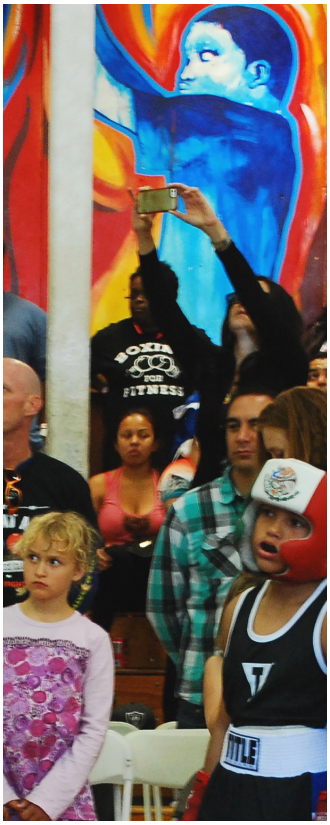
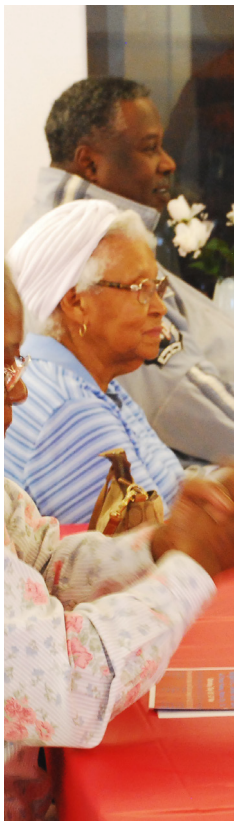
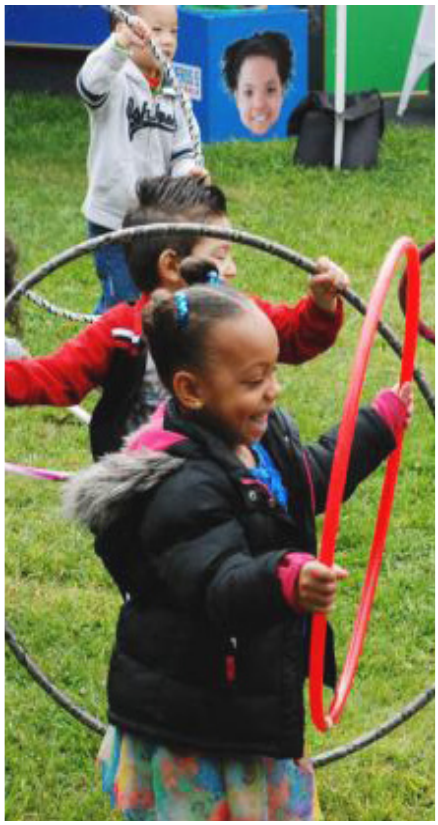
Marin City

Center for Community Life Master Plan Application

RESUBMITTAL: February 2, 2017







GROUP 4

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14443-02

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COUNTY OF MARIN

COMMUNITY DEVELOPMENT AGENCY
PLANNING DIVISION

PLANNING PERMIT APPLICATION

- [x] MASTER PLAN
- [ ] PRECISE DEVELOPMENT PLAN
- [ ] COASTAL PERMIT
- [ ] FLOATING HOME ADJUSTMENT/DEVIATION
- [ ] AMENDMENT/EXTENSION/RENEWAL
- [ ] GENERAL/COMMUNITY PLAN AMENDMENT
- [ ] REZONING
- [ ] TREE REMOVAL PERMIT
- [ ] DESIGN REVIEW
- [ ] MINOR DESIGN REVIEW
- [ ] SECOND UNIT PERMIT
- [ ] SIGN PERMIT/REVIEW
- [ ] USE PERMIT
- [ ] VARIANCE
- [ ] TIDELANDS PERMIT
- [ ] LARGE FAMILY DAY-CARE PERMIT

TO BE COMPLETED BY PLANNING DEPARTMENT STAFF:

Date Received: _____ Permit fees: _____
Receipt No: _____ Permit fees: _____
Received By: _____ CEQA fees: _____
Planner Assigned: _____ Other: _____
Concurrent Application: _____
Reviewing Authority: _____ Total fees due: _____

(Make checks payable to: Marin County Planning Department)

Application No(s): _____ *Note: Fees may not be refunded in full if the application is withdrawn.*

TO BE COMPLETED BY APPLICANT: (Please type or print legibly)

1. Assessor's Parcel No(s): 052-113-07 Zoning: Public Facilities (PF)
2. Project Address: 630 Drake Avenue City/Zip: Marin City, CA 94965
3. Property Owner: Marin City Community Services Dist. Phone: (415) 332-1441
4. Owner's Address: 630 Drake Avenue City/Zip: Marin City, CA 94965
5. Owner's Email: mbrown.mccsd@gmail.com, jbarrow.mccsd@gmail.com
6. Applicant: MCCSD Phone: (415) 332-1441
7. Applicant's Address: 630 Drake Avenue City/Zip: Marin City, CA 94965
8. Applicant's Email: jbarrow.mccsd@gmail.com, mbrown.mccsd@gmail.com
9. Please indicate any other individuals/parties to receive correspondence:

   Name: Group 4 Architecture, Reserach + Planning, Inc. Address: 211 Linden Ave
   attn: David Schnee, principal South San Francisco, CA 94080
   dschnee@g4arch.com

10. Project Description (include additional sheets if needed):

    See accompanying application materials

3501 Civic Center Drive · Suite 308 · San Rafael, CA 94903-4157 · 415 473 6269 T · 415 473 7880 F · 415 473 2255 TTY · www.marincounty.org/plan

11. State of California Hazardous Waste and Substances Sites List (C.G.C. § 65962.5)

Pursuant to California Government Code Section 65962.5(e), before a local agency accepts as complete an application for any development project, the applicant shall consult the latest State of California Hazardous Waste and Substances Sites List online with various State agencies and submit a signed statement indicating whether the project is located on a site which is included on the List.

Statement: I have consulted the latest State of California Hazardous Waste and Substances Lists, and I have determined that the project site **is** /**is not** (circle one) included on the List.

Date of List consulted: 11/21/2016

Source of the listing: CA: Department of Toxic Substances Control: CalEPA "Cortese" List

SIGNATURE:

The property involving this permit request may be subject to deed restrictions called Covenants, Conditions and Restrictions (CC&Rs) which may restrict the property's use and development. These deed restrictions are private agreements and are NOT enforced by the County of Marin. Consequently, development standards specified in such deed restrictions are NOT considered by the County when granting permits. I understand that it is my responsibility to determine if the property is subject to deed restrictions and if so, I certify that I have contacted the appropriate homeowners association and adjacent neighbors about the project prior to proceeding with construction. Following this procedure will minimize the potential for disagreement among neighbors and possible litigation.

I hereby authorize employees, agents, and/or consultants of the County of Marin to enter upon the subject property upon reasonable notice, as necessary, to inspect the premises and process this application. I understand that in cases where the development site is large or cannot be easily seen or accessed from the nearest public road, the Community Development Director may determine that a publicly noticed site inspection by the decision maker is necessary. In this instance, I hereby authorize the conduct of such inspections of the premises upon reasonable notice.

I hereby authorize the Planning Department to reproduce plans and exhibits as necessary for the processing of this application. I understand that this may include circulating copies of the reduced plans for public inspection. Multiple signatures are required when plans are prepared by multiple professionals.

I hereby certify that I have read this application form and that to the best of my knowledge, the information in this application form and all the exhibits are complete and accurate. I understand that any misstatement or omission of the requested information or of any information subsequently requested shall be grounds for rejecting the application, deeming the application incomplete, denying the application, suspending or revoking a permit issued on the basis of these or subsequent representations, or for the seeking of such other and further relief as may seem proper to the County of Marin. I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this application was signed at

_____ , California on _____.

Signature of Property Owner(s)
MARIN CITY COMMUNITY SERVICES DISTRICT
Nancy Johnson, Board of Directors, Chair

Signature of Plan Preparer
GROUP 4 ARCHITECTURE RESEARCH + PLANNING, INC.
David Schnee, Principal

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MASTER PLAN APPLICATION SUBMITTAL – UPDATED JANUARY 2017

This Master Plan application is being submitted by the Marin City Community Services District (CSD) to Marin County as a complete replacement to the master plan application dated December 1, 2016. Upon CSD approval, this submission will initiate the planning, review, and approval processes for the Center for Community Life Vision Plan Master Plan.

PROJECT OVERVIEW

Project Description

The Marin City Community Services District (CSD) owns and operates a multi-building campus of community facilities providing recreational, educational, health, wellness, and cultural services. Despite its role as a key center of community activity and gathering in Marin City, the existing campus and facilities struggle to provide for the growing needs of the community. At present, the undersized facility is inefficient and outdated, greatly limiting the potential of programs and organizations to optimally serve the community. The Center for Community Life (CFCL) project proposes the renovation and expansion of the existing facilities in order to meet and cater to the evolving needs of the community for years to come.

The CFCL Vision Plan was developed to support the six principles of: (1) supporting families, (2) preparing young people for success, (3) enhancing health and wellness in clinical and recreational settings, (4) promoting economic well-being, (5) enriching lives of all ages – children to seniors, and (6) celebrating culture and diversity.

Existing Conditions

The Marin City Community Services District owns approximately 4.87 acres of land in the heart of Marin City located on Phillips Drive, and bordered by Bayside/Martin Luther King Academy, Cornerstone Church, Marin County Public Safety Building, Rocky Graham Park, Oak Knolls Apartments, and Drake Avenue. Phillips Drive is a private roadway and utility easement owned by the CSD and its adjacent neighbors. As Phillips Drive spans across other properties, the CSD has obtained letters of support and intent to participate in the drive's proposed improvements (see Figure 1 below, Drawing Sheet A1.1-1, and Appendix 1 Letters of Support).

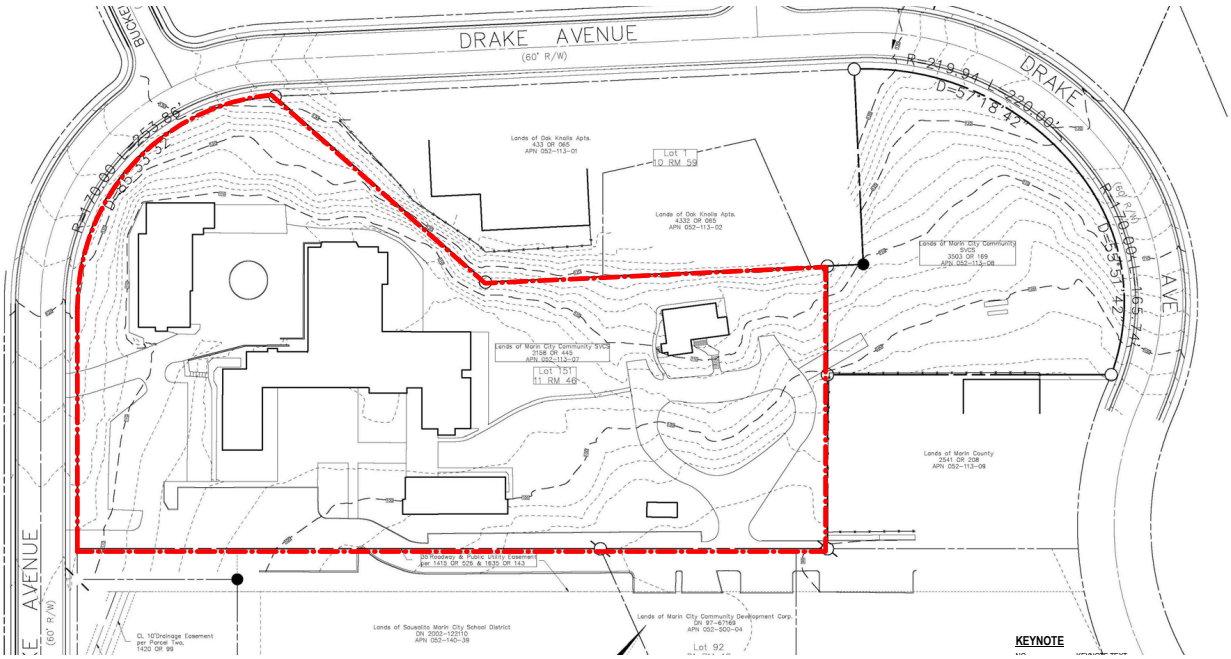

Figure 1: Existing site survey and property boundary

At present, the campus is comprised of four permanent buildings and two modular classrooms. On the western portion of the site is the 4,138 square foot (sf) Marguerita C. Johnson Senior Center, which was built in the late 1980s. The 15,200 sf Manzanita Recreation Center, constructed during the mid-20th Century, contains the Health & Wellness, teen, gym, and boxing/fitness facilities. A 2,500 sf annex to the Manzanita Recreation Center includes the CSD offices and additional Health & Wellness Center offices. The eastern portion of the site contains two 1,350 sf modular classrooms currently used by Community Action Marin for early childhood education programs (known as the Manzanita Children's Center). The Harriet Tubman House, a 2,700 sf residential home built in the early 20th Century, is used by the CSD as a storage facility presently. A surface parking lot in poor condition provides 18 parking spaces on the western edge of the site. Roughly 24 parking spaces exist along the CSD owned portion of Phillip's Drive. A series of concrete walkways, plazas, and open grassy areas connect the various campus buildings (see Figures 2-5 and Drawing A2.1-1 Existing Conditions).

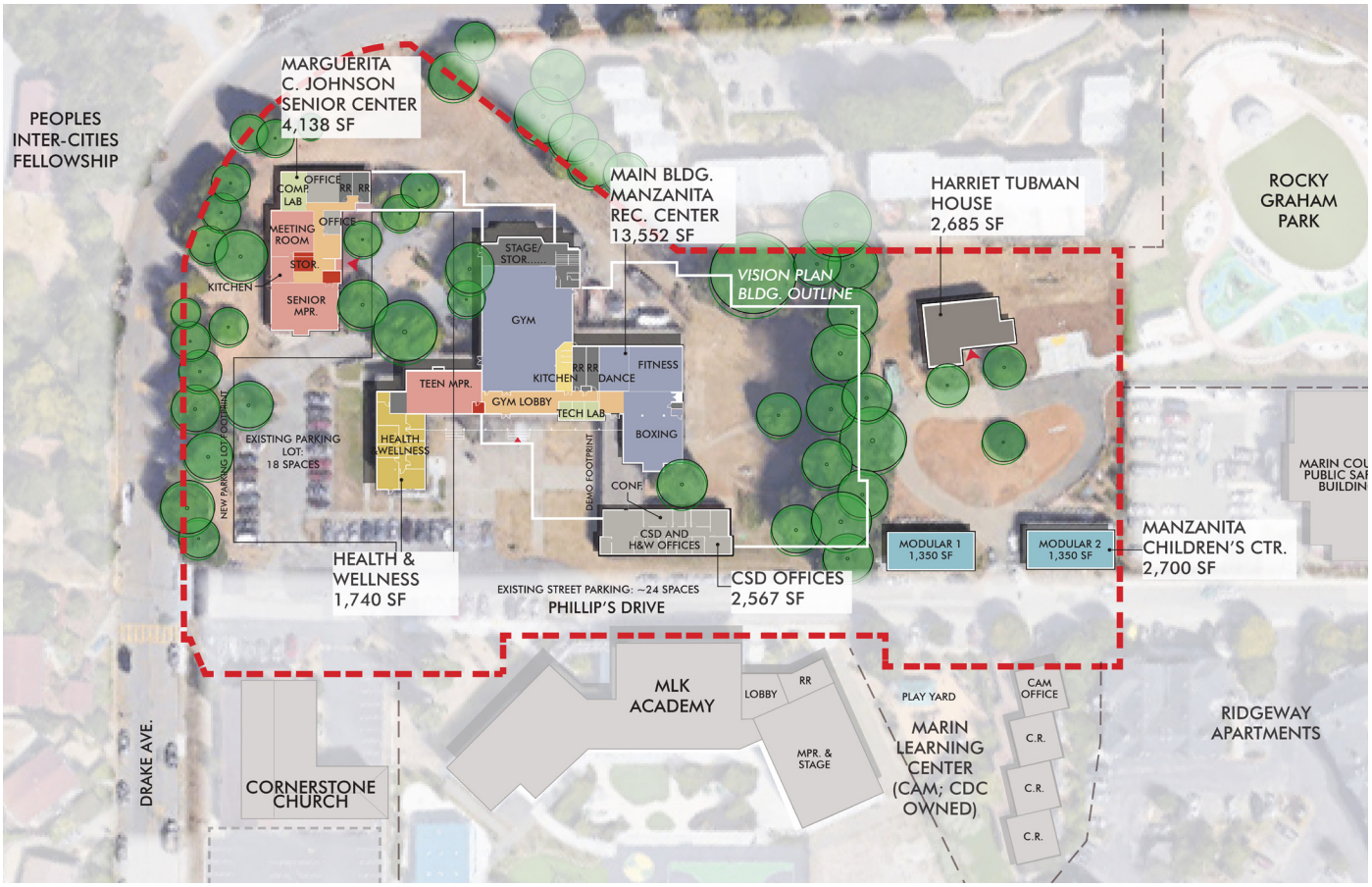

Figure 2: Existing campus plan and project scope boundary

Figure 3: Existing site aerial

Figure 4: Existing Main Building – Manzanita Recreation Center

Figure 5: Existing Harriet Tubman House

VISION PLAN – MASTER PLAN SCOPE

The Vision Plan scope is being submitted here to Marin County for Master Plan approval.

The Vision Plan shows the desired long range build-out of the Center for Community Life campus, allowing for an expanded recreation center building, health clinic, early childhood education center, and related site work through a combination of renovation and new construction. The Vision Plan includes the renovation of the Senior Center and Harriet Tubman House structures, the demolition of currently outdated recreation, health and wellness, and office buildings, and the removal of modular buildings for permanent replacement with new construction.

Table 1

BUILDING	EXISTING TOTAL AREA	PROPOSED ACTION	PROPOSED AREA
Marguerita C. Johnson Senior Center	4,138 sf	Renovation	7,160 sf
Main Building: Manzanita Recreation Center	13,552 sf	Replacement	41,714 sf
Health & Wellness Center	1,740 sf	Replacement	4,000 sf
CSD Offices	2,567 sf	Relocation @ Harriet Tubman House	2,685 sf
Manzanita Children's Center	2,700 sf	Replacement	4,400 sf
CAMPUS TOTAL	24,667 sf		59,959 sf

The Vision Plan scope also includes a gym providing enough space for a NBA sized basketball court and three cross courts, indoor swimming pool, supplemental classrooms, and meeting and event spaces (see Figure 6 and Drawing A3.1-1 Master Plan Vision Plan). A detailed program of spaces included in the Vision Plan can be found in Table 2 on pages 6-9.

An integral part of the master plan includes the redevelopment of Phillip's Drive. Currently, the portion of Phillips Drive immediately adjacent to the community center is a "sea of asphalt," characterized by problematic pedestrian crossings, inefficient parking, and deteriorated paving. The new Vision Plan includes a proposal for the reconfiguration of Phillips Drive, transforming the street through the addition of continuous angled street parking, sidewalks, street planting, new paving, and raised pedestrian crosswalks. Through the use of various paving materials and raised pedestrian crosswalks, vehicular traffic will be slowed, and safer pedestrian crossings between the CFCL campus, MLK Academy, Marin Learning Center, and Cornerstone Church will be established. The reimagined Phillips Drive will serve as a new "main street" for Marin City, complemented by the CFCL and other civic and educational facilities lining the street.

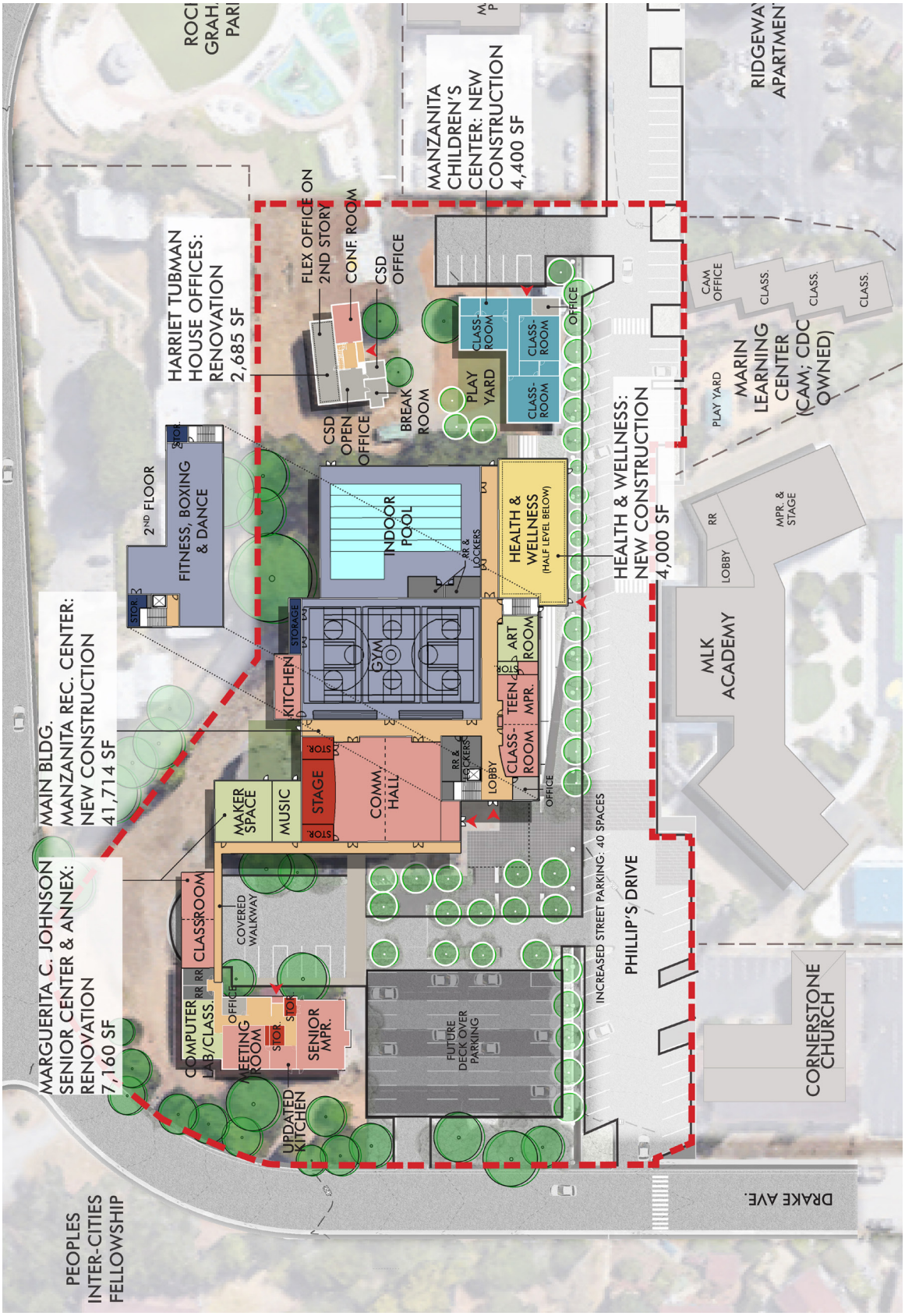

Figure 6: Master Plan (Vision Plan)

Table 2: Vision Plan Building Program

Main Building

ROOM	EXISTING SF	NEW SF	Occupancy
Teen Classroom	1,105 SF	816 SF	41
Art Classroom	-	700 SF	35
Teen & Art Storage	-	100 SF	
Multipurpose Classroom	-	700 SF	35
Classroom Storage	-	50 SF	
Music Classroom	-	600 SF	30
Music Storage	-	70 SF	
Multipurpose Gym	4,501 SF	8,381 SF	559
Gym Storage	411 SF	240 SF	
Community Hall	-	4,500 SF	300
Community Hall Stage	825 SF	825 SF	
Comm. Hall Storage	-	475 SF	
Kitchen	328 SF	650 SF	
Dance Classroom	578 SF	900 SF	18
Dance Storage	-	180 SF	
Boxing	1,808 SF	2,000 SF	40
Fitness	1,067 SF	1,730 SF	35
Boxing, Fitness Storage	78 SF	130 SF	
Reception & Office	-	240 SF	2
Pool	-	4,000 SF	80
Pool Deck	-	3,850 SF	257
Men's Restroom/Lockers	254 SF	700 SF	
Women's Restroom/Lockers	236 SF	700 SF	
TOTAL	**11,658 SF**	**32,537 SF**	**1432**
Circulation/Service:	1,864 SF	9,177 SF	
TOTAL GROSS SF:	**13,522 SF**	**41,714 SF**	

Marguerita C. Johnson Senior Center

ROOM	EXISTING SF	NEW SF	Occupancy
Senior Multipurpose Room	1,270 SF	1,270 SF	85
Senior MPR. Storage	87 SF	87 SF	
Senior Meeting Room	729 SF	729 SF	36
Senior Mtg. Storage	33 SF	33 SF	
Senior Computer Lab	397 SF	675 SF	34
Kitchen	231 SF	231 SF	
Mangers Office	160 SF	160 SF	2
Partner Offices	155 SF	*Replaced w. lab*	
Reception	164 SF	164 SF	
General Storage 1	112 SF	112 SF	
General Storage 2	123 SF	*Replaced w. lab*	
Men's Restroom	148 SF	148 SF	
Women's Restroom	183 SF	183 SF	
Circulation	346 SF	346 SF	
TOTAL	**4,138 SF**	**4,138 SF**	**157**

Senior Center Annex

ROOM	EXISTING SF	NEW SF	Occupancy
Maker Space/Tech Lab	467 SF	1,200 SF	60
Maker Space Storage		200 SF	
Adult MPR. Classroom		1,000 SF	50
Adult MPR. Storage		122 SF	
Circulation/Service		500 SF	
TOTAL		**3,022 SF**	**110**
TOTAL MCJ S.C. BLDG. SF		**7,160 SF**	**267**

Harriet Tubman House	EXISTING SF (at CSD Annex)	NEW SF	Occupancy
Reception/Waiting Room	625 SF	Included in CSD office	
CSD Office	200 SF	300 SF	3
Conference Room	206 SF	280 SF	3
Flex Office or Historical Archive	620 SF	684 SF	7
Break Room	73 SF	144 SF	
Restroom	179 SF	150 SF	
Storage	171 SF	521 SF	
Service/Circulation	493 SF	606 SF	
Total	**2,567 SF**	**2,685 SF**	**13**

Early Childhood Education	EXISTING SF	NEW SF	Occupancy
Classrooms 1	775 SF	900 SF	26
Classrooms 2	775 SF	900 SF	26
Classrooms 3	-	900 SF	26
Kitchen	184 SF	175 SF	
Office	150 SF	150 SF	
Restroom	384 SF	400 SF	
Service/Circulation	432 SF	975 SF	
TOTAL	**2,700 SF**	**4,400 SF**	**78**

Health & Wellness Center	EXISTING SF	NEW SF	Occupancy
Waiting Room/Reception	300 SF	345 SF	**3**
Conference Room	225 SF	200 SF	**10**
Medical Exam Rooms	220 SF	998 SF	**10**
Dental Exam Rooms	215 SF	827 SF	**8**
Laboratory	180 SF	Incl. in exam room sf	
Behavioral Health (currently located at CSD offices)	*300 SF*	387 SF	**4**
Administration Offices	300 SF	450 SF	**5**
Service/Circulation	300 SF	793 SF	
TOTAL	**1,740 SF**	**4,000 SF**	**40**
Total Campus SF:	**24,667 SF**	**59,959 SF**	

Vision Plan Zoning

The existing site is currently zoned for Public Facilities (PF) per the County of Marin. Uses allowed include recreation, education, and public assembly. Several uses are permitted under a conditional use permit and Design Review approval, including indoor sports facilities, outdoor public assembly, and service uses including government offices and health and wellness facilities. Refer to the memo on pages 26-27 for the preliminary code analysis completed in 2016.

An alternative approach to the zoning for the Health and Wellness Clinic is to consider that use as a medical office building. The County is evaluating the process for approving this, either as a zoning change or part of or parallel to the Conditional Use Permit process required in the Master Plan and later Precise Development Plan approvals. All uses will be carefully considered for impacts. The successful history of all uses, with the exception of the pool, being on the CFCL campus for many years may be considered in the process.

Vision Plan Parking

As part of the approval process for the master plan Vision Plan, the County Department of Public Works has indicated that they will accept the Institute of Transportation Engineer's (ITE) parking standards for the Senior Center and Main Recreation buildings. County parking requirements are used for the Harriet Tubman House, Early Childhood Education, and Health & Wellness facilities. Per these standards, the full complement of uses requires a total of 195 spaces. 128 spaces will be provided on-site through expanded lots by the Senior Center and Harriet Tubman House, an elevated parking deck above a portion of the main lot, and increased parking capacity along Phillips Drive. The County has indicated that they will consider on-street parking along Drake Avenue to count towards the remaining parking need as part of the master plan approval process. A parking study demonstrating the current use will be required and subsequently submitted. Refer to Figures 7-8, Table 3, and Drawing A3.1-2 Vision Plan Parking for more detailed information on the parking demand and layouts.

County requirements for parking greatly exceed the ITE guidelines for community recreation centers and commonly accepted best practices, including those of nearby Sausalito and Mill Valley. The ITE Parking Generation Manual 4th Edition, published in 2010, provides information on the parking demand characteristics of a broad range of land uses based on actual site studies. It provides information for the "recreational community center" land use type, with parking data covering seven (7) study sites with an average size of 38,000 square feet. The peak parking demand period for these uses were observed to be during an evening weekday, with the average observed parking demand of 3.2 occupied spaces per 1,000 sf GFA. It is worth noting that due to Marin City's small scale and walkability, the existing recreation center is extremely pedestrian friendly, with many users walking to the current facility as opposed to driving. The improvements to Phillips Drive proposed within this master plan will greatly improve the safety and experience for pedestrians, further promoting the walkable nature of the community. Dedicated bicycle parking and storage (which currently does not exist) will also be included on-site for those patrons wishing to bike to the campus.

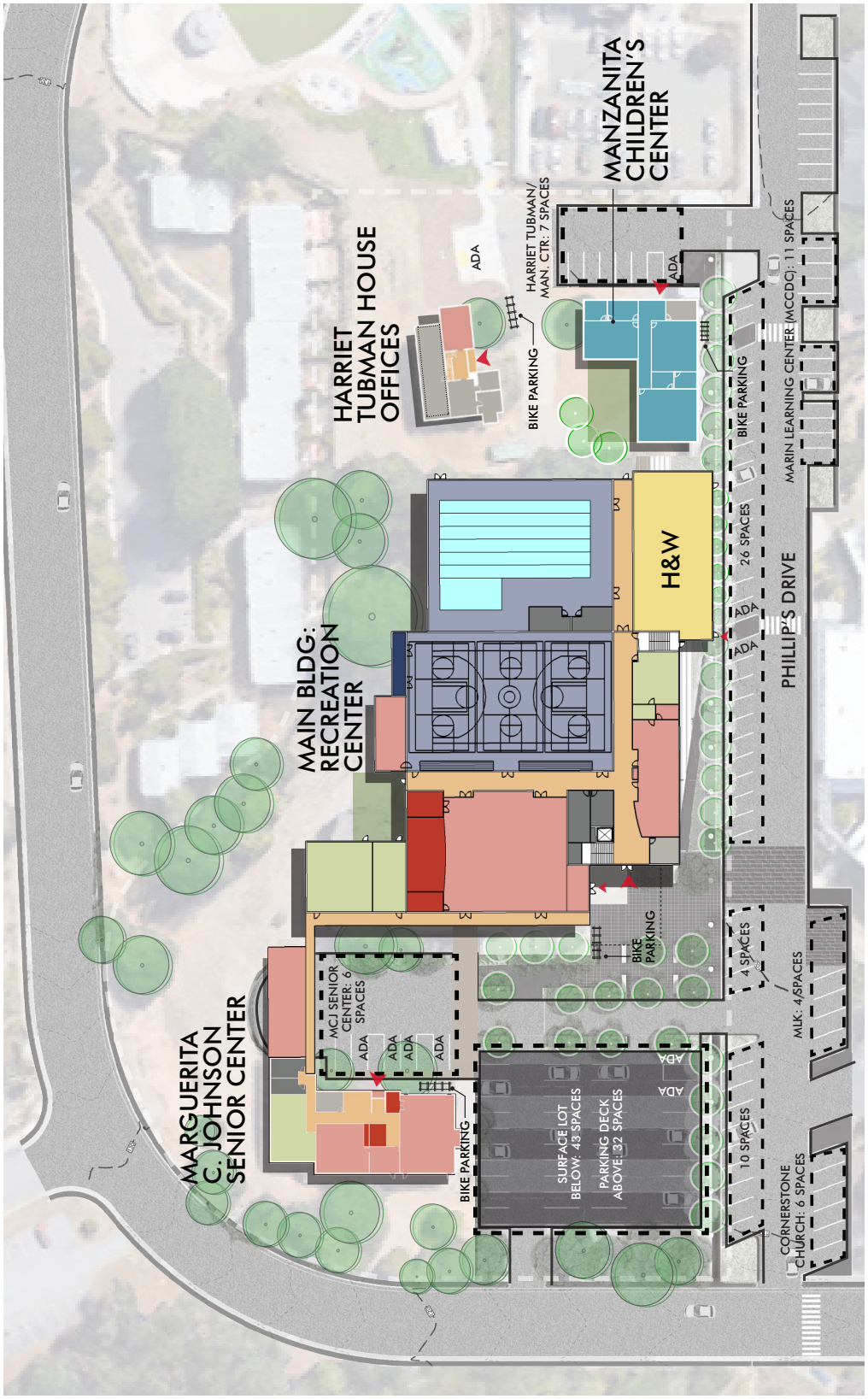

Figure 7: Master Plan (Vision Plan) site parking

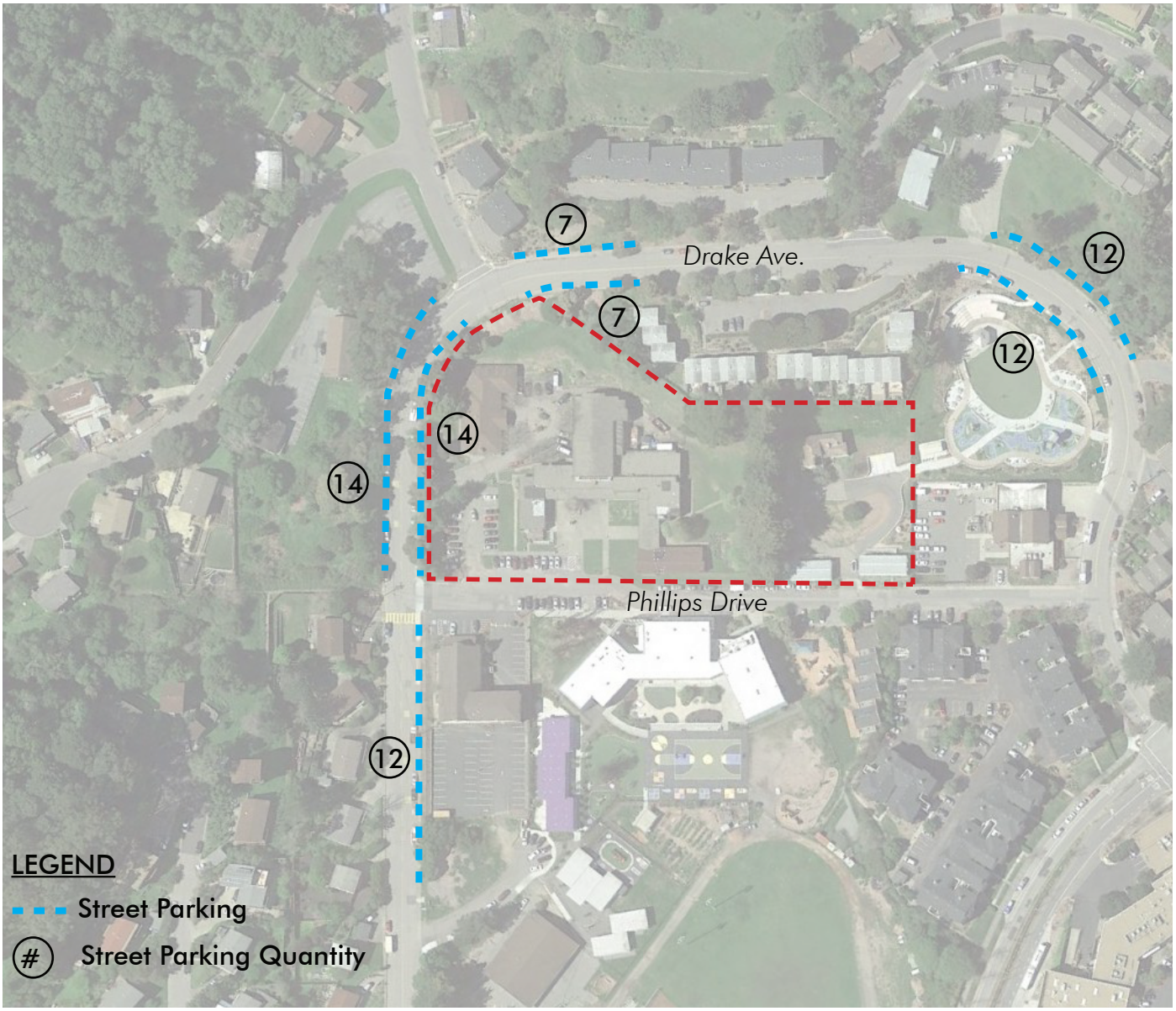

Figure 8: Adjacent street parking extent

Table 3: Vision Plan Parking Demand and Quantities Provided

Marguerita C. Johnson Senior Center

ROOM	EXISTING SF	NEW SF	Occupancy	Parking Stalls (ITE Standards)[i]
Senior Multipurpose Room	1,270 SF	1,270 SF	85	
Senior MPR. Storage	87 SF	87 SF		
Senior Meeting Room	729 SF	729 SF	36	
Senior Mtg. Storage	33 SF	33 SF		
Senior Computer Lab	397 SF	675 SF	34	
Kitchen	231 SF	231 SF		
Mangers Office	160 SF	160 SF	2	
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Circulation	346 SF	346 SF		
TOTAL	**4,138 SF**	**4,138 SF**	**157**	**13**

Senior Center Annex

ROOM	EXISTING SF	NEW SF	Occupancy	Parking Stalls (ITE Standards)[i]
Maker Space/Tech Lab	467 SF	1,200 SF	60	
Maker Space Storage		200 SF		
Adult MPR. Classroom		1,000 SF	50	
Adult MPR. Storage		122 SF		
Circulation/Service		500 SF		
TOTAL		**3,022 SF**	**110**	**10**
TOTAL MCJ S.C. & ANNEX		**7,160 SF**	**267**	**23**

[i] Parking Generation Manual 4th Edition (2010), Institute of Transportation Engineers (ITE) recommendation of 3.2 spaces per 1,000 sf GFA for recreational community center land use type

Main Building

ROOM	EXISTING SF	NEW SF	Occupancy	Parking Stalls (ITE Standards)[i]
Teen Classroom	1,105 SF	816 SF	41	
Art Classroom	-	700 SF	35	
Teen & Art Storage	-	100 SF		
Multipurpose Classroom	-	700 SF	35	
Classroom Storage	-	50 SF		
Music Classroom	-	600 SF	30	
Music Storage	-	70 SF		
Multipurpose Gym	4,501 SF	8,381 SF	559	
Gym Storage	411 SF	240 SF		
Community Hall	-	4,500 SF	300	
Community Hall Stage	825 SF	825 SF		
Comm. Hall Storage	-	475 SF		
Kitchen	328 SF	650 SF		
Dance Classroom	578 SF	900 SF	18	
Dance Storage	-	180 SF		
Boxing	1,808 SF	2,000 SF	40	
Fitness	1,067 SF	1,730 SF	35	
Boxing, Fitness Storage	78 SF	130 SF		
Reception & Office	-	240 SF	2	
Pool	-	4,000 SF	80	
Pool Deck	-	3,850 SF	257	
Men's Restroom/Lockers	254 SF	700 SF		
Women's Restroom/Lockers	236 SF	700 SF		
TOTAL	**11,658 SF**	**32,537 SF**	**1432**	
Circulation/Service:	1,864 SF	9,177 SF		
TOTAL GROSS SF/PARKING:	**13,522 SF**	**41,714 SF**		**133**
TOTAL OCC./PARKING MAIN BLDG. & SENIOR CENTER:			**1699**	**156**

Harriet Tubman House	EXISTING SF (at CSD Annex)	NEW SF	Occupancy	Parking Stalls (Marin County Code)[4]
Reception/Waiting Room	625 SF	Included in CSD office		
CSD Office	200 SF	300 SF	3	
Conference Room	206 SF	280 SF	3	
Flex Office or Historical Archive	620 SF	684 SF	7	
Break Room	73 SF	144 SF		
Restroom	179 SF	150 SF		
Storage	171 SF	521 SF		
Service/Circulation	493 SF	606 SF		
Total	**2,567 SF**	**2,685 SF**	**13**	**11**

Early Childhood Education	EXISTING SF	NEW SF	Occupancy	Parking Stalls (Marin County Code)[5]
Classrooms 1	775 SF	900 SF	26	
Classrooms 2	775 SF	900 SF	26	
Classrooms 3	-	900 SF	26	
Kitchen	184 SF	175 SF		
Office	150 SF	150 SF		
Restroom	384 SF	400 SF		
Service/Circulation	432 SF	975 SF		
TOTAL	**2,700 SF**	**4,400 SF**	**78**	**12**

[i] Parking Generation Manual 4th Edition (2010), Institute of Transportation Engineers (ITE) recommendation of 3.2 spaces per 1,000 sf GFA for recreational community center land use type

[4] Per Marin County Code, Chapter 42.04.340i: one per 250 sf of gross floor area

[5] Per Marin County Code, Chapter 42.04.340p: four spaces for every classroom

Health & Wellness Center	EXISTING SF	NEW SF	Occupancy	Parking Stalls (Marin County Code)[4]
Waiting Room/Reception	300 SF	345 SF	**3**	
Conference Room	225 SF	200 SF	**10**	
Medical Exam Rooms	220 SF	998 SF	**10**	
Dental Exam Rooms	215 SF	827 SF	**8**	
Laboratory	180 SF	Incl. in exam room sf		
Behavioral Health (currently located at CSD offices)	*300 SF*	387 SF	**4**	
Administration Offices	300 SF	450 SF	**5**	
Service/Circulation	300 SF	793 SF		
TOTAL	**1,740 SF**	**4,000 SF**	**40**	**16**
Total Campus SF:	**24,667 SF**	**59,959 SF**		
TOTAL REQUIRED CAMPUS PARKING:				**195**

Parking Provided

Onsite	
Main Surface Lot	**43**
Marguerita C. Johnson S.C. Lot	**6**
Harriet Tubman/ Early Child. Lot	**7**
Phillips Drive	**40**
Parking Deck	**32**
Total Onsite	**128**
Adjacent: Along Drake Ave.	**78**
TOTAL ONSITE/ADJACENT PARKING:	**206**

[4] Per Marin County Code, Chapter 42.04.340i: one per 250 sf of gross floor area

[5] Per Marin County Code, Chapter 42.04.340p: four spaces for every classroom

STUDIES UNDERWAY

Predesign Planning

In the Fall of 2016, the CSD contracted with Group 4 Architecture Research + Planning, Inc., to conduct limited Predesign Services, CEQA, and Community and Stakeholder Engagement. Supporting that effort were Mack5, who provided cost planning inputs and project delivery advice, RHAA, who provided landscape architecture advice for site strategies, and LSA operating as the CEQA consultant. The Fall 2016 scope included:

Predesign Services

Program, Building, and Site Strategy Update

The predesign services included updating the program, building, and site strategy from the 2014 Master Plan in response to new programming needs, funding potential, and site constraints. The outcome of that update is being submitted as part of this master plan submittal, and has been described in the preceding pages. Refer to Figure 6 and Table 2 on pages 6-9.

Project Delivery Plan

As part of the predesign services, the Consultant team, CSD Project Management Team, John Clawson of Equity Community Building, Bob Alten of Alten Construction, and John O'Neil reviewed and analyzed alternate construction strategies for the project.

Through a series of meetings the following directions were recommended:

The construction method is recommended to be a combination of light-weight wood and steel frames. Tilt-up concrete construction was determined to be too heavy for existing soil conditions in addition to the building sizes being too small to be an economical construction strategy.

The project delivery/construction contract type that is recommended is a Construction Manager at Risk (CMAR) who will develop in parallel to the architectural and engineering design phases a negotiated Guaranteed Maximum Price (GMP). Due to the parallel activities of design, engineering, and construction contracting, significant time can be saved, making it possible to have the project permitted and bid in the shortest time possible. This allows the project to be "shovel ready" as required by the New Market Tax Credit funding stream, which the CSD has identified as a potential key funding source.

Design-Bid-Build was considered and determined to be a less desirable project delivery method because of the longer time required to get the construction contract underway. Design-Build was also considered, but the length of time to prepare the bridging documents, in addition to the challenges of obtaining CSD and community input throughout the process were considered disadvantages. Developer turn-key was eliminated as an option because of the time needed to create developer performance criteria, as well as the uncertainty of whether a market for interested developers exists for a project of this nature. Requirements for prevailing wages and local workforce development, plus requirements for CSD and community engagement made the developer turn-key method a less desirable option as well.

Updated Cost Model

Preliminary cost estimates were updated to reflect the preferred Master Plan Vision Plan scope that has been outlined above. The cost model accounts for new market conditions.

Preliminary Entitlements

CEQA/MND (LSA leading study, under subcontract to Group 4)

As a subconsultant to Group 4's predesign services, the environmental planning firm LSA has been contracted to prepare a California Environmental Quality Act (CEQA) Initial Study (IS) and Mitigated Negative Declaration (MND). Their scope of work and time line are shown in Appendix 2 LSA IS/MNS work plan.

Through consultation with County Planning, it was recommended that the Marin City Community Services District (CSD) be the lead agency, with the County serving as a responsible agency for the CEQA process.

The Vision Plan scope will be the subject of the IS/MND with the intention of obtaining Master Plan approval for the Vision Scope within which a Phase 1 scope will be able to be submitted for a Precise Development Plan.

As part of the IS/MND effort, LSA will be utilizing the following studies previously completed on behalf of the CSD: geotechnical investigation report, conceptual stormwater pollution control plan, biological constraints analysis, cultural resources survey (including archeological and historical research), and a traffic impact analysis (see Studies Completed on page 20 for more detailed information). LSA will be conducting an arborist report and also be updating the traffic analysis as part of their scope of work in the Spring of 2017.

County Coordination – Planning Process

As part of the predesign scope of services, the Consultant met and corresponded with the Marin County Planning Department through which the following process was outlined:

The submission of this Master Plan application to the County initiates the planning process. The CSD and its consultants will meet again with the County in early 2017 to get input and assist in clarifying, revising, or supplementing any of the information in the application so that the County may reach a determination that this application is complete.

The CEQA IS/MND scope above will be a requirement of the Master Plan approval. This is anticipated to be submitted to the County in late spring or summer 2017.

A schematic design scope for a Phase 1 of the Vision Plan will commence in February 2017, anticipating completion in late spring 2017; thereafter, the CSD will be submit a Precise Development Plan application to the County. As both the Master Plan and Precise Development Plan require County Planning Commission review and County Board of Supervisors approval, it was suggested by County Planning staff that both applications be joined in the spring and go through a common review and approval process. Approval for both may be targeted for summer/fall 2017.

Once those plans are approved, the CSD will be able to submit architectural and engineering plans for County Building Permit approval, which should be able to be granted through ministerial review authority.

Community and Stakeholder Engagement

The predesign planning process included a robust round of community and stakeholder engagement, which included the following:

Community Meetings (October 27th and November 19th)

The community-at-large was engaged at key intervals in the project to provide feedback and input on the evolving building programs and campus layouts. The community meetings were conducted in two formats: an informal, "drop-in" open-house, and a structured town hall meeting in the evening. The content and goal for community input was the same for both meeting formats. Several methods of publicity were used to advertise the community meetings to surrounding residents: postcard mailers were sent to each postal customer in Marin City, advertising the community meetings, in addition to an email blast to all CSD news subscribers; banners were also posted at the Manzanita Recreation Center and Skate Park fence along Donahue Street to further promote the meetings.

Community Advisory Committee (CAC) Meetings (November 10th and November 21st)

The CSD and Group 4 Architecture conducted two CAC meetings, comprised of key community stakeholders and involved individuals representing a broad cross section of Marin City. The CAC provided feedback and oversight to the planning process. The format and style of the CAC was modeled after the successful advisory group that existed for the Rocky Graham Park design and construction process. It is the intent to keep the CAC assembled throughout the forthcoming design and construction phases for the project. The CSD used flyers, email blasts, and direct invitations to individuals to assemble the CAC group.

Marin City Community Services District Board Study Sessions (November 3rd and December 1st)

Two CSD Board Study Sessions were completed through the predesign services. These study sessions provided the Board with project updates, where key project developments were reviewed, including the building program, site layouts, construction phasing, construction type, project delivery, and cost estimates.

Stakeholder Focus Groups

The CSD and Group 4 Architecture held a series of focus groups with key service providers and program operators as part of the predesign services. These focus group meetings served to update and confirm the building program and site strategies with the facility stakeholders, in response to their current usage of spaces and goals for the new facility. These groups included:

- Marin City CSD Recreation Department
- Marin City Health & Wellness
- Community Action Marin
- Marin Horizon School
- Boys and Girls Club of Marin and Southern Sonoma Counties
- Marin YMCA

STUDIES COMPLETED

A series of studies were completed for the project site as part of the 2008 Community Center Master Plan process. A summary of the studies completed can be found below, with the full studies attached in Appendix 3.

Geotechnical Investigation Report

A Geotechnical Investigation Report was completed for the project site on November 29, 2005, by Miller Pacific Engineering Group. The evaluations and recommendations from the 2005 report were still judged valid for the site on February 19, 2008. Based on the results of the investigations, the engineer concluded that the site is feasible for a community center complex, although several geological and geotechnical hazards that could significantly affect the cost of developing the site must be considered as part of the design process. The concerns centered around the strong seismic shaking of the surrounding area, settlement issues of the building improvements, and the presence of high groundwater. It is suggested that the geotechnical report be revisited and updated accordingly in response to new seismic design parameters set forth in the most recent California Building Code (CBC).

Conceptual Stormwater Pollution Control Plan

A Conceptual Stormwater Pollution Control Plan was created on August 25, 2009, by F.E. Jordan Associates, Inc., for the project site. The major constraints of the site included relatively impermeable soils and steep slopes over portions of the site. Suggested stormwater pollution mitigation methods included the use of bioretention facilities, grass areas, catch basins, and site retaining walls to reduce slopes. The 2009 study will need to be reviewed and updated as necessary in response to changes in local and state building codes.

Biological Constraints Analysis

Ms. Lucy Macmillan, a Mill Valley environmental scientist, completed a biological constraints analysis for the project site in September 2005. Macmillan concluded that the project site is unlikely to support special-status plant species due to the disturbed nature of the site and presence of existing buildings and hardscape. Existing large trees on-site may provide suitable nesting habitats for birds and raptors, and it is suggested that if the construction is to occur between February and August, a qualified biologist should conduct pre-construction surveys of all potential nesting habitats within 500 feet of the project site. If sensitive nesting habitats are found, a non-disturbance buffer should be established around the nest tree during the breeding season. Similarly, the project site may also support the habitat of special-status bat species. Macmillan also recommends conducting a pre-construction survey to determine if special-status bats are present, and establishing a non-disturbance buffer if found. Lastly, the Biological Constraints Analysis identified that no wetlands were found on-site.

Since no major changes have occurred on the project site since the Biological Constraints Analysis was completed in 2005, it is likely that an update to the study is needed.

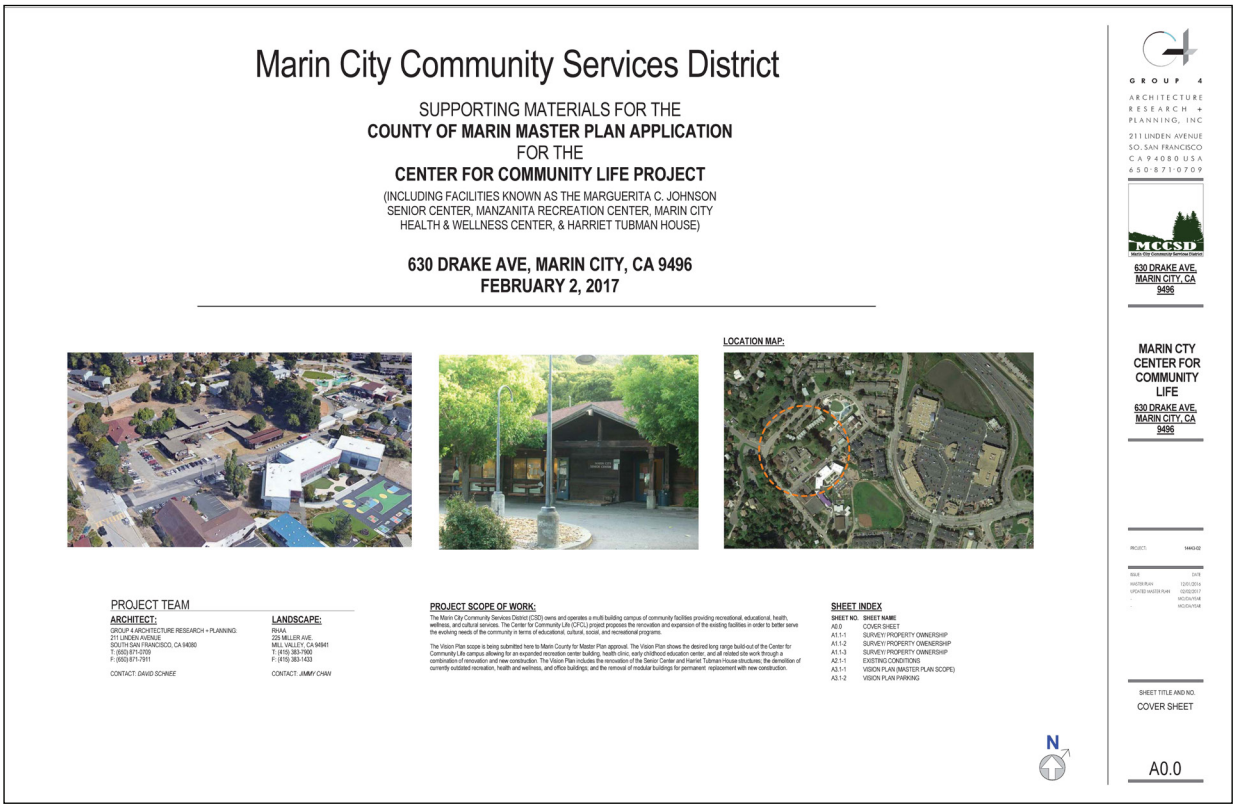
Cultural Resource Survey (including archeological and historical research)

A cultural resources survey was completed for the project site by Tom Origer & Associates on August 10, 2005. On March 3, 2008, Tom Origer & Associates provided an update to the 2005 report, further asserting that no prehistoric or important historical period resources exist on the site. It is unlikely that an update to the cultural resources survey will be needed as part of future design phases.

Traffic Impact Analysis

Wilson Engineering & Transportation Consultants provided an updated traffic analysis for the project site on September 2, 2009, in response to the proposed 2008 Community Center Master Plan. The engineers concluded that minimal traffic increases would result from the proposed 27,400 square feet community center building. The project forecast to create an additional 52 trips a day relative to the existing center, and as such, would not impact the surrounding roadway network. All intersections were intended to continue operating at existing levels of service with no changes in delay. Since the 2009 traffic analysis excluded the impact of a future phase indoor pool set forth in the 2008 master plan, an updated traffic analysis will be conducted as part of the forthcoming design phase, reflecting the updates to the project made during the predesign services.

MASTER PLAN SUPPORTING DRAWINGS



Marin City Community Services District

SUPPORTING MATERIALS FOR THE
COUNTY OF MARIN MASTER PLAN APPLICATION
FOR THE
CENTER FOR COMMUNITY LIFE PROJECT
(INCLUDING FACILITIES KNOWN AS THE MARGUERITA C. JOHNSON SENIOR CENTER, MANZANITA RECREATION CENTER, MARIN CITY HEALTH & WELLNESS CENTER, & HARRIET TUBMAN HOUSE)

630 DRAKE AVE, MARIN CITY, CA 9496
FEBRUARY 2, 2017

LOCATION MAP:

PROJECT TEAM

ARCHITECT:
GROUP 4 ARCHITECTURE RESEARCH + PLANNING
211 LINDEN AVENUE
SOUTH SAN FRANCISCO, CA 94080
T: (650) 871-0709
F: (650) 871-7911
CONTACT: DAVID SCHWEE

LANDSCAPE:
RHAA
225 MILLER AVE.
MILL VALLEY, CA 94941
T: (415) 383-7900
F: (415) 383-1433
CONTACT: JIMMY CHAN

PROJECT SCOPE OF WORK:
The Marin City Community Services District (CSD) owns and operates a multi building campus of community facilities providing recreational, educational, health, wellness, and cultural services. The Center for Community Life (CFCL) project proposes the renovation and expansion of the existing facilities in order to better serve the evolving needs of the community in terms of educational, cultural, social, and recreational programs.

The Vision Plan scope is being submitted here to Marin County for Master Plan approval. The Vision Plan shows the desired long range build-out of the Center for Community Life campus allowing for an expanded recreation center building, health clinic, early childhood education center, and all related site work through a combination of renovation and new construction. The Vision Plan includes the renovation of the Senior Center and Harriet Tubman House structures; the demolition of currently outdated recreation, health and wellness, and office buildings; and the removal of modular buildings for permanent replacement with new construction.

SHEET INDEX

SHEET NO.	SHEET NAME
A0.0	COVER SHEET
A1.1-1	SURVEY/ PROPERTY OWNERSHIP
A1.1-2	SURVEY/ PROPERTY OWNERSHIP
A1.1-3	SURVEY/ PROPERTY OWNERSHIP
A2.1-1	EXISTING CONDITIONS
A3.1-1	VISION PLAN (MASTER PLAN SCOPE)
A3.1-2	VISION PLAN PARKING

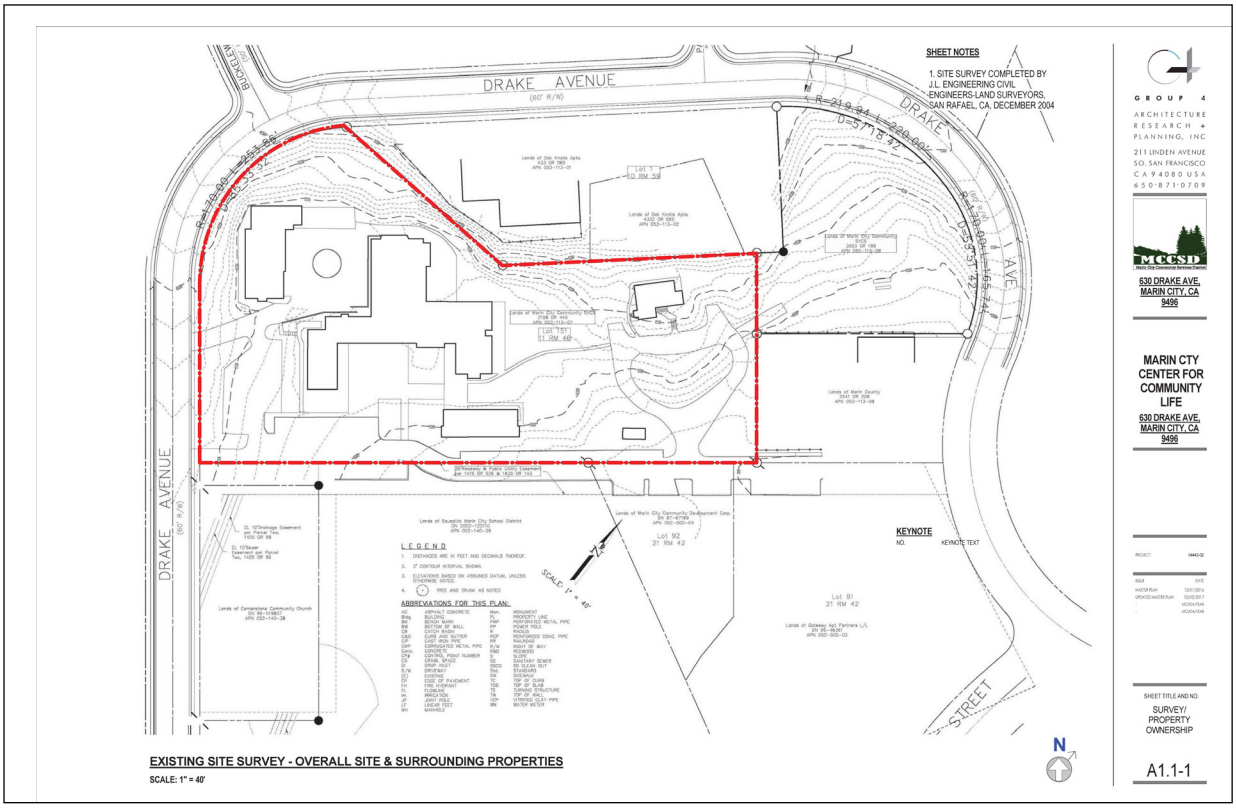
GROUP 4 ARCHITECTURE RESEARCH + PLANNING, INC
211 LINDEN AVENUE
SO. SAN FRANCISCO
CA 94080 USA
650-871-0709

MCCSD

630 DRAKE AVE, MARIN CITY, CA 9496

MARIN CTY CENTER FOR COMMUNITY LIFE
630 DRAKE AVE, MARIN CITY, CA 9496

SHEET TITLE AND NO.
COVER SHEET
A0.0



SHEET NOTES
1. SITE SURVEY COMPLETED BY J.L. ENGINEERING CIVIL ENGINEERS-LAND SURVEYORS, SAN RAFAEL, CA, DECEMBER 2004

DRAKE AVENUE (60' R/W)
I AVE.
STREET

LEGEND
ABBREVIATIONS FOR THIS PLAN:
KEYNOTE
SCALE: 1" = 40'

EXISTING SITE SURVEY - OVERALL SITE & SURROUNDING PROPERTIES
SCALE: 1" = 40'

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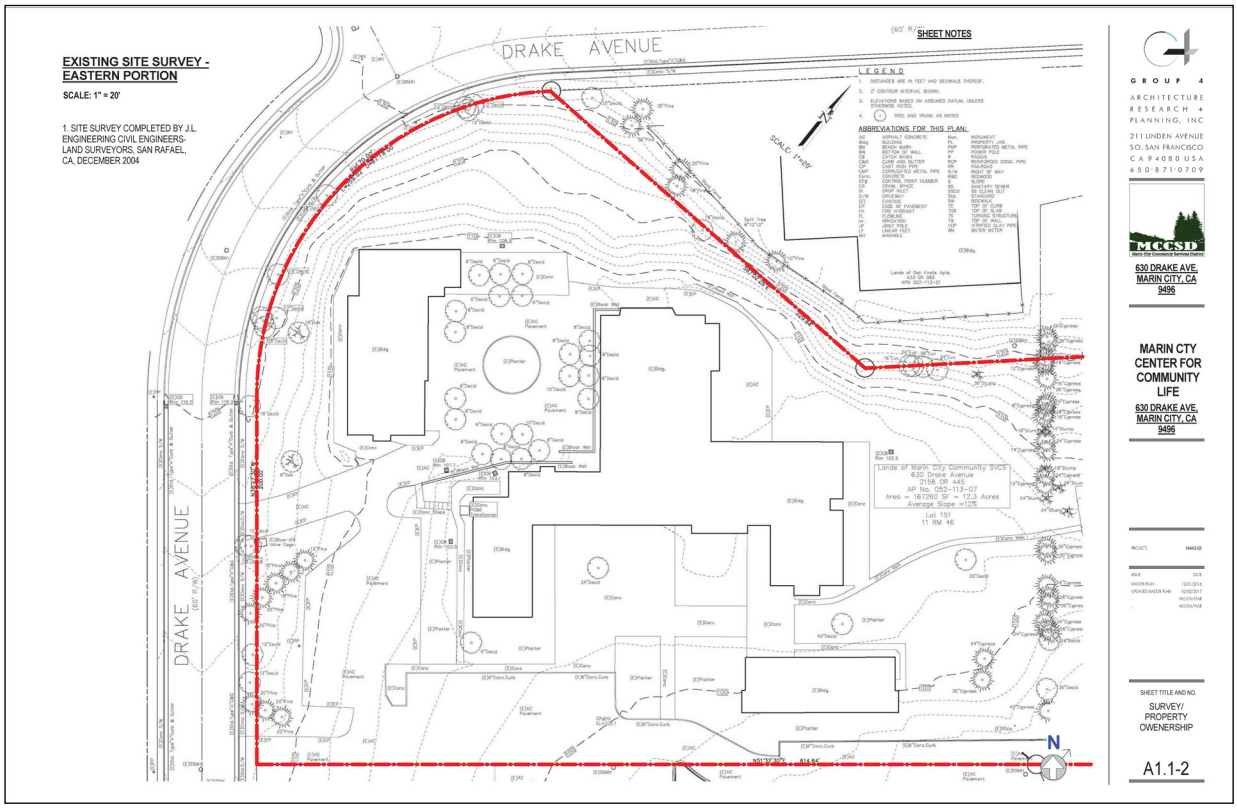
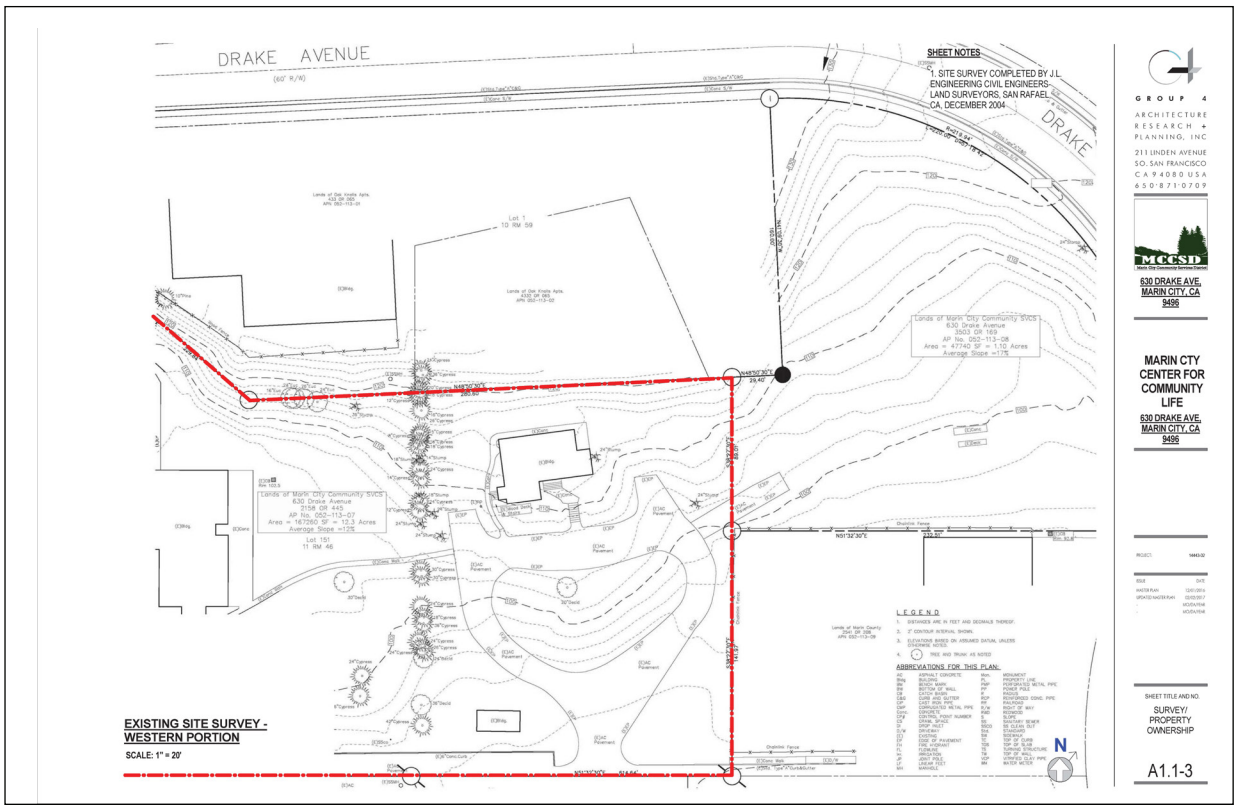
MCCSD

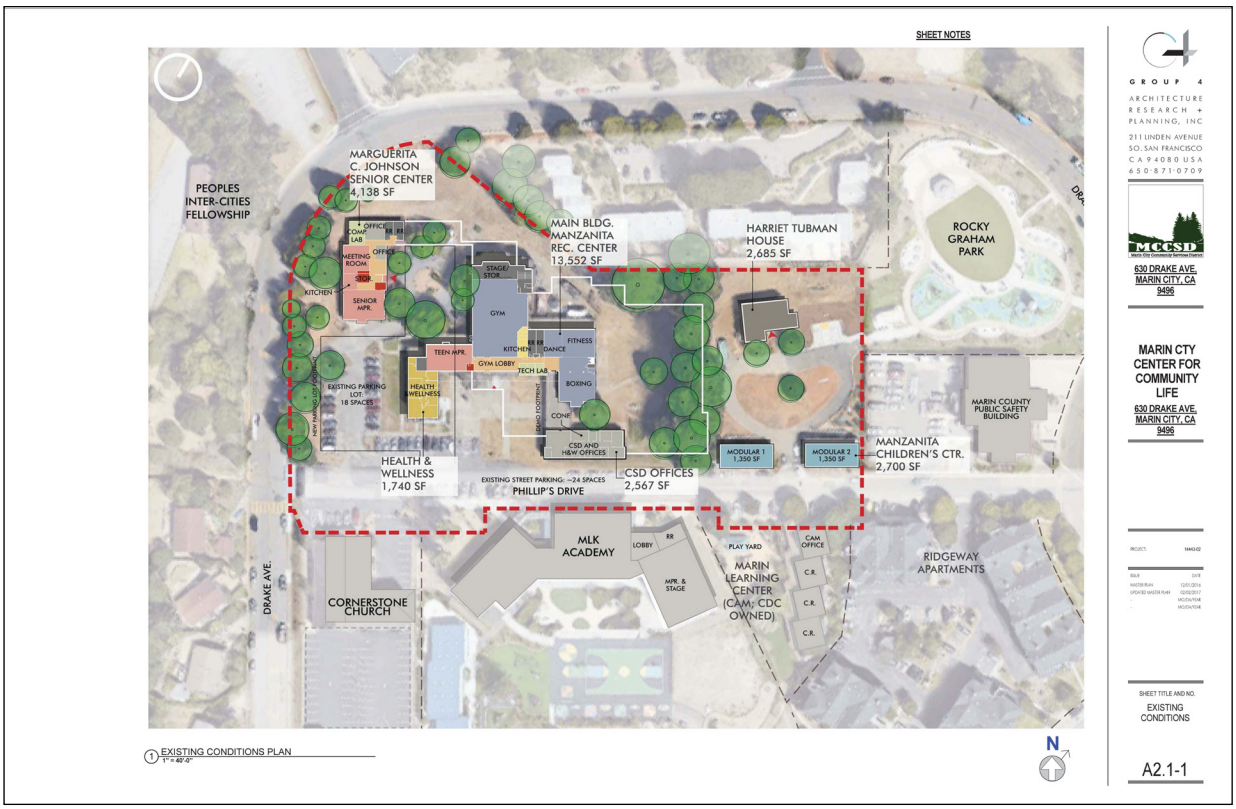
630 DRAKE AVE, MARIN CITY, CA 9496

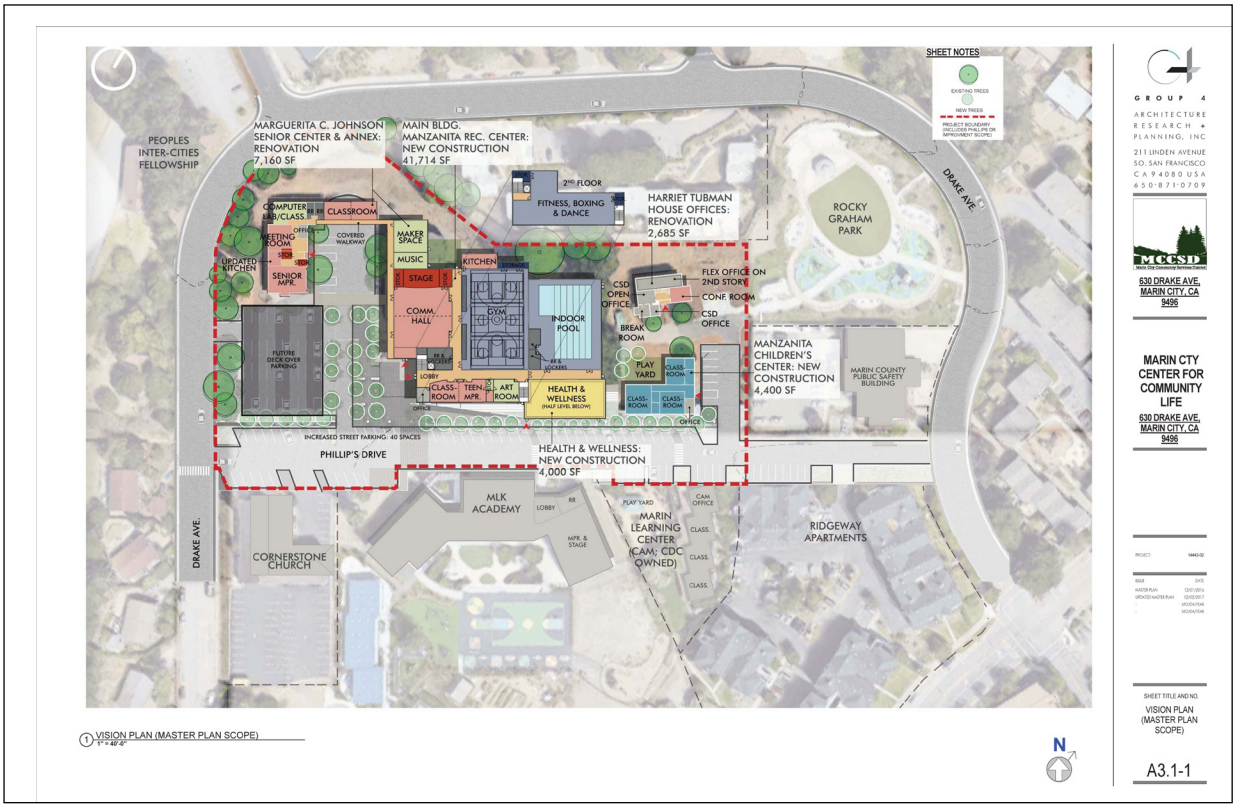
MARIN CTY CENTER FOR COMMUNITY LIFE
630 DRAKE AVE, MARIN CITY, CA 9496

SHEET TITLE AND NO.
SURVEY/ PROPERTY OWNERSHIP
A1.1-1


EXISTING SITE SURVEY - EASTERN PORTION
SCALE: 1" = 20'
1. SITE SURVEY COMPLETED BY J.L. ENGINEERING CIVIL ENGINEERS-LAND SURVEYORS, SAN RAFAEL, CA, DECEMBER 2004
DRAKE AVENUE
SHEET NOTES
LEGEND
ABBREVIATIONS FOR THIS PLAN:
GROUP 4 ARCHITECTURE RESEARCH + PLANNING, INC
211 LINDEN AVENUE SO. SAN FRANCISCO CA 94080 USA 650-871-0709
MCCSD
630 DRAKE AVE, MARIN CITY, CA 9496
MARIN CTY CENTER FOR COMMUNITY LIFE
630 DRAKE AVE, MARIN CITY, CA 9496
SHEET TITLE AND NO.
SURVEY/ PROPERTY OWENERSHIP
A1.1-2


DRAKE AVENUE
SHEET NOTES
1. SITE SURVEY COMPLETED BY J.L. ENGINEERING CIVIL ENGINEERS-LAND SURVEYORS, SAN RAFAEL, CA, DECEMBER 2004
EXISTING SITE SURVEY - WESTERN PORTION
SCALE: 1" = 20'
LEGEND
ABBREVIATIONS FOR THIS PLAN:
GROUP 4 ARCHITECTURE RESEARCH + PLANNING, INC
211 LINDEN AVENUE SO. SAN FRANCISCO CA 94080 USA 650-871-0709
MCCSD
630 DRAKE AVE, MARIN CITY, CA 9496
MARIN CTY CENTER FOR COMMUNITY LIFE
630 DRAKE AVE, MARIN CITY, CA 9496
SHEET TITLE AND NO.
SURVEY/ PROPERTY OWNERSHIP
A1.1-3


SHEET NOTES
PEOPLES INTER-CITIES FELLOWSHIP
MARGUERITA C. JOHNSON SENIOR CENTER 4,138 SF
MAIN BLDG. MANZANITA REC. CENTER 13,552 SF
HARRIET TUBMAN HOUSE 2,685 SF
ROCKY GRAHAM PARK
HEALTH & WELLNESS 1,740 SF
CSD OFFICES 2,567 SF
MANZANITA CHILDREN'S CTR. 2,700 SF
MARIN COUNTY PUBLIC SAFETY BUILDING
PHILLIP'S DRIVE
MLK ACADEMY
MARIN LEARNING CENTER (CAM; CDC OWNED)
RIDGEWAY APARTMENTS
CORNERSTONE CHURCH
DRAKE AVE.
EXISTING CONDITIONS PLAN
1" = 40'-0"
N
GROUP 4
ARCHITECTURE RESEARCH + PLANNING, INC
211 LINDEN AVENUE SO. SAN FRANCISCO CA 94080 USA
650·871·0709
MCCSD
630 DRAKE AVE, MARIN CITY, CA 9496
MARIN CTY CENTER FOR COMMUNITY LIFE
630 DRAKE AVE, MARIN CITY, CA 9496
SHEET TITLE AND NO.
EXISTING CONDITIONS
A2.1-1


SHEET NOTES
EXISTING TREES
NEW TREES
PROJECT BOUNDARY (INCLUDES PHILLIPS OR IMPROVEMENT SCOPE)
PEOPLES INTER-CITIES FELLOWSHIP
MARGUERITA C. JOHNSON SENIOR CENTER & ANNEX: RENOVATION 7,160 SF
MAIN BLDG. MANZANITA REC. CENTER: NEW CONSTRUCTION 41,714 SF
2ND FLOOR
FITNESS, BOXING & DANCE
HARRIET TUBMAN HOUSE OFFICES: RENOVATION 2,685 SF
ROCKY GRAHAM PARK
DRAKE AVE
FLEX OFFICE ON 2ND STORY
CONF ROOM
CSD OFFICE
MANZANITA CHILDREN'S CENTER: NEW CONSTRUCTION 4,400 SF
MARIN COUNTY PUBLIC SAFETY BUILDING
INCREASED STREET PARKING: 40 SPACES
PHILLIP'S DRIVE
HEALTH & WELLNESS: NEW CONSTRUCTION 4,000 SF
MLK ACADEMY
MARIN LEARNING CENTER (CAM; CDC OWNED)
RIDGEWAY APARTMENTS
CORNERSTONE CHURCH
DRAKE AVE.
VISION PLAN (MASTER PLAN SCOPE)
1" = 40'-0"
N
GROUP 4
ARCHITECTURE RESEARCH + PLANNING, INC
211 LINDEN AVENUE SO. SAN FRANCISCO CA 94080 USA
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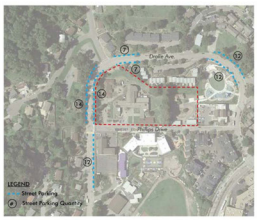
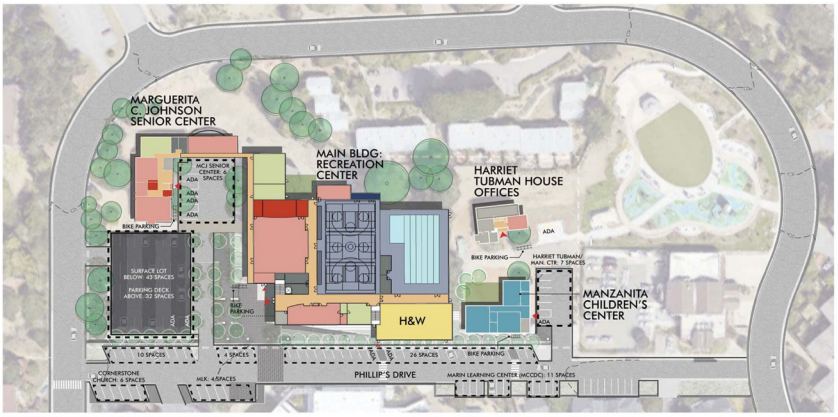
MCCSD
630 DRAKE AVE, MARIN CITY, CA 9496
MARIN CTY CENTER FOR COMMUNITY LIFE
630 DRAKE AVE, MARIN CITY, CA 9496
SHEET TITLE AND NO.
VISION PLAN (MASTER PLAN SCOPE)
A3.1-1

SHEET NOTES



ADJACENT STREET PARKING - VICINITY MAP

NOT TO SCALE



VISION PLAN - PARKING PLAN

NOT TO SCALE

N

GROUP 4
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650 871 0709

MCCSD

630 DRAKE AVE. MARIN CITY, CA 9496

MARIN CTY CENTER FOR COMMUNITY LIFE

630 DRAKE AVE. MARIN CITY, CA 9496

PROJECT: 14402.02

ISSUE	DATE
MASTER PLAN	12/01/2016
UPDATED MASTER PLAN	02/02/2017
	MCCDV1048
	MCCDV1049

SHEET TITLE AND NO.
VISION PLAN PARKING

A3.1-2

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ARCHITECT
JILL EYRES
ARCHITECT
ANDREA GIFFORD
ARCHITECT
PAUL JAMTGAARD
ARCHITECT
WILLIAM LIM
ARCHITECT

1 December 2016

MEMORANDUM

Ben Berto, Principal Planner
COUNTY OF MARIN, COMMUNITY DEVELOPMENT AGENCY
3501 Civic Center Drive, Room 308, San Rafael, CA 94903

PROJECT

MARIN CITY CENTER FOR COMMUNITY LIFE MASTER PLAN – PRELIMINARY ZONING REVIEW

SENT VIA

Physical delivery

TOPIC

ZONING DATA:

- Zoning District: Public Facilities (PF)
  - Uses: Community, governmental, education, or other institutional facility
  - Conditional Uses (Use permit required): Indoor recreation centers, sports facilities, outdoor public assembly, professional offices, and health/fitness facilities

BUILDING ENVELOPE:

- Building Height
  - Per Marin County Code of Ordinance, Chapter 22.14, Table 2-10:
    - Primary: 35'-0"
    - Accessory: 15'-0"
  - Public buildings excepted from height limitations under certain conditions (as per Marin County Code of Ordinance 22.70.010I)
    - In any district, (other than an S-1 district or one combined with an S-1 district) where the height limitation is less than seventy-five feet, public and semipublic buildings, schools, churches, hospitals and other institutions permitted in such district may be erected to a height not exceeding seventy-five feet; provided that the front, rear, and side yards shall be increased one foot for each one foot by which such building exceeds the height limit hereinbefore established for such district.
- Building Setback (Per Marin County Code of Ordinance Chapter 22.14, Table 2-10)
  - Front: Not applicable
  - Sides: Not applicable
  - Rear: Not applicable

g:\14443-02 marin city ctr cl\d-documents\county planning\master plan_code memo 2016-12-15 code.docx

- Maximum Floor Area Ration FAR (Per Marin County Code of Ordinance Chapter 22.14, Table 2-10)
    - Not Applicable
- Parking – see Executive Report Pages 8-11 including Table 3

FLOODING

- Geotechnical Investigation as completed by Miller Pacific Engineering Group (dated November 28, 2005):
    - Based on FEMA flood hazard maps, the site is not within a 500-year flood zone. Topographic mapping provided by the Client shows existing grades at the site to vary between approximately +20 feet and +45 feet (MSL).

Vance Stoner
Job Captain

VS/s

cc:

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APPENDIX

1. LETTERS OF SUPPORT
2. LSA CEQA IS/MND SCOPE OF WORK & TIMELINE
3. STUDIES PREVIOUSLY COMPLETED

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APPENDIX 1

Letter of Support and Willingness to Collaborate in Follow-Up Activities for the Marin City Center of Community Life Project

INTENT TO PARTICIPATE IN PHILLIPS DR. STREET IMPROVEMENTS/SHARED STREET PARKING USE – SITES ADJACENT TO CENTER FOR COMMUNITY LIFE:

FACILITY	CONTACT
Cornerstone Church of God in Christ 626 Drake Avenue Marin City 94965	Bishop Jonathan D. Logan Senior, Senior Pastor
Bayside/Martin Luther King Jr. Academy Sausalito-Marin City School District 200 Phillips Drive, Sausalito, CA 94965	William McCoy, Superintendent
Marin Learning Center, Community Action Marin Marin City Community Development Corporation 441 Drake Avenue Marin City, CA 94965	Dr. Melissa Cadet, Executive Director

LSA ASSOCIATES, INC.
2215 FIFTH STREET
BERKELEY, CALIFORNIA 94710
510.540.7331 TEL
510.540.7344 FAX
CARLSBAD
FRESNO
IRVINE
PALM SPRINGS
PT. RICHMOND
RIVERSIDE
ROCKLIN
SAN LUIS OBISPO

June 24, 2016

Dawn Merkes, Principal
Group 4 Architecture, Research + Planning, Inc.
211 Linden Avenue
South San Francisco, CA 94080

Subject: Scope and Budget to Conduct CEQA Review for the Marin City Community Center Master Plan

Dear Dawn,

LSA Associates, Inc. (LSA) is pleased to submit this scope and budget for the preparation of an Initial Study/Mitigated Negative Declaration (IS/MND) for the Marin City Community Center Master Plan (project). Primary staff on this project will be **Judith Malamut, Principal**, who will oversee the project and **Greta Brownlow, Associate,** who will serve as project manager. **Amy Fischer, Associate**, will provide technical expertise for the air quality, noise analyses, and greenhouse gas emissions.

PROJECT UNDERSTANDING AND APPROACH

The Marin City Community Center project (project) involves implementation of the Marin City Community Center Master Plan (December 2014) through a combination of renovation and new construction within the existing Manzanita Recreation Center site located on Drake Avenue. As described in the Marin City Community Center Master Plan, the project would occur in two primary phases. Phase 1 includes a combination of sub-phase options which can be completed depending on community priority or available funding opportunities. The recommended Phase 1 option includes the following elements:

- Construct new gym and Community Service District offices
- Renovate Senior Center to include a Health & Wellness Center
- Construct new Early Childhood Education Center
- Renovate Harriet Tubman House

Phase 2 includes renovation of the existing Manzanita Recreation Center and the expansion of the existing parking lot. During Phase 2, all programs currently offered in the existing Recreation Center would move and operate out of the newly completed gym and Marin City Community Services District (MCCSD) offices, until the renovation is complete.

An additional Phase 3 would involve full demolition of the existing Manzanita Recreation Center and replacement with a new two-story community center and indoor pool.

Based on the information in the Master Plan and our discussion with Group 4, LSA believes an Initial Study/Mitigated Negative Declaration (IS/MND) is the appropriate environmental document to evaluate the effects of the proposed project. Should significant environmental effects be identified

during the course of this evaluation, LSA will discuss the implications regarding the appropriate CEQA document and whether additional analysis is warranted. The lead agency for the purposes of CEQA would be the Marin City Community Services District (MCCSD); the Marin County Planning Department (County) would also review and provide input on the CEQA document as a responsible agency. This scope of services is focused on providing CEQA clearance via an IS/MND for Phase 1 and Phase 2 activities. Per your request, LSA is also providing a cost estimate to include CEQA clearance for the Phase 3 activities as part of the IS/MND (identified as a separate optional task) and an estimate to provide CEQA clearance for Phase 3 activities subsequent to the adoption of the IS/MND for the Phase 1 and Phase 2 activities. Prior to finalizing this scope of services, LSA will coordinate with Group 4 and the MCCSD to make any necessary revisions to this scope of services.

SCOPE OF WORK

Table 1 contains an outline of LSA's proposed scope of work for the IS/MND, which is discussed below.

Table 1: Work Program Outline

TASK A. PROJECT INITIATION
1. Start-Up Meeting/Site Visit
2. Base Map Preparation
3. Data Gathering and Evaluation
4. Project Description

TASK B. CONDUCT ENVIRONMENTAL ANALYSIS
1. Aesthetics
2. Agriculture and Forestry Resources
3. Air Quality
4. Biological Resources
5. Cultural Resource
6. Geology and Soils
7. Greenhouse Gas Emissions
8. Hazards and Hazardous Material
9. Hydrology and Water Quality
10. Land Use and Planning
11. Mineral Resources
12. Noise
13. Population and Housing
14. Public Services and Recreation
15. Traffic and Circulation
16. Utilities and Service Systems
17. Mandatory Findings of Significance

TASK C. PEPARE DRAFT INITIAL STUDY/ MITIGATED NEGATIVE DECLARATION
1. Administrative Draft IS/MND
2. Screencheck Draft IS/MND
3. Public Review Draft IS/MND
4. Response to Comments
5. Mitigation Monitoring and Reporting Program

TASK D. PROJECT MANAGEMENT

TASK E. MEETINGS AND PUBLIC HEARINGS

TASK A. PROJECT INITIATION

Project initiation will include several tasks, including the preliminary meeting and site visit, preparation of a base map, compiling and distributing relevant documents, data gathering, and contacting responsible agencies and MCCSD and County departments. The project description for the environmental document will also be prepared as part of project initiation subtasks.

1. Start-Up Meeting/Site Visit

The LSA project team will meet with MCCSD and County staff and the design team to discuss the environmental review strategy, timeline, and scope tasks. We will visit the site to walk through and photograph the project site and its surroundings in order to document existing conditions and site features.

2. Base Map Preparation

A base map of the project site and vicinity will be prepared by LSA based on information provided by Group 4. The project site base map will be used to illustrate the project site vicinity and the project's relationship to surrounding uses and General Plan and Zoning designations.

APPENDIX 2: LSA CEQA IS/MND SCOPE OF WORK & TIMELINE

3. Data Gathering and Evaluation

Existing data and analyses applicable to the project site and vicinity will be collected and evaluated. In addition, LSA will contact responsible agencies and County departments that may have information about the project site or insight into potential environmental impacts of the project.

4. Project Description

LSA will prepare the project description based on materials provided by MCCSD, the County, and the design team. The project description will include a discussion of the key characteristics of the project site and its vicinity, project objectives, details of the proposed project, the approval process, and anticipated development schedule.

TASK B. CONDUCT ENVIRONMENTAL ANALYSIS

LSA will conduct an analysis of the project's impacts in the following topical areas: aesthetics; agriculture and forestry resources; air quality; biological resources; cultural resources; geology and soils; greenhouse gas emissions; hazards and hazardous materials; hydrology and water quality; land use and planning; mineral resources; noise; population and housing; public services, utilities and recreation; transportation and circulation. Mitigation measures to reduce significant effects to a less-than-significant level will be recommended as appropriate.

This analysis would be used to support an IS/MND. Our proposed analysis of the topics listed above is described below.

1. Aesthetics

This section will include an evaluation of existing visual conditions in and around the project site, including views of and from the project site. The change in views of the site after improvements have been made will be described. The project's impact on scenic vistas and the visual character of surrounding neighborhood will be discussed.

2. Agriculture and Forestry Resources

As the project site is located within a developed area, it is not anticipated that the proposed project would have any effect on agricultural or forestry resources. LSA will provide a brief response to the checklist questions.

3. Air Quality

LSA will prepare an air quality analysis for the proposed project in response to the Initial Study questions. Project construction activities would include ground disturbance and the use of diesel vehicles on the site, which could have adverse effects on air quality. The air quality analysis will be based on the results of the traffic impact study. In addition, the project would generate vehicle trips that would result in emissions of regional pollutants. The air quality analysis will include the following components: 1) assessment of baseline air quality in the area; 2) assessment of project construction impacts; 3) assessment of traffic-related and operational air quality effects associated with the project; and 4) recommendation of mitigation measures consistent with Bay Area Air Quality Management District guidelines.

4. Biological Resources

The project could result in the removal of mature trees and the implementation of a landscape plan. Trees on the site may be used by nesting birds. LSA will evaluate the impacts of the project on trees and associated animal species, and any other biological resources identified on the site. This analysis will be based on a tree survey to be conducted by LSA.

LSA will conduct a field survey of the on-site trees that will consist of the following:

- Identify each tree to species;
- Determine which trees qualify as "protected" trees as defined by the Marin County Tree Ordinance;
- Locate each tree on the project base map (Tree Map);[1]
- Measure the trunk diameter of each tree at a point 4.5 feet above the natural grade (DBH). If an individual tree has multiple trunks, the diameters of all trunks will be totaled; and
- Evaluate the health and structural condition of each tree as being either:
    - *Excellent* – Extraordinary specimen trees with large diameter (greater than 40 inches), with good health and structure that have potential for longevity on site.
    - *Good* – Trees with good health and structure that have potential for longevity on site.
    - *Fair* – Trees with somewhat declining health and/or structural defects that can be abated with treatment. The tree will require more intense management and monitoring, and may have a shorter life span than those in the 'good' category.
    - *Poor* – Trees in poor health or with significant structural defects that cannot be mitigated. Trees in this category are expected to continue to decline, regardless of treatment. The species or individual tree may have characteristics that are undesirable for landscapes, and generally are unsuited for use areas.

A certified arborist will prepare a brief tree report with a tree table and associated figure showing the approximate location of each tree or group of trees. The tree table will list the on-site trees by number, species, DBH, condition, and tree-ordinance status. This letter report will provide a summary of our findings and will discuss potential impacts that may occur to subject trees as a result of project development.

This scope of work assumes a landscape plan identifying the characteristics of the trees to be removed as part of the project will be provided to LSA by the design team.

LSA will also prepare responses the IS checklist questions and mitigation measures to protect migratory birds and other resources, and compliance with any County tree ordinances will be identified if warranted.

5. Cultural Resources

The analysis of cultural resources impacts will rely on the cultural resources report prepared as part of the Master Plan process. This scope of work assumes there are no historic resources on the project site and that all structures that would be demolished as part of the project are less than 50 years old. Ground disturbance within the project site could result in the identification of archaeological and paleontological resources. LSA will evaluate the potential for such resources to be uncovered during

[1] Only trees that meet the minimum size specified in the ordinance will be mapped.

the construction period, and will recommend mitigation measures to reduce potential significant impacts.

6. Geology and Soils

The geology and soils section will summarize the potential for geologic impacts based on information available in geotechnical reports provided by the MCCSD or the design team. Using the geotechnical report, LSA will address checklist questions related to earthquakes, landslides, and unstable soil conditions, including erosion and shrink-swell soils. The IS/MND will identify potential impacts related to geologic and soils hazards and suggest mitigation measures, if necessary.

7. Greenhouse Gas Emissions

LSA will evaluate the project's impacts on greenhouse gas (GHG) emissions in accordance with the CEQA Guidelines Amendments. The guidelines state that a lead agency should make a good-faith effort, based on available information, to describe, calculate, or estimate the amount of GHG emissions resulting from a project and determine if the project is consistent with GHG reduction plans. LSA will provide a quantitative assessment of GHG emissions, using information contained in the traffic impact analysis, associated with all relevant sources related to the project for which project data are available, including construction activities, energy consumption, and water usage. LSA will also provide a qualitative assessment of the project's consistency with relevant plans and regulations.

8. Hazards and Hazardous Materials

LSA will summarize the available information on hazards and hazardous materials and will address checklist questions related to hazardous materials and other hazards that could result from implementation of the proposed project. LSA will describe known and potentially hazardous materials issues in the project area and immediate vicinity based on information collected from available reports. Other tasks will include a description of any potential project-related interference with emergency response or emergency evacuation plans and a description of local fire hazards. If excavation or demolition is required, LSA will rely on information provided by the MCCSD regarding hazards related to building materials or contaminated soils on site.

9. Hydrology and Water Quality

Implementation of the proposed project would increase impervious surface on the project site. The IS/MND will qualitatively evaluate potential impacts related to hydrology and water quality and will respond to checklist questions related to water quality, groundwater resources, groundwater recharge, flooding, and erosion. If required, mitigation measures will be identified. This analysis will be based on the hydrology study that was prepared for the project during the Master Plan process, and will be provided to LSA by the project team.

10. Land Use and Planning

The land use and planning policy analysis will focus on the project's relationship to local land use patterns and relevant planning policy. LSA will discuss land use compatibility issues and planning policy consistency.

11. Mineral Resources

It is anticipated that the project will have no effect on mineral resources. LSA will provide a brief response to the checklist questions for this topic.

12. Noise

LSA will prepare a noise analysis for the proposed project based in part on information contained in the traffic impact analysis. The noise analysis will include the following components: 1) a description of existing noise conditions in and around the project site; 2) quantitative assessment of noise impacts related to project construction and operational activities (including traffic noise impacts) on sensitive receptors; and if required, 3) preparation of mitigation measures consistent with best practice standards and the local noise ordinance.

13. Population and Housing

It is not expected that the proposed project would have any effect on population or housing. LSA will provide a brief response to the checklist questions on this topic.

14. Public Services and Recreation

This section will evaluate the potential impacts on public services, including police, fire, and schools. LSA will determine if the proposed project would result in increased demand for public services and would require an expansion of existing infrastructure or facilities. LSA also will analyze the effects of the proposed project on existing and planned recreational facilities.

15. Traffic and Circulation

LSA understands that an analysis of the potential transportation impacts and parking issues associated with the project has been completed, but will need to be updated to incorporate recent project changes. Upon completion, LSA will convert the updated analysis into the Initial Study transportation section. The transportation analysis will be completed under a separate contract; it would not be included as part of LSA's contract.

16. Utilities and Service Systems

Based on information provided by the MCCSD, LSA will summarize the impacts that could result from implementation of the proposed project to the following utilities and service systems: water supplies; wastewater treatment and capacity; stormwater facilities; and solid waste disposal.

TASK C. PREPARE DRAFT IS/MND

Based on the environmental analysis conducted as part of Task B, LSA will prepare an IS/MND for concurrent review by the MCCSD and the County. If it is determined during the research and analysis stage of Task B that the project would result in significant unavoidable impacts, LSA will strategize with the MCCSD and the County on alternate environmental review approaches. After publication of the IS/MND, LSA will review comments and provide responses to CEQA-related comments in a memorandum. LSA also will consider and respond to any CEQA-related comments on the public review Draft IS/MND in a memorandum and will prepare a Mitigation Monitoring and Reporting Program (MMRP) as described below.

1. Administrative Draft IS/MND

LSA will prepare an Administrative Draft IS/MND with the following components. Figures and tables will be provided as appropriate to illustrate the existing project site, the proposed project, and the study's findings.

- Project Description
- CEQA Environmental Checklist Form
- Mandatory Findings of Significance
- Contacts and Bibliography
- Mitigated Negative Declaration
- Technical Appendices

Five (5) copies of the Administrative Draft IS/MND will be submitted to the MCCSD for review and comment. This scope assumes that MCCSD will coordinate with County staff in regards to providing them with copies of submittals and considering County comments. At the end of the review period, and upon receipt of one set of consolidated comments from MCCSD and the County, LSA will discuss comments on the Administrative Draft on a conference call.

2. Screencheck Draft IS/MND

LSA will amend the Administrative Draft IS/MND based on comments provided by MCCSD and the County. Two (2) copies of the Screencheck Draft IS/MND will be provided to MCCSD to verify that all requested changes have been made and all appendix materials, references, and final graphics are acceptable.

3. Public Review Draft IS/MND

LSA will amend the Screencheck Draft IS/MND based on one set of consolidated comments provided by MCCSD and the County. LSA will produce copies of the Public Review Draft IS/MND for public distribution and submittal to the State Clearinghouse. Our budget assumes publication of up to 20 copies of the Draft IS/MND (but additional copies could be produced on a time-and-materials basis). LSA will also prepare a Notice of Completion, in accordance with the CEQA Guidelines. This scope assumes that MCCSD will distribute the Draft IS/MND pursuant to CEQA and MCCD/County review procedures. LSA will also provide PDF versions of the IS/MND and a copy-ready version of the document.

4. Response to Comments

LSA will prepare responses in a memorandum format to CEQA-related public and agency comments received on the IS/MND during the public review period, as appropriate. This scope and budget assume up to approximately 26 staff hours to prepare responses to comments. Should an unexpectedly large volume of comments be submitted, LSA will request an adjustment in the budget to cover work beyond the assumed level.

5. Mitigation Monitoring and Reporting Program

Before the IS/MND is adopted, LSA will prepare an electronic copy of the Mitigation Monitoring and Reporting Program (MMRP) for all mitigation measures in the IS/MND. The MMRP will list mitigation measures that are recommended in the IS/MND and provide standards and timelines for monitoring these measures to ensure they are completed by MCCSD.

TASK D. PROJECT MANAGEMENT

Judith Malamut and Greta Brownlow will undertake a variety of general project management tasks throughout the process of preparing the IS/MND, and they will coordinate with MCCSD and the County, as well as other regulatory agencies/organizations, as needed. Judith will provide input on and monitor the scope, budget, and scheduling of the project. She will also be ultimately responsible for quality assurance for all work undertaken and will review all prepared text, tables, and graphics before these materials are presented as administrative review documents. She will also be available for consultation on environmental review procedural matters.

Greta will coordinate the day-to-day activities associated with the project. Project management tasks include regular client contact; contract management; oversight of subconsultants and team members; schedule coordination; and development of products. Judith and/or Greta will attend client meetings and public hearings, as appropriate (see Task E).

TASK E. MEETINGS AND PUBLIC HEARINGS

Judith and Greta will be available throughout the environmental documentation preparation period to meet with MCCSD, the County, and other involved agencies to gather information, review progress, review preliminary findings, discuss comments and concerns about the project, and offer input into discussions on project modifications (if considered by MCCSD). The cost estimate includes attendance by Judith and/or Greta at up to three general meetings/teleconferences and two public hearings. Attendance at additional meetings or hearings would be billed on a time and materials basis.

BUDGET AND SCHEDULE

For completion of the scope of work discussed above, LSA proposes a total budget of $62,350. Table 2 (attached) provides a detailed budget estimate. As noted above, Table 2 includes as an optional task an estimated cost for the analysis of Phase 3 of the Master Plan project as part of the IS/MND. If the Phase 3 activities were included as part of the project beginning in Task A Project Initiation, LSA estimates that an additional $3,000 would be needed to describe and evaluate the Phase 3 activities bringing the total cost to $65,350. Should the MCCSD decide to evaluate the Phase 3 activities after adoption of the IS/MND, LSA would need to consider what the appropriate CEQA document would be (e.g., an Addendum to the adopted IS/MND per CEQA Section 15164 or some other CEQA document depending on the findings of the IS/MND on Phase 1 and 2 activities). In general, the greatest cost savings would occur with evaluation of the most comprehensive project (i.e., all phases of the Master Plan project) in one CEQA document. Should changes to the project occur when the MCCSD is ready to construct Phase 3 of the Master Plan, additional CEQA documentation can take place at that time.

Table 3 provides a proposed schedule for the IS/MND. Based on this schedule, LSA would provide an Administrative Draft IS/MND to MCCSD and the County within 8 weeks of authorization to proceed and receipt of all project information and relevant background data. The MND would be ready for review and adoption within 24 weeks of authorization to proceed. As always, we are open to discussing ways to shorten this schedule, if desired by MCCSD.

Table 3: Proposed Environmental Documentation Schedule

Milestone	Responsible Party	Weeks to Complete	Cumulative Weeks
Authorization to Proceed	MCCSD	–	–
Prepare Administrative Draft IS/MND	LSA	8	8
Review of Administrative Draft IS/MND	MCCSD/County	3	11
Prepare Screencheck Draft IS/MND	LSA	2	13
Review Screencheck Draft IS/MND	MCCSD/County	3	16
Prepare and Reproduce Public Review Draft IS/MND	LSA	2	18
Public Review Period	–	*4*	*22*
Prepare Final IS/MND and MMRP	LSA/ MCCSD/County	2	24
Hearings with MCCSD Board/Planning Commission	MCCSD	TBD	28

Thank you for requesting a proposal from LSA. If you have any questions regarding this scope of work or budget, please call Judith Malamut or Greta Brownlow at (510) 540-7331.

Sincerely,

LSA ASSOCIATES, INC.

Judith H. Malamut, AICP
Principal

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February 19, 2008
File: 1268.01bltr

G.H. Williams Collaborative
411 West Chapel Hill Street
Durham, NC 27701
(email: ghwc@mindspring.com)

Re: Reliance Upon Geotechnical Investigation Report
Marin City Community Center Complex
Marin City, California

Dear Mr. Williams:

As we have discussed, this letter confirms that the evaluations and recommendations in our November 29, 2005 Geotechnical Investigation Report for the Marin City Community Center Project are still judged valid for the site. One item that has changed is the adoption of the 2007 California Building Code (CBC) which incorporates new seismic design parameters. When needed by the project Structural Engineer for final design work, we will issue a brief letter with the new criteria.

We trust this letter allows project planning to continue. Please call with any additional questions.

Very truly yours,
MILLER PACIFIC ENGINEERING GROUP

Michael Morisoli
Geotechnical Engineer No. 2541
(Expires 12/31/08)

3 copies submitted

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GEOTECHNICAL INVESTIGATION
MARIN CITY COMMUNITY CENTER COMPLEX, PHASE ONE
MARIN COUNTY, CALIFORNIA

November 28, 2005

Project 1268.01

Prepared For:
G. H. Williams Collaborative
411 West Chapel Hill Street
Durham, North Carolina 27701

CERTIFICATION

This document is an instrument of service, prepared by or under the direction of the undersigned professionals, in accordance with the current ordinary standard of care. The service specifically excludes the investigation of radon, asbestos, toxic mold and other biological pollutants, and other hazardous materials. The document is for the sole use of the client and consultants on this project. Use by third parties or others is expressly prohibited without written permission. If the project changes, or more than two years have passed since issuance of this report, the findings and recommendations must be reviewed by the undersigned.

MILLER PACIFIC ENGINEERING GROUP
(a California corporation)

REGISTERED PROFESSIONAL ENGINEER
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GEOTECHNICAL INVESTIGATION
MARIN CITY COMMUNITY CENTER COMPLEX, PHASE ONE
MARIN COUNTY, CALIFORNIA

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APPENDIX 3: STUDIES COMPLETED

Miller Pacific
ENGINEERING GROUP

GEOTECHNICAL INVESTIGATION
MARIN CITY COMMUNITY CENTER COMPLEX, PHASE ONE
MARIN COUNTY, CALIFORNIA

I. INTRODUCTION

This report presents the results of our geotechnical investigation for the first phase of the Marin City Community Center Complex. The location of the project is shown on the Vicinity Map, Figure 1. Current project planning includes demolition of the existing community center and replacement with a new Community Center complex. We understand that the complex will be constructed in phases, with the total project comprised of six to seven new structures including a gymnasium, swim center, and community center as the first phase with office buildings, residential dwellings and an amphitheater as later phases.

The purpose of our geotechnical investigation is to characterize subsurface soil, rock, and groundwater conditions in order to provide geotechnical recommendations for the project. Our proposal dated September 6, 2005 specified our services in three phases: 1) Geotechnical Investigation, 2) Supplemental Services, Consultation, and Plan Review, and 3) Construction Observation and Testing. This report provides our site-wide evaluation of geologic hazards associated with development of the Community Center Complex, including recommended mitigation measures, as appropriate, and provides design level geotechnical criteria for the first phase of the project. Design level geotechnical criteria for subsequent phases of the project will be provided in a supplemental report(s), as details for these phases become available. Our Phase 1 services include the following:

- Review of readily available geologic and geotechnical reference data;
- Exploration of subsurface conditions with 12 borings within the planned Complex;
- Laboratory testing of selected samples to determine the pertinent engineering properties of the various soil and rock encountered;
- Evaluation of the geotechnical conditions and geologic hazards;
- Engineering analysis of the above data; and,
- Preparation of this report summarizing our geotechnical recommendations.

APPENDIX 3: STUDIES COMPLETED

II. PROJECT DESCRIPTION

The G. H. Williams Collaborative is the Project Architect for the Community Center Complex and has developed the Master Plan for the project. We understand that final details of project development and site layout are pending. As discussed previously, we anticipate that the new Community Center Complex will include several new buildings, constructed in phases with the first phase including a gymnasium, swim center, and community center. New asphalt-paved parking lots and associated underground utility services are also planned for the current phase. Based on our discussions with George Williams, we anticipate that new structures will have concrete slab-on-grade floors and impose moderate to heavy building loads. Building wall types have not been determined at this time, but concrete block or steel framing is likely for some of the taller walls or for walls supporting longer spans.

Existing site conditions and currently planned improvement locations are shown on Figure 2. We understand that future phases of development will include residential units, an amphitheatre, and office buildings with a possible underground level of parking.

The project site is located on a gentle, southerly-facing slope that was originally graded for the existing structures. Cut slopes, up to about 10 feet high and inclined at between 1.5:1 and 2:1 (horizontal:vertical), at the north end of the site appear to be performing relatively well with no observed signs of sloughing or sliding. Although final details of site development are pending, additional cuts into the hillside at the northwestern end of the project are likely. These cuts would likely be supported with new retaining walls up to 10 to 15 feet, or more in retained height. Site grading may also include placement of some additional fill (anticipated to be no more than five feet) to create the relatively level building pads and to provide for positive site drainage.

APPENDIX 3: STUDIES COMPLETED

III. SITE CONDITIONS

A. Regional Geology

The site is located within the Coast Range Geomorphic Province of California. The regional bedrock geology consists of complexly folded, faulted, sheared, and altered sedimentary, igneous, and metamorphic rock of the Franciscan Complex. Bedrock is characterized by a diverse assemblage of greenstone, sandstone, shale, chert, and melange, with lesser amounts of conglomerate, calc-silicate rock, schist and other metamorphic rocks.

The regional topography is characterized by northwest-southeast trending mountain ridges and intervening valleys that were formed by movement between the North American and the Pacific Plates. Continued deformation and erosion during the late Tertiary and Quaternary Age (the last several million years) formed the prominent Marin coastal ridges and the inland depression that is now the San Francisco Bay. The more recent seismic activity within the Coast Range Geomorphic Province is concentrated along the San Andreas Fault zone, a complex group of generally north to northwest trending faults.

Published geologic mapping (CDMG, 1976) shows the site is located near the contacts between three geologic units. The hills north and northeast of the site are mapped as Franciscan mélange bedrock, a tectonic mixture of small to large masses of resistant rock types (principally sandstone, greenstone, chert, and serpentine) embedded in a matrix of sheared and pulverized rock material. The mapping further indicates that the majority of the project site is underlain by unconsolidated colluvium comprised of weathered bedrock fragments transported and accumulated at the base of natural slopes. Although no artificial fill or compressible bay mud are mapped within the project site, a contact with an artificial fill over bay mud area is mapped several hundred feet southeast of the site.

B. Surface Conditions

Natural ground within and adjacent to the site slopes down towards the southeast. Natural slopes are steepest (up to approximately 3:1, horizontal:vertical) at the northern end of the site and become flatter towards the south. Previous grading at the site created cut slopes up to a maximum height of approximately 10 to 12 feet at the northwest end of the property. These cut slopes are at inclinations of approximately 2:1 or slightly steeper. This past grading also created the relatively level building pads for the existing single-story structures of the current

APPENDIX 3: STUDIES COMPLETED

Community Center. Some fills were also placed to raise the grade at the southern end of the site.

The existing community center building appears to have experienced some differential settlement at the south end, most likely due to settlement of the existing fill. In addition to the existing Community Center buildings, the site includes asphalt-paved access roads and parking areas and grass-covered areas with several mid- to large-sized trees.

C. Field Exploration and Laboratory Testing

We drilled seven exploratory borings within the area of planned first phase development and five additional borings within the areas of later-phased development at the locations shown on Figure 2 on September 15, and 16, 2005 using truck-mounted drilling equipment. The soils encountered were logged and samples were obtained for laboratory testing. The subsurface exploration program is discussed in more detail in Appendix A. Soil and Rock Classification Charts are presented along with the boring logs on Figures A-1 through A-15 of Appendix A.

Laboratory testing of undisturbed samples from the exploratory borings included moisture content, dry density, unconfined compressive strength and plasticity. The results of the moisture content, density, and strength tests are presented on the boring logs. The plasticity test results are presented on Figure A-16. The laboratory testing program also is discussed in more detail in Appendix A.

D. Subsurface Conditions

Our subsurface exploration generally confirms the mapped geology. The subsurface profile varies across the planned first phase development area. At the northwest end, adjacent to the existing cut slopes, between four and ten feet of stiff sandy clay soil (colluvium) overlies weathered Franciscan mélange bedrock. Over central and southeast portions of the Phase 1 development area, a wedge of loose to medium stiff artificial fill and natural soil thickens towards the south. The fill and softer soils in this area overlie firm soil and weathered bedrock. Total depth to firm soil or bedrock across central and southern portions of the first phase development area varies from approximately six feet (Boring 2) to 20+ feet (Boring 6). With the exception of Boring 6, artificial fill and natural soils encountered tended to be fine-grained (i.e., clays and silts). At Boring 6, natural soils below approximately 15 feet became coarse-grained (i.e., sands and gravels). Between approximately 17 and 20 feet in Boring 6, these sandy soils

APPENDIX 3: STUDIES COMPLETED

were relatively loose. Moderate to highly plastic soils were also encountered in the upper six feet of Boring 2, indicating some expansive potential of the near-surface soils.

Groundwater was observed at approximately 6.5 feet below the ground surface in Boring 6 (five hours after drilling) and at approximately 15 feet below ground surface in Boring 7 during drilling. Other borings were backfilled immediately after drilling and no groundwater was observed. Because the borings were not left open for an extended period of time, a stabilized depth to groundwater may not have been observed. Groundwater levels are also expected to fluctuate seasonally and may be near the ground surface during and after periods of intense rainfall.

E. Seismicity

The Community Center Complex site is located within a seismically active area and will therefore experience the effects of future earthquakes. Earthquakes are the product of the build-up and sudden release of strain along a "fault" or zone of weakness in the earth's crust. Stored energy may be released as soon as it is generated or it may be accumulated and stored for long periods of time. Individual releases may be so small that they are detected only by sensitive instruments, or they may be violent enough to cause destruction over vast areas.

Faults are seldom single cracks in the earth's crust but typically are braids of breaks that comprise shatter zones which link to form networks of major and minor faults. Within the Bay Area, faults are concentrated along the San Andreas fault zone. The movement between rock formations along either side of a fault may be horizontal, vertical, or a combination and is radiated outward in the form of energy waves. The amplitude and frequency of earthquake ground motions partially depends on the material through which it is moving. The earthquake force is transmitted through hard rock in short, rapid vibrations, while this energy movement becomes a long, high-amplitude motion when moving through soft ground materials, such as bay mud.

An "active" fault is one that shows displacement within the last 11,000 years and, therefore, is considered more likely to generate a future earthquake than a fault that shows no sign of recent rupture. The locations of the currently known active faults relative to the project site are shown on Figure 3.

The Richter or Moment Magnitude Scale provides a method to deduce the magnitude of an earthquake from seismologic instruments. The measurement of magnitude provides a rating that is independent of the place of observation and thus allows a comparison of seismic events. Magnitude is measured on a logarithmic scale; every one-unit increase indicates an increment of roughly 30 times the energy. For example, an 8.0 magnitude earthquake would have an energy level 30 times that of a 7.0 magnitude and 900 times that of a 6.0 magnitude earthquake.

Historic Fault Activity

Numerous earthquakes have occurred in the region within historic times. The results of our computer database search indicate that 45 earthquakes (Richter Magnitude 5.0 or larger) have occurred within 100 kilometers of the site area between 1735 and 2005. Using empirical attenuation relationships, the maximum historic bedrock acceleration (median peak) within the study area is approximately 0.36g. The five most significant historic earthquake to affect the project site are summarized in Table A.

TABLE A
SIGNIFICANT EARTHQUAKE ACTIVITY
SAN FRANCISCO BAY AREA REGION

Fault	Historic Richter Magnitude	Year	Distance	Maximum Peak Bedrock Acceleration
San Andreas	8.3	1906	18 km	0.28 g
Hayward	6.8	1836	28 km	0.10 g
San Andreas	7.0	1838	31 km	0.10 g
Rodgers Creek	6.2	1898	37 km	0.06 g
Hayward	6.8	1868	40 km	0.07 g

References: Sources: USGS (2005), Boore, Joyner, Fumal (1994)

The calculated bedrock accelerations should only be considered as reasonable estimates. Many factors (soil conditions, orientation to the fault, etc.) can influence the actual ground surface accelerations. Significant deviation from the values presented are possible due to geotechnical and geologic variations from the typical conditions used in the empirical correlations.

Probability of Future Earthquakes

The historical records do not directly indicate either the maximum credible earthquake or the probability of such a future event. To evaluate earthquake probability in this region, the USGS has assembled a group of researchers into the "Working Group on California Earthquake Probabilities" to estimate the probabilities of earthquakes on active faults. Potential sources were analyzed considering fault geometry, geologic slip rates, geodetic strain rates, historic activity, and micro-seismicity, to arrive at estimates of probabilities of earthquakes with a Moment Magnitude greater than 6.7 by 2032.

The probability studies focus on seven "fault systems" within the Bay Area. Fault systems are composed of different, interacting fault segments capable of producing earthquakes within the individual segment or in combination with other segments of the same fault system. The probabilities for the individual fault segments in the San Francisco Bay Area are presented on Figure 3.

In addition to the seven fault systems, the studies included probabilities of "background earthquakes." These earthquakes are not associated with the identified fault systems and may occur on lesser faults (i.e., West Napa) or previously unknown faults (i.e., the 1989 Loma Prieta and 2000 Napa/Mt. Veeder Earthquake). When the probabilities on all seven fault systems and the background earthquakes are combined mathematically, there is a 62 percent chance for a magnitude 6.7 or larger earthquake to occur in the Bay Area by the year 2032. Smaller earthquakes (between magnitudes 6.0 and 6.7), capable of considerable damage depending on proximity to urban areas, have about an 80 percent chance of occurring in the Bay Area by 2032 (USGS, 2002).

Additional studies by the USGS regarding the probability of large earthquakes in the Bay Area are on going. These current evaluations include data from additional active faults and updated geological data.

IV. GEOLOGIC HAZARDS

A. General

We evaluated commonly-considered geologic hazards and their potential impacts on the planned development of the site. The primary geologic hazards identified include strong seismic shaking, settlement of new structures, and liquefaction. Other hazards, such as fault rupture, were not considered significant at the site.

B. Seismic Shaking

The site will experience seismic ground shaking similar to other areas in the seismically active Bay Area. The intensity of ground shaking will depend on the characteristics of the causative fault, distance from the fault, the earthquake magnitude and duration, and site-specific geologic conditions.

Table B summarizes the expected ground accelerations at the site for earthquakes on various nearby active faults. These acceleration values are for an earthquake originating on the closest portion of the fault to the site.

TABLE B
ESTIMATED PEAK GROUND ACCELERATION
FOR PRINCIPAL ACTIVE FAULTS
MARIN CITY COMMUNITY CENTER COMPLEX
MARIN CITY, CALIFORNIA

Fault	Moment Magnitude for Characteristic Earthquake	Closest Estimated Distance (kilometers)	Median Peak Ground Acceleration (g)[1]
San Andreas	7.9	15	0.45
San Gregorio	7.3	16	0.32
Hayward	7.1	18	0.27
Rodgers Creek	7.0	20	0.25
West Napa	6.5	40	0.11

(1) Determined from attenuation relationship by Boore, Joyner, and Fumal (1994) for medium stiff soil sites.

Reference: USGS (1996)

The calculated bedrock accelerations should only be considered as reasonable estimates. Many factors (soil conditions, orientation to the fault, etc.) can influence the actual ground surface accelerations.

Ground shaking can result in structural failure and collapse of structures or cause non-structural building elements, such as light fixtures, shelves, cornices, etc., to fall, presenting a hazard to building occupants and contents. The first building code regulations relating to earthquake resistance appeared in 1933. As knowledge has increased, codes have been updated; however the field of earthquake resistant structural engineering is very complex and relatively new. Compliance with provisions of the most recent California Building Code (CBC) should result in structures that do not collapse in an earthquake. Hazards associated with falling objects or non-structural building elements will remain.

The potential for strong seismic shaking at the project site is high. Due to their close proximity, the San Andreas and Hayward faults present the highest potential for severe ground shaking. The significant adverse impact associated with strong seismic shaking is potential damage to structures and improvements.

Seismic Shaking Mitigation Measures – Minimum mitigation measures should include designing the improvements and structures in accordance with the most recent (2001) version of the California Building Code. Recommended CBC seismic coefficients are provided in Section V-C of this report.

C. Liquefaction Potential and Seismic Induced Ground Settlement

Liquefaction refers to the sudden, temporary loss of soil strength during strong ground shaking. This phenomenon can occur where there are saturated, loose, granular deposits subjected to seismic shaking. Liquefaction-related phenomena include settlement, flow failure, and lateral spreading. Seismic induced ground settlement can induce settlement of unsaturated, loose, granular soils.

Although un-consolidated (soft) soils were encountered in our borings, site soil is predominately clayey (fine-grained) and therfore not suceptaible to liquefation or seismically-induced ground settlement. One zone of relatively loose, granular soil was encountered between approximately 17 and 20 feet below ground surface in Boring 6. Although potentially subject to liquefaction, this zone does not appear to represent a continuous layer or layer of significant thickness and is confined by over 15 feet of medium stiff clay soil. We therefore judge that the risk of surface manifestation or damage to structures at the site from liquefaction or seismically-induced settlement is low and would be limited to some localized minor differential surface settlements.

Liquefaction and Seismic Induced Ground Settlement Mitigation Measures – Measures to mitigate liquefaction and ground settlement include stiffening shallow foundations and slabs-on-grade and/or the use of deepened foundation systems such as drilled piers or driven piles to reduce the risk of differential and total settlements. Improved performance could be also be accomplished through ground improvement such as grouting or installation of rammed aggregate piers (RAP). These alternatives are discussed in more detail in Section V.

D. Expansive Soils

Moderate and highly plastic silts and clays, when located near the ground surface, can exhibit expansive characteristics (shrink-swell) detrimental to structures and flatwork during periods of fluctuating soil moisture content. We performed plasticity testing on representative near surface soil samples. Our testing is summarized on Figure A-11 and indicates that near surface soils are generally moderate plasticity silts and clays with pockets of high plasticity clay soil (B2).

Expansive Soil Mitigation Measures – Risk of damage due to expansive soil can be effectively mitigated through careful adherence to the Site Preparation and Grading recommendations, provided in Section V-C.

E. Flooding

The site is located in a developed section of Marin County and based on FEMA flood hazard maps, is not within a 500-year flood zone. Topographic mapping provided by the Client shows existing grades at the site to vary between approximately +20 feet and +45 feet (MSL)

Flooding Mitigation Measures – We judge that the risk of widespread flooding is low. However, the project Civil Engineer should evaluate the potential for localized flooding and design the project storm drainage accordingly.

F. Settlement

Soils encountered during our exploration varied from stiff to soft and compressible. In addition, the total thickness of compressible soils varies significantly across the site. Therefore, the risk to new structures from total and differential settlement is moderate to high. Special foundation design and/or ground improvement will be required to mitigate the settlement hazard to new improvements for the project.

Settlement mitigation measures are required. Mitigation options are discussed in Section V-B of this report and include deepened foundations systems, stiffened shallow foundation systems, and ground improvement to allow for conventional shallow foundations systems. The appropriate mitigation system(s) for this site and project will depend on the relative costs of the mitigation options vs. the desired performance level of the new structures, among other factors.

G. Erosion

Sandy soils on moderate slopes or clayey soils on steep slopes are susceptible to erosion when exposed to concentrated surface water flows. With the exception of the natural and cut slopes at the northern site boundary, the site is relatively flat to gently sloping and the surface soils are relatively clayey. However, concentrated surface water flows can still result in erosion under these conditions.

Erosion Mitigation Measures – Mitigation measures include the project Civil Engineer designing a site drainage system to collect surface water into a tight pipe storm drain system and discharge water at an appropriate location. Re-establishing vegetation on disturbed slopes will also be required to reduce erosion.

H. Slope Stability/Landsliding

With the exception of the natural and cut slopes at the northern site boundary, the site is relatively flat to gently sloping. There are hillside areas above the site to the north and east. Detailed stability analysis of off-site slopes is not within the scope of our current investigation. However, we did not observe evidence of slope instability or landslide hazard within adjacent up-slope areas which would pose a hazard to the planned development. As noted earlier, on-site cut slopes have performed well to-date. Further, additional cuts into the northern hill will be supported by engineered retaining structures.

Slope Stability Mitigation Measures – Provided that site grading is performed and retaining walls are designed in accordance with the criteria provided in Sections V-D and V-F, respectively, no additional mitigation measures are required.

V. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions

Based on the results of our investigation and our experience with similar projects, we conclude that the site is feasible for the planned Community Center Complex. However, geologic/geotechnical hazards that could significantly affect the cost of developing this site as currently planned must be considered. As discussed below, careful consideration of final building layout on the site could help mitigate some of the more significant site hazards.

The primary geotechnical concerns for the project are strong seismic ground shaking and settlement of new improvements. High groundwater could also be problematic during construction of deep foundations or deep utility trenches and could also pose a hazard to the planned swimming pool, both during and after construction. Seismic design criteria are provided in Section V-D. Mitigation options for settlement are discussed in Section V-B, and other geotechnical design criteria for the project are provided in subsequent sections.

B. Discussion of Settlement Mitigation Options

To facilitate the discussion of settlement mitigation options, we have prepared Figure 4, a Foundation Constraints Plan. The primary purpose of Figure 4 is to show the approximate limits of where deep, loose soil, in combination with high groundwater, may limit foundation options. If final site layout for the Community Center Complex is still pending, we advise that consideration be given to relocating the gymnasium and/or other new structures with relatively heavy foundation loads, outside of this deep soil zone.

Also of particular importance in evaluating the appropriate settlement mitigation for the gymnasium, swim center, and community center is whether the three facilities will be designed as separate structures (structurally isolated) or will be structurally connected. If the facilities are structurally isolated, different foundation systems could be used for each, potentially resulting in cost savings to the project. If the three facilities are not structurally isolated, they should be designed with a uniform foundation system so that the structure is supported on uniform materials, reducing the risks of differential settlements.

As the Swim Center is planned primarily within a cut area (very stiff soils or weathered rock), it could be founded on conventional shallow spread footings, locally deepened towards the southwest to maintain uniform bearing in firm native soil. Design criteria for shallow spread

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footings bearing within the firm natural site soils are provided in Section V-E. However, as the Community Center and gymnasium span over a steeply thickening layer of compressible artificial fill and native soil, these facilities will require a specialized foundation system and/or ground improvement to allow for conventional spread footings. This condition is most severe and most highly exacerbated by groundwater at the southeast of the site, in the vicinity of Boring 6 (Figures 2 and 4).

The use of stiffened, rigid shallow foundation systems such as mat-slabs was considered as a mitigation option. Although this type of system could mitigate structural distress to new structures with light to moderate foundation loads, we judge that the relatively heavy loads anticipated for a gymnasium structure would be difficult to support on a stiffened shallow foundation system. A better system to provide uniform foundation support for heavily-loaded structures over the variable layer of unsuitable material is to design and construct a deep foundation system of either drilled and cast-in-place concrete piers or driven piles which extend through the unsuitable soils and into the firm bearing materials below. Piers or piles are connected at the surface by reinforced concrete grade beams that then provide the uniform foundation support for the new structures. Design criteria for deep foundations are also provided in Section V-E.

Deep foundation systems will provide good foundation support, but are generally more costly than conventional shallow foundations. Of particular concern for drilled piers on this project are groundwater and granular soils at the southwest of the site (Boring 6, Figures 2 and 4). Open holes here would likely encounter caving that would require the added expense and difficulty of casing and dewatering the holes during construction. These conditions can also make quality control during construction difficult. Therefore, driven piles are the preferred deep foundation method for heavily-loaded structures that span over this deep soil zone. Variations of the deep foundation system include driven pipe piles (min-piles) and helical piers. These alternative systems can be advantageous as they do not required a pre-drilled pier hole, but they often provide only limited lateral resistance (necessary for seismic design).

A potentially cost-saving alternative to deep foundations within the compressible soil areas may be the use of rammed aggregate piers (RAP) to improve the soft soils and allow for use of conventional shallow spread footings. The RAP process involves drilling a series 30±inch diameter holes of various depths beneath future foundation locations (for this site the holes

would be drilled to maximum depths of approximately 20 feet). The holes are then filled with compacted aggregate base rock. This process provides an overall improvement of the compressible soil zone such that less costly conventional shallow spread footings can then be used to support new foundation loads in place of the deep piers or piles. The ground improvement is often such that a bearing capacity in excess of that allowed for the stiff on-site native soils can be used in foundation design. Use of RAP may also be considered to provide an improved floor slab subgrade for the gymnasium, as even relatively small differential movement may be detrimental to the intended use of the structure. However, RAP also require the excavation of a pre-drilled hole, which could be problematic at the southeast end of the site. Additional information regarding RAP can be provided upon request.

C. Swimming Pool Buoyancy

High groundwater adjacent to an in-ground pool can result in hydrostatic pressures at the base of the pool. If the pool is emptied, or the water level lowered such that groundwater levels outside the pool shell are higher than the water level in the pool, uplift and severe damage to the pool, piping, and deck work can result. We therefore recommend a hydrostatic relief system be installed beneath the pool. This can be achieved in different ways. Perhaps the simplest and most effective means would be to install a minimum six-inch layer of crushed rock beneath the pool shell. To provide hydrostatic relief, this gravel layer would have to connected to a "Daylight" point(s) via a solid pipe outlet(s). Other hydrostatic relief systems (valves) are also commonly available and could be also be used.

D. Seismic Design

Mitigation of ground shaking includes seismic design of the structure in conformance with the provisions of the most recent version (2001) of the California Building Code. Based on the interpreted subsurface conditions and closest fault type and distance, we recommend the CBC coefficients and site values shown in Table C below for use in equations 30-4 through 30-8 to calculate the design base shear of the new construction.

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TABLE C
2001 CBC FACTORS
MARIN CITY COMMUNITY CENTER COMPLEX

Factor Name	Coefficient	CBC Table	Site Specific Value
Seismic Zone Factor	Z	16-I	0.40
Soil Profile Type[1]	$S_{A,B,C,D,E, or F}$	16-J	S_D
Near Source Factor	N_a	16-S	1.00[3]
Near Source Factor	N_v	16-T	1.00
Seismic Coefficient	C_a	16-Q	0.44
Seismic Coefficient	C_v	16-R	0.64
Seismic Source Type[2]	A, B or C	16-U	A

(1) Soil Profile Type S_D Description: Stiff Soil Profile, Shear Wave Velocity between 600 and 1,200 feet per second, Standard Penetration Test N values between 15 and 50, and Undrained Shear Strength between 1,000 and 2,000 psf.
(2) Seismic Source Type A: Faults that are capable of producing large magnitude events and have a high rate of seismic activity.
(3) The project Structural Engineer should determine if the Near Source Factor (Na) and Seismic Coefficient (Ca) may be reduced based on building type and structure irregularities.

E. Site Grading

Site preparation and grading should conform to the following recommendations and criteria.

1. Surface Preparation – Clear all structures, concrete slabs, asphalt pavement, over-size debris, and organic matter from the site. Existing concrete foundations, slabs or asphalt pavements should be removed where they conflict with new grades and foundations because "hard points" and reflection cracking are expected if new structures are located over old improvements. Recovered aggregate base and asphalt materials may be stockpiled and used as compacted fill provided they are spread evenly in fills and the asphalt is processed so that the maximum particle size is not greater than 4 inches.

Clear all grass, brush, roots, over-sized debris and organic material from areas to be graded. Excavate loose soil to expose firm natural soils. Any landscaping vegetation within the building areas should be scraped from the surface, stockpiled for reuse in landscaping or removed from the site. Any construction debris or abandoned utilities encountered during site grading should be removed from the site. Rocks or concrete pieces larger than 4 inches encountered during subgrade preparation or site grading should be removed from the site. Excavations to remove existing foundations or oversized materials should be backfilled with compacted fill in accordance with subsequent sections of this report.

2. Materials – Soil and rock mixtures generated from on-site excavations will generally be suitable for use as fill provided the maximum particle sizes are less than 4 inches and any concentrations of high plasticity clay are sufficiently well mixed. Processing will include removal and/or crushing of rock, mixing and moisture conditioning as described below.

3. Compacted Fill – Non-expansive fill, backfill, and scarified subgrades should be conditioned to slightly above their optimum moisture content. Moisture conditioned and cured on-site materials should subsequently be placed in loose horizontal lifts of 8 inches thick or less and uniformly compacted to a minimum of 90 percent relative compaction. In areas where new pavement will be installed, the upper 6 inches should be further compacted to at least 95 percent relative compaction.

Moderate to high plasticity on-site soil used as fill or backfill or scarified as subgrades should be conditioned to at least two percent above their optimum moisture content. Properly moisture conditioned and cured on-site materials should subsequently be placed in loose horizontal lifts of 8 inches thick or less and uniformly compacted to between 88 and 92 percent relative compaction. In areas where new asphalt pavement will be installed, the upper 6 inches should be moisture conditioned to above the optimum moisture content and compacted to at least 95 percent relative compaction.

Relative compaction, maximum dry density, and optimum moisture content of fill materials should be determined in accordance with ASTM Test Method D 1557, "Moisture-Density Relations of soils and Soil-Aggregate Mixtures Using a 10-lb. Rammer and 18-in. Drop." The appropriate moisture conditioning and compaction for variable soil conditions will be determined in the field by the Geotechnical Engineer during construction. Further, once plastic soils have been conditioned and compacted as outlined above, they must then be maintained in a moist condition up until they are confined by pavement, flatwork or new structures. Moderate to highly expansive soils should not be placed as fill in "structural" areas, if at all possible, due to risks of seasonal movement and their decreased performance relative to non-expansive soils.

If imported fill is required, the material shall consist of soil and rock mixtures that: (1) are free of organic material, (2) have a Liquid Limit less than 40 and a Plasticity Index of less than 20, and (3) have a maximum particle size of 4 inches. Any imported fill material needs to be tested to determine its suitability for use as fill material.

F. Foundation Design

As discussed above, several alternatives for foundation design and ground improvement are available for this site. Based on our investigation and understanding of the project, we recommend one of the following set of foundation design options. As project planning and design progresses and foundation loads and building layout are more definitively established, we should be consulted to verify that these recommendations remain appropriate.

1) Provided that the Swim Center is structurally isolated from the Gymnasium and Community Center, found the Swim Center on shallow spread footings designed in accordance with Table D. Swim Center footings may need to be deepened somewhat towards the southwest to maintain uniform bearing materials in the footing bottom. The deepest portions of these spread footings may extend as deep as four feet below the existing ground surface, depending on final grading and building layout.

   Design a deep foundation system (drilled piers or driven piles) for the Community Center and Gymnasium Building. Cast-in-place piers would gain their support in friction along their sides and should be designed in accordance with the Criteria in Table D. Driven piles would have to be specifically designed once actual foundation design loads are known. If selected as the deep foundation alternative, piles would vary in length from approximately 10 to 35 feet, depending on location within the building area. We anticipate that individual pile capacities up to 100 tons could be achieved with typical 14-inch piles at this site.

2) If the three facilities are structurally tied together, design the entire system as a deep foundation as discussed in 2).

3) If costs for options 1 or 2 above prove prohibitive, evaluate cost benefits of ground improvement using a RAP system with shallow spread footings. If this option is to be considered, a licensed designer/installer of RAP systems should be consulted to provide design assistance and cost estimates for comparison with options 1 and 2. Re-location of the heavy gymnasium building could also be considered to mitigate high construction costs anticipated due to soft granular soils and high groundwater.

As discussed previously, if the buildings remain in their currently proposed locations, deep foundations or ground improvement using open drilled holes (cast-in-place piers of RAP's) will be difficult to construct and would make quality control difficult during construction below the water table. For this reason, we recommend that driven piles be considered as the best deep

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foundation option if structures with relatively heavy foundation loads (i.e., gymnasium) will span the deep soil area shown on Figure 4.

TABLE D
FOUNDATION DESIGN CRITERIA
SHALLOW FOUNDATIONS AND FRICTION PIERS
MARIN CITY COMMUNITY CENTER COMPLEX

Shallow Spread Footings (For Swim Center only if structurally isolated)	
Minimum footing width[1]:	18 inches
Minimum footing embedment depth (below lowest adjacent grade)[2]:	18 inches
Allowable bearing pressure:	
Dead plus total live loads:	2,500 psf
Total design loads (includes wind and seismic):	3,200 psf
Base friction coefficient:	0.35
Lateral Passive Resistance[3]: (per foot of depth)	350 pcf
Friction Piers	
Minimum Diameter	18 inches
Minimum depth into firm soil/rock[4]	5 feet
Anticipated Total Depths	variable 10 to 30 feet
Allowable Skin Friction Capacity, Firm Soil or Weathered Rock (Dead plus total Live loads)	750 psf
Lateral Passive Resistance[5]	
Upper three feet	200 pcf
Below three feet	350 pcf

(1) Size footing to impose similar bearing pressures rather than uniform widths.
(2) Deepen footing as necessary towards the southeast to maintain similar bearing condition.
(3) Equivalent Fluid Pressure, not to exceed 2000 psf.
(4) Disregard artificial fill and loose native soil. Geotechnical Engineer must field verify depth to firm native soil/weathered rock during construction.
(5) Equivalent Fluid Pressure, not to exceed 2,000 psf, assumed to act over two pier diameters.

Concrete slab-on-grade floors can be designed as either structurally isolated from perimeter and interior footings or they may be structurally connected. Because of the clayey near-surface soil and potential for differential settlement, we recommend constructing concrete slabs that are at least 5 inches thick and reinforced with steel bars, not mesh. Additional notes for concrete slabs-on-grade are included in Appendix B. Concrete slabs at the southeast end of the site may settle slightly due to the presence of deeper fills and soft natural soils. If floor slab differential settlements of about 1 inch in 20 feet are considered acceptable, we do not judge that the added expense of structurally supporting floor slabs in this area will be justified. However, if an RAP

ground improvement program is selected to improve foundation conditions, RAP could be considered below floor slabs in loose soil areas to reduce the potential for differential settlements.

To improve interior moisture conditions, a 4-inch layer of clean, free draining, 3/4-inch angular gravel or crushed base rock should be placed beneath the interior concrete slabs to form a capillary moisture break. The base rock must be placed on a properly moisture conditioned and compacted subgrade that has been approved by the Geotechnical Engineer. Where moisture would be detrimental to the interior floor coverings, a vapor barrier consisting of a minimum 10-mil plastic sheeting should cover the aggregate. The vapor barrier should meet the requirements of ASTM E-1745. To aid concrete curing and protect the vapor barrier, cover the membrane with about 2-inches of dry sand. Eliminating the capillary moisture break and/or plastic vapor barrier may result in excess moisture intrusion through the floor slabs resulting in poor performance of floor coverings, mold growth or other adverse conditions.

G. Retaining Walls

Project retaining walls should be designed in accordance with the criteria in Table E. Where minor displacements at the top of the wall are allowable (0.01 x Height of wall), use the unrestrained criteria. Otherwise, use the restrained criteria. Retaining walls must have backdrains to prevent build-up of hydrostatic pressure. These drains should consist of at least a 12-inch wide vertical zone of clean free-draining gravel with filter fabric placed between the soil/gravel interface, or a prefabricated drain such as Miradrain 6000, or equivalent. The drains should outlet through rigid perforated pipe (placed with perforations down and sloped for gravity flow) along the base of the walls, and which discharge through rigid non-perforated pipe. The project Architect should determine what additional waterproofing is necessary to protect walls adjacent to living/interior space. Typical wall backdrain details are provided on Figure 5.

TABLE E
RETAINING WALL DESIGN CRITERIA
MARIN CITY COMMUNITY CENTER COMPLEX

Foundation		
Allowable bearing pressure[1]:		
	Dead plus live loads:	3,000 psf
	Total design loads (includes wind and seismic):	3,500 psf
	Base friction coefficient:	0.35
Active Pressures[2]		
Restrained Pressure [3]		
	Level Backfill	25*H psf
	2:1 Backfill	30*H psf
Unrestrained Pressure[4]		
	Level Backfill	40 pcf
	2:1 Backfill	60 pcf
Passive Resistance[4][5]		
Dense native soil		400 pcf
Seismic Surcharge[6]		21*H psf

(1) Deeper cut areas within the northwestern portion of site only. Contact Geotechnical Engineer if retaining walls are planned elsewhere on-site.
(2) Interpolate wall pressures for intermediate slopes.
(3) Uniform rectangular pressure distribution. (H = Height of wall)
(4) Equivalent fluid pressure.
(5) Ignore upper 6-inches for passive resistance unless confined by concrete slab.
(6) Uniform rectangular pressure distribution. Factor of safety for short-term seismic loading conditions may be reduced to 1.0. Resultant acts at 0.6 H below top of wall.

H. Site and Foundation Drainage

Careful consideration should be given to design of finished grades at the site. We recommend that the building areas be raised slightly relative to adjacent landscaped areas and that the ground surface be sloped downward at least 0.25 feet for 5 feet (5 percent) from the perimeter of building foundations. Where hard surfaces, such as concrete or asphalt adjoin foundations, slope these surfaces at least 0.10 feet in the first 5 feet (2 percent). Roof gutter downspouts may discharge onto the pavements, but should not discharge onto any landscaped areas. Provide area drains for landscape planters adjacent to buildings and parking areas and collect downspout discharges into a tight pipe collection system. To mitigate migration of groundwater beneath new structures, a foundation subdrain should be installed along the up-hill side of building perimeter foundations. Typical details for foundation subdrains are provided on Figure 6.

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Site drainage should be discharged away from the building area and outlets should be designed to reduce erosion of the soils immediately downslope. Site drainage improvements should be connected into the existing City storm drainage system if possible.

I. Utility Trench Backfills

Excavations for utilities will be generally in medium stiff and loose to medium dense soils. Trench excavations having a depth of 5 feet or more must be excavated and shored in accordance with OSHA regulations. Pursuant to OSHA classifications, on-site soils may be considered as Type C. Bedding materials for utility pipes should be well graded sand with 90 to 100 percent of particles passing the No. 4 sieve and no more than 5 percent finer than the No. 200 sieve. Provide the minimum bedding beneath the pipe in accordance with the manufacturer's recommendation, typically 3 to 6 inches. Trench backfill may consist of on-site soils, moisture conditioned and placed in thin lifts and compacted to at least 90 percent. The upper 12 inches of backfill for trenches within areas of asphalt paving should consist of properly moisture conditioned Caltrans Class 2 Aggregate Base compacted to at least 95 percent relative compaction. Use equipment and methods that are suitable for work in confined areas without damaging utility conduits.

J. Exterior Concrete Slabs-on-Grade

Exterior reinforced concrete slabs-on-grade can be placed directly on a properly prepared subgrade as described in Section V-E. For improved performance, exterior slabs could be thickened to 5 inches and reinforced with concrete bars. To further improve performance, exterior concrete slabs may be underlain with 4 inches or more of Caltrans Class 2 Aggregate Base compacted to at least 92 percent relative compaction. Additional notes for concrete slabs-on-grade are included in Appendix B.

K. Pavement Design

We provide flexible asphalt pavement structural section recommendations in Table F. Because near-surface soil at the site is clayey, we used an assumed R-value of 5 for our analysis. Based on the anticipated relatively light traffic loads for access driveways and parking areas we prepared alternative designs for assumed Traffic Indices (TI) of 4, 5, and 6. The Project Civil Engineer should determine the appropriate TI in the various paved areas. Pavement design was performed in general accordance with Caltrans procedures for flexible pavement design (1990). Additional pavement sections can be calculated for different TI values if required.

TABLE F
PAVEMENT SECTION RECOMMENDATIONS
MARIN CITY COMMUNITY CENTER COMPLEX

T.I.	Asphalt Concrete [1]	Aggregate Base
4.0	2.5 inches	6.0 inches
5.0	3.0 inches	6.0 inches
6.0	3.5 inches	6.0 inches

1. The asphalt concrete should conform to the criteria for asphalt presented in Section 39 of the Caltrans Standard Specifications. The asphalt concrete shall be placed in layers not exceeding 2.5 inches in thickness and compacted to at least 95 percent relative compaction.

Subgrade preparation for asphalt-paved areas should follow the recommendations in the site preparation and grading (Section V-E) of this report. Additionally, the subgrade should be smooth and unyielding under a moving, fully loaded water truck. The subgrade should also not be allowed to dry out prior to pavement construction. Areas of soft or saturated soils encountered during construction should be excavated and replaced with properly moisture conditioned fill or aggregate base.

The aggregate base material should conform to Class 2 Aggregate Base in the current edition of Caltrans Standard Specifications. The aggregate base should be moisture conditioned to near optimum moisture content and compacted to at least 95 percent relative compaction in lifts no more than six inches thick.

If desired, rigid (concrete) pavements subjected to vehicle loads should be designed in accordance with Portland Cement Concrete Pavement (PCCP) Structural Thickness Guidelines designated in the Caltrans Highway Design Manual for an R-value of 5. Subgrade preparation should follow the same recommendations as for flexible pavements.

L. Wintertime Construction

Wintertime site work is feasible during the construction phase of this project provided that weather conditions do not adversely impact the planned grading and proper erosion control measures are implemented to prevent silt and mud from entering the storm drain system. High soil moisture contents and muddy site conditions may impact placing fills, compacting subgrades, and

VI. SUPPLEMENTAL GEOTECHNICAL SERVICES

We must review the plans and specifications for the project when they are nearing completion to confirm that the intent of our geotechnical recommendations has been incorporated and provide supplemental recommendations, if needed.

During construction, we need to observe and/or test site preparation and surface drainage. We also need to observe foundation excavations for the structures and associated improvements to confirm that the soils encountered during construction are consistent with the design criteria.

APPENDIX 3: STUDIES COMPLETED

LIST OF REFERENCES

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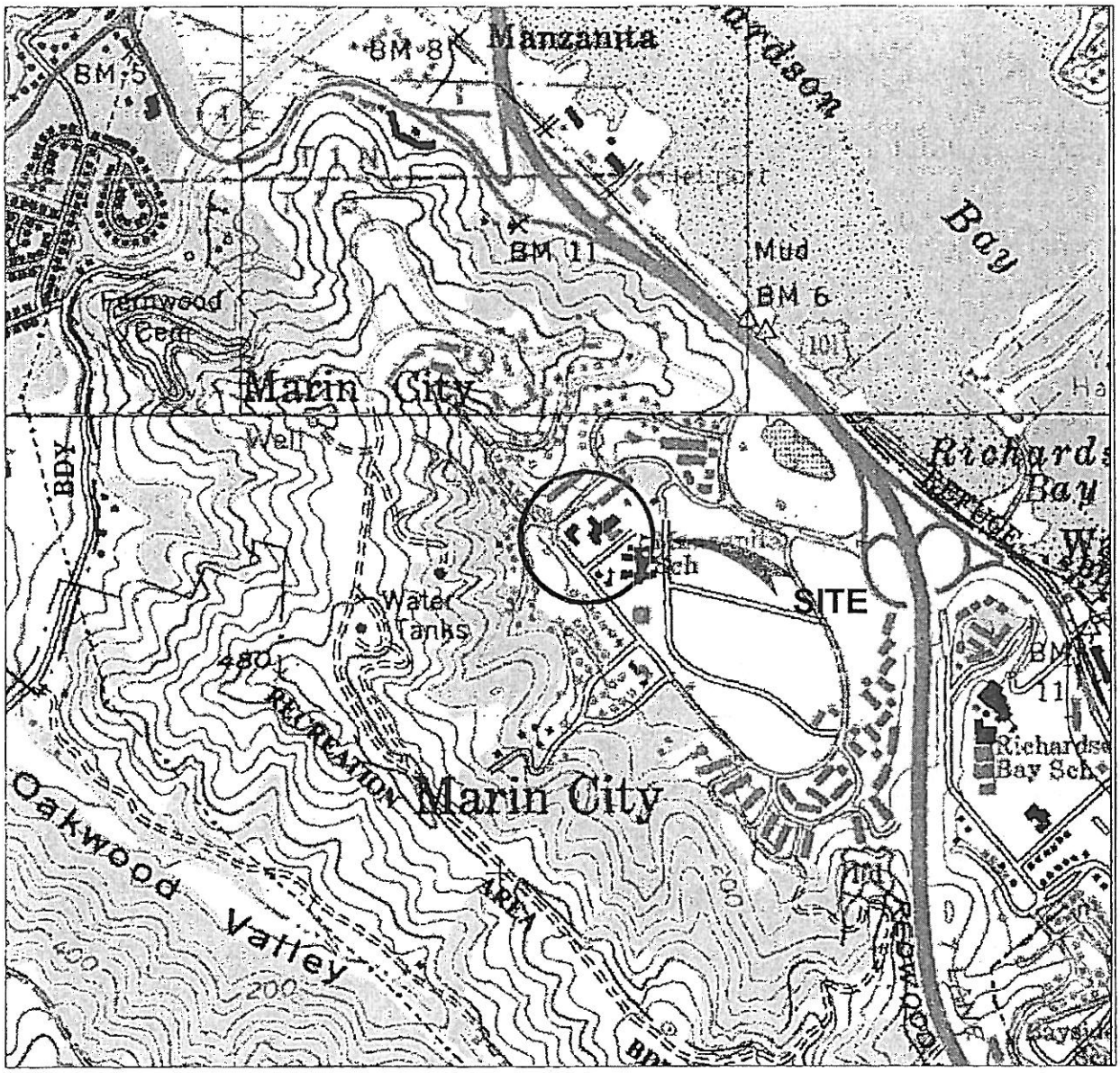

SITE LOCATION

SCALE

0 500 1000 2000 FEET

0 250 500 METERS

NORTH

REFERENCE: DeLorme 3D TopoQuads, 1999

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SITE LOCATION MAP
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1

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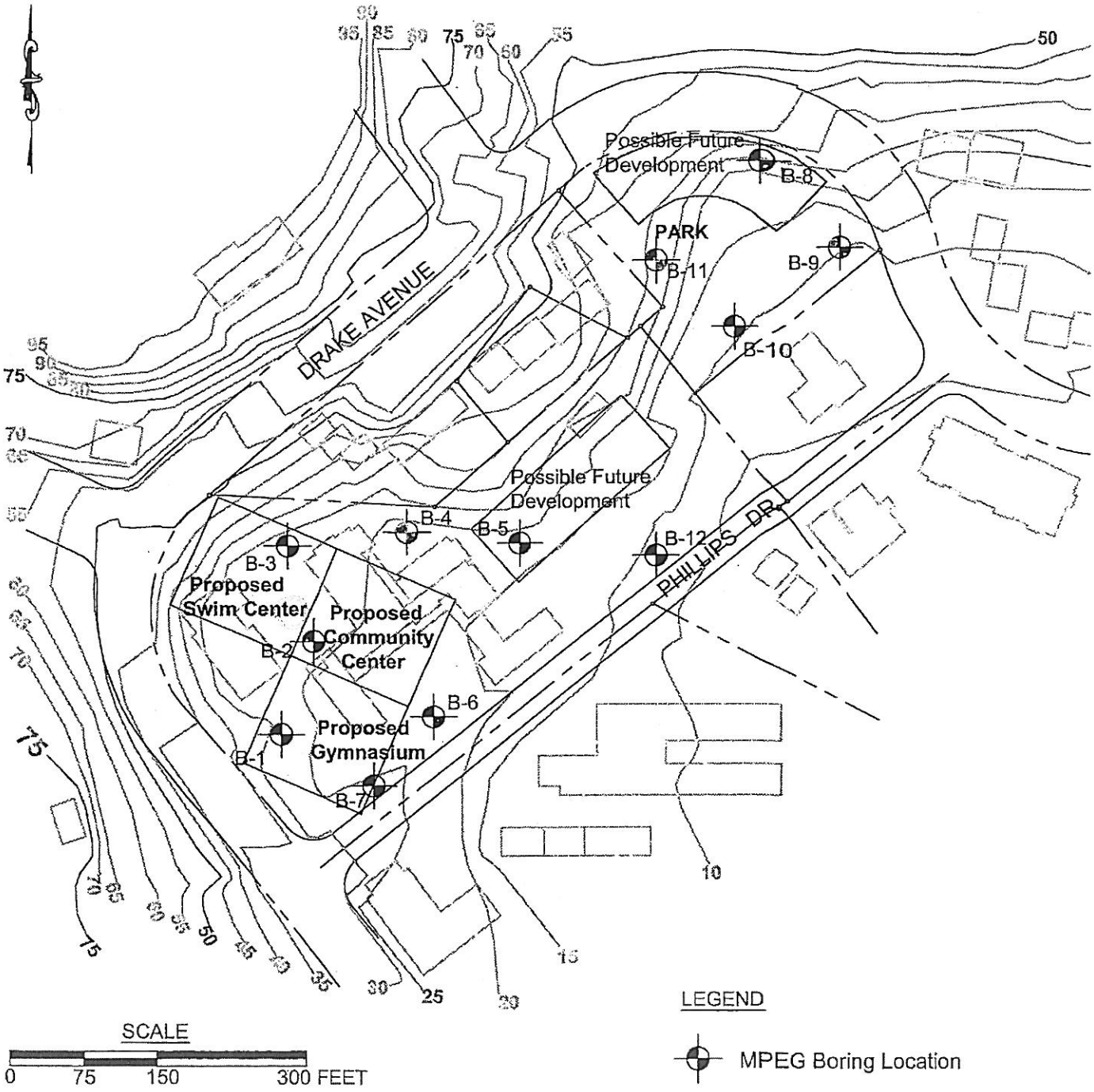

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SITE PLAN
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2

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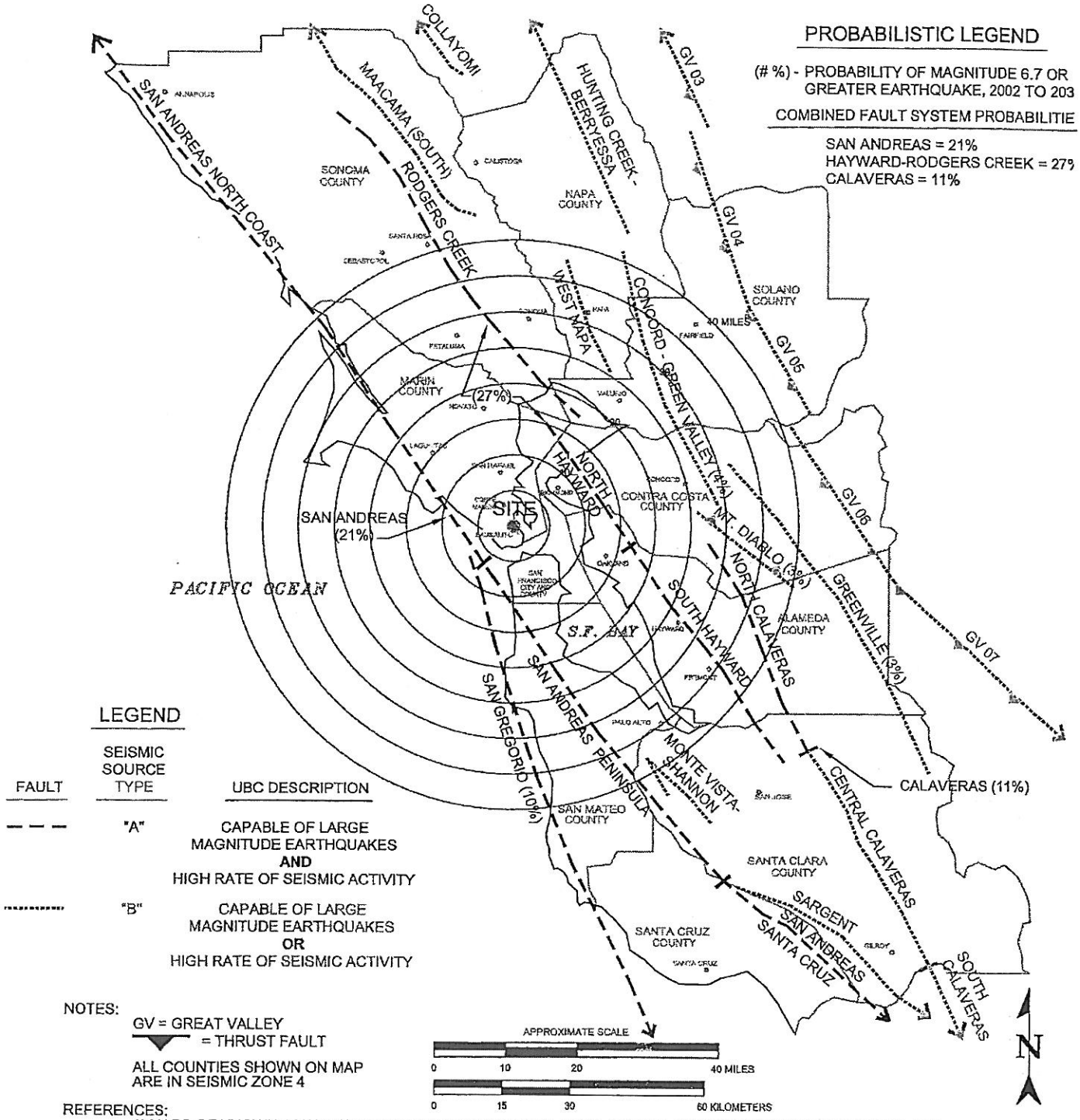

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FILE: fault map.dwg

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ACTIVE FAULT MAP
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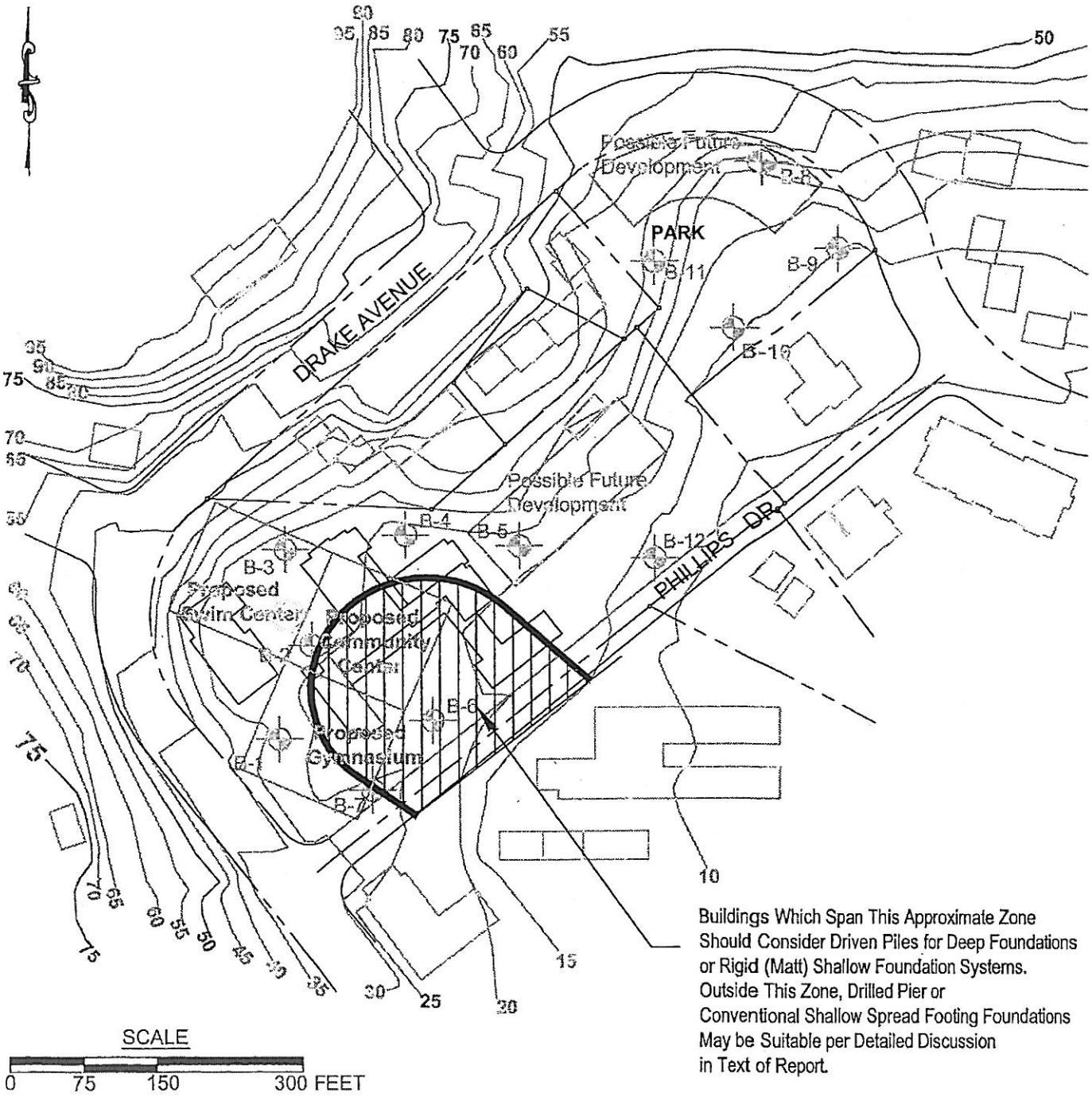

Reference: Un-dated Topographic Map provided by Client.

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FOUNDATION CONSTRAINTS PLAN
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4

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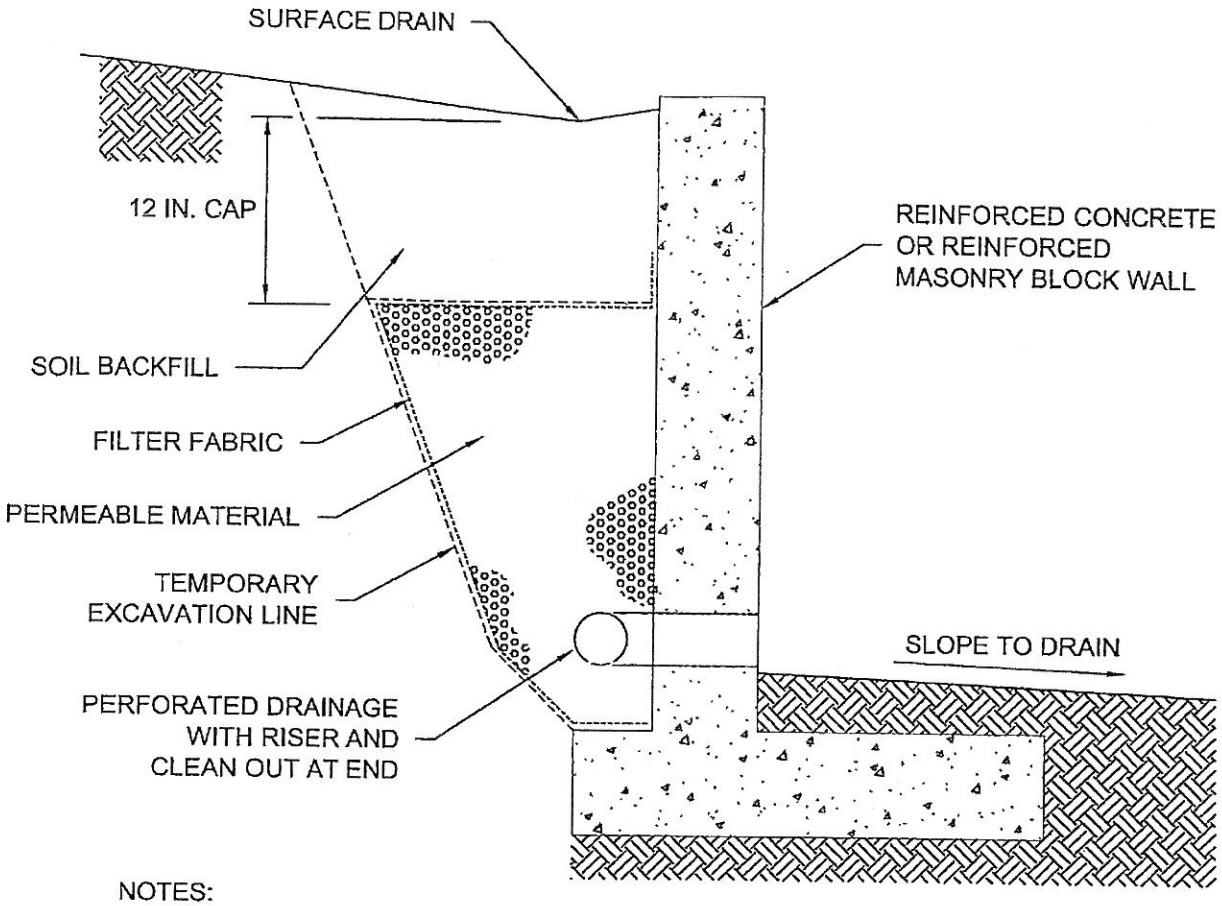
Figure



NOTES:

(1.) PERFORATED DRAIN PIPE TO BE 4-INCH DIA. SCHEDULE 40 PVC, U.O.S. UPSLOPE END TO HAVE CLOSED PIPE RISER, CLEAN OUT AND CAP, DISCHARGE TO BE CLOSED PIPE THROUGH WEEP HOLE OR FREE DRAINING END. SLOPE DISCHARGE PIPE AT 0.02 MIN.

(2.) FILTER FABRIC TO BE MIRAFI 140N, U.O.S.

(3.) PERMEABLE MATERIAL TO BE CALTRANS CLASS 1A OR 1B ("PEA GRAVEL" OR "3/4 ROCK") COMPACTED TO 70% RELATIVE DENSITY MAX./MIN. INDEX UNIT WEIGHT, ASTM D-4253 AND D-4254

(4.) SOIL BACKFILL TO BE SOIL; 100% <4"; 25-50% < #200 SIEVE; COMPACTED TO 90% RELATIVE COMPACTION, ASTM D-1557

(5.) SURFACE DRAIN TO BE CARRIED TO SAFE DRAINAGE LOCATION AT END. DO NOT DRAIN SURFACE WATER INTO WALL BACKDRAIN OR CLEAN OUT RISER.

(6.) U.O.S. = UNLESS OTHERWISE SPECIFIED

RETAINING WALL BACKDRAIN CRITERIA

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RETAINING WALL BACKDRAIN CRITERIA
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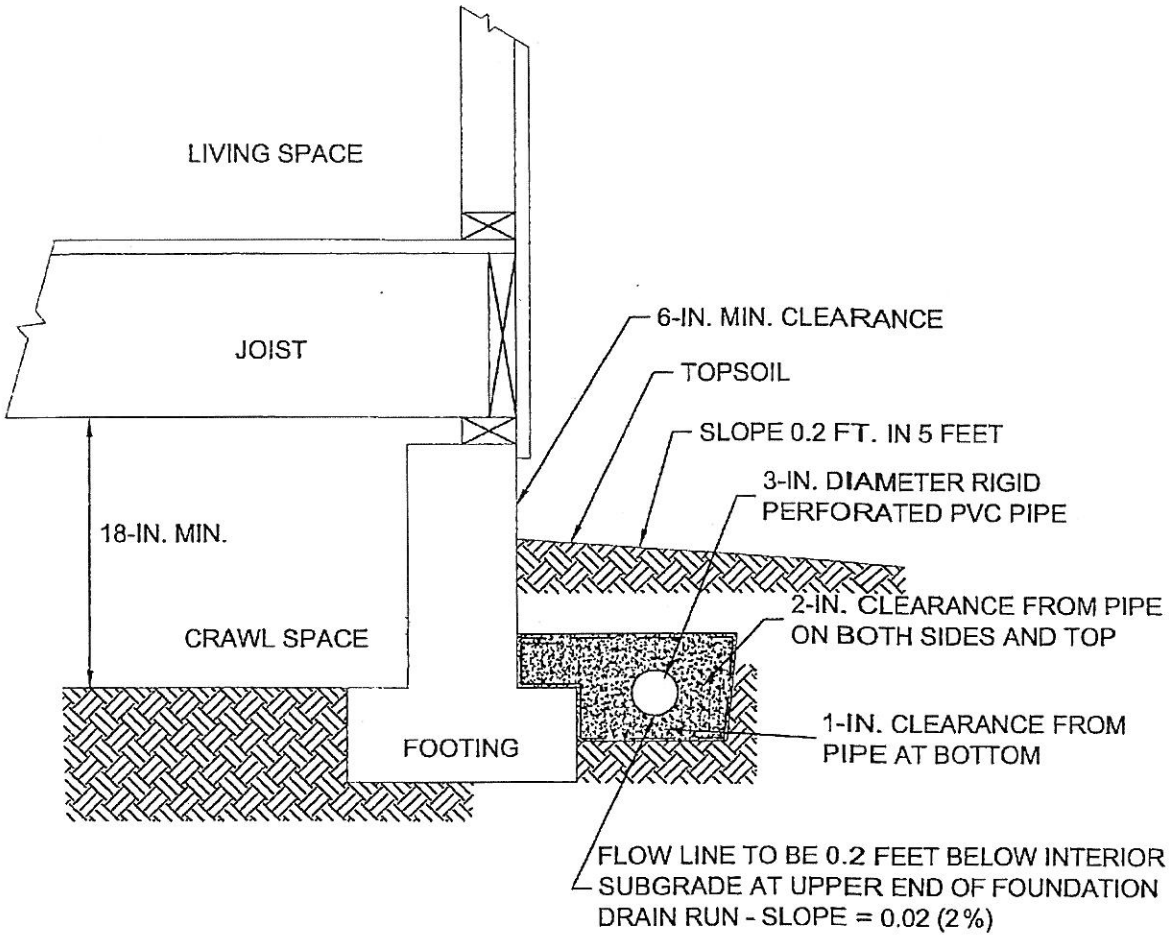

NOTES:

(1.) DO NOT CONNECT DOWNSPOUT LEADER TO FOUNDATION DRAIN
(2.) PROVIDE CLEAN OUT WHERE SPECIFIED BY DESIGNER
(3.) DISCHARGE THROUGH RIGID, NON-PERFORATED PIPE, SLOPE 0.02 (2%) UNLESS OTHERWISE SPECIFIED

TYPICAL FOUNDATION DRAIN DETAIL

(NO SCALE)

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TYPICAL FOUNDATION DRAIN DETAIL
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APPENDIX A

SUBSURFACE EXPLORATION AND LABORATORY TESTING

1.0 Subsurface Exploration

We explored subsurface conditions at the site by drilling seven test borings on September 15 and 16, 2005 at the locations shown on Figure 2. Test borings were drilled to depths of between 8.5 and 27.5 feet using a hollow-stem auger with a diameter of 8 inches.

The soils encountered were logged and identified by our Engineer in general accordance with ASTM Standard D 2487, "Field Identification and Description of Soils (Visual-Manual Procedure)." This standard is briefly explained on Figure A-1, Soil Classification Chart and Key to Log Symbols. Where bedrock was encountered, it is described on the boring logs in accordance with the classification system summarized on Figure A-2. The Boring Logs are presented on Figures A-3 to A-15.

We obtained "undisturbed" samples using a 3-inch diameter, split-barrel modified California sampler with 2.5 by 6-inch brass tube liners or with a 2-inch diameter, split-barrel Standard Penetration Test (SPT) sampler. The sampler was driven with a 140-pound hammer falling 30 inches. The number of blows required to drive the samplers 18 inches was recorded and is reported on the boring logs as blows per foot for the last 12 inches of driving. The samples obtained were examined in the field, sealed to prevent moisture loss, and transported to our laboratory.

2.0 Laboratory Testing

We conducted laboratory tests on selected intact samples to verify field identifications and to evaluate engineering properties. The following laboratory tests were conducted in accordance with the ASTM standard test method cited:

- Laboratory Determination of Water (Moisture Content) of Soil, Rock, and Soil-Aggregate Mixtures, ASTM D 2216;
- Density of Soil in Place by the Drive-Cylinder Method, ASTM D 2937;
- Unconfined Compressive Strength of Cohesive Soil, ASTM D 2166; and,
- Liquid Limit, Plastic Limit, and Plasticity Index of Soils, ASTM D 4318.

APPENDIX 3: STUDIES COMPLETED

The moisture content, dry density, and unconfined compression test results are shown on the exploratory Boring Logs, Figures A-2 through A-15. Plasticity Index Testing is summarized on figure A-16.

The exploratory Boring Logs, description of soils encountered and the laboratory test data reflect conditions only at the location of the boring at the time they were excavated or retrieved. Conditions may differ at other locations and may change with the passage of time due to a variety of causes including natural weathering, climate and changes in surface and subsurface drainage.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS		SYMBOL	DESCRIPTION
COARSE GRAINED SOILS over 50% sand and gravel	CLEAN GRAVEL	GW	Well-graded gravels or gravel-sand mixtures, little or no fines
		GP	Poorly-graded gravels or gravel-sand mixtures, little or no fines
	GRAVEL with fines	GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
	CLEAN SAND	SW	Well-graded sands or gravely sands, little or no fines
		SP	Poorly-graded sands or gravely sands, little or no fines
	SAND with fines	SM	Silty sands, sand-silt mixtures
		SC	Clayey sands, sand-clay mixtures
FINE GRAINED SOILS over 50% silt and clay	SILT AND CLAY liquid limit <50%	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
		CL	Inorganic clays of low to medium plasticity, gravely clays, sandy clays, silty clays, lean clays
		OL	Organic silts and organic silt-clays of low plasticity
	SILT AND CLAY liquid limit >50%	MH	Inorganic silts, micaceous or diatomaceous fine sands or silts, elastic silts
		CH	Inorganic clays of high plasticity, fat clays
		OH	Organic clays of medium to high plasticity
HIGHLY ORGANIC SOILS		PT	Peat, muck, and other highly organic soils
ROCK			Undifferentiated as to type or composition

KEY TO BORING AND TEST PIT SYMBOLS

CLASSIFICATION TESTS

AL	ATTERBERG LIMITS TEST
SA	SIEVE ANALYSIS
HYD	HYDROMETER ANALYSIS
P200	PERCENT PASSING NO. 200 SIEVE
P4	PERCENT PASSING NO. 4 SIEVE

STRENGTH TESTS

TV	FIELD TORVANE (UNDRAINED SHEAR)
UC	LABORATORY UNCONFINED COMPRESSION
TXCU	CONSOLIDATED UNDRAINED TRIAXIAL
TXUU	UNCONSOLIDATED UNDRAINED TRIAXIAL
	UC, CU, UU = 1/2 Deviator Stress

SAMPLER TYPE

UNDISTURBED CORE SAMPLE: MODIFIED CALIFORNIA OR HYDRAULIC PISTON SAMPLE

STANDARD PENETRATION TEST SAMPLE

X DISTURBED OR BULK SAMPLE

ROCK OR CORE SAMPLE

NOTE: Test boring and test pit logs are an interpretation of conditions encountered at the location and time of exploration. Subsurface rock, soil and water conditions may differ in locations and with the passage of time. Lines defining interface between differing soil or rock description are approximate and may indicate a gradual transition.

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SOIL CLASSIFICATION CHART
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A-1

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FRACTURING AND BEDDING

Fracture Classification	Spacing	Bedding Classification
Crushed	less than 3/4 inch	Laminated
Intensely fractured	3/4 to 2-1/2 inches	Very thinly bedded
Closely fractured	2-1/2 to 8 inches	Thinly bedded
Moderately fractured	8 to 24 inches	Medium bedded
Widely fractured	2 to 6 feet	Thickly bedded
Very widely fractured	greater than 6 feet	Very thickly bedded

HARDNESS

Low	Carved or gouged with a knife
Moderate	Easily scratched with a knife, friable
Hard	Difficult to scratch, knife scratch leaves dust trace
Very hard	Rock scratches metal

STRENGTH

Friable	Crumbles by rubbing with fingers
Weak	Crumbles under light hammer blows
Moderate	Indentations <1/8 inch with moderate blow with pick end of rock hammer
Strong	Withstands few heavy hammer blows, yields large fragments
Very strong	Withstands many heavy hammer blows, yields dust, small fragments

WEATHERING

Complete	Minerals decomposed to soil, but fabric and structure preserved
High	Rock decomposition, thorough discoloration, all fractures are extensively coated with clay, oxides or carbonates
Moderate	Fracture surfaces coated with weathering minerals, moderate or localized discoloration
Slight	A few stained fractures, slight discoloration, no mineral decomposition, no affect on cementation
Fresh	Rock unaffected by weathering, no change with depth, rings under hammer impact

NOTE: Test boring and test pit logs are an interpretation of conditions encountered at the location and time of exploration. Subsurface rock, soil and water conditions may differ in other locations and with the passage of time.

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ROCK CLASSIFICATION CHART
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A-2

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BORING 1

EQUIPMENT: Truck Mounted Rig with 8 inch Hollow Stem Auger
DATE: 9/15/05
ELEVATION: 30-Feet*
*REFERENCE: Topo map provided by Client

OTHER TEST DATA	UNDRAINED SHEAR STRENGTH psf (1)	BLOWS PER FOOT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT pcf (2)	DEPTH meters / feet	SAMPLE	SYMBOL (3)	
		14	19.2	95	0 – 0			SANDY CLAY (CL) (Fill) mottled brown, moist, medium stiff, medium plasticity
	UC 750	13	20.2	91	1 – 5			CLAYEY SILT (ML) (Alluvium) dark gray, moist, medium stiff
		12	17.8	111	2 – 10			SANDY CLAY (CL) (Alluvium) brown with red-brown mottling, moist to wet, medium stiff
	UC 2300	23	16.6	109	3 – 15			stiff to very stiff
		25	18.4	107	4 – 20			with some gravel
					5 – 6			Bottom of Boring at 18.5 ft No groundwater was encountered while drilling

NOTES: (1) METRIC EQUIVALENT STRENGTH (kPa) = 0.0479 x STRENGTH (psf)
(2) METRIC EQUIVALENT DRY UNIT WEIGHT kN/m³ = 0.1571 x DRY UNIT WEIGHT (pcf)
(3) GRAPHIC SYMBOLS ARE ILLUSTRATIVE ONLY

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BORING LOG
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A-3

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BORING 2

EQUIPMENT: Truck Mounted Rig with 8 inch Hollow Stem Auger
DATE: 9/15/05
ELEVATION: 25-Feet*
*REFERENCE: Topo map provided by Client

OTHER TEST DATA	UNDRAINED SHEAR STRENGTH psf (1)	BLOWS PER FOOT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT pcf (2)	DEPTH meters / feet	SAMPLE	SYMBOL (3)	
PI 37		10	20.0	97	0 - 0			SANDY CLAY (CH) (Fill or Alluvium) brown mottling, dry to moist, medium stiff, high plasticity
	UC 3200	15	17.2	103	1 - 5			
		22	21.2		2			CLAY WITH SAND (CL) (Residual Soil) brown, dark gray and yellow-orange mottled, moist, stiff to very stiff
					3 - 10			SHALE/WEATHERED ROCK brown, gray, yellow-orange mottling, moist, low hardness, friable, completely weathered
		36	14.8		4			
					15			Bottom of Boring at 13.5 ft No groundwater was encountered while drilling
					5			
					6 - 20			

NOTES: (1) METRIC EQUIVALENT STRENGTH (kPa) = 0.0479 x STRENGTH (psf)
(2) METRIC EQUIVALENT DRY UNIT WEIGHT kN/m^3 = 0.1571 x DRY UNIT WEIGHT (pcf)
(3) GRAPHIC SYMBOLS ARE ILLUSTRATIVE ONLY

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A-4

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BORING 3

EQUIPMENT: Truck Mounted Rig with 8 inch Hollow Stem Auger
DATE: 9/15/05
ELEVATION: 30-Feet*
*REFERENCE: Topo map provided by Client

OTHER TEST DATA	UNDRAINED SHEAR STRENGTH psf (1)	BLOWS PER FOOT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT pcf (2)	DEPTH meters / feet	SAMPLE	SYMBOL (3)	
		32			0 – 0			SANDY CLAY (CL) (Colluvium) mottled gray, moist, stiff, medium plasticity
	UC 800	22	17.2		1 – 5			
		16	19.3		2			SHALE/WEATHERED ROCK brown and red brown mottling, moist, low hardness, friable, completely weathered transitions to: olive brown and green-gray mottling, moist, low to moderate hardness, friable, moderately weathered
		27			3 – 10			
					4			Bottom of Boring at 12.5 ft No groundwater was encountered while drilling
					15			
					5			
					6 – 20			

NOTES: (1) METRIC EQUIVALENT STRENGTH (kPa) = 0.0479 x STRENGTH (psf)
(2) METRIC EQUIVALENT DRY UNIT WEIGHT kN/m^3 = 0.1571 x DRY UNIT WEIGHT (pcf)
(3) GRAPHIC SYMBOLS ARE ILLUSTRATIVE ONLY

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BORING 4

EQUIPMENT: Truck Mounted Rig with 8 inch Hollow Stem Auger
DATE: 9/15/05
ELEVATION: 28-Feet*
*REFERENCE: Topo map provided by Client

OTHER TEST DATA	UNDRAINED SHEAR STRENGTH psf (1)	BLOWS PER FOOT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT pcf (2)	DEPTH meters	DEPTH feet	SAMPLE	SYMBOL (3)	
					0	0			SANDY CLAY (CL) (Colluvium) brown mottling, moist, stiff to very stiff, medium plasticity
	UC 4700	31	15.9	114	1				
						5			
	UC 2350	29	15.6	113	2				
		31	11.3		3	10			SHALE/WEATHERED ROCK brown, moist, low hardness, friable, moderately weathered
		21			4				
						15			Bottom of Boring at 13.5 ft No groundwater was encountered while drilling
					5				
					6	20			

NOTES: (1) METRIC EQUIVALENT STRENGTH (kPa) = 0.0479 x STRENGTH (psf)
(2) METRIC EQUIVALENT DRY UNIT WEIGHT kN/m^3 = 0.1571 x DRY UNIT WEIGHT (pcf)
(3) GRAPHIC SYMBOLS ARE ILLUSTRATIVE ONLY

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BORING 5

EQUIPMENT: Truck Mounted Rig with 8 inch Hollow Stem Auger
DATE: 9/15/05
ELEVATION: 29-Feet*
*REFERENCE: Topo map provided by Client

OTHER TEST DATA	UNDRAINED SHEAR STRENGTH psf (1)	BLOWS PER FOOT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT pcf (2)	DEPTH meters / feet	SAMPLE	SYMBOL (3)	
					0 / 0			CLAYEY SAND (CL) (Colluvium) brown, dry to moist, medium dense, ~50 % medium plasticity clay, ~50 % well graded sand
		26	11.4	116				SANDY CLAY (CL) (Residual Soil) olive brown, dry, stiff
		55	8.1		1 / 5			SHALE/WEATHERED ROCK gray and brown mottling, dry, moderate hardness and strength, moderately weathered
		29	7.0		2			
					3 / 10			Bottom of Boring at 8.5 ft No groundwater was encountered while drilling
					4			
					15			
					5			
					6 / 20			

NOTES: (1) METRIC EQUIVALENT STRENGTH (kPa) = 0.0479 x STRENGTH (psf)
(2) METRIC EQUIVALENT DRY UNIT WEIGHT kN/m^3 = 0.1571 x DRY UNIT WEIGHT (pcf)
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BORING 6

EQUIPMENT: Truck Mounted Rig with 8 inch Hollow Stem Auger
DATE: 9/16/05
ELEVATION: 21-Feet*
*REFERENCE: Topo map provided by Client

OTHER TEST DATA	UNDRAINED SHEAR STRENGTH psf (1)	BLOWS PER FOOT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT pcf (2)	DEPTH meters / feet	SAMPLE	SYMBOL (3)	
					0 – 0			SANDY CLAY (CL) (Fill) dark gray, moist, medium stiff
		17	18.6	102	– 1			
					5			
		11	16.3		– 2			
		10			– 3 10			
		9	20.3		– 4			SANDY CLAY (CL) (Alluvium) brown and gray mottling, wet, medium stiff
					15			
					– 5			
		3	21.0		– 6 20			CLAYEY SAND (SC) dark gray, wet, loose

NOTES: (1) METRIC EQUIVALENT STRENGTH (kPa) = 0.0479 x STRENGTH (psf)
(2) METRIC EQUIVALENT DRY UNIT WEIGHT kN/m^3 = 0.1571 x DRY UNIT WEIGHT (pcf)
(3) GRAPHIC SYMBOLS ARE ILLUSTRATIVE ONLY

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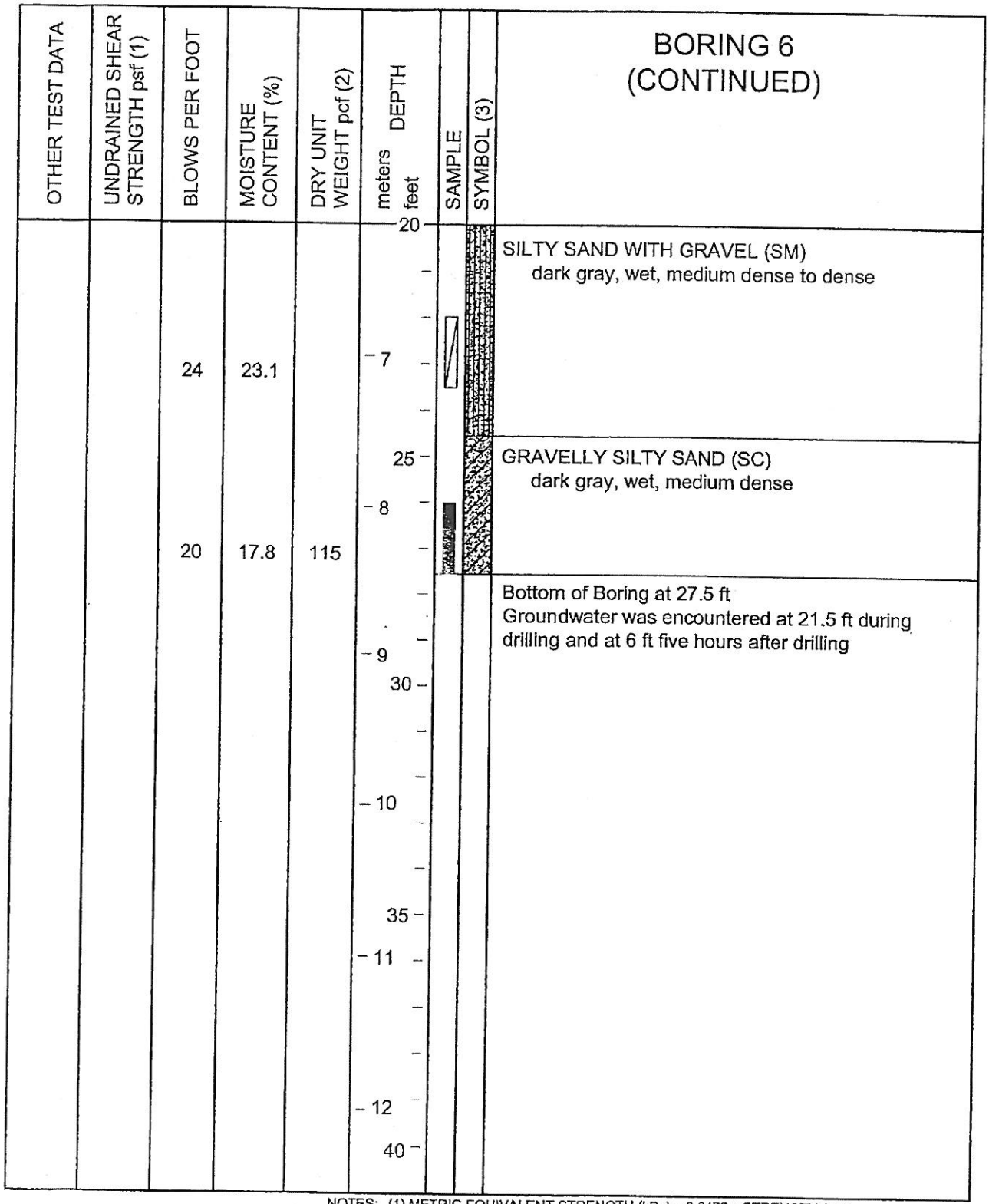

NOTES: (1) METRIC EQUIVALENT STRENGTH (kPa) = 0.0479 x STRENGTH (psf)
(2) METRIC EQUIVALENT DRY UNIT WEIGHT kN/m³ = 0.1571 x DRY UNIT WEIGHT (pcf)
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BORING 7

EQUIPMENT: Truck Mounted Rig with 8 inch Hollow Stem Auger
DATE: 9/16/05
ELEVATION: 21-Feet*
*REFERENCE: Topo map provided by Client

OTHER TEST DATA	UNDRAINED SHEAR STRENGTH psf (1)	BLOWS PER FOOT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT pcf (2)	DEPTH meters / feet	SAMPLE	SYMBOL (3)	
					0 - 0			CLAYEY SILT WITH SAND (ML) (Fill) gray and brown mottling, moist, medium stiff
		14	19.2	107				
					1			
		24	21.4	105	5			
					2			
		15	21.3	105				SANDY CLAY (CL) brown and blue gray mottled, moist, medium stiff,
					3 10			SANDY CLAY (CL) (Alluvium) brown and gray mottling, wet, medium stiff
		13	21.4	109				
					4			
					▽15			increasing sand
					5			SILTY SAND (SC) gray and brown mottling, wet, medium dense to dense
		32	18.1	114				
					6 20			Bottom of Boring at 21.5 ft Groundwater was encountered at 15 ft during drilling
		21	24.5	103				

NOTES: (1) METRIC EQUIVALENT STRENGTH (kPa) = 0.0479 x STRENGTH (psf)
(2) METRIC EQUIVALENT DRY UNIT WEIGHT kN/m^3 = 0.1571 x DRY UNIT WEIGHT (pcf)
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BORING LOG
Marin City Community Center
Marin City, California

A-10

Project No. 1268.01 Date 09/30/05 Approved By:

Figure

BORING 9

EQUIPMENT: Truck Mounted Rig with 8 inch Hollow Stem Auger
DATE: 9/16/05
ELEVATION: 18-Feet*
*REFERENCE: Topo map provided by Client

OTHER TEST DATA	UNDRAINED SHEAR STRENGTH psf (1)	BLOWS PER FOOT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT pcf (2)	DEPTH meters / feet	SAMPLE	SYMBOL (3)	
PI 18		9	18.8	102	0 – 0			SANDY CLAY (CL) (Fill or Colluvium) dark brown, moist, medium stiff, medium plasticity
		9	19.3	98	1 – 5			
	1,000	18	17.5	113	2 – 10			CLAY WITH SAND (CL) (Colluvium) brown, moist, medium stiff to stiff, medium plasticity clay
	1,000	16	17.8	113	3 – 15			
		50/1"			4 – 20			SANDSTONE brown, dry, hard, strong
					5 –			Bottom of Boring at 17.0 ft No groundwater was encountered while drilling
					6 –			

NOTES: (1) METRIC EQUIVALENT STRENGTH (kPa) = 0.0479 x STRENGTH (psf)
(2) METRIC EQUIVALENT DRY UNIT WEIGHT kN/m^3 = 0.1571 x DRY UNIT WEIGHT (pcf)
(3) GRAPHIC SYMBOLS ARE ILLUSTRATIVE ONLY

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BORING LOG
Marin City Community Center
Marin City, California

A-12

Project No. 1268.01 Date 09/30/05 Approved By:

Figure

BORING 10

EQUIPMENT: Truck Mounted Rig with 8 inch Hollow Stem Auger
DATE: 9/16/05
ELEVATION: 16-Feet*
*REFERENCE: Topo map provided by Client

OTHER TEST DATA	UNDRAINED SHEAR STRENGTH psf (1)	BLOWS PER FOOT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT pcf (2)	DEPTH meters / feet	SAMPLE	SYMBOL (3)	
					0 – 0			SANDY SILTY CLAY (CL) (Fill) brown mottling, moist, medium stiff
	1700	10	21.9	95	– 1			
					5			
		28	15.6	114	– 2			
								SANDY SILTY CLAY (CL) (Colluvium) gray and brown mottling, moist, stiff, medium plasticity
		24	16.3	114	– 3 10			
								medium stiff to stiff
		19	18.8	110	– 4			
					15			
		21	21.5	105	– 5			
		25	24.1	99	– 6 20			Bottom of Boring at 21.5 ft No groundwater was encountered while drilling

NOTES: (1) METRIC EQUIVALENT STRENGTH (kPa) = 0.0479 x STRENGTH (psf)
(2) METRIC EQUIVALENT DRY UNIT WEIGHT kN/m^3 = 0.1571 x DRY UNIT WEIGHT (pcf)
(3) GRAPHIC SYMBOLS ARE ILLUSTRATIVE ONLY

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BORING LOG
Marin City Community Center
Marin City, California

A-13

Project No. 1268.01 Date 09/30/05 Approved By:

Figure

BORING 11

EQUIPMENT: Truck Mounted Rig with 8 inch Hollow Stem Auger
DATE: 9/16/05
ELEVATION: 37-Feet*
*REFERENCE: Topo map provided by Client

OTHER TEST DATA	UNDRAINED SHEAR STRENGTH psf (1)	BLOWS PER FOOT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT pcf (2)	DEPTH meters / feet	SAMPLE	SYMBOL (3)
		11	18.7	108	0 / 0 – 1		
	UC 3300	14	16.3	115	1 / 5 – 2		
	UC 4750	33	16.8	115	2 / – 3		
		16	15.6		3 / 10 – 4		
					4 / 15 – 5		
		11			5 / – 6		
		32			6 / 20		

SANDY CLAY (CL) (Fill or Colluvium)
mottled brown, moist, medium stiff,~70 % medium plasticity clay

SANDY CLAY (CL) (Colluvium)
brown and red-brown mottling, moist, medium stiff to stiff, low plasticity

SANDSTONE
brown, moist, moderate hardness, friable, highly weathered

Bottom of Boring at 21.5 ft
Groundwater at 18 ft during drilling

NOTES: (1) METRIC EQUIVALENT STRENGTH (kPa) = 0.0479 x STRENGTH (psf)
(2) METRIC EQUIVALENT DRY UNIT WEIGHT kN/m^3 = 0.1571 x DRY UNIT WEIGHT (pcf)
(3) GRAPHIC SYMBOLS ARE ILLUSTRATIVE ONLY

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BORING LOG
Marin City Community Center
Marin City, California

A-14

Project No. 1268.01 Date 09/22/05 Approved By:

Figure

BORING 12

EQUIPMENT: Truck Mounted Rig with 8 inch Hollow Stem Auger
DATE: 9/15/05
ELEVATION: 12-Feet*
*REFERENCE: Topo map provided by Client

OTHER TEST DATA	UNDRAINED SHEAR STRENGTH psf (1)	BLOWS PER FOOT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT pcf (2)	DEPTH meters / feet	SAMPLE	SYMBOL (3)	
PI 6		8	16.3	97	0 – 0			CLAYEY SANDY SILT (ML) (Fill) dark gray and brown mottling, moist, soft to medium stiff
		8	17.9	106	1 – 5			
		11			2 –			
		13	20.4		3 – 10			SANDY CLAY (CL) (Colluvium) gray, wet, medium stiff becoming stiff No Recovery
		21	18.0	110	4 – 15			SHALE MELANGE brown and gray mottling, moist, low hardness, moderate strength, highly weathered
					5 – 6 – 20			Bottom of Boring at 18.5 ft No groundwater was encountered while drilling

NOTES: (1) METRIC EQUIVALENT STRENGTH (kPa) = 0.0479 x STRENGTH (psf)
(2) METRIC EQUIVALENT DRY UNIT WEIGHT kN/m^3= 0.1571 x DRY UNIT WEIGHT (pcf)
(3) GRAPHIC SYMBOLS ARE ILLUSTRATIVE ONLY

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BORING LOG
Marin City Community Center
Marin City, California

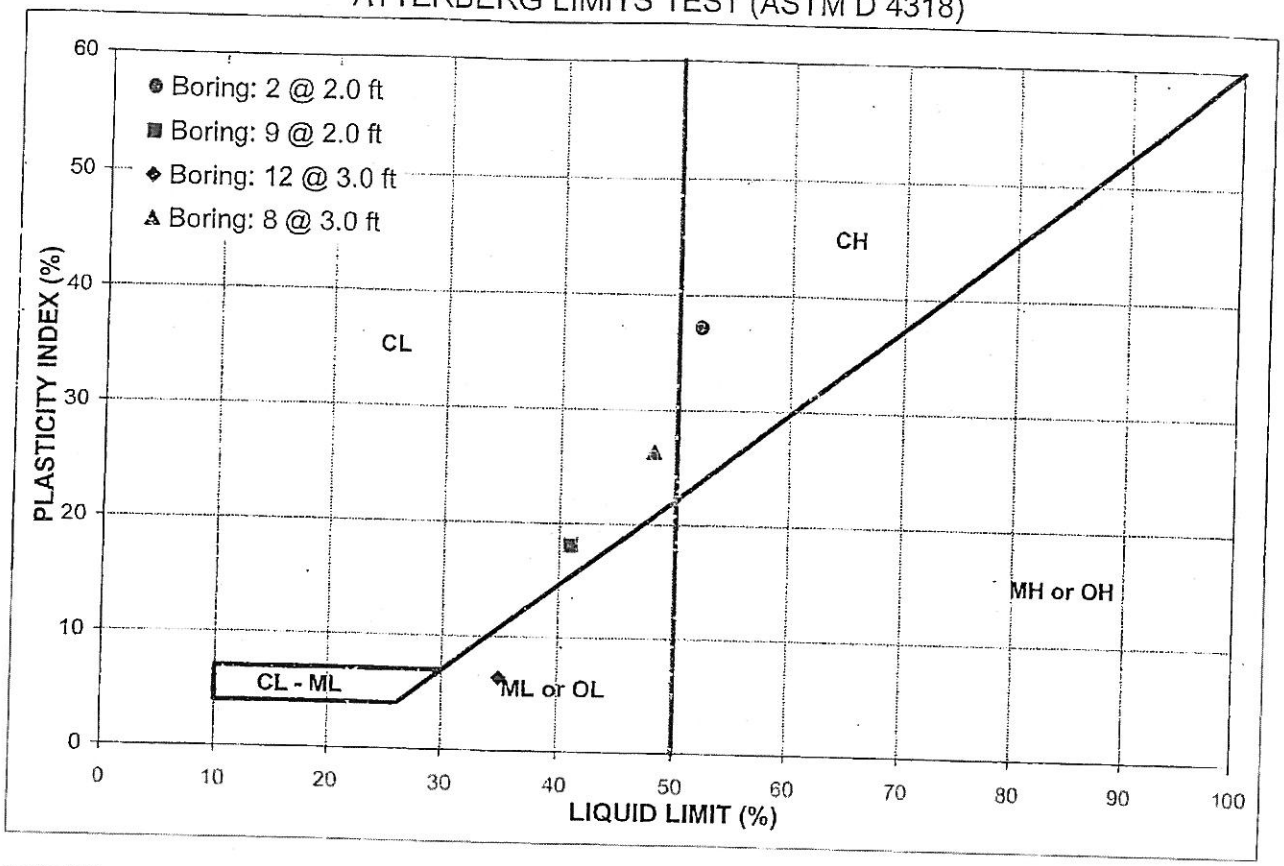
A-15

Project No. 1268.01 Date 09/30/05 Approved By:

Figure

MILLER PACIFIC ENGINEERING GROUP

ATTERBERG LIMITS TEST (ASTM D 4318)



Sample	Classification	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)
Boring: 2 @ 2.0 ft	SANDY CLAY (CH) dark brown, ~75% clay, ~25% fine to mediu	52	15	37
Boring: 9 @ 2.0 ft	SANDY CLAY (CL) dark brown, moist, ~75% silty clay, ~25% w	41	23	18
Boring: 12 @ 3.0 ft	SANDY CLAYEY SILT (ML) brown, well graded sand	35	29	6
Boring: 8 @ 3.0 ft	SANDY CLAY (CL) brown, moist, ~60% clay, ~40% fine to med	48	22	26

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PLASTICITY CHART
Marin City Community Center
Marin City, California

A-16

Project No. 1268.01 Date 10/21/05 Approved By: JSE Figure

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APPENDIX B

DESIGN NOTES FOR CONCRETE SLABS-ON-GRADE

These "design notes" are for the general guidance of the project Civil Engineer or Architect who is responsible for the actual design of concrete slabs-on-grade for the project.

Recommendations are given in the body of the report for the subgrade support of concrete flatwork. However, concrete slabs-on-grade often perform poorly for various non-geotechnical reasons. These notes are offered as a reminder of factors which can influence slab performance. The designer should refer to the recommendations and design guidelines published by the Portland Cement Association, The American Concrete Institute and the Northern California Cement Promotion Group.

1. THICKNESS and STRENGTH. For residential walks, automobile driveways and garage floors, it is normal practice to use 4-inch thick slabs of 2500 psi concrete. For improved performance, the design may be upgraded to 5-inch thick slabs of 3000 psi concrete. Concrete streets and driveways subjected to truck traffic and concrete residential floors should be designed for the specific loads and job conditions.

2. SHRINKAGE. All concrete shrinks as it cures. Shrinkage will amount to 1/16 to 1/8 inch per 20-foot length. A concrete mix with a high water/cement ratio results in increased shrinkage and greater shrinkage cracking. A low water/cement ratio will reduce shrinkage and cracking.

3. REINFORCEMENT. It is normal to use non-reinforced concrete for residential concrete slabs. However, wire mesh or light steel reinforcement will minimize crack width and resist vertical offset across cracks.

4. CRACK CONTROL JOINTS. Crack control joints are used to control the location of the inevitable shrinkage cracks. Crack control joints should extend to a depth of 1/4 to 1/3 of the thickness of the slab and be spaced about 20 to 30 times the slab thickness (i.e., for a 4-inch thick slab, joints should be spaced 6 to 10 feet apart). If mesh is used in the slab, it should be continuous through the joints. If reinforcing steel is used, No. 3 or No. 4 bars should be used and only every other bar should extend across the joint. Keyed joints or dowels may also be considered. To be effective, the joints must be tooled into the fresh concrete or saw cut within 4 to 12 hours of the pour, while the concrete is still green.

5. ISOLATION JOINTS AND EXPANSION JOINTS. Isolation joints should be provided where vertical or horizontal movement is expected. The joints should extend for the full slab thickness and contain a compressible joint filler. Mesh and reinforcement should not extend across the joint. Joints used to accommodate expansion should be spaced about 60 feet apart.

6. CURING. Where aggregate base and a vapor barrier are placed under the slab, 2 inches or more of sand should directly underlay the slab to aid in more uniform curing between top and bottom. The slab should be cured with wet curing methods or moisture retention curing compounds. Particular care should be taken in hot and windy weather.

CONCEPTUAL STORMWATER POLLUTION CONTROL PLAN

August 25, 2009

For

Marin City Community Center Development

Prepared by:
F.E. Jordan Associates, Inc.
11 Embarcadero West, Suite 210
Oakland, CA 94607

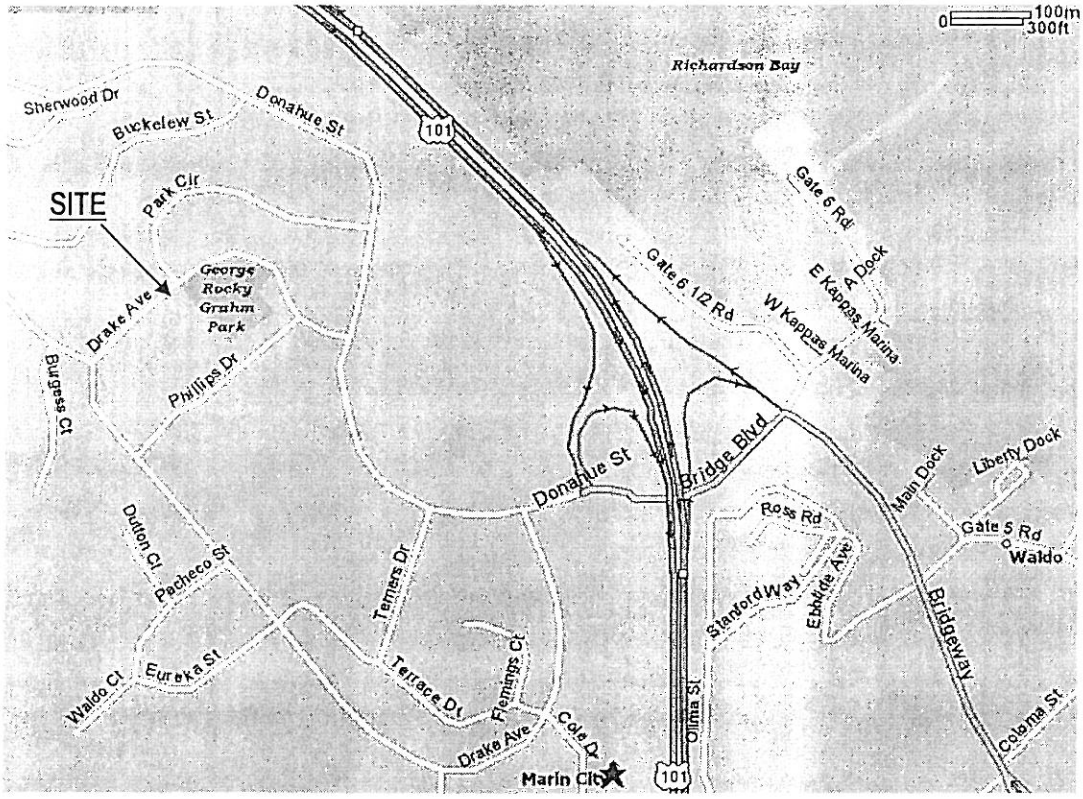
EXHIBIT C

APPENDIX 3: STUDIES COMPLETED

Conceptual Stormwater Pollution Control Plan

I. Project Setting

1a. The Marin City Community Center Development Project is a multi-use project that includes a community center and Natatorium on approximately 4 acres. The site is located in Marin City, Marin County, California between Phillips Drive and the Drake Avenue loop. A Location Plan is shown immediately below. A Site Conceptual Grading Plan is shown in drawing C.3.



1b. Existing Site Conditions

The site has four existing structures on it. The site also contains existing drainage facilities to serve the existing improved portions. However, it is anticipated that only the drainage facilities in Phillips Drive will be used for the proposed improvements. Existing site has approximately 1.87 acres of impervious surface and approximately 1.95 acres of pervious surface.

Site topography is relatively steep over-all with elevations ranging from 130 feet in Drake Avenue to 90 feet in Phillips Drive. This elevation change occurs over a distance of approximately 600 feet.

The soils report for the low site shows that the top 5 feet of soil is mainly a sandy clay type, which has low permeability. For design purposes, the soil is considered unsuitable for stormwater infiltration.

APPENDIX 3: STUDIES COMPLETED

1c. Opportunities and Constraints for Stormwater Control

Constraints include relatively impermeable soils and steep slopes over portions of the site. Extensive site grading is needed for buildings, public and parking areas.

Existing storm drains in Phillips Drive are useful to receive treated stormwater from the site.

APPENDIX 3: STUDIES COMPLETED

II. Measures to limit Imperviousness

1. Measures to Cluster Development

About 50 percent of the existing site has been previously disturbed and is impermeable as indicated by existing buildings, walkways and paved areas. The proposed improvements will increase impervious areas.

However, the following site development features will serve to mitigate the increase in imperviousness:

Traditional paving will be used through most of site due to soils of low permeability. However, for the new improvements, bioretention facilities will be used for storm water treatment. Retaining walls will be used to reduce some existing slopes to mild slopes.

III. Selection and Preliminary Design of Stormwater Treatment Best Management Practices (BMPs).

1. Runoff from roofs and parking lots will be environmentally treated through use of bioretention facilities and grass areas. The design criteria for treatment is as follows:

a. Design storm and criteria used to size treatment facilities:

- Sizing Factor	0.4 in/hr
- Runoff coefficient (paving and roof)	1.0
- Manning's roughness coefficient for flow	
- Infiltration rate for treatment facilities	5 in/hr

b. Design storm frequency for bypassing flow:

- From Marin County Public Work Dept. Hydrology Manual	100-yr

2. bio retention facilities will be designed for the following requirements:

a. Minimum side slopes 3:1, unless otherwise constrained.
b. Have 18-in. depth of sand compost mix with a minimum infiltration rate of 5 inches per hour.
c. Drain rock around perforated under drain pipe will be 18-in. wide minimum by 12-in. deep minimum.
d. Underdrains connect to drain system, which connects to existing storm sewers in Phillips Drive.
e. Overflow pipes to be 4-in. minimum above flow line of swale. Free board will be 2–in, above top of overflow pipe. See Figure 1, Bioretention Facility.

APPENDIX 3: STUDIES COMPLETED

Figure 1: Bioretention Facility

APPENDIX 3: STUDIES COMPLETED

3. Catch Basins or area drains will be used in landscaped areas to collect local drainage and discharge into the drain system.
4. Site grading was designed to provide an approximate balance of cut and fill and to minimize use of retaining walls. Impervious runoff is directed to treatment areas while pervious area runoff is considered treated by vegetation as it passes over it. Grading is shown in drawing C.1, Conceptual Grading Plan.

IV. Specific Characteristics of Treatment
See Table 1, Best Management Practices - Sizing
For entire system see drawing C.2, Conceptual Drainage Plan.

V. Source Control Measures
This mixed-use project will create few potential sources of stormwater pollutants. Sources to be controlled are:

1. Potential dumping of washwater or other liquids into storm drain inlets

2. Need for future indoor or structural pest control.

3. Fertilizers and pesticides used in plaza maintenance and home yard maintenance.

4. Vehicle washing.

Table 2 lists potential pollutant sources on the development site and the corresponding source control measures.

APPENDIX 3: STUDIES COMPLETED

Table 1 – BEST MANAGEMENT PRACTICES Sizing

Table I BEST MANAGEMENT PRACTICES -- Sizing

DM name	DM area, sq ft	sizing factor	IMP name DM flows to	IMP area req'd, sq ft	IMP area supplied, sq ft
1	9744	0.04	4	390	1960
2	6254	0.04	2	250	2360
3	8356	0.04	3	334	2340
4	1529	0.04	5	61	280
5	2982	0.04	11	119	1000
6	12390	0.04	6	496	610
7	1689	0.04	7	68	430
8	1887	0.04	6	75	610
9	20676	0.04	11	827	1000
10	15625	0.04	10	625	625
11	1321	0.04	7	53	430
12	1543	0.04	8	62	170
13	512	0.04	9	20	380
14	3740	0.04	1	150	1520

All areas where these activities occur will drain to stormwater treatment BMPs. To further reduce the potential for pollutants to enter runoff, permanent and operational BMPs will be implemented as described in Table 2.

VI. Permitting And Code Compliance Issues

There are no known conflicts between the stormwater control BMPs and other Marin County codes or other development requirements,

The primary issue to be coordinated with County staff is to verify that the bio retention facilities will provide treatment of lesser storms and be able to pass the 100-year storm.

Any conflicts will be resolved through the County's development review process or during subsequent permitting.

Table 2 – Sources and Source Control BMPs

Potential Source	Controls Incorporated Into Project
On site storm drain inlets	All accessible on-site inlets will be marked with the words "No Dumping! Flows to Bay".
Need for future indoor and structural pest control.	
Landscape/outdoor pesticide use	Final landscape plans will: Be designed to minimize irrigation and runoff and to minimize use of fertilizers and pesticides that can contribute to stormwater pollution. Specify plantings within bioretention areas and swales that are tolerant of the sand/compost mix and periodic inundation. Include pest-resistant plants. Include plantings appropriate to site soils slopes climate, sun, wind, rain land use, air movement, ecological consistency and plant interactions.
Vehicle washing	Will not be permitted on the site

VII. BMP Operation and Maintenance

1. Means to Finance and Implement BMP" Maintenance

a. Commitment to execute any necessary agreements
Owner agrees to provide any necessary easements or rights of entry to Marin County for access and inspection of stormwater BMPs.

b. Statement Accepting Responsibility for Operation and Maintenance
Owner agrees to operate and maintain the bioretention facilities constructed in connection with the project.

c. Stormwater Facilities Operation and Maintenance Plan
Owner will submit with application for building permits, a draft Stormwater Facilities Operation and Maintenance Plan including detailed maintenance requirements and a maintenance schedule.

VIII. Summary of Maintenance Requirements

Swales remove pollutants primarily by filtering runoff slowly through an active layer of soil. Routine maintenance is needed to insure that flow is unobstructed, that erosion is prevented, and that soils are held together by plant roots and are biologically active. Typical routine maintenance consists of the following:

1. Inspect catch basins, bio retention facilities, exposure of soils or other evidence of erosion. Clear any obstructions and remove any accumulation of sediment. Examine rock or other material used as a splash pad and replenish if necessary.

2. Inspect overflow outlets for erosion or plugging.

3. Inspect side slopes for evidence of instability or erosion and correct as necessary.

4. Observe soil at the bottom of the bio retention facilities for uniform percolation throughout. If portions of the bioretention facilities do not drain within 48 hours after the end of a storm, the soil should be tilled and replanted. Remove any debris or accumulations of sediment.

5. Confirm that check dams and flow spreaders are in place and level and that channelization within the swale or filter is effectively prevented.

6. Examine the vegetation to insure that it is healthy and dense enough to provide filtering and to protect soils from erosion. Replenish sand/compost as necessary, remove fallen leaves and debris, prune large shrubs or trees, and mow turf areas. Confirm that irrigation is adequate and not excessive. Replace dead plants and remove invasive vegetation.

7. Abate any potential vectors by filling holes in the ground in and around the swale and by insuring that there are no areas where water stands longer than 48 hours following a

APPENDIX 3: STUDIES COMPLETED

storm. If mosquito larvae are present and persistent, contact the Marin/Sonoma County Mosquito and Vector Control District for information and advice. Mosquito larvicides should be applied only when absolutely necessary and then only by a licensed individual or contractor.

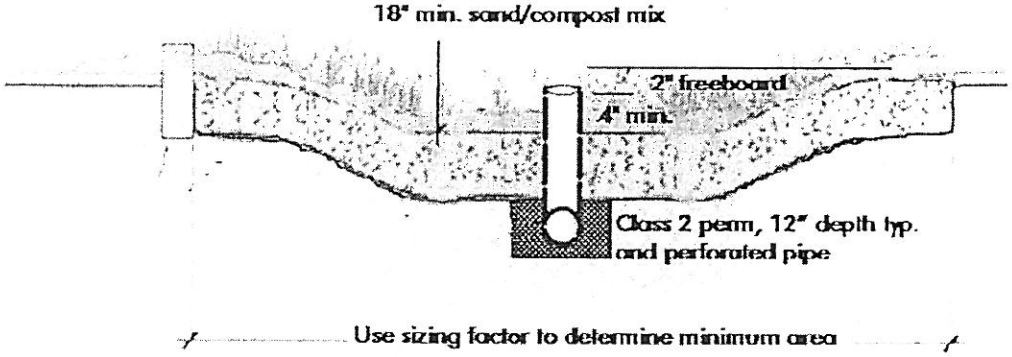
IX. Table 2 – Construction Plan Checklist

Will be submitted with application for permit.

APPENDIX 3: STUDIES COMPLETED

Bioretention area (can be configured as a linear swale or free-form shape)

- ❒ Sizing factor (surface area of bioretention facility)/(tributary impervious area) is at least 0.04.
- ❒ Surface reservoir minimum 4" to overflow, plus 2" freeboard.
- ❒ Overflow designed to prevent clogging by debris.
- ❒ Minimum 18" deep soil mix with a minimum infiltration rate of 5 inches per hour and < 5% clay content. 50% washed construction sand, 50% screened compost may be used.
- ❒ Perforated pipe underdrain (where required) with cleanouts and adequately sloped piped connection to storm drain or discharge point. Bed perforated pipe in Class 2 perm, Caltrans spec 68-1.025. Do not use filter fabric.
- ❒ Curb cuts 12" wide, with ½" drop across. Provide an apron on inside side of curb cut to prevent blockage by vegetation.
- ❒ If facility is sloped, check dams fashioned of rock, concrete, or similar material extend perpendicular to the direction of flow and are keyed into the side slopes.
- ❒ Splash blocks or cobbles at inlets and inlet pipes.
- ❒ Plants selected for viability and to minimize need for fertilizers and pesticides.
- ❒ Native soils protected against compaction during construction.
- ❒ Irrigation system with connection to water supply.



Drawing adapted from the City of Portland Stormwater Manual, 2002

Figure 1: Bioretention Facility

APPENDIX 3: STUDIES COMPLETED

CONCEPTUAL STORMWATER POLLUTION CONTROL PLAN

January 23, 2006

For

Marin City Community Center Development

DRAFT

Prepared by:
F.E. Jordan Associates, Inc.
11 Embarcadero West, Suite 210
Oakland, CA 94607

Conceptual Stormwater Pollution Control Plan

I. Project Setting

1a. The Marin City Community Center Development Project is a multi-use project that includes a community center, office/retail space, residential housing and an amphitheater on approximately 5 acres. The site is located in Marin County, California between Phillips Drive and Drake Avenue.

INSERT MAP

1b. Existing Site Conditions

The site contains five existing structures in the middle and southerly portions of the site. There are no improvements in the northerly portion of the site. The site also contains existing drainage facilities to serve the existing improved portions. However, it is anticipated that only the drainage facilities in Phillips Drive will be used for the proposed improvements. Existing site has approximately 2 acres of impervious surface and approximately 3 acres of pervious surface.

Site topography is relatively steep over-all with elevations ranging from 130 feet in Drake Avenue to 90 feet in Phillips Drive. This elevation change occurs over a distance of approximately 420 feet.

The soils report for the low site shows that the top 5 feet of soil is mainly a sandy clay type, which has low permeability. For design purposes, the soil is considered unsuitable for stormwater infiltration.

1c. Opportunities and Constraints for Stormwater Control

Constraints include relatively impermeable soils and steep slopes over portions of the site. Extensive site grading is needed for buildings, public and parking areas.

The site plans call for a grassy amphitheater, which will treat water falling on it. Existing storm drains in Phillips Drive are useful to receive treated stormwater from the site.

II. Measures to limit Imperviousness

2a. Measures to Cluster Development

About 40 percent of the site has been previously disturbed and is impermeable as indicated by existing buildings, walkways and paved areas.

However, the following site development will serve to reduce imperviousness:

A portion of office/retail roofs will be green roofs where treatment will be provided by grass and plants. Traditional paving will be used through most of site due to soils of low permeability. However, for the new improvements planter boxes and swales will be used for treatment. Retaining walls will be used to reduce some existing slopes to mild slopes. Parking will be under buildings and in multi-story structures to minimize paved areas.

III. Selection and Preliminary Design of Stormwater Treatment BMPs.

1. Runoff from roofs and parking lots will be directed to planters, vegetated swales and grass areas. The design criteria for treatment is as follows:

a. Design storm used to size treatment facilities:

- Rainfall intensity	0.2 in/hr
- Runoff coefficient (paving and roof)	0.9
- Manning's roughness coefficient for flow Velocity in grassy channels, swales	0.035
- Infiltration rate for treatment facilities	5 in/hr
- Runoff coefficient (grass)	0.1

b. Design storm frequency for bypassing:

- From Marin County Public Work Dept. Hydrology Manual	100-yr

2. Swales will be designed for the following requirements:

a. Minimum side slopes 3:1, unless otherwise constrained.
b. Have 12-in. depth of sandy loam soil with a minimum infiltration rate of 5 inches per hour.
c. Drain rock around perforated under drain pipe will be 18-in. wide by 12-in. deep minimum.
d. Underdrains connect to drain system, which connects to existing storm sewers in Phillips Drive or Drake Avenue.
e. Overflow pipes to be 5-in. minimum above flow line of swale. See Sketch _____.

3. Planter boxes will be designed for the following requirements:

   a. 18-in. of sandy loam soil with minimum infiltration rate of 5 in/hr.
   b. 12-in. of drain rock around perforated pipe.
   c. Perforated pipe connects to drain system, which connects to existing storm sewers in Phillips Drive or Drake Avenue.
   d. Overflow pipe to be 12-in. minimum above top of soil. See Sketch _____.

4 Proprietary filter unit will consist of a concrete curb type inlet with filter media provided by the manufacturer. These units will be used at driveways that rise up from the street on Phillips Drive and Drake Avenue. Bypass flow will go past the proprietary unit into an adjacent catch basin, which is connected, to the drain system connected to the existing storm sewers in Phillips Drive and Drake Avenue.

5. Vegetated filter will be used to treat runoff from parking lot behind 31 residential units. Filter will be 25 feet wide and 10 feet long (in direction of flow).

   a. 12-in of sandy loam soil with minimum infiltration rate of 5 inches per hour.
   b. 12-in of aggregate base around perforated under drain pipe.
   c. Perforated pipe connects to drain system which connects to existing storm sewers – Drake Avenue. See Sketch _____.

6. Area drains will be used in grassy areas to collect local drainage and discharge into the drain system.

IV. Specific Characteristics of Treatment
See Table 1, BMP Sizing
For entire drainage system see drawing _____.

V. Source Control Measures
This mixed-use project will create few potential sources of stormwater pollutants. Sources to be controlled are:

1. Potential dumping of washwater or other liquids into storm drain inlets

2. Need for future indoor or structural pest control.

3. Fertilizers and pesticides used in plaza maintenance and home yard maintenance.

4. Vehicle washing.

Table 2 lists potential pollutant sources on the development site and the corresponding source control measures.

APPENDIX 3: STUDIES COMPLETED

Table 1 – BMP Sizing

Area ID	Description	Size, SF	BMP ID	Area Served by BMP	Sizing Factor	Impervious Runoff Coefficient	BMP Min Required Area, SF	Designed Surface Area SF	100-Year Discharge CFS
1	40 Car Garage	6,400	Planter Box	Roof & Drive	.04	.9	230		0.6
2	Natatorium	10,300	Planter Box	Roof	.04	.9	371	360	0.90
3	Gym	11,500	Vegetated Filter	Roof	.04	.9	414		1.08
4	Comm Center	17,625	Vegetated Filter	Roof	.04	.9	635		0.1
5	31 Unit Parking Lot	13,068	Landscape Swale	Paved Surface	.04	.9	470		1.25
6	31 Unit Residential	1,925	Planter Box	Roof Per Unit	.04	.9	70		0.18
7	31 Unit 18 Spaces–SP Park	6,675	Vegetated Filter	Paved Surface	.04	.9	240	250	0.62
8	Retail	19,468	Planter Box	Impervious Roof	.04	.9	701		1.85
9	Retail	3,072	Roof Garden	Porous Roof	.04	.9	By Others	By Others	0.29
10	Retail	17,325	Plaza	Pavers	.04	.9	624		1.65

APPENDIX 3: STUDIES COMPLETED

All areas where these activities occur will drain to stormwater treatment BMPs. To further reduce the potential for pollutants to enter runoff, permanent and operational BMPs will be implemented as described in Table 2.

VI. Permitting And Code Compliance Issues

There are no known conflicts between tile stormwater control BMPs and other Marin County codes or other development requirements,

The primary issue to be coordinated with County staff is to verify that the swales will provide treatment of lesser storms and be able to pass the 100-year storm.

Any conflicts will be resolved through the County's development review process or during subsequent permitting.

Table 2 – Sources and Source Control BMPs

Potential Source	Permanent BMPs	Operational BMPs
On site storm drain inlets	All accessible on-site inlets will be marked with the words "No Dumping! Flows to Bay"	Markings will be periodically repainted or replaced. Inlets and pipes conveying stormwater to BMPs will be inspected and maintained as part of BMP Operation and Maintenance Plan.
Need for future indoor and structural pest control.		Owner will provide pest control information to new homeowners.
Landscape/outdoor pesticide use	Final landscape plans will: Be designed to minimize irrigation and runoff and to minimize use of fertilizers and pesticides that can contribute to stormwater pollution. Specify plantings within bioretention areas and swales that are tolerant of the sandy loam soils and periodic inundation. Include pest-resistant plants. Include plantings appropriate to site soils slopes climate, sun, wind, rain land use, air movement, ecological consistency and plant interactions.	Landscape will be maintained using minimum or no pesticides. Pest control information will be provided to new homeowners.
Vehicle washing	Driveways and parking areas drain to vegetated filters or swales.	Distribute stormwater pollution prevention information to homeowners.

APPENDIX 3: STUDIES COMPLETED

VII. BMP Operation and Maintenance

1. Means to Finance and Implement BMP" Maintenance

a. Commitment to execute any necessary agreements
Owner agrees to provide any necessary easements or rights of entry to Marin County for access and inspection of stormwater BMPs and to make provision of easements or rights of entry a condition of sale.

b. Statement Accepting Responsibility for Operation and Maintenance Until Responsibility is Transferred
Owner agrees to operate and maintain the swales constructed in connection with the project until one of the following occurs:

1) Acceptance of maintenance responsibility by the County, including the filing of all required easements and establishment of a special district or other permanent funding mechanism or

2) Legal incorporation of a homeowners' association or other private entity to be responsible for maintenance, execution of Codes, Covenants, and Responsibilities or other agreement that runs with the land and requires future owners to provide and pay for maintenance of stormwater BMPs, and execution of a Stormwater management Facilities Operation and Maintenance Agreement and Right of Entry in the form provided by the County.

c. Stormwater Facilities Operation and Maintenance Plan
Owner will submit with application for building permits, a draft Stormwater Facilities Operation and Maintenance Plan including detailed maintenance requirements and a maintenance schedule.

VIII. Summary of Maintenance Requirements

Swales remove pollutants primarily by filtering runoff slowly through an active layer of soil. Routine maintenance is needed to insure that flow is unobstructed, that erosion is prevented, and that soils are held together by plant roots and are biologically active. Typical routine maintenance consists of the following:

1. Inspect catch basins, swales, exposure of soils or other evidence of erosion. Clear any obstructions and remove any accumulation of sediment. Examine rock or other material used as a splash pad and replenish if necessary.

2. Inspect overflow outlets for erosion or plugging.

3. Inspect side slopes for evidence of instability or erosion and correct as necessary.

4. Observe soil at the bottom of the swale or filter for uniform percolation throughout. If portions of the swale or filter do not drain within 48 hours after the end of a storm, the soil should be tilled and replanted. Remove any debris or accumulations of sediment.

APPENDIX 3: STUDIES COMPLETED

5. Confirm that check dams and flow spreaders are in place and level and that channelization within the swale or filter is effectively prevented.

6. Examine the vegetation to insure that it is healthy and dense enough to provide filtering and to protect soils from erosion. Replenish mulch as necessary, remove fallen leaves and debris, prune large shrubs or trees, and mow turf areas. Confirm that irrigation is adequate and not excessive. Replace dead plants and remove invasive vegetation.

7. Abate any potential vectors by filling holes in the ground in and around the swale and by insuring that there are no areas where water stands longer than 48 hours following a storm. If mosquito larvae are present and persistent, contact the Marin/Sonoma County Mosquito and Vector Control District for information and advice. Mosquito larvicides should be applied only when absolutely necessary and then only by a licensed individual or contractor.

IX. Table 2 – Construction Plan Checklist

Stormwater Control Plan Reference	BMP Description	Plan Sheet Number
	Slopes adjacent to and draining toward swales set back, minimized and or stabilized to avoid siltation.	

bdarden@fejordan.com to ghwc

Hello George;
We have reviewed the Conceptual Stormwater Pollution Control Plan and find that there will be no significant changes to the plan due to phasing. We would want to look at sizing the storm and sewer facilities for build-out if and where they combine to avoid later replacement or upsizing.

I'm sorry it took so long to address this.

BIOLOGICAL CONSTRAINTS ANALYSIS
Marin City Community Services District Site
APN 052-113-07 and APN 052-113-08
Marin City, California

Prepared for:

The G.H. Williams Collaborative, PA
P.O. Box 1266
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Prepared by:

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September 2005

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1.0 INTRODUCTION

This report presents the results of a biological constraints analysis conducted on the Marin City Community Services District site located on approximately 1.5 acres south of Drake Drive and north of Phillips Drive in Marin City, Marin County, California. The project site is currently occupied by the Marin City Community Development Building and is proposed for redevelopment. The project occurs within an un-surveyed section within Township 1 South and Range 6 West of the San Rafael, California USGS quadrangle 7.5 minute series at an elevation of approximately 75 feet mean sea level.

The purpose of the biological constraints analysis is to identify special-status plant and animal species that have the potential to occur on or within the vicinity of the project site and to determine if the proposed redevelopment of the property may affect these species. In addition, the site is evaluated for the presence of sensitive habitats, followed by a discussion of mitigation measures designed to offset potential impacts to any special-status species and/or sensitive habitats.

2.0 METHODS OF ANALYSIS

Special-status plants and animals are legally protected under the State and Federal Endangered Species Acts or other regulations, and species that are considered rare by the scientific community. They are defined as:

- Plants and animals that are listed or proposed for listing as threatened or endangered under the California Endangered Species Act (Fish and Game Code 1995 §2050 *et seq.*; 14 CCR §670.1 *et seq.*) and/or the Federal Endangered Species Act (50 CFR 17.12 for plants; 50 CFR 17.11 for animals; and various notices in the Federal Register [FR] for proposed species).

- Plants and animals that are Candidates for possible future listing as threatened or endangered under the Federal Endangered Species Act (50 CFR 17.12 for plants; 59 FR 58982 November 15, 1994 for animals).

- Plants and animals that are considered Federal Species of Concern (formerly C2 candidate species).

- Plants and animals that meet the definition of rare or endangered under CEQA (14 CCR §15380), which includes species not found on State or Federal Endangered Species lists.

- Plants occurring on Lists 1A, 1B, 2, 3, and 4 of the *California Native Plant Society's* (CNPS) *Inventory of Rare and Endangered Vascular Plants of California* (Skinner and Pavlik 1994). California Department of Fish and Game (CDFG) recognizes that

APPENDIX 3: STUDIES COMPLETED

Lists 1A, 1B, and 2 of the CNPS inventory contain plants that, in the majority of cases, would qualify for state listing, and CDFG requests their inclusion in EIRs as necessary. Plants occurring on CNPS Lists 3 and 4 are "plants about which more information is necessary," and "plants of limited distribution," respectively (Skinner and Pavlik 1994), and may be included as special-status species on the basis of local significance and/or recent biological information.

- Animals that are designated as "Species of Special Concern" by CDFG (1999).

- Animal species that are "fully protected" in California (Fish and Game Code, §3511, §4700, §5050 and §5515).

- Animal species that are considered sensitive by California Department of Forestry (14 CCR §895.1 pursuant to 14 CCR §898.2[d]) and plants and animals that are considered as sensitive by the U. S. Forest Service (Forest Service Manual §2670) and the U. S. Bureau of Land Management (BLM 6840 Manual).

2.1 Special-status Plant and Animal Species

The California Department of Fish and Game's Natural Diversity Data Base (CNDDB, 2005) was reviewed to identify special-status plant and animal species potentially occurring on or within the vicinity of the project site. From the CNDDB and my familiarity with the project region, a target list of special-status plants and animals with potential to occur in the project vicinity was developed. In addition, prior to the site visit the Marin County Soil Survey was also reviewed to determine if soils mapped on the project site are listed as hydric soils[1] given hydric soils may indicate the presence of potential wetland areas.

On September 5, 2005 I conducted a reconnaissance-level habitat assessment on the site to generally characterize habitats on the site and within the immediate vicinity. The purpose of this was to determine if the site supports habitats that may support special status species.

2.2 Wetlands Evaluation

On September 5, 2005, I conducted jurisdictional wetlands assessment on the site to generally characterize the nature and extent of habitat types potentially subject to U.S. Army Corps of Engineers (Corps) jurisdiction pursuant to Section 404 of the Clean Water Act utilizing the methods and procedures prescribed in the Corps Federal Wetlands Delineation Manual.

---

[1] Hydric soils are defined by the criteria established by the National Technical Committee for Hydric Soils (NTCHS). These criteria are reproduced in the Corps' 1987 Manual and are based on the depth and duration of soil saturation. The NTCHS has also developed a list of hydric soils in the U.S. (USDA, 1991). District field offices have also developed county hydric soils lists (U.S.D.A. 1992).

3.0 RESULTS

3.1 Habitat Characterization

The project site is generally flat with elevations approximately 75 feet mean sea level (MSL) and currently supports buildings and a parking lot associated with the community center. Wildlife species commonly associated with areas such as the project site include house sparrow (*Passer domesticus*), Western scrub jay (*Aphelocoma californica*), American robin (*Turdus migratorius*), western terrestrial garter snake (*Thamnophis elegans*), pacific chorus frog (*Hyla regilla*), and Western toad (*Bufo boreas*). Most of these and other wildlife species most likely use the project site migrate to more open, woody habitats in the surrounding areas given the site is regularly frequented by people using the existing community center. During my September 5, 2005 field survey there was no evidence of nesting birds (such as nests in trees or overhangings, whitewash, etc.) on the site.

3.2 Special-status Plants

Nineteen different special-status plant species were listed on the San Rafael and surrounding CNDDB quadrangles. These species, their preferred habitats, and federal and state status designations are listed in Table 1 attached. Because the project site is primarily comprised of buildings, parking lots, and concrete walkways, it seems unlikely that any of the listed plant species occur on the project site due to human modifications of the natural habitat and given that the special-status plant species listed on the CNDDB may be found in serpentine habitats[2] which do not occur on the site. However, if required, a botanical survey could be conducted for the listed species known to occur on grasslands if this information was required by the lead agency through the environmental review process. Most likely only one survey would need to be conducted (probably during the month of May) to adequately cover the listed plants' flowering periods.

3.3 Special-status Animals

Seventeen different special-status animal species were listed on the San Rafael and surrounding CNDDB quadrangles. Many of these species are associated with salt-water habitats and therefore would not occur on the project site. While the site is not expected to support any of the species listed in Table 2, the site and its surrounding environs could provide foraging and/or nesting habitat for passerine birds, raptors, and bats.

3.4 Wetlands

The soil unit mapped on the project site is Tamalpais-Barnabe Variant very gravelly loams 15-30% slopes. This map unit is not listed as a hydric soil on the County or National hydric soil lists and is classified as moderately deep, well-drained soils on

[2] The soils maped on the project site are Tamalpais-Barnabe Variant very gravelly loams, 15-30% slopes. These soils primarily formed in material weathered from chert and sandstone.

APPENDIX 3: STUDIES COMPLETED

uplands (USDA, 1985). During my September 5, 2005 site visit I did not observe any potential wetland features on the project site.

3.5 Marin County Native Tree Protection and Preservation Ordinance

The County of Marin has established regulations for the preservation and protection of native trees in the non-agricultural unincorporated areas of Marin County by limiting tree removal in a manner which allows for reasonable use and enjoyment of such property. Approximately 36 native trees are protected under this ordinance and include big-leaf maple (*Acer negundo*), California buckeye (*Aesculus californica*), tanbark oak (*Lythocarpus densiflorus*), coast live oak (*Quercus agrifolia*), valley oak (*Quercus lobata*), and Sargent cypress (*Cupressuss argentii*). The large sycamores on the project site are not included in the list of trees native to Marin County, however, this species is native to California and the two specimens on-site appear to be very healthy. Therefore, if possible, not removing these trees and incorporating them into the project design would serve as a natural and visual amenity to the project site.

Finally, it is recommended that an arborist evaluate all trees on the project site to determine if they do not provide a safety hazard and or require protection under the tree ordinance.

4.0 CONCLUSIONS & MITIGATION

Provided below is a discussion of the potential for occurrence of special-status species and the presence of sensitive habitats on the project site. Recommended mitigation measures designed to offset any potential impacts are also provided.

4.1 Special-status Plants

It is my opinion that the project site is unlikely to support special-status plant species due to the disturbed nature of the site and the presence of buildings and associated hardscape. Generally, many of the special-status species identified in Table 1 occur on serpentine soils or are associated with coastal marsh habitats, neither of which occur on the site.

However, if through the environmental review process for the project the County determines botanical surveys should be conducted on the site, these surveys should be conducted by a qualified biologist prior to construction. Most likely one survey conducted in the Spring months would be sufficient for this purpose. If special-status species were observed and it was determined that the project may impact special-status species, mitigation measures would be coordinated with the California Department of Fish and Game through the CEQA process.

APPENDIX 3: STUDIES COMPLETED

4.2 Nesting Birds and Raptors

The large trees on the project site (including two large sycamores (*Platanus racemosa*)) and other tree adjacent to the project site may provide suitable nesting habitat for nesting birds and raptors. All nesting birds are protected under Sections 3505, 3503.5, and 3800 of the California Fish and Game Code that protect nesting birds, raptors, their eggs, and young. In addition, all raptors and passerine birds are protected under the federal Migratory Bird Treaty Act (50 CFR 10.13). Various raptors such as the white-tailed kite (*Elanus leucurus*) which is considered a "fully protected species" under the California Fish and Game Code and Cooper's hawk (*Accipiter cooperi*) which is considered a "species of special concern" under the California Fish and Game Code. These regulations protect raptors from "take", or direct mortality of individuals and/or eggs. Finally, some bat species are considered "species of special concern" and are protected pursuant to CEQA regulations.

If project construction is to occur between February 1st through August 31st, a qualified biologist should conduct pre-construction surveys of all potential nesting habitats within 500 feet of project activities. If nesting birds are identified on the project site, a non-disturbance buffer (determined in coordination with the CDFG should be established around the nest tree during the breeding season or until the young have fledged. If preconstruction surveys indicate that nests are inactive or potential habitat is unoccupied, no further mitigation measures are required. Raptor or other bird nests initiated during construction are presumed to be unaffected and no buffer is necessary. However, the "take" of any individuals is prohibited.

4.3 Special-status bats

The project site and surrounding lands may provide potential habitat for special-status bat species such as the pallid bat (*Antrozus pallidus*) and Townsend's western big eared bat (*Corynorhinus townsendii townsendii*) both of which are considered species of special concern by CDFG. The pallid bat is a locally common species of low elevations in California and inhabits a wide variety of habitats, including grasslands, shrublands, woodlands and forests. The species is most common in open dry habitats with rocky areas for roosting. Day roosts include caves, crevices, old mines, and occasionally hollow trees and buildings. Night roosts may be in more open sites, such as open porches and open buildings (Zeiner et al, 1990).

The Townsend's western big eared bat is found throughout California but its distribution is less well known than the pallid bat. This species requires caves, mines, tunnels, buildings, or other human-made structures for roosting and may use separate sites for night, day, hibernation, or maternity roosts (Zeiner et al, 1990).

APPENDIX 3: STUDIES COMPLETED

The trees and buildings on the project site and in surrounding areas may provide potential roosting habitat for both bat species. Therefore, prior to construction activities (including building demolition) within 500 feet of trees and buildings potentially supporting special-status bats, a qualified bat biologist should survey the site to determine if special-status bats are present. If evidence of bats is observed either through direct observation and/or the presence of whitewash, etc., a no-disturbance buffer acceptable in size to the CDFG will be created around active bat roosts during their breeding seasons. Bat roosts initiated during construction are presumed to be unaffected, and no buffer is necessary. However, "take" of individuals is prohibited. In addition, removal of trees showing evidence of bat activity should occur during the period least likely to impact bats, as determined by a qualified bat biologist, generally between February 15 and October 15 for winter hibernacula and between August 15 and March 1 for maternity roosts.

4.3 Wetlands

No potential jurisdictional wetlands were identified on the project site therefore no mitigation measures for wetland impacts are prescribed.

APPENDIX 3: STUDIES COMPLETED

References

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Appendix A – State and Federal Status Designations

Provided below is an explanation of the status designations given to the species listed in Table 1 and 2 and the implication of these designations for the environmental review process.

Status Designations

Federal Status

1) Federally listed Endangered and Threatened species are legally protected under the federal Endangered Species Act (ESA), and potential impacts to these species require formal consultation with the United State Fish and Wildlife Service (USFWS).

2) Federally Proposed Endangered or Threatened species are also legally protected under ESA, and potential impacts to these species require informal consultation with the USFWS.

3) Federal Species of Concern have no federal legal status, although federal agencies may choose to give them special management consideration. For plants, a federal Species of Concern indicates former C1 and C2 candidates that changed status in 1996 when the USFWS abandoned the C1/C2 model. However, these taxa may still meet the criteria for future listing by the USFWS and are important to include in "potential lists".

State Status

4) State listed Endangered and Threatened animal species are legally protected pursuant to Section 2080 of the California Fish and Game Code.

5) State listed Endangered and Threatened plant species are legally protected pursuant to Section 1904 (Native Plant Protection Act) and Sections 2074.2 and 2075.5 (California Endangered Species Act) of the California Fish and Game Code.

6) Plant species listed by the California Native Plant Society (CNPS) as List 1B or 2 species must be considered by state agencies during the California Environmental Quality Act (CEQA) review process.

7) State Fully Protected species may not be taken or possessed without a permit from the California Fish and Game Commission and/or CDFG.

8) CDFG's designation of California Species of Special Concern is an administrative designation given to vertebrate species that appear to be vulnerable to extinction because of declining populations, limited ranges, and or continuing threats.

Tables 1 and 2

APPENDIX 3: STUDIES COMPLETED

Tom Origer & Associates
Archaeology / Historical Research

March 3, 2008

George H. Williams
The G.H. Williams Collaborative, PA
1300 Clay Street, Suite 600
Oakland, California 94612

Dear Mr. Williams:

We have reviewed the revised plan for the Marin City Center project. We completed a cultural resources survey of the project location in 2005 and found no prehistoric or important historic-period resources. Our findings stand for the revised project.

Please contact me if you have any questions or need additional information.

Sincerely,

Vicki Beard
Senior Associate

P.O. Box 1531, Rohnert Park, California 94927 ♦ Phone (707) 584-8200 Fax (707) 584-8300

A Cultural Resources Survey for the
Marin City Community Services Center
Marin County, California

Prepared by:

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Prepared for:

The G. H. Williams Collaborative
411 West Chapel Hill Street
Durham, North Carolina 27702

August 10, 2005

ABSTRACT

Tom Origer & Associates conducted a cultural resources survey of approximately three acres of land for the Marin City Community Service Center, Marin County, California. This study was requested and authorized by George Williams, of The G.H. Williams Collaborative.

This study included archival research at the Northwest Information Center, Sonoma State University (NWIC File No. 05-72), examination of the library and files of Tom Origer & Associates, and field inspection of the parcel. Field survey found no significant prehistoric or historic-period resources. Documentation pertaining to this study is on file at the offices of Tom Origer & Associates (File No. 05-69S).

Synopsis

Project:	Marin City Community Services Center
Location:	Drake Avenue, Marin City
Quadrangle:	Point Bonita, California 7.5' series
Study Type:	Intensive survey
Scope:	Approximately three acres
Field Hours:	1.0 person hour
Finds:	None

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INTRODUCTION

This report describes a cultural resources survey for the Marin City Community Services Center, Marin County, California. The study area is located in southern Marin County, California (Figure 1). This study was requested and authorized by George Williams, of The G.H. Williams Collaborative, and was designed to comply with Section 106 of the National Historic Preservation Act as well as the California Environmental Quality Act. Documentation pertaining to this study is on file at Tom Origer & Associates (File No. 05-69S).

REGULATORY CONTEXT

The proposed project could be subject to the California Environmental Quality Act (CEQA) and Section 106 of the National Historic Preservation Act (Section 106). These acts require that historic properties be considered as part of the environmental review process.

This is accomplished by an inventory of resources within a study area and by assessing the potential that cultural resources could be affected by development. Compliance with Section 106 requires that agencies make an effort to identify historic properties that may be affected by a project, and gather information to evaluate the property's eligibility for inclusion in the National Register of Historic Places (National Register).

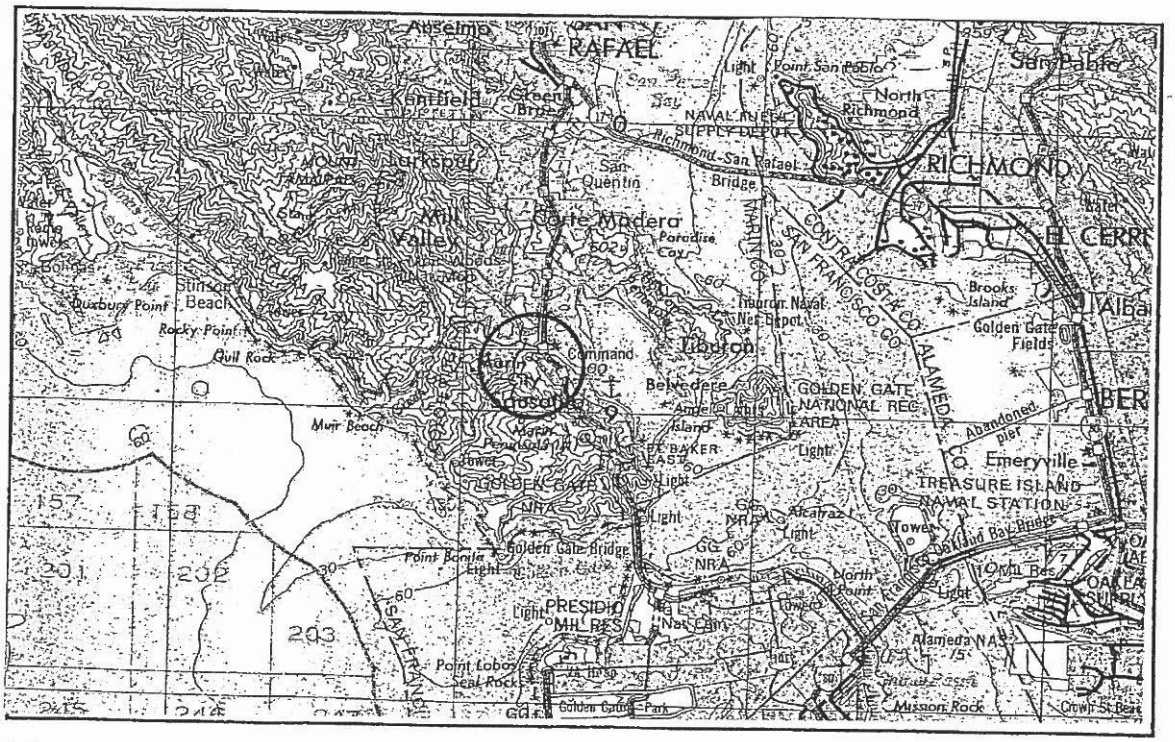

Figure 1. Project vicinity (adapted from the 1956 [photo-revised1980] San Francisco 1:250,000-scale USGS map).

APPENDIX 3: STUDIES COMPLETED

If historic resources are identified within a project area, they are evaluated using National Register criteria promulgated in 36CFR60. For National Register purposes, the age requirement is generally 50 years; however, more recent resources could be eligible for listing.

The California Environmental Quality Act (CEQA) requires that cultural resources be considered during the environmental review process. This is accomplished by an inventory of resources within a study area and by assessing the potential that cultural resources could be affected by development.

This cultural resources survey was designed to satisfy environmental issues specified in both Section 106 and CEQA and its guidelines (Title 14 CCR §15064.5) by: (1) identifying all cultural resources within the project area; (2) offering a preliminary significance evaluation of the identified cultural resources; (3) assessing resource vulnerability to effects that could arise from project activities; and (4) offering suggestions designed to protect resource integrity, as warranted.

Resource Definitions

The National Register of Historic Places defines a historic property as a district, site, building, structure, or object significant in American history, architecture, engineering, archaeology, and culture, and may be of value to the Nation as a whole or important only to the community in which it is located (National Park Service [NPS] 1995:2). These resource types are described by the National Park Service (1995) and the California Office of Historic Preservation (OHP) (1995:2) as follows.

> **Site.** A site is the location of a significant event, a prehistoric or historic occupation or activity, or a building or structure, whether standing, ruined, or vanished, where the location itself possesses historic, cultural, or archaeological value regardless of the value of any existing structure.
>
> **Building.** A building, such as a house, barn, church, hotel, or similar construction, is created principally to shelter any form of human activity. "Building" may also be used to refer to a historically and functionally related unit, such as a courthouse and jail, or a house and barn.
>
> **Structure.** The term "structure" is used to distinguish from buildings those functional constructs made usually for purposes other than creating shelter.
>
> **Object.** The term "object" is used to distinguish from buildings and structures those constructions that are primarily artistic in nature or are relatively small in scale and simply constructed. Although it may be, by nature or design, movable, an object is associated with a specific setting or environment.

District. A district possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development.

Significance Criteria

Under Section 106 the importance of an identified historic property, or archaeological site is evaluated in terms of National Register of Historic Places criteria put forth in 36CFR60, as follows:

> The quality of significance is present in properties that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:
>
> A. That are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> B. That are associated with the lives of persons significant in our past; or
>
> C. That embody the distinct characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> D. That have yielded or may be likely to yield, information important in prehistory or history.

Under CEQA, when a project might affect a cultural resource (Site, Building, Structure, Object, or District) the project proponent is required to conduct an assessment to determine whether the effect may be one that is significant. Consequently, it is necessary to determine the importance of resources that could be affected. The importance of a resource is measured in terms of criteria for inclusion on the California Register of Historical Resources (Public Resources Code §5024.1; Title 14 CCR, §4850.3) listed below. A resource may be important if it meets any one of the criteria below, or if it is already listed on the California Register of Historical Resources or a local register of historical resources.

An important historical resource is one which:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
2. Is associated with the lives of persons important in our past.
3. Embodies the distinctive characteristics of a type, period, region or method of construction, or represents the work of an important creative individual, or possesses high artistic values.

APPENDIX 3: STUDIES COMPLETED

4. Has yielded, or may be likely to yield, information important in prehistory or history.

Under CEQA, if an archaeological site does not meet any of the above criteria it should be evaluated under the criteria of Public Resources Code 21083.2 to determine if it is a "unique archaeological resource". A "unique archaeological resource" is:

> . . . an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:
>
> (1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information
>
> (2) Has a special and particular quality such as being the oldest of its type or the best available example of its type
>
> (3) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

The California OHP suggests that all resources over 45 years old be recorded for inclusion in the OHP filing system (OHP 1995:2), although professional judgment is urged in determining whether a resource warrants documentation.

PROJECT SETTING

Study Area Location and Description

The study area is located between Drake Avenue and Phillips Drive, Marin City, Marin County, California (see Figure 2). It consists of approximately three acres of level to gently sloping land that has been modified by leveling in certain places. The interface between two soil types passes through the study area. Xerothents soils are found in low lying areas along former bay margins, and Saurin-Urban-land-Bonnydoon complex soils are found on uplands and on slopes leading down to bay margins (Kashiwagi 1985:Sheet 10). The Saurin and Bonnydoon complex soils tend to be well drained (Kashiwagi 1985:54 and 78).

No springs or sources of fresh water were present within the parcel. The study area currently is about one-quarter mile from Richardson Bay; however, prior to development, the former bay shoreline was near the foot of the slope. While no obvious source of fresh water is present near the study area, well draining soils, and the proximity to Richardson Bay and its marine resources, would have made the study area a desirable location to collect and process a variety of resources during prehistoric times.

APPENDIX 3: STUDIES COMPLETED

Figure 2. Study location (adapted from the 1954 San Rafael and Point Bonita 7.5' USGS maps).

APPENDIX 3: STUDIES COMPLETED

The geology of the project area is of the immense Franciscan complex, which on the Marin Peninsula consists of a mélange matrix of sandstone and shale that originated as turbidite deposits on the deep ocean floor (Clark, Wahrhaftig, and Brabb 1991). The mélange could contain some pockets of radiolarian chert which might contain fossils; however, the major appearance of radiolarian chert in the vicinity is in the Marin Headlands, substantially south of the project area (Clark, Wahrhaftig, and Brabb 1991).

Cultural Setting

Archaeological evidence indicates that human occupation of California began at least 12,000 years ago (Fredrickson 1984:506). Early occupants appear to have had an economy based largely on hunting, with limited exchange, and social structures based on extended family units. Later, milling technology and an inferred acorn economy were introduced. This diversification of economy appears to be coeval with the development of sedentism and population growth and expansion. Sociopolitical complexity and status distinctions based on wealth are also observable in the archaeological record, as evidenced by an increased range and distribution of trade goods (e.g., shell beads, obsidian tool stone), which are possible indicators of both status and increasingly complex exchange systems.

At the time of European settlement, the study area was included in the territory controlled by the Coast Miwok (Kelly 1978:414). The Coast Miwok were hunter-gatherers who lived in rich environments with large carrying capacities that allowed for dense populations with complex social structures (Barrett 1908; Krocber 1925). They settled in large, permanent villages about which were distributed seasonal camps and task-specific sites. Primary village sites were occupied continually throughout the year, and other sites were visited in order to procure particular resources that were especially abundant or available only during certain seasons. Sites often were situated near freshwater sources and in ecotones where plant life and animal life were diverse and abundant.

Historically, the study area lies in the southeastern portion of the 19,572-acre Saucelito land grant. William A. Richardson was granted Rancho Saucelito (on the shore of what is now Richardson Bay) in 1838. He built an adobe home, more than one mile to the southeast of the study area, in the city of Saucalito in 1841 where he lived until his death in 1856 (Hoover, Rensch, Rensch, Abeloe, and Kyle 2002:189).

Development of the study area and environs accelerated during World War II. Marin City was dedicated in 1942 as a community focused on housing up to 6,000 ship builders and their families. Most of this development took place in the former marshlands southeast of the current project area (see Rice and Pigniolo 1991).

STUDY PROCEDURES

Native American Contact

APPENDIX 3: STUDIES COMPLETED

Letters were sent to the Native American Heritage Commission and the Federated Indians of Graton Rancheria to request their input about the study area. A letter was received from the Native American Heritage Commission on August XX, 2005. Follow-up telephone calls were made to the Federated Indians of Graton Rancheria. Results of these consultation efforts are presented in Appendix A.

Archival Study Procedures

Archival research included examination of the library and project files at Tom Origer & Associates. A review (NWIC File No. 05-72) was completed of the archaeological site base maps and records, survey reports, and other materials on file at the Northwest Information Center (NWIC), Sonoma State University, Rohnert Park. Sources of information included but were not limited to the current listings of properties on the National Register of Historic Places, California Historical Landmarks, California Register of Historical Resources, and California Points of Historical Interest as listed in the Office of Historic Preservation's *Historic Property Directory* (OHP 2005).

The Office of Historic Preservation has determined that structures in excess of 45 years of age should be considered potentially important historical resources, and former building and structure locations could be potentially important historic archaeological sites. Archival research included an examination of historical maps to gain insight into the nature and extent of historical development in the general vicinity, and especially within the study area. Maps ranged from hand-drawn maps of the 1800s (e.g., General Land Office) to topographic maps issued by the United States Geological Survey (USGS) and the United States Army Corps of Engineers (USACE). In addition, ethnographic literature that describes appropriate Native American groups, county histories, and other primary and secondary sources were reviewed. Sources reviewed are listed in the "Materials Consulted" section of this report.

Field Survey Procedures

Robert Douglass and Nelson "Scotty" Thompson completed a field inspection of the study area on July 26, 2005. All portions of the study area were searched intensively by walking the parcel in a zigzag fashion within corridors approximately 10 to 15 meters wide. Primary hindrances to field inspection of the property included extant buildings and landscaping. All visible ground surfaces were examined, and where ground surface visibility was hindered by grasses and forbs, hoes were to clear small patches of ground.

Prehistoric archaeological site indicators expected to be found in the region include but are not limited to: obsidian and chert flakes and chipped stone tools; grinding and mashing implements such as slabs and handstones, and mortars and pestles; bedrock outcrops and boulders with mortar cups; and locally darkened midden soils containing some of the previously listed items plus fragments of bone, shellfish, and fire affected stones. Historic-period site indicators generally include: fragments of glass, ceramic, and metal objects; milled and split lumber; and structure and feature remains such as building foundations and discrete trash deposits (e.g., wells, privy pits, dumps).

Each building within the study area was photographed and notes were taken that described construction details. In addition, buildings surrounding the study area were examined to create a context for the built environment.

STUDY FINDINGS

Archival Study Findings

Archival research found that the parcel had not been subjected to prior cultural resources survey. One cultural resources study had been completed in the immediate area (Rice and Pigniolo 1991). No ethnographic sites were reported within the study area (Barrett 1908; Kelly 1978; and Kroeber 1925). No archaeological sites are recorded on or adjacent to the project area.

Buildings begin to show in the area on topographic maps in the mid-20th century (USACE 1941, USGS 1954). The USACE map (1941) shows a probable ranch complex nearby, while the USGS (1954) quadrangle shows three buildings within the study area. Two buildings are larger than houses and one appears to be a house.

Field Survey Findings

Archaeology. No prehistoric or historic-era archaeological materials were identified within the study area.

Built Environment. The main complex of the buildings on the property is at the western end and consists of a Senior Center, a gymnasium/community center with the Health and Wellness Clinic and the Marin City Community Services District office, and a small office building. The Senior Center and gymnasium complex are not shown on the 1940 USGS map but do appear on the 1954 map.

The remaining building on the property is the "Harriet Tubman Building" slightly east of the center of the property. This building first appears on the 1940 USGS map.

The Senior Center is a single story building constructed on an "L" shaped plan. The roof is hipped with composition covering. The siding is horizontal wood, and windows are aluminum sliders.

The gymnasium complex and office building are connected by a breezeway and are of similar style. These buildings have unpainted shingle siding and shed roofs. Windows are aluminum framed.

The Senior Center and gymnasium complex are not clearly associated with important events or people in the history of the region and therefore do not meet criteria A and B of the National Register, or 1 and 2 of the California Register. These buildings are typical of mid-20th century design and do not meet Criterion C of the National Register or 3 of the California Register. The buildings do not have any intrinsic data value and do not meet criterion D of the National Register or 4 of te California Register.

APPENDIX 3: STUDIES COMPLETED

The "Harriet Tubman" building is reported to date from the 1930s or earlier (Robert Fisher personal communication). It is a Spanish eclectic style building with stucco walls and red barrel tile roof. The original footprint appears to have been a "L" shape. An addition was made to the northwest side of the house. The modifications to the structure have impaired its ability to convey the architectural style. We agree with Rice and Pigniolo that the building does not appear eligible for either the National Register under Criterion C or the California Register under Criterion 3.

Robert Fisher, a local volunteer at the community center indicated that the house had been part of a dairy prior to World War II. It has since been used for multiple functions including offices, and a community center. The building does not reflect its association with agriculture and its subsequent uses do not support an association with events or people important in the history or development of the region. In our opinion this building does not meet criteria for inclusion on the National Register under criteria A or B, or the California Register under criteria 1 or 2.

Finally, the building does not appear to have any intrinsic data value and does not meet National Register Criterion D or California Register Criterion 4.

RECOMMENDATIONS

No historical properties were identified during this study, and no resource specific recommendations are required.

Accidental Discovery. There is the possibility that buried archaeological deposits could be present, and accidental discovery could occur. In keeping with the CEQA guidelines, if archaeological remains are uncovered, work at the place of discovery should be halted immediately until a qualified archaeologist can evaluate the finds (§15064.5 [f]). Prehistoric archaeological site indicators include: obsidian and chert flakes and chipped stone tools; grinding and mashing implements (e.g., slabs and handstones, and mortars and pestles); bedrock outcrops and boulders with mortar cups; and locally darkened midden soils. Midden soils may contain a combination of any of the previously listed items with the possible addition of bone and shell remains, and fire affected stones. Historic period site indicators generally include: fragments of glass, ceramic, and metal objects; milled and split lumber; and structure and feature remains such as building foundations and discrete trash deposits (e.g., wells, privy pits, dumps).

The following actions are promulgated in the CEQA Guidelines Section 15064.5(d) and pertain to the discovery of human remains. If human remains are encountered, excavation or disturbance of the location must be halted in the vicinity of the find, and the county coroner contacted. If the coroner determines the remains are Native American, the coroner will contact the Native American Heritage Commission. The Native American Heritage Commission will identify the person or persons believed to be most likely descended from the deceased Native American. The most likely descendent makes recommendations regarding the treatment of the remains with appropriate dignity.

SUMMARY

Tom Origer & Associates conducted a cultural resources survey of approximately three acres of land for the Marin City Community Service Center, Marin County, California. This study was requested and authorized by George Williams, of The G.H. Williams Collaborative.

No important prehistoric or historic-period cultural resources were identified on the parcel.

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APPENDIX A

Native American Consultation

Tom Origer & Associates
Archaeology / Historical Research

August 10, 2005

Debbie Pilas-Treadway
Native American Heritage Commission
915 Capitol Mall
Sacramento, CA 95814

VIA FACSIMILE

Re: Marin City Community Services Center, Marin County, California

Dear Ms. Pilas-Treadway:

I write regarding a cultural resources study our firm is conducting for the Marin City Community Development Department. The City plans to build a Community Services Center on the property at 100 Phillips Drive, as shown on the Point Bonita 7.5' topographic map. We are seeking information from the Native American Heritage Commission regarding possible sacred lands and other cultural sites within these areas. We would also like to obtain a list of individuals whom it would be appropriate to contact regarding this project.

Below is information to aid in your search. Please contact me at (707) 584-8200 if you have any questions or need additional information. Thank you for your help.

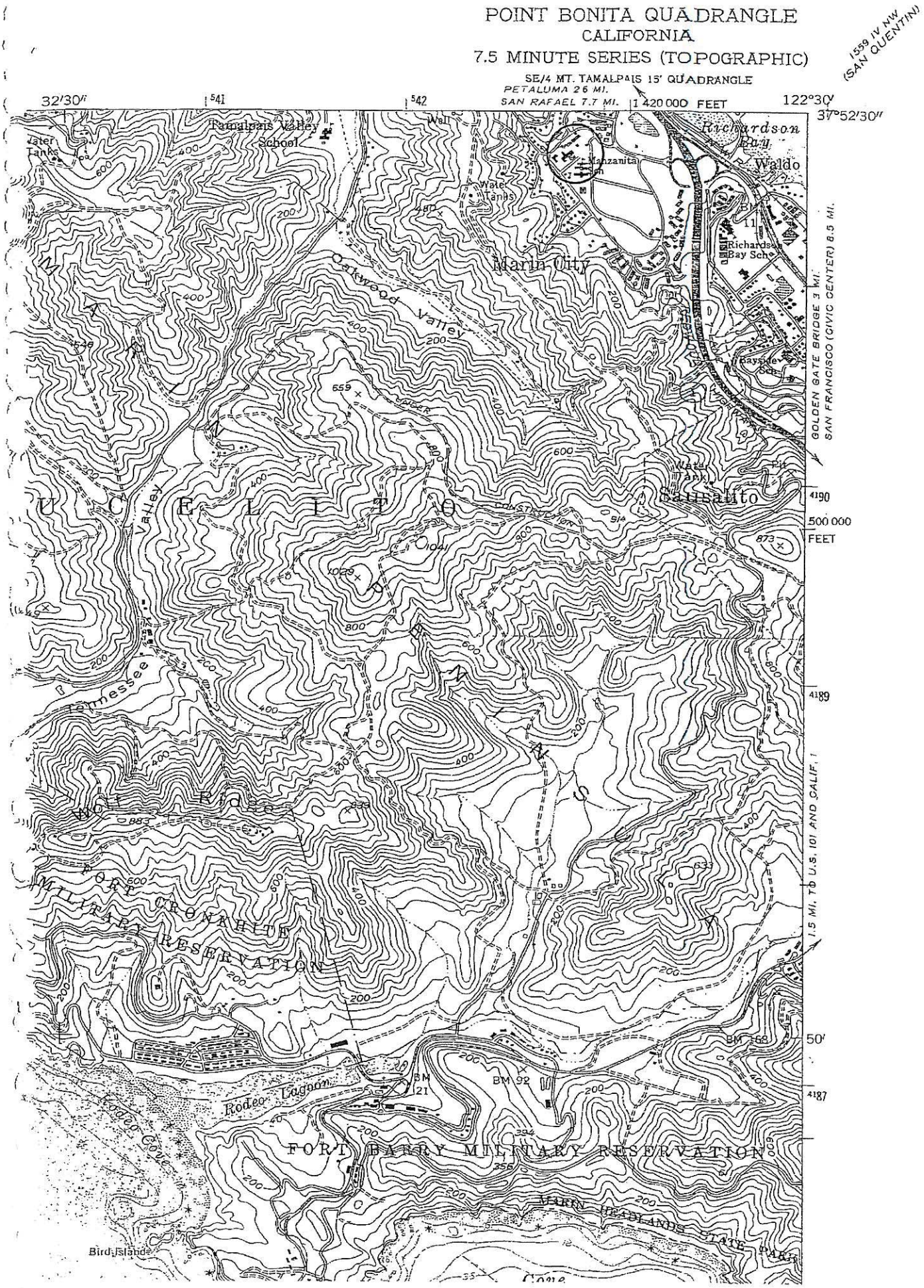
Sincerely,

Janine Loyd

Janine M. Loyd
Senior Associate

County	USGS Map	Township	Range	Section	Comments
Marin	Point Bonita 7.5'				Saucelito land grant

P.O. Box 1531, Rohnert Park, California 94927 ♦ Phone (707) 584-8200 Fax (707) 584-8300


POINT BONITA QUADRANGLE
CALIFORNIA
7.5 MINUTE SERIES (TOPOGRAPHIC)
SE/4 MT. TAMALPAIS 15' QUADRANGLE
PETALUMA 26 MI.
SAN RAFAEL 7.7 MI.
1 420 000 FEET
1559 IV NW (SAN QUENTIN)
32'30"
122°30'
37°52'30"
541
542
Tamalpais Valley School
Water Tanks
Manzanita
Richardson Bay
Waldo
Richardson Bay Sch
Marin City
Oakwood Valley
Bayside Sch
GOLDEN GATE BRIDGE 3 MI.
SAN FRANCISCO (CIVIC CENTER) 8.5 MI.
Sausalito
4190
500 000 FEET
4189
1.5 MI. TO U.S. 101 AND CALIF. 1
50'
4187
MILITARY RESERVATION
FORT CRONKHITE
Rodeo Lagoon
Rodeo Cove
FORT BARRY MILITARY RESERVATION
MARIN HEADLANDS STATE PARK
Bird Island
BM 92
BM 162
BM 121

Tom Origer & Associates
Archaeology / Historical Research

August 10, 2005

Mr. Gene Buvelot
Cultural Resources Officer
Federated Indians of Graton Rancheria
320 Tesconi Circle, Suite G
Santa Rosa, CA 95403

Re: Marin City Community Services Center, Marin County, California

Dear Mr. Buvelot:

I write regarding a cultural resources study our firm is conducting for the Marin City Community Development Department. The City plans to build a Community Services Center on the property at 100 Phillips Drive, as shown on the Point Bonita 7.5' topographic map. We are seeking information from the Native American Community regarding possible sacred lands and other cultural sites within these areas. This information will be used to guide recommendations for preservation of cultural resources.

Below is information to aid in your search. Please contact me at (707) 584-8200 if you have any questions or need additional information. Thank you for your help.

Sincerely,

Janine Loyd

Janine M. Loyd
Senior Associate

Cc: Frank Ross

P.O. Box 1531, Rohnert Park, California 94927 ♦ Phone (707) 584-8200 Fax (707) 584-8300

APPENDIX 3: STUDIES COMPLETED

STATE OF CALIFORNIA Arnold Schwarzenegger, Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-4082
Fax (916) 657-5390
Web Site www.nahc.ca.gov

August 18, 2005

Janine Loyd
Tom Origer & Associates
PO Box 1531
Rohnert Park, CA 94927

Sent by Fax: 707-584-8300
Number of Pages: 3

RE: Proposed Marin City Community Services, Marin County and Rohnert Park development, Sonoma County

Dear Ms. Loyd:

A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe or group. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 653-4038.

Sincerely,

Debbie Pilas-Treadway
Environmental Specialist III

Native American Contacts
Sonoma County
August 17, 2005

Grant Smith
4309 Chico Ave
Santa Rosa , CA 95401
(707) 528 -2584
Coast Miwok
Pomo

The Federated Indians of Graton Rancheria
Tim Campbell, Cultural Resources Officer
PO Box 14428
Santa Rosa , CA 95402
coastmiwok@aol.com
(707) 566-2288
(707) 566-2291 - fax
Coast Miwok
Southern Pomo

Kathleen Smith
1778 Sunnyvale Avenue
Walnut Creek , CA 94596
(925) 938-6323
Pomo
Coast Miwok

The Federated Indians of Graton Rancheria
Frank Ross
813 Lamont Ave
Novato , CA 94945
miwokone@yahoo.com
(415) 269-6075
Coast Miwok
Southern Pomo

Dawn S. Getchell
P.O. Box 53
Jenner , CA 95450
(707) 865-2248
Coast Miwok
Pomo

Ya-Ka-Ama
6215 Eastside Road
Forestville , CA 95436
yakaama.indian.ed@att.net
(707) 887-1541
Pomo
Miwok
Wappo

The Federated Indians of Graton Rancheria
Gene Buvelot
PO Box 14428
Santa Rosa , CA 95402
coastmiwok@aol.com
(415) 883-9215 Home
Coast Miwok
Southern Pomo

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resource assessment for the proposed Rohnert Prk development, Sonoma County.

FEDERATED INDIANS OF GRATON RANCHERIA
P.O. Box 14428, Santa Rosa, CA 95402
(707) 566-2288 Tribal Office
(707) 566-2291 Tribal Fax

Sept 1, 2005

To: Tom Origer & Associates
Archaeology / Historical Research
P.O. Box 1531
Rohnert Park, Cal. 94927

Dear Ms. Janine M. Loyd,

This is in response to the request of any Native American Sites within the area of 100 Philips Drive, I went and looked at the area of concern and it would seem to me that the area having been developed numerous times before, evidence of archaeological material may or may not exist at that site. I would be interested in any opportunity to monitor earth disturbance in that area to get a better picture of the soil development there. The story goes that traveling to Mount Tamalpias was often in undetermined paths. To this date only discussions of trying to identify these trails has happened. The area of concern may be vital to this new discovery of how the Coast Miwok moved around the mountain.

Thank you for your request and please keep us informed as to the progress of the Project.

Sincerely,

Frank Ross
Sacred Site and Site Protection Committee Member Officer
Federated Indians of Graton Rancheria

Frank Ross
813 Lamont Av.
Novato, Cal. 94945
415-269-6075

WILSON
ENGINEERING
& TRANSPORTATION
CONSULTANTS, INC

September 2, 2009

Clinton Bolden, Managing Principal
Bocart and Associates
133 Estudillo Ave. STE 296
San Leandro, CA 94577

RE: Traffic Analysis for a Proposed New Community Center in Marin City

Dear Clint,

The following provides an assessment of potential traffic impacts associated with the proposed new community center in Marin City. The project had originally included a much larger program with both retail and office space in addition to rebuilding the existing community center. However, after continued evaluation of the initial building program, it was reduced to essentially updating the existing facilities with expanded community center, medical support and gym space. Proposed retail and office space was removed due to the distance to the freeway and a decision to keep the project a community center supporting Marin City residents. This changing the project to a simply modernization of the existing facility with the same users reduced potential increases in trip generation to a very limited amount. The project is forecast to generate a total of six additional trips during the morning and evening peak commute hours as described below. These trips will be from Marin City and will not impact surrounding roadways or intersections. The increase in traffic will be less than daily fluctuations and will be unnoticeable to existing motorists.

The proposed center will be located on Phillips Drive at the site of the existing Manzanita Center which will essentially be demolished and replaced with a larger and more up to date facility. The new facility will include an interim amphitheatre, gym, a community center area with teen, senior and wellness centers, and office space. Table 1 provides a summary of existing, proposed and net gain in space for the center. As indicated, the existing center has a gym and fitness center with approximately 13,400 square feet of space and approximately 3,600 square feet of office space. This is to be replaced with a 200 seat amphitheatre, an approximately 18,149 square foot gym and fitness center, 3,600 foot community center area (teen, senior, and wellness centers), and 5,640 square foot of District and service provider professional office space. The project will result in a net increase of a 200 seat amphitheatre, 3,600 square feet of community center space, and 2,040 square feet of office space.

Estimates of the number of trips which would be generated by the project were developed using *Institute of Transportation Engineers* standard trip generation rates for proposed uses. Review of Table 2 will show the project is forecast to generate an additional 52 trips per day relative to the existing center. Of these, 4 are forecast to be inbound and 2 outbound during the morning peak hour and another 2 are forecast to be inbound and 4 outbound during the evening peak hour.

CIVIL ENGINEERING
TRAFFIC IMPACT STUDIES
TRANSPORTATION PLANNING
TRAFFIC SIGNAL DESIGN

70 ZOE STREET
SUITE 200
SAN FRANCISCO, CA
94107

TEL: (415) 974-5071
FAX: (415) 974-5073

EXHIBIT D

Table 1
Project Summary

Use	Existing Center	Proposed Center	Net Increase in Space
Amphitheatre		200 Seats	200 Seats
Gym/ Fitness	13,400 sf	18,149 sf	4,749 sf
Community Center		3,600 sf	3,600 sf
Office	3,600 sf	5,640 sf	2,040 sf

Source: G.H. Williams Collaborative, 2009

This increase in traffic will not impact the surrounding roadway network. All intersections will continue to operate at existing levels of service (LOS) with no changes in delay. Drivers will not be able to discern any changes in volumes as a result of the project. Current fluctuations in daily volumes are more pronounced.

County Staff has also requested a review of the intersection of the southerly end of Drake at Donahue and relative to current safety. Staff indicated a concern about autos exiting southbound US 101 and making a right at the end of the ramp and then attempting to make a left onto Drake. There is approximately 200 feet between the limit line at the end of the ramp and where one would stop to turn left into Drake. In this 200 feet, a driver has to merge with and cross two lanes of westbound traffic on Donahue to reach the westbound left turn pocket at Drake. This can be done safely as long as drivers stop at the end of the ramp if the light is red and wait for both westbound through lanes from under the freeway to clear. Sight distance appears acceptable but the guess is drivers exiting the freeway do not always come to a complete stop. Some probably make a running stop at the end of the ramp, even when confronted with a red light, and then attempt to merge across the two westbound lanes quickly to get into the left turn lane at Drake.

Our assessment is that from the Project's perspective, this is an existing problem that will not be exacerbated by the project for two reasons. First, the project has been tailored to support the local community and not to attract trips from U.S. 101 and second, if traffic does approach the site from the freeway, it will follow Donahue north to the other end of Drake to reach the Center. It will not make a quick left at the southern end of Drake and follow Drake around to the site.

In terms of things the County might try to improve safety, it appears that some have already been implemented. A limit line is in place at the end of the off ramp and there is a signal pole/head at that limit line to further confirm drivers need to stop on a red at the end of the ramp. They have also put two merge arrows on the pavement just west of the ramp juncture to further emphasize to westbound traffic from under the freeway, the presence of traffic entering from the ramp. Other suggestions include:

"Stop Here on Red" sign on signal pole at limit line on the off-ramp, or
"No Right on Red" if really forced to – issue is traffic potentially backing down ramp during peaks, or
Some type of "Right Lane on Donahue Only" sign on signal pole at foot of ramp.

If you have any questions, please do not hesitate to call.

Sincerely
Wilson Engineering

John Wilson, TE

APPENDIX 3: STUDIES COMPLETED

Project Trip Generation (Net Change)

Use	Size	Average Daily Traffic		A.M. Peak Hour Traffic				P.M. Peak Hour Traffic			
		Factor (1)	Trips	Factor (1)		Trips		Factor (1)		Trips	
				In (2)	Out (2)	In (2)	Out (2)	In (2)	Out (2)	In (2)	Out (2)
Amphitheatre (3)	200 Seats	-	-	-	-	-	-	-	-	-	-
Gym (4)	18,149 sf	-	-	-	-	-	-	-	-	-	-
Community Center (5)	3,600 sf	22.88 te/ksf	82	0.99 te/ksf	0.63 te/ksf	4	3	0.48 te/ksf	1.16 te/ksf	2	4
Office (med/prof) (6)	2,040 sf	11.01 te/ksf	22	1.36 te/ ksf	0.19 te/ ksf	3	1	0.25 te/ksf	1.24 te/ksf	1	3
Subtotal			104			7	4			3	7
(-50% (7)) Modal Split			(-52)			(-3)	(-2)			(-1)	(-3)
Net trips			52			4	2			2	4

(1) Trips (te) per 1,000 sf (1ksf) of floor area.
(2) In = inbound to the project/ out = outbound from the project.
(3) Amphitheatre not expected to generate trips on a typical weekday basis.
(4) Gym/ Fitness has a net increase of 7,354 with new boxing ring etc. However, similar peak hour trip generation and no net change in trips expected between existing gym and new gym
(5) 3,800 sf of proposed senior, teen and wellness center
(6) 5,640 proposed sf - 3,600 exisitng sf = 2,040 net new sf
(7) Use non-auto mode of travel (bicycle, bus, and pedestrian)