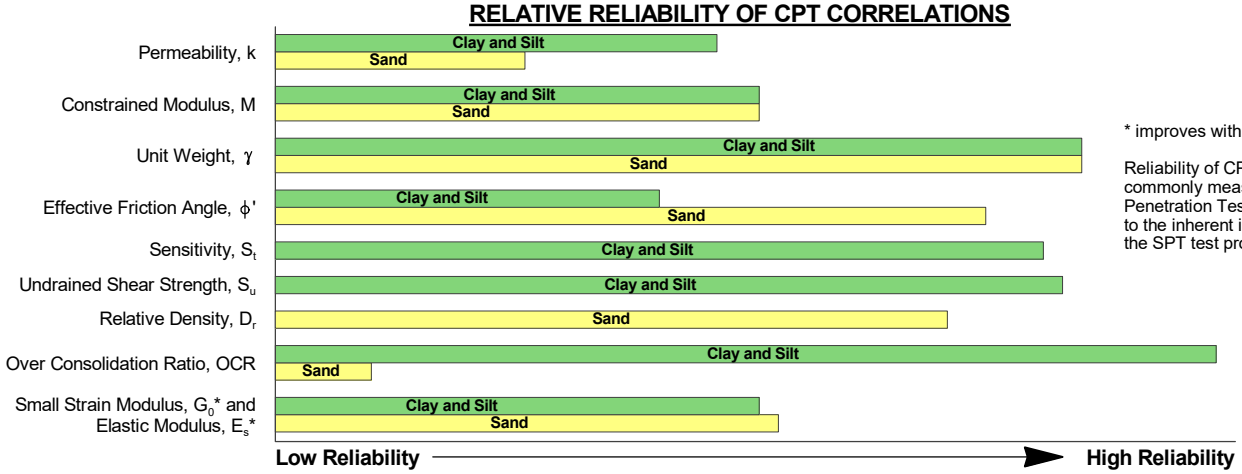
Hydraulic Conductivity, k
For $1.0 < I_c < 3.27$ $k = 10^{(0.952 - 3.04Ic)}$
For $3.27 < I_c < 4.0$ $k = 10^{(-4.52 - 1.37Ic)}$

Relative Density, D_f
$D_r = (Q_{tn} / 350)^{0.5} \times 100$

REPORTED PARAMETERS

CPT logs as provided, at a minimum, report the data as required by ASTM D5778 and ASTM D7400 (if applicable). This minimum data include q_t, f_s, and u. Other correlated parameters may also be provided. These other correlated parameters are interpretations of the measured data based upon published and reliable references, but they do not necessarily represent the actual values that would be derived from direct testing to determine the various parameters. To this end, more than one correlation to a given parameter may be provided. The following chart illustrates estimates of reliability associated with correlated parameters based upon the literature referenced below.

RELATIVE RELIABILITY OF CPT CORRELATIONS



* improves with seismic V_s measurements

Reliability of CPT-predicted N_{60} values as commonly measured by the Standard Penetration Test (SPT) is not provided due to the inherent inaccuracy associated with the SPT test procedure.

WATER LEVEL

The groundwater level at the CPT location is used to normalize the measurements for vertical overburden pressures and as a result influences the normalized soil behavior type classification and correlated soil parameters. The water level may either be "measured" or "estimated:"

Measured - Depth to water directly measured in the field

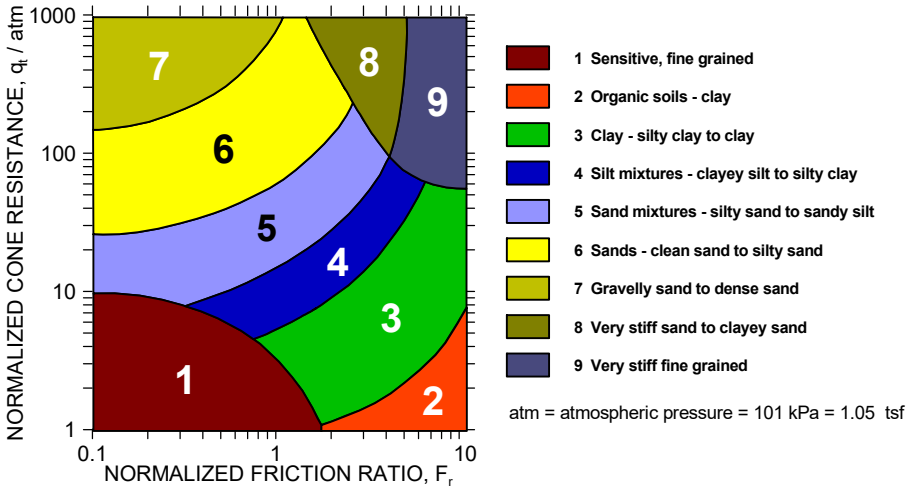
Estimated - Depth to water interpolated by the practitioner using pore pressure measurements in coarse grained soils and known site conditions

While groundwater levels displayed as "measured" more accurately represent site conditions at the time of testing than those "estimated," in either case the groundwater should be further defined prior to construction as groundwater level variations will occur over time.

CONE PENETRATION SOIL BEHAVIOR TYPE

The estimated stratigraphic profiles included in the CPT logs are based on relationships between corrected tip resistance (q_t), friction resistance (f_s), and porewater pressure (u_2). The normalized friction ratio (F_r) is used to classify the soil behavior type.

Typically, silts and clays have high F_r values and generate large excess penetration porewater pressures; sands have lower F_r's and do not generate excess penetration porewater pressures. The adjacent graph (Robertson *et al.*) presents the soil behavior type correlation used for the logs. This normalized SBT chart, generally considered the most reliable, does not use pore pressure to determine SBT due to its lack of repeatability in onshore CPTs.



atm = atmospheric pressure = 101 kPa = 1.05 tsf

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Kulhawy, F.H., Mayne, P.W., (1997). "Manual on Estimating Soil Properties for Foundation Design," Electric Power Research Institute, Palo Alto, CA.

Mayne, P.W., (2013). "Geotechnical Site Exploration in the Year 2013," Georgia Institue of Technology, Atlanta, GA.

Robertson, P.K., Cabal, K.L. (2012). "Guide to Cone Penetration Testing for Geotechnical Engineering," Signal Hill, CA.

Schmertmann, J.H., (1970). "Static Cone to Compute Static Settlement over Sand," *Journal of the Soil Mechanics and Foundations Division*, 96(SM3), 1011-1043.

UNIFIED SOIL CLASSIFICATION SYSTEM

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests [A]					Soil Classification	
					Group Symbol	Group Name [B]
Coarse-Grained Soils: More than 50% retained on No. 200 sieve	**Gravels:** More than 50% of coarse fraction retained on No. 4 sieve	**Clean Gravels:** Less than 5% fines [C]	$Cu \geq 4$ and $1 \leq Cc \leq 3$ [E]		GW	Well-graded gravel [F]
			$Cu < 4$ and/or [Cc<1 or Cc>3.0] [E]		GP	Poorly graded gravel [F]
		Gravels with Fines: More than 12% fines [C]	Fines classify as ML or MH		GM	Silty gravel [F, G, H]
			Fines classify as CL or CH		GC	Clayey gravel [F, G, H]
	Sands: 50% or more of coarse fraction passes No. 4 sieve	**Clean Sands:** Less than 5% fines [D]	$Cu \geq 6$ and $1 \leq Cc \leq 3$ [E]		SW	Well-graded sand [I]
			$Cu < 6$ and/or [Cc<1 or Cc>3.0] [E]		SP	Poorly graded sand [I]
		Sands with Fines: More than 12% fines [D]	Fines classify as ML or MH		SM	Silty sand [G, H, I]
			Fines classify as CL or CH		SC	Clayey sand [G, H, I]
Fine-Grained Soils: 50% or more passes the No. 200 sieve	**Silts and Clays:** Liquid limit less than 50	**Inorganic:**	PI > 7 and plots on or above "A"		CL	Lean clay [K, L, M]
			PI < 4 or plots below "A" line [J]		ML	Silt [K, L, M]
		Organic:	Liquid limit - oven / Liquid limit - not dried	< 0.75	OL	Organic clay [K, L, M, N] / Organic silt [K, L, M, O]
	Silts and Clays: Liquid limit 50 or more	**Inorganic:**	PI plots on or above "A" line		CH	Fat clay [K, L, M]
			PI plots below "A" line		MH	Elastic Silt [K, L, M]
		Organic:	Liquid limit - oven / Liquid limit - not dried	< 0.75	OH	Organic clay [K, L, M, P] / Organic silt [K, L, M, Q]
Highly organic soils:	Primarily organic matter, dark in color, and organic odor				PT	Peat

[A] Based on the material passing the 3-inch (75-mm) sieve.

[B] If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

[C] Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.

[D] Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay.

[E] $Cu = D_{60}/D_{10}$ $\quad Cc = \dfrac{(D_{30})^2}{D_{10} \times D_{60}}$

[F] If soil contains ≥ 15% sand, add "with sand" to group name.

[G] If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

[H] If fines are organic, add "with organic fines" to group name.

[I] If soil contains ≥ 15% gravel, add "with gravel" to group name.

[J] If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

[K] If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.

[L] If soil contains ≥ 30% plus No. 200 predominantly sand, add "sandy" to group name.

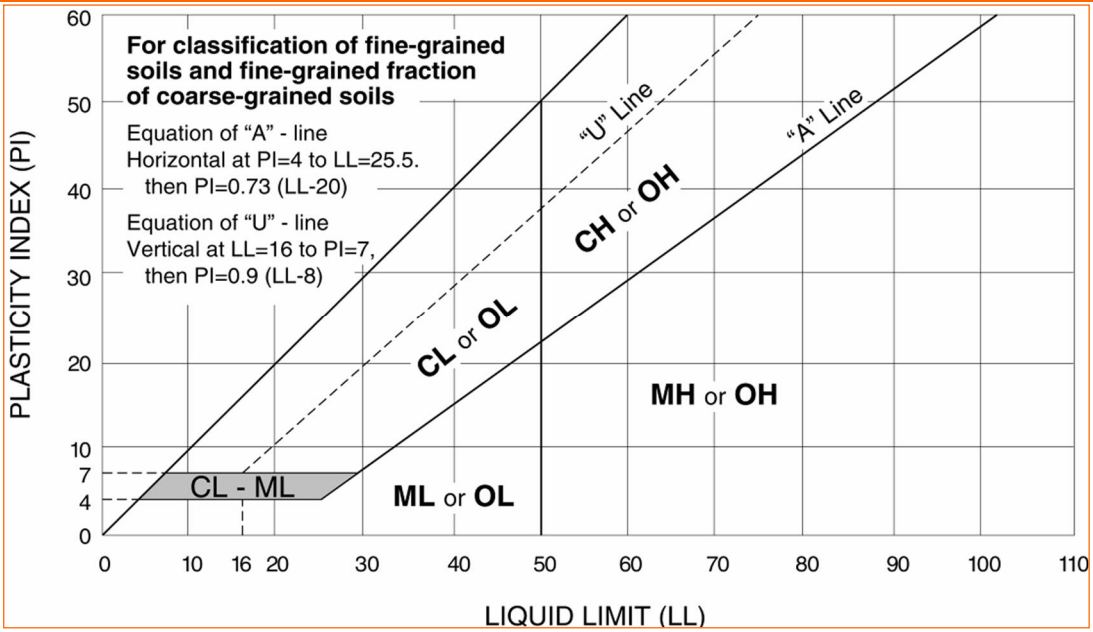
[M] If soil contains ≥ 30% plus No. 200, predominantly gravel, add "gravelly" to group name.

[N] PI ≥ 4 and plots on or above "A" line.

[O] PI < 4 or plots below "A" line.

[P] PI plots on or above "A" line.

[Q] PI plots below "A" line.



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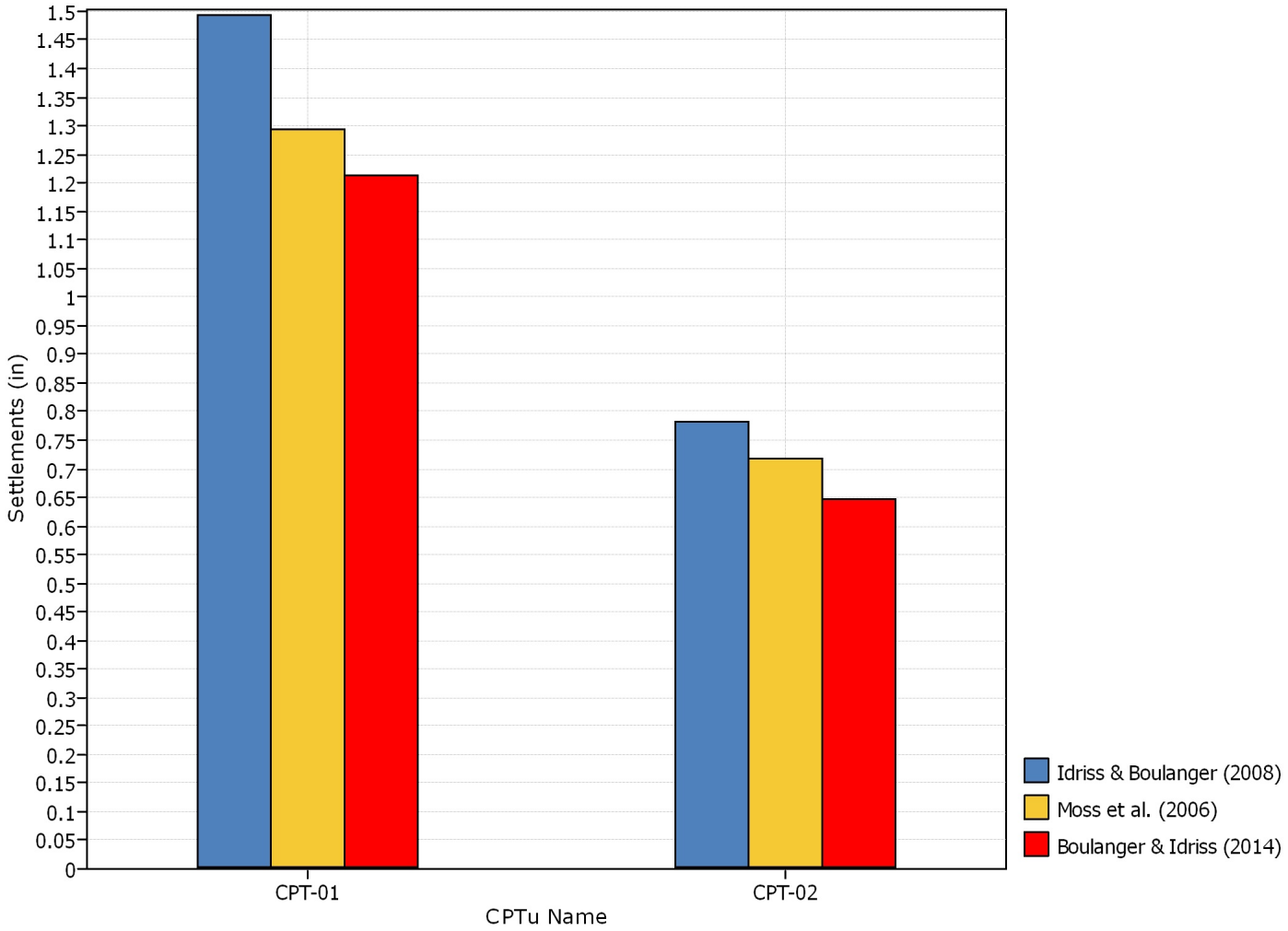
Overall Parametric Assessment Method



:: CPT main liquefaction parameters details ::

CPT Name	Earthquake Mag.	Earthquake Accel.	GWT in situ (ft)	GWT earthq. (ft)
CPT-01	6.35	0.43	5.00	5.00
CPT-02	6.35	0.43	5.00	5.00

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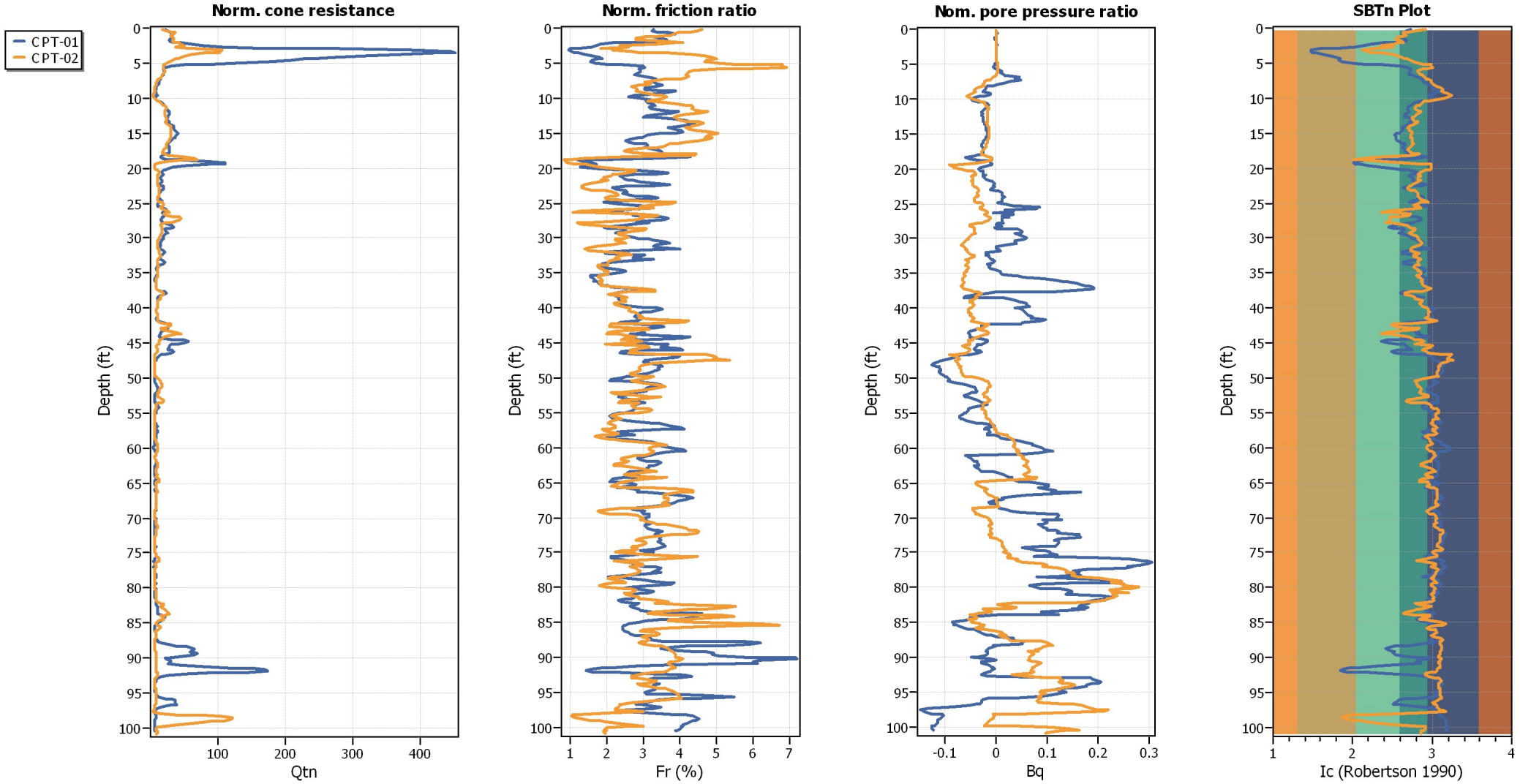
Project:

Overlay Normalized Plots



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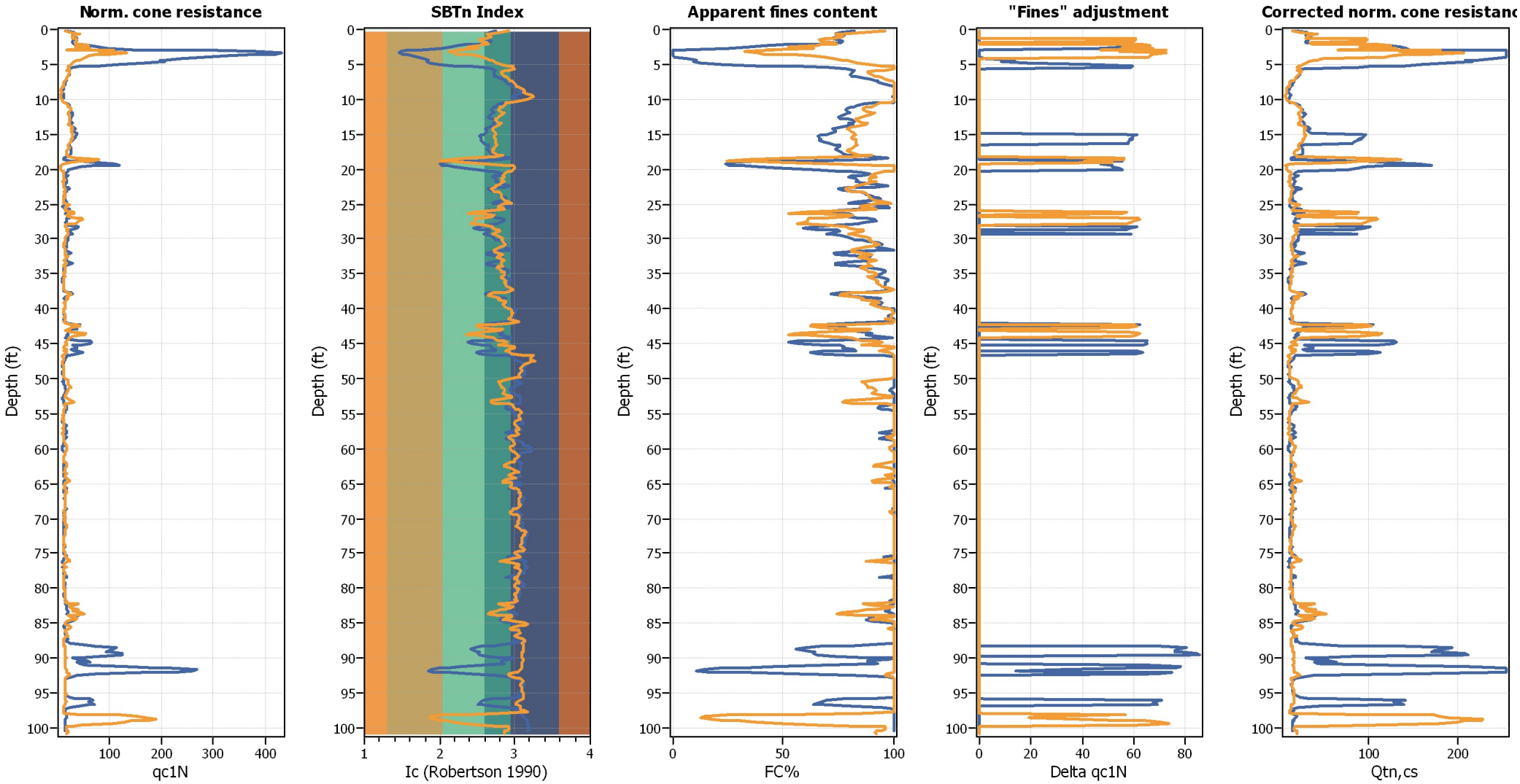
Project:

Overlay Intermediate Results



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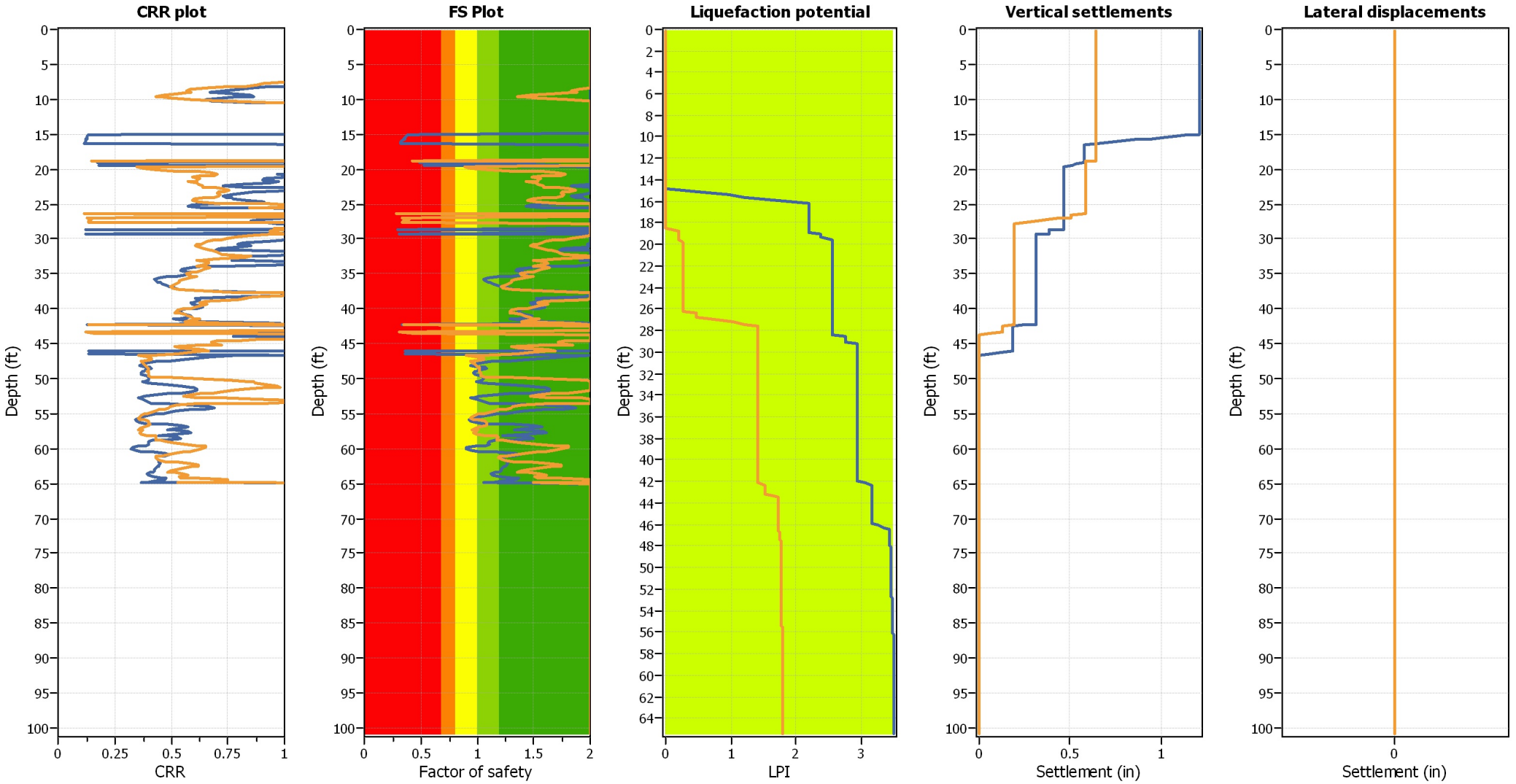
Project:

Overlay Cyclic Liquefaction Plots



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Project:

Overlay Strength Loss Plots