



**LA PAZ VILLAGE SENIOR LIVING**

PROJECT DESCRIPTION:						
FOUR - STORY TYPE V A OVER ONE LEVEL TYPE I PODIUM PARKING, RESIDENTIAL UNITS, AMENITIES, PLUS ONE LEVEL TYPE I BASEMENT.						

ZONING SUMMARY						
PROJECT SITE INFORMATION	APN # SUBJECT SITE	ADDRESS	CURRENT ZONE	GENERAL PLAN AND USE	GROSS LOT AREA	NET LOT AREA
	620-211-17	25254 LA PAZ ROAD, LAGUNA HILLS, CA 92653	CC COMMUNITY COMMERCIAL	CC COMMUNITY COMMERCIAL	2,554 AC	2,438 AC

ENTITLEMENT REQUEST:						
180 INDEPENDENT SENIOR LIVING						

PROJECT REQUIREMENTS		NOTES				
SETBACKS	RESIDENTIAL	THE PROPOSED PROJECT IS SUBMITTED UNDER THE HOUSING ACCOUNTABILITY ACT 65589.5 SUBDIVISION (D) DENSITY AND F.A.R. AREA MEASURED BASED ON THE LOT NET AREA				
NORTH	5'-0"					
STREET SIDE (EAST SIDE)	10'-0"					
INTERIOR SIDE (WEST SIDE)	5'-0"					
SOUTH	5'-0"					

PROJECT REQUIREMENTS		NOTES				
NUMBER OF RESIDENTIAL UNITS	180 DU	THE PROPOSED PROJECT IS SUBMITTED UNDER THE HOUSING ACCOUNTABILITY ACT 65589.5 SUBDIVISION (D) DENSITY AND F.A.R. AREA MEASURED BASED ON THE LOT NET AREA				
DENSITY	74 DU / AC					
MAXIMUM LOT COVERAGE	65,902 S.F. 62%					
NUMBER OF STORIES	4 LEVEL RESIDENTIAL OVER 1 LEVEL PARKING					
BUILDING HEIGHT	61'-4"					
F.A.R.	1.97					
OPEN SPACE	29,682 S.F.					
LANDSCAPE AREA	13,500 S.F.					

OPEN SPACE CALCULATION	AT GRADE COURTYARD	COURTYARD OVER PODIUM	ROOF TERRACE	PRIVATE OPEN SPACE	TOTAL OPEN SPACE	
	3,000 S.F.	14,619 S.F.	650 S.F.	11,413 S.F.	29,682 S.F.	
THE PROPOSED PROJECT IS PRESENTED PURSUANT TO GOVERNMENT CODE SECTION 65589.5 SUBDIVISION (D); ANY DISCREPANCIES BETWEEN THE PLANS AND REQUIREMENTS OF THAT SECTION ARE INADVERTENT AND SHALL BE INTERPRETED IN A MANNER THAT ENSURES COMPLIANCE WITH SECTION 65589.5						
RESIDENTIAL BUILDING AREA	1ST LEVEL	2ND LEVEL	3RD LEVEL	4TH LEVEL	5TH LEVEL	TOTAL
	19,916 S.F.	46,673 S.F.	46,868 S.F.	46,868 S.F.	46,230 S.F.	208,555 S.F.

UNIT SUMMARY							
PLAN	DESCRIPTION	Q.	RATIO	GROSS AREA (SF)	TOTAL G.A. (SF)	PRIVATE DECK (SF)	TOTAL PRIVATE DECK (SF)
S1	STUDIO	13		390	5,070	-	-
S1 (BMR)	STUDIO	3		390	1,170	-	-
TOTAL STUDIO		16	9%	6,240	-	-	-
A1 (BMR)	1 BED / 1 BATH	1		519	519	-	-
A2	1 BED / 1 BATH	1		575	575	-	-
A3 (BMR)	1 BED / 1 BATH	11		726	7,986	60	660
A3	1 BED / 1 BATH	3		726	2,178	60	180
A4 (BMR)	1 BED / 1 BATH	3		796	2,388	48	144
A5	1 BED / 1 BATH	67		800	53,600	71	4,757
A5 (BMR)	1 BED / 1 BATH	4		800	3,200	71	284
A6	1 BED / 1 BATH	3		772	2,316	58	174
TOTAL 1 BEDROOM		93	52%	72,762	6,199	-	-
B1 (BMR)	2 BED / 2 BATH	14		888	12,432	60	840
B1	2 BED / 2 BATH	4		888	3,552	60	240
B2	2 BED / 2 BATH	53		1,040	55,120	78	4,134
TOTAL 2 BEDROOM		71	39%	65,784	4,584	-	-
TOTAL		180		150,106	11,173	-	-

RESIDENTIAL PARKING	NUMBER OF DU	NUMBER OF CAR/DU	PROVIDED PARKING STALLS	NOTE:
STUDIO	13	1	13	THE PROPOSED PROJECT IS SUBMITTED UNDER THE HOUSING ACCOUNTABILITY ACT 65589.5 SUBDIVISION (D) RESIDENTS PARKING INCLUDED 5 ACCESSIBLE STALLS 215 RESIDENTIAL STALLS X 2% = 5 ACCESSIBLE STALLS, INCLUDING ONE ACCESSIBLE VAN PARKING 13 RESIDENTS' GUESTS PARKING INCLUDES 1 ACCESSIBLE VAN STALL 13X2% = 1 EV RESIDENTS' PARKING AS FOLLOWS: 228 X 5% = 12 EV CHARGER INCLUDED ONE HC VAN STALL UNASSIGNED 228 X 10% = 23 EV CAPABLE 228 X 25% = 57 EV READY
STUDIO (BMR)	3	0	0	
1 BEDROOM	74	1	74	
1 BEDROOM (BMR)	19	0	0	
2 BEDROOM	57	2	114	
2 BEDROOM (BMR)	14	1	14	
TOTAL RESIDENTIAL			215	
GUEST		1 / 15 DU	13	1.30 CAR / DU PROVIDED EXCLUDED GUEST PARKING
TOTAL RES. AND GUEST			228	
UNASSIGNED			27	

CODE	CBC 2022
SUSTAINABILITY	PROJECT WILL COMPLY WITH CAL GREEN
ACCESSIBILITY	PROJECT WILL COMPLY WITH CA BUILDING CODE CHAPTER 11A - NO PUBLIC FUNDING

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PROJECT TEAM

APPLICANT: La Paz Village Investors, Inc.  
 ADDRESS: 1010 South El Camino Real, Suite 200  
 San Clemente, CA 92672

CONTACT: Nick Buchanan  
 PHONE NUMBER: (949)441-7442  
 EMAIL: nbuchanan@proteallc.com

ARCHITECT: WHA Inc.  
 ADDRESS: 680 Newport Center Drive, Suite 300  
 Newport Beach, CA 92660

CONTACT: Ron Nestor  
 PHONE NUMBER: (949)250-0607 ext. 8776  
 EMAIL: ron@whainc.com

CIVIL ENGINEER: C&V Consulting, INC.  
 ADDRESS: 9830 Irvine Center Drive  
 Irvine, CA 92618

CONTACT: Ryan Bitner  
 PHONE NUMBER: (949)369-6141  
 EMAIL: rbittner@cvc-inc.net

LANDSCAPE ARCHITECT: C2 Collaborative  
 ADDRESS: 100 Avenida Miramar  
 San Clemente, CA 92672

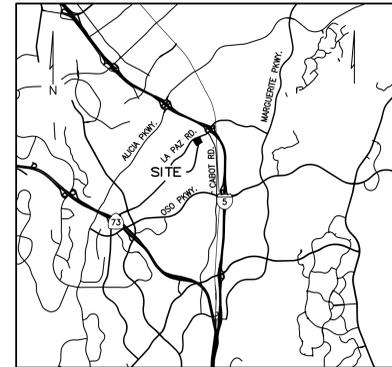
CONTACT: Jack Haden  
 PHONE NUMBER: (949)366-6624  
 EMAIL: jhaden@c2collaborative.com



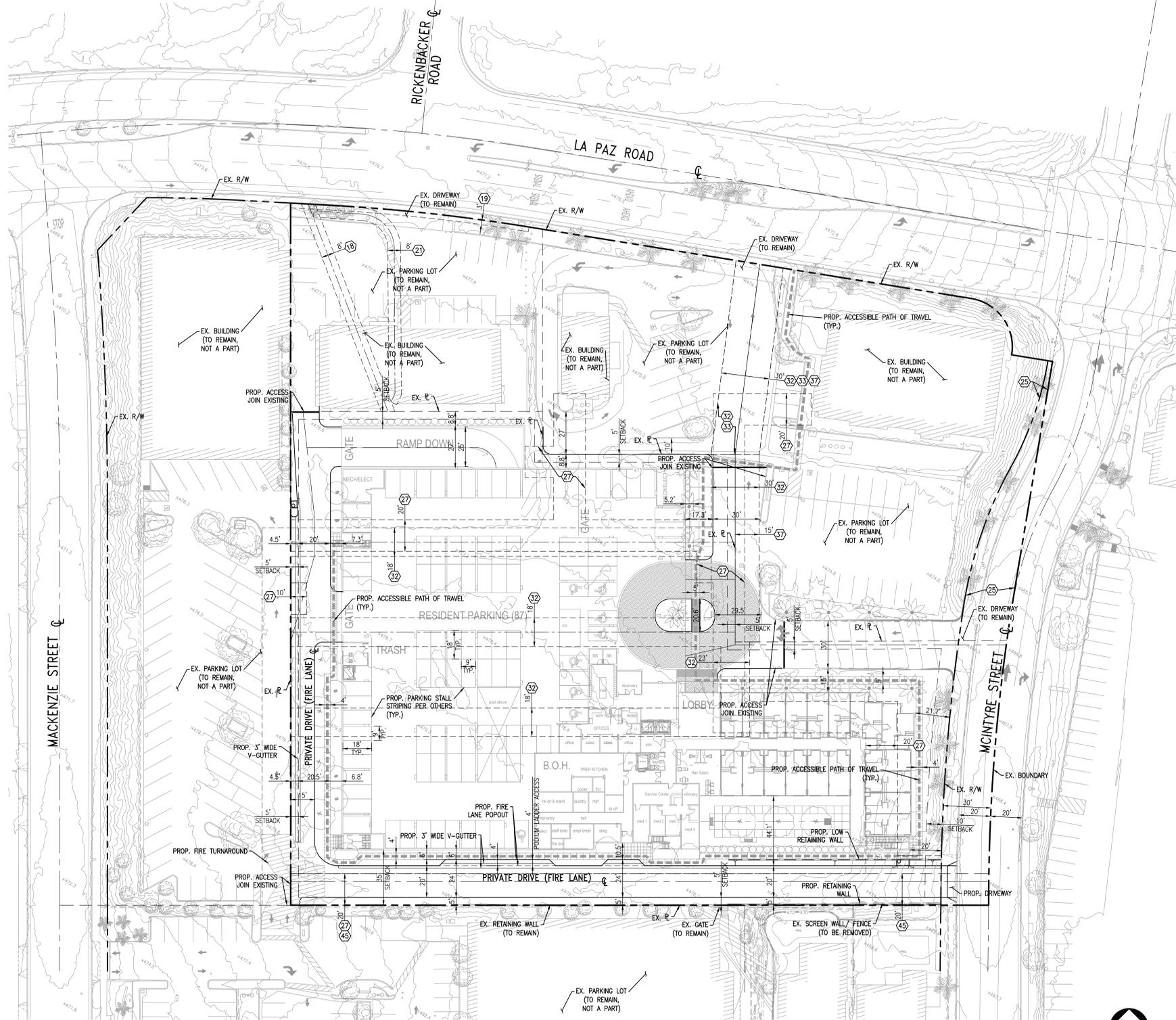
VICINITY MAP

# CONCEPTUAL SITE PLAN

LA PAZ VILLAGE SENIOR LIVING,  
LAGUNA HILLS



VICINITY MAP  
NOT TO SCALE



**TITLE INFORMATION:**

THE FOLLOWING TITLE INFORMATION WAS DERIVED FROM A COMMITMENT FOR TITLE INSURANCE ISSUED BY FIDELITY NATIONAL TITLE COMPANY, ORDER NO. 997-30103372-A-TS4 DATED AUGUST 7, 2023 AT 7:30AM, AMENDED AUGUST 15, 2023, AMENDMENT NO. A.

- 13 ABUTTER'S RIGHTS OF INGRESS AND EGRESS TO OR FROM MARCO POLO ROAD (NOW KNOWN AS LA PAZ ROAD), HAVE BEEN DEDICATED OR RELINQUISHED ON THE MAP OF TRACT NO. 5641 ON FILE IN BOOK 204, PAGE 1-9, OF TRACT MAPS. (RELINQUISHMENT FOR PTR PARCEL 2)
- 14 COVENANTS, CONDITIONS, RESTRICTIONS AND EASEMENTS IN THE DOCUMENT RECORDED AS BOOK 7916, PAGE 42 OF OFFICIAL RECORDS. (BLANKET IN NATURE FOR PTR PARCEL 2)
- 15 COVENANTS, CONDITIONS, RESTRICTIONS AND EASEMENTS IN THE DOCUMENT RECORDED AS BOOK 7916, PAGE 51 OF OFFICIAL RECORDS. (BLANKET IN NATURE FOR PTR PARCEL 2)
- 16 COVENANTS, CONDITIONS, RESTRICTIONS AND EASEMENTS IN THE DOCUMENT RECORDED AS BOOK 7916, PAGE 622 OF OFFICIAL RECORDS. (BLANKET IN NATURE FOR PTR PARCEL 1)
- 18 AN EASEMENT FOR PUBLIC UTILITIES AND INCIDENTAL PURPOSES, IN FAVOR OF SAN DIEGO GAS & ELECTRIC COMPANY, RECORDED APRIL 29, 1968 AS BOOK 8586, PAGE 885 OF OFFICIAL RECORDS.
- 19 AN EASEMENT FOR PUBLIC UTILITIES AND INCIDENTAL PURPOSES, IN FAVOR OF PACIFIC TELEPHONE AND TELEGRAPH COMPANY, A CORPORATION, RECORDED FEBRUARY 6, 1969 AS BOOK 8867, PAGE 318 OF OFFICIAL RECORDS.
- 20 COVENANTS, CONDITIONS, RESTRICTIONS AND EASEMENTS IN THE DOCUMENT RECORDED JANUARY 25, 1972 AS BOOK 9976, PAGE 785 OF OFFICIAL RECORDS. (BLANKET IN NATURE FOR PTR PARCEL 2, 3, 4)
- 21 AN EASEMENT FOR PIPELINES AND INCIDENTAL PURPOSES, IN FAVOR OF SAN DIEGO GAS & ELECTRIC COMPANY, A CORPORATION, RECORDED APRIL 9, 1973 AS BOOK 10635, PAGE 624 OF OFFICIAL RECORDS
- 22 COVENANTS, CONDITIONS, RESTRICTIONS AND EASEMENTS IN THE DOCUMENT RECORDED AS BOOK 11951, PAGE 1984 OF OFFICIAL RECORDS. (BLANKET IN NATURE FOR PTR PARCEL 2)
- 23 COVENANTS, CONDITIONS, RESTRICTIONS AND EASEMENTS IN THE DOCUMENT RECORDED AS BOOK 11952, PAGE 1 OF OFFICIAL RECORDS. (BLANKET IN NATURE FOR PTR PARCEL 2)
- 24 ABUTTER'S RIGHTS OF INGRESS AND EGRESS TO OR FROM 7-ELEVEN FOOD STORE AT 25758 LA PAZ ROAD OF THE DRIVEWAYS HAVE BEEN RELINQUISHED IN THE DOCUMENT RECORDED JANUARY 25, 1972 AS BOOK 9976, PAGE 785 OF OFFICIAL RECORDS. (RELINQUISHMENT FOR PTR PARCEL 1)
- 25 AN EASEMENT FOR STREET, HIGHWAY AND INCIDENTAL PURPOSES, IN FAVOR OF THE COUNTY OF ORANGE-- A BODY CORPORATE AND POLITIC, RECORDED JUNE 15, 1973 AS BOOK 10753, PAGE 157 OF OFFICIAL RECORDS.
- 26 THE FACT THAT THE OWNERSHIP OF THE LAND DOES NOT INCLUDE VEHICULAR ACCESS TO AND FROM A PORTION OF LA PAZ ROAD, SAID RIGHTS HAVING BEEN PARTIALLY OBTAINED BY DEED FROM MISSION HILLS PLAZA, LTD., A PARTNERSHIP, TO THE COUNTY OF ORANGE, RECORDED FEBRUARY 4, 1974 IN BOOK 11069, PAGE 1012 OF OFFICIAL RECORDS. (RELINQUISHMENT FOR PTR PARCEL 2, 3, 4)
- 27 AN EASEMENT FOR WATER TRANSMISSION AND INCIDENTAL PURPOSES, IN FAVOR OF MOULTON-NIGUEL WATER DISTRICT, RECORDED APRIL 23, 1974 AS BOOK 11125, PAGE 1351 OF OFFICIAL RECORDS.
- 28 AN EASEMENT FOR PIPE LINES AND INCIDENTAL PURPOSES, IN FAVOR OF MOULTON-NIGUEL WATER DISTRICT, RECORDED APRIL 29, 1974 AS BOOK 11130, PAGE 1432 AND RE-RECORDED MAY 15, 1974 IN BOOK 11145, PAGE 272 BOTH OF OFFICIAL RECORDS. (EASEMENT IS OUTSIDE OF SURVEY AREA)
- 29 AN EASEMENT FOR TRANSMISSION AND DISTRIBUTION OF ELECTRICITY AND INCIDENTAL PURPOSES, IN FAVOR OF SAN DIEGO GAS & ELECTRIC COMPANY, A CORPORATION, RECORDED DECEMBER 24, 1974 AS BOOK 11311, PAGE 847 OF OFFICIAL RECORDS. (EASEMENT LOCATION IS INDETERMINATE FROM RECORD INFORMATION)
- 30 ABUTTER'S RIGHTS OF INGRESS AND EGRESS TO OR FROM LA PAZ ROAD HAVE BEEN RELINQUISHED IN THE DOCUMENT RECORDED MARCH 30, 1977 AS BOOK 12124, PAGE 424 OF OFFICIAL RECORDS. (RELINQUISHMENT FOR PTR PARCEL 2, 3, 4)
- 31 COVENANTS, CONDITIONS, RESTRICTIONS AND EASEMENTS IN THE DOCUMENT RECORDED FEBRUARY 15, 1979 AS BOOK 13035 PAGE 996 OF OFFICIAL RECORDS. (BLANKET IN NATURE FOR PTR PARCEL 2, 3)
- 32 AN EASEMENT FOR INGRESS, EGRESS AND INCIDENTAL PURPOSES, IN FAVOR OF SADDLEBACK VALLEY BOARD OF REALTORS, A CALIFORNIA NONPROFIT, RECORDED FEBRUARY 15, 1979 AS BOOK 13035, PAGE 1001 OF OFFICIAL RECORDS.
- 33 THE TERMS, PROVISIONS AND EASEMENT(S) CONTAINED IN THE DOCUMENT ENTITLED "EASEMENT AGREEMENT BETWEEN LAND OWNER" RECORDED MAY 12, 1997 AS INSTRUMENT NO. 97-218842 OF OFFICIAL RECORDS. THE TERMS AND PROVISIONS CONTAINED IN THE DOCUMENT ENTITLED "AMENDED AND RESTATED EASEMENT AGREEMENT AMONG LANDOWNERS" RECORDED FEBRUARY 15, 2018 AS INSTRUMENT NO. 2018000053465 OF OFFICIAL RECORDS.
- 37 THE TERMS, PROVISIONS AND EASEMENT(S) CONTAINED IN THE DOCUMENT ENTITLED "EASEMENT AGREEMENT BETWEEN LAND OWNERS" RECORDED MAY 20, 2011 AS INSTRUMENT NO. 2011-251806 OF OFFICIAL RECORDS.
- 38 THE TERMS, PROVISIONS AND EASEMENT(S) CONTAINED IN THE DOCUMENT ENTITLED "AMENDED AND RESTATED EASEMENT AGREEMENT AMONG LAND OWNERS" RECORDED MARCH 08, 2012 AS INSTRUMENT NOS. 2012000131670 AND RECORDED FEBRUARY 15, 2018 AS INSTRUMENT NO. 2018000053465, BOTH OF OFFICIAL RECORDS. (BLANKET IN NATURE PTR PARCEL 1, 2, 3, 4)
- 45 AN EASEMENT FOR INGRESS, EGRESS AND INCIDENTAL PURPOSES, IN FAVOR OF SADDLEBACK VALLEY BOARD OF REALTORS, A CALIFORNIA NON-PROFIT, RECORDED AUGUST 08, 1980 AS BOOK 13693, PAGE 1673 OF OFFICIAL RECORDS.

**VESTING OWNER:**

LA PAZ VILLAGE INVESTORS LLC, A DELAWARE LIMITED LIABILITY COMPANY

**DEVELOPER:**

CAPE POINT DEVELOPMENT, LLC  
1010 S. EL CAMINO REAL, SUITE 200  
SAN CLEMENTE, CA 92672  
T (949) 441-7442  
NICK BUCHANAN

**SITE ADDRESS:**

25250-25260 LA PAZ ROAD  
LAGUNA HILLS, CA 92653

**CIVIL ENGINEER:**

C&V CONSULTING, INC.  
9830 IRVINE CENTER DRIVE  
IRVINE, CA 92618  
T (949) 916-3800  
RYAN BITTNER, P.E., PRINCIPAL

**ARCHITECT:**

WILLIAM HEZMAHALCH ARCHITECTURE, INC.  
680 NEWPORT CENTER DRIVE, SUITE 300  
NEWPORT BEACH, CA 92660  
T (714) 250-0607  
RON NESTOR, SENIOR PRINCIPAL

**CONSTRUCTION TYPE:**

4-STORY TYPE V A

**UTILITY PURVEYORS:**

**WATER**  
MOULTON NIGUEL WATER DISTRICT (MNWD)  
(949) 831-2500

**SEWER**  
MOULTON NIGUEL WATER DISTRICT (MNWD)  
(949) 831-2500

**ELECTRICITY**  
SAN DIEGO GAS & ELECTRIC COMPANY (SDG&E)  
(800) 411-7343

**GAS**  
SOCAL GAS  
(800) 411-7343

**PHONE/INTERNET**  
COX  
(800) 261-4021

**EXISTING ZONING:**

COMMUNITY COMMERCIAL (CC)

**LEGEND:**

- CENTERLINE
- - - EX. BOUNDARY
- - - EASEMENT
- - - EX. LOT LINE
- - - ADA PATH OF TRAVEL

**PROJECT SUMMARY:**

SITE AREA: GROSS: 2,554 AC  
NET: 2,438 AC  
DENSITY: 74 DU/AC  
F.A.R.: 1.97  
UNITS: 180 SENIOR LIVING UNITS

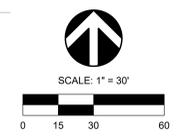
7-STUDIO	390 SF
9-STUDIO BMR	390 SF
1-1BR (A1)	519 SF
1-1BR (A2)	575 SF
10-1BR (A3)	726 SF
4-1BR BMR (A3)	726 SF
3-1BR (A4)	796 SF
66-1BR (A5)	800 SF
5-1BR (A6)	800 SF
3-1BR (A6)	772 SF
18-2BR BMR (B1)	888 SF
53-2BR (B2)	1,040 SF
<b>TOTAL:</b>	<b>150,106 SF</b>

PARKING: REQUIRED: 180 UNITS AT 1.2 (INCLUDING GUESTS) = 215 SPACES  
RESIDENTIAL: 215 SPACES  
GUEST: 13 SPACES  
TOTAL PROVIDED: 228 SPACES  
OPEN SPACE: TOTAL OPEN SPACE: 29,682 SF

BUILDING: 4-LEVEL RESIDENTIAL OVER 1 LEVEL PARKING 1 BUILDING HEIGHT: 81'-4" TOTAL BUILDING AREA: 208,55 SF

SETBACKS:  
FRONT: 10' (MCINTYRE STREET)  
INTERIOR STREET: 5'  
INTERIOR SIDE: 5'  
REAR: 5'

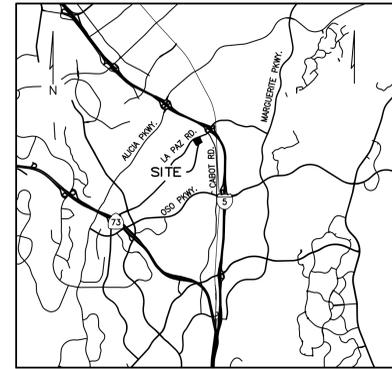
SHEET INDEX	SHEET #
CONCEPTUAL SITE PLAN	1
CONCEPTUAL GRADING PLAN	2
SECTIONS	3
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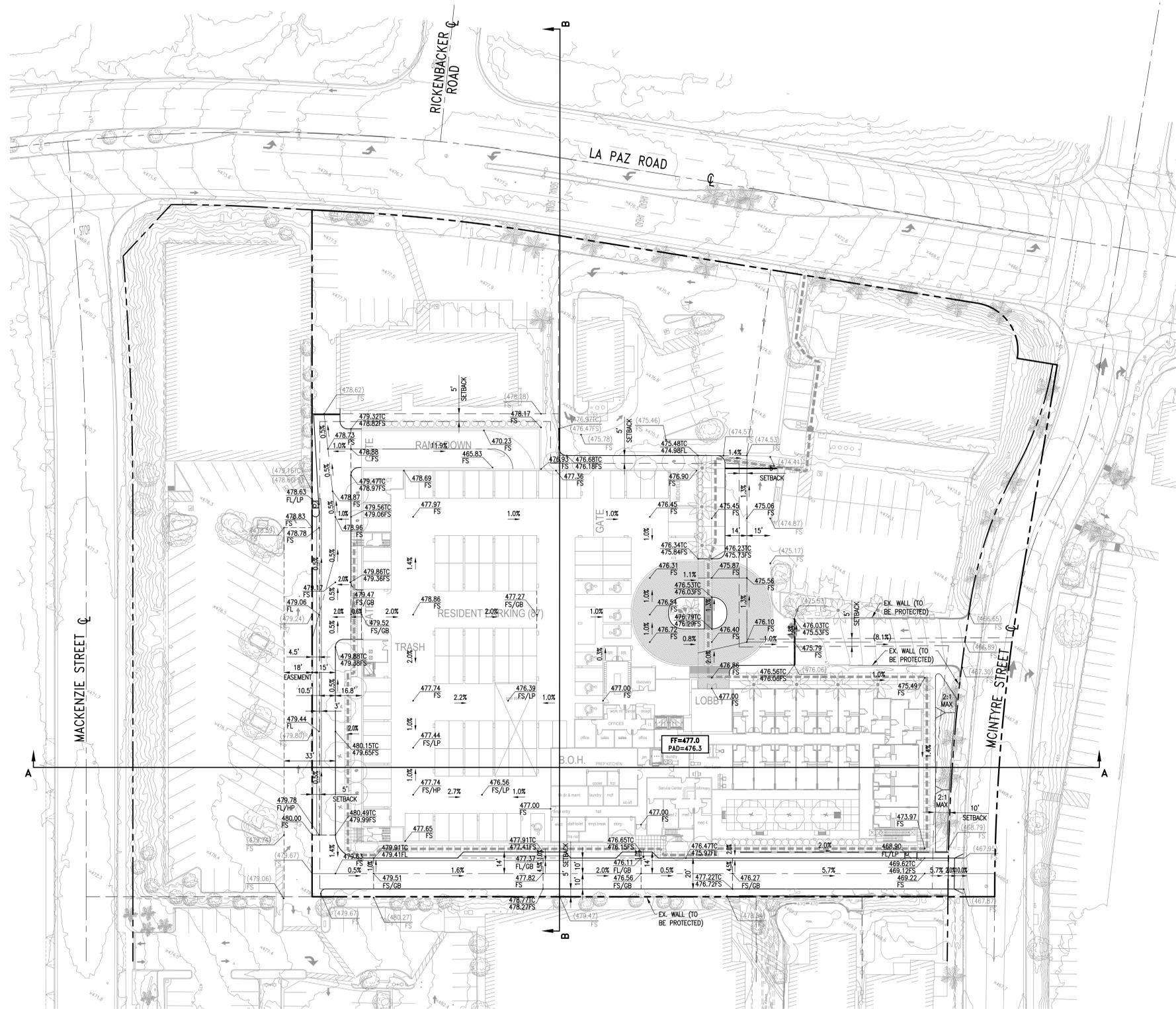
<p>DEVELOPER :</p> <p style="text-align: center;"><b>REVISIONS</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>NO.</th> <th>DATE</th> <th>INITIAL</th> <th>DESCRIPTION</th> <th>APP</th> <th>DATE</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	NO.	DATE	INITIAL	DESCRIPTION	APP	DATE																									<p>OWNER &amp; DEVELOPER :</p> <p><b>CAPE POINT</b> DEVELOPMENT, LLC</p> <p>CAPE POINT DEVELOPMENT, LLC 1010 S. EL CAMINO REAL, SUITE 200 SAN CLEMENTE, CA 92672 PHONE (949) 447-7442</p>	<p>PREPARED BY :</p> <p><b>C&amp;V</b> CONSULTING, INC. CIVIL ENGINEERING LAND PLANNING &amp; SURVEYING</p> <p>9830 IRVINE CENTER DRIVE IRVINE, CALIFORNIA 92618 (949) 916-3800 INFO@CVC-INC.NET WWW.CVC-INC.NET</p>	<p style="text-align: right;">DATE: 9/21/2023</p> <p style="text-align: center;"><b>LA PAZ VILLAGE SENIOR LIVING</b> <b>25250-25260 LA PAZ ROAD</b> <b>CONCEPTUAL SITE PLAN</b></p> <p style="text-align: right;">SHEET 1 OF 4</p> <p>SCALE: AS SHOWN    DRAWN BY: JH    CHECKED BY: JH</p> <p style="text-align: center;"><b>CITY OF LAGUNA HILLS</b></p>
NO.	DATE	INITIAL	DESCRIPTION	APP	DATE																												

# CONCEPTUAL GRADING PLAN

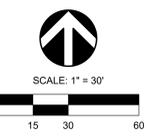
LA PAZ VILLAGE SENIOR LIVING,  
LAGUNA HILLS



VICINITY MAP  
NOT TO SCALE



- LEGEND:**
- CENTERLINE
  - EX. BOUNDARY
  - EASEMENT
  - EX. LOT LINE
  - ADA PATH OF TRAVEL



DEVELOPER :					
REVISIONS					
NO.	DATE	INITIAL	DESCRIPTION	APP	DATE

OWNER & DEVELOPER :

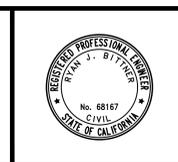
**CAPE POINT**  
DEVELOPMENT, LLC

CAPE POINT DEVELOPMENT, LLC  
1010 S. EL CAMINO REAL, SUITE 200  
SAN CLEMENTE, CA 92672  
PHONE (949) 447-7442

PREPARED BY :

**C&V**  
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CIVIL ENGINEERING  
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LA PAZ VILLAGE SENIOR LIVING  
25250-25260 LA PAZ ROAD  
CONCEPTUAL GRADING PLAN

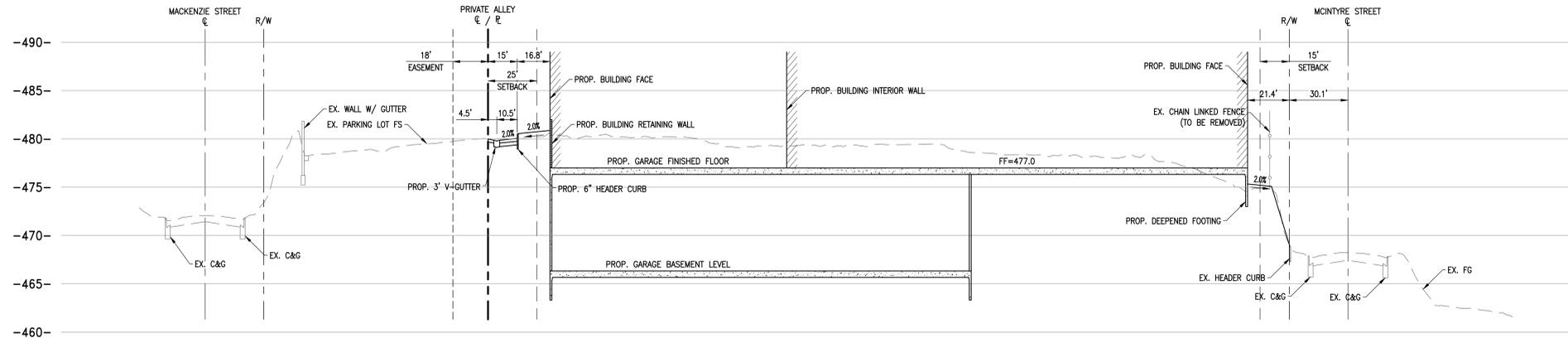
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SHEET 2 OF 4

SCALE: AS SHOWN    DRAWN BY: KL    CHECKED BY: JH

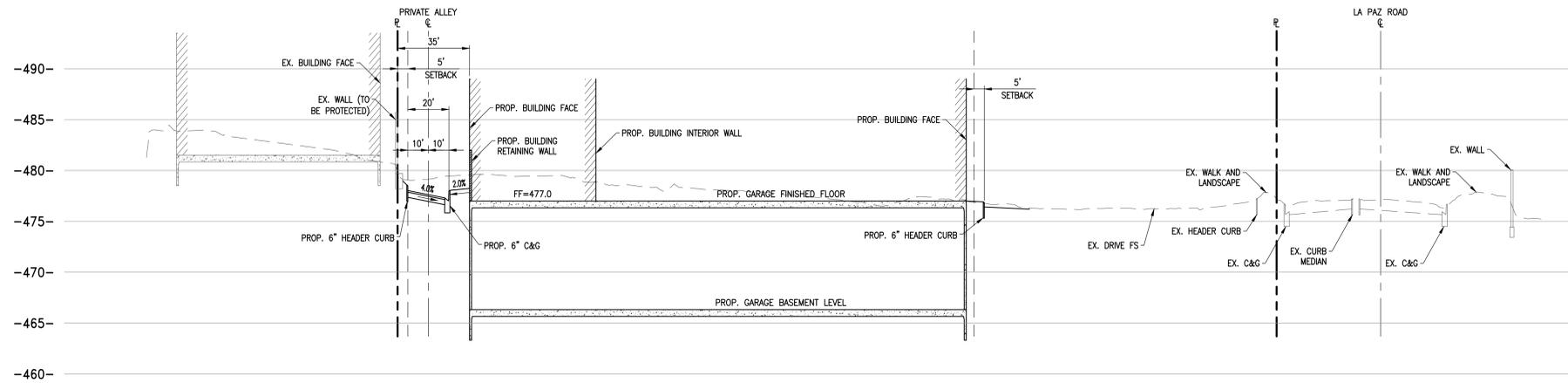
**CITY OF LAGUNA HILLS**

# SECTIONS

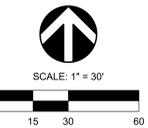
## LA PAZ VILLAGE SENIOR LIVING, LAGUNA HILLS



SECTION A-A  
EAST-WEST OF PROJECT SITE  
HOR: 1"=30'  
VERT: 1"=6'



SECTION B-B  
NORTH-SOUTH OF PROJECT SITE  
HOR: 1"=30'  
VERT: 1"=6'



DEVELOPER : REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APP

OWNER & DEVELOPER :

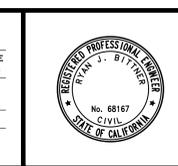
**CAPE POINT**  
DEVELOPMENT, LLC

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CIVIL ENGINEERING  
LAND PLANNING & SURVEYING



**LA PAZ VILLAGE SENIOR LIVING**  
**25250-25260 LA PAZ ROAD**

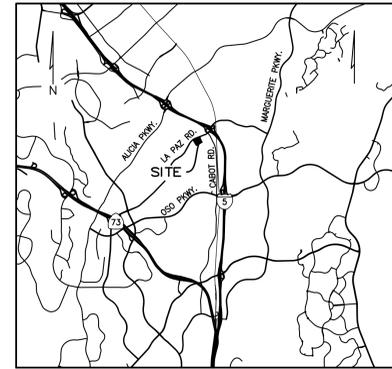
**SECTIONS**

DATE: 9/21/2023  
SHEET 3 OF 4

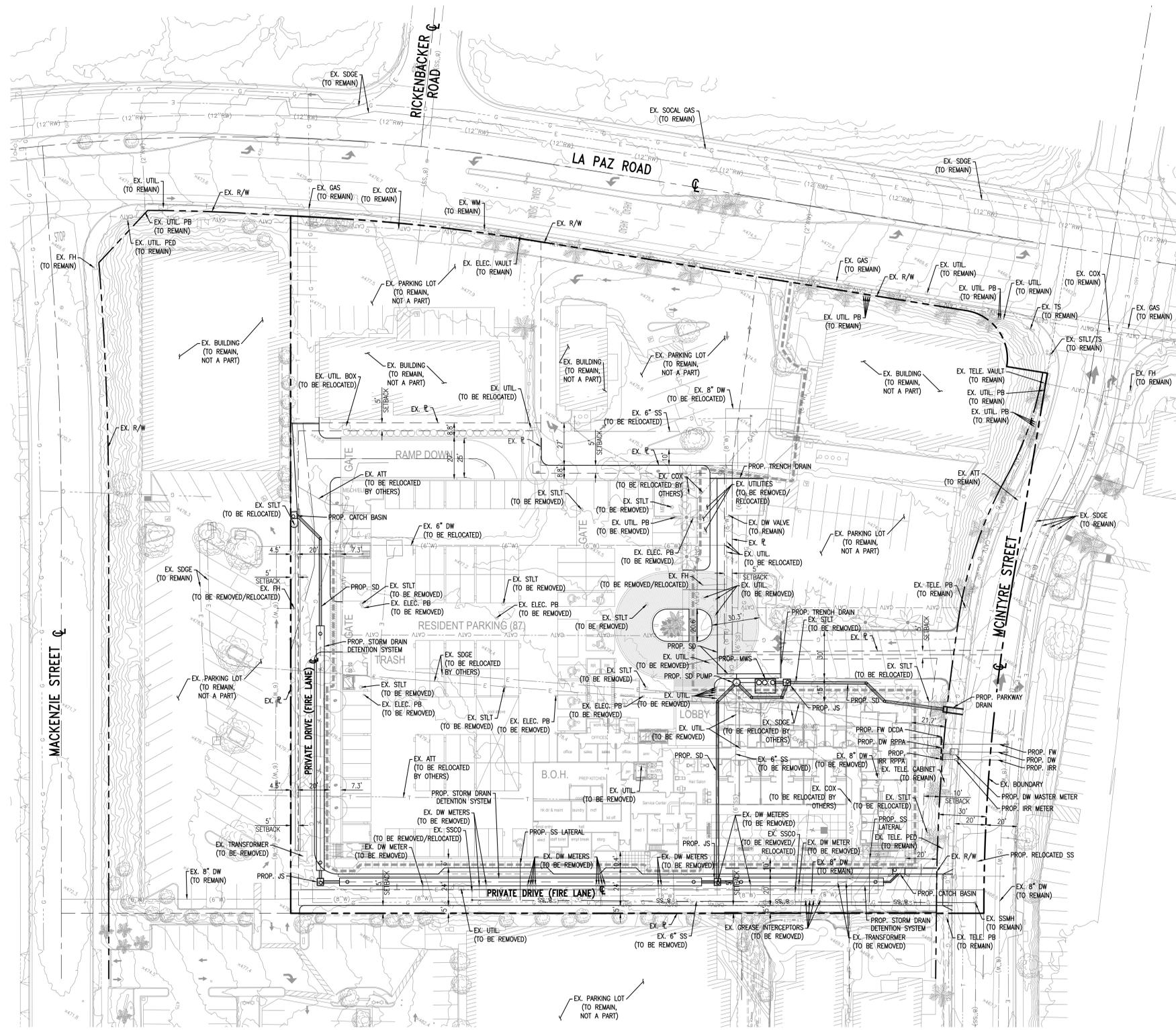
SCALE: AS SHOWN	DRAWN BY: KL	CHECKED BY: JH
<b>CITY OF LAGUNA HILLS</b>		

# CONCEPTUAL UTILITY PLAN

LA PAZ VILLAGE SENIOR LIVING,  
LAGUNA HILLS



VICINITY MAP  
NOT TO SCALE

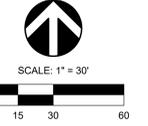


**LEGEND:**

- CENTERLINE
- - - EX. BOUNDARY
- - - EASEMENT
- - - EX. LOT LINE
- - - EX. SANITARY SEWER
- - - EX. DOMESTIC WATER
- - - EX. SAN DIEGO GAS & ELECTRIC
- - - EX. COX INTERNET/TELEPHONE
- - - PROP. DOMESTIC WATER
- - - PROP. DOMESTIC WATER RPPA
- - - PROP. FIRE WATER
- - - PROP. FIRE WATER DCDA
- - - PROP. SANITARY SEWER
- - - GATE VALVE
- - - PROP. STORM DRAIN
- - - PROP. MWS
- - - PROP. JUNCTION STRUCTURE
- - - PROP. SD PUMP

**ABBREVIATIONS:**

- CL CENTERLINE
- DCDA DOUBLE-CHECK DETECTOR ASSEMBLY
- DW DOMESTIC WATER
- ELEC. ELECTRIC
- IRR IRRIGATION
- JS JUNCTION STRUCTURE
- MWS MODULAR METLAND'S SYSTEM
- PB PULLBOX
- PED PEDESTAL
- PL PROPERTY LINE
- PC POINT OF CONNECTION
- RPPA REDUCED PRESSURE PRINCIPLE ASSEMBLY
- R/W RIGHT-OF-WAY
- SD STORM DRAIN
- SDGE SAN DIEGO GAS & ELECTRIC
- STLT STREETLIGHT
- SS SANITARY SEWER
- SSCO SANITARY SEWER CLEANOUT
- SSMH SANITARY SEWER MANHOLE
- TS TRAFFIC SIGNAL
- UTIL UTILITY
- WM WATER METER



DEVELOPER : REVISIONS					
NO.	DATE	INITIAL	DESCRIPTION	APP	DATE

OWNER & DEVELOPER :

**CAPE POINT**  
DEVELOPMENT, LLC

CAPE POINT DEVELOPMENT, LLC  
1010 S. EL CAMINO REAL, SUITE 200  
SAN CLEMENTE, CA 92672  
PHONE (949) 447-7442

PREPARED BY :

**C&V**  
CONSULTING, INC.  
CIVIL ENGINEERING  
LAND PLANNING & SURVEYING

2830 IRVINE CENTER DRIVE  
IRVINE, CALIFORNIA 92618  
(949) 916-3800  
INFO@CVC-INC.NET  
WWW.CVC-INC.NET



**LA PAZ VILLAGE SENIOR LIVING**  
25250-25260 LA PAZ ROAD  
CONCEPTUAL UTILITY PLAN

DATE: 9/21/2023  
SHEET 4 OF 4

SCALE: AS SHOWN    DRAWN BY: IV    CHECKED BY: JH

**CITY OF LAGUNA HILLS**



**Abbreviations:**  
 R. Residential  
 R. T. Residential Tandem  
 G. Guest  
 U. Unassigned  
 R. E.V. CH Residential E.V. charger  
 R. E.V. C. Residential E.V. capable  
 R. E.V. R. Residential E.V. ready

- Notes:**
1. Site plan is for conceptual purposes only.
  2. Site plan must be reviewed by planning, building, and fire departments for code compliance.
  3. Base information per civil engineer.
  4. Civil engineer to verify all setbacks and grading information.
  5. Building Footprints might change due to the final design elevation style.
  6. Open space area is subject to change due to the balcony design of the elevation.
  7. Building setbacks are measured from property lines to building foundation lines.

THE INTERIOR COLOR AND SIGNAGE TO COMPLY WITH LHMC  
 BLIND CORNER WILL BE PROVIDED WITH VIEWING MIRRORS TO COMPLY WITH LHMC

**LPVI LLC**

**LA PAZ VILLAGE SENIOR LIVING**

LAGUNA HILLS, CA

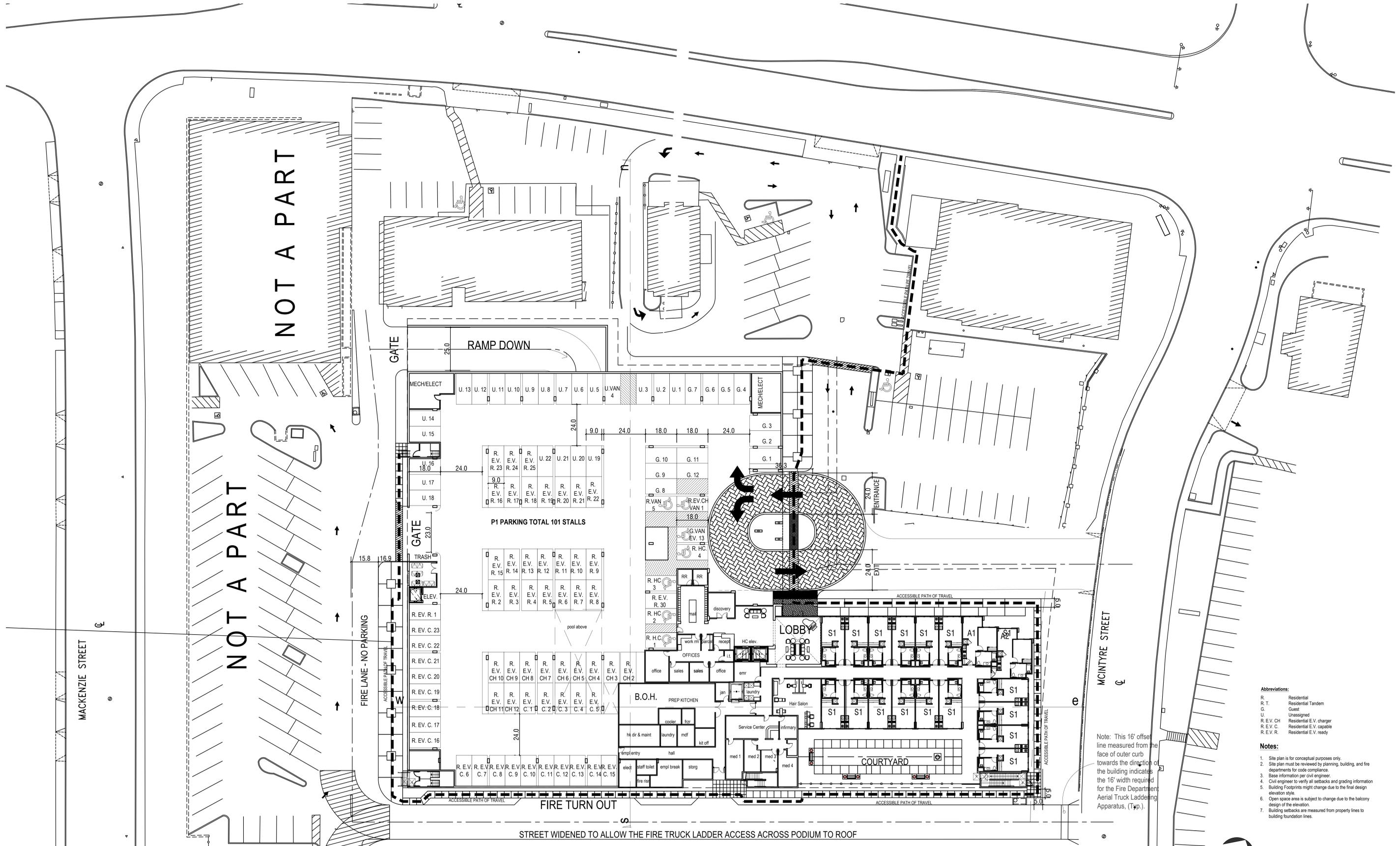


**A-02  
 BASEMENT**

**CONCEPTUAL DESIGN**

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ARCHITECTS . PLANNERS . DESIGNERS  
**WHA**  
 ORANGE COUNTY . LOS ANGELES . BAY AREA



NOT A PART

NOT A PART

**Abbreviations:**  
 R. Residential  
 R.T. Residential Tandem  
 G. Guest  
 U. Unassigned  
 R.E.V. Residential E.V. charger  
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Note: This 16' offset line measured from the face of outer curb towards the direction of the building indicates the 16' width required for the Fire Department Aerial Truck Laddering Apparatus, (Tpp).

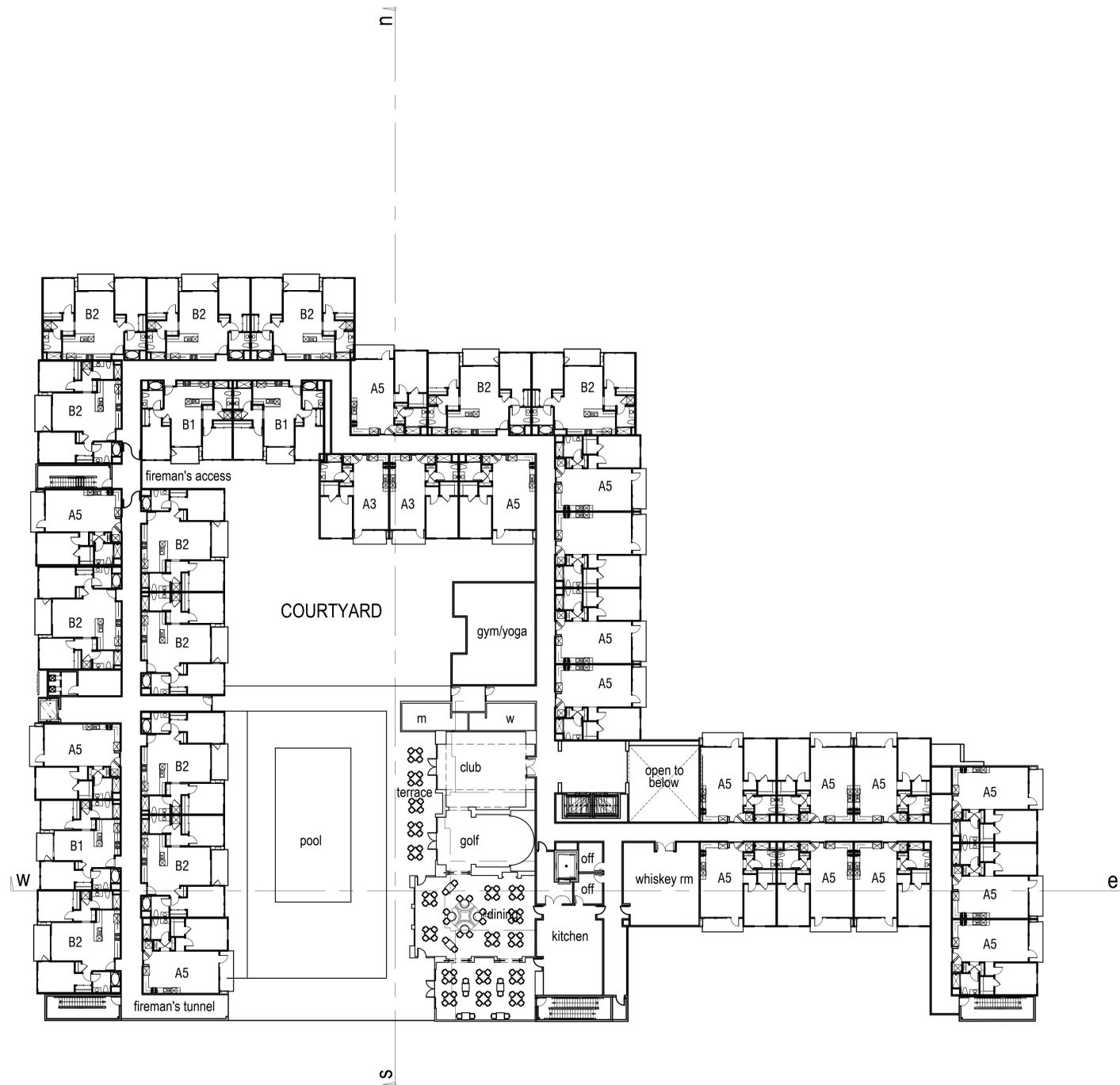
THE INTERIOR COLOR AND SIGNAGE TO COMPLY WITH LHMC  
 BLIND CORNER WILL BE PROVIDED WITH VIEWING MIRRORS TO COMPLY WITH LHMC

**LPVI LLC**

**LA PAZ VILLAGE SENIOR LIVING**  
 LAGUNA HILLS, CA

**A-03**  
**LEVEL 1**  
**CONCEPTUAL DESIGN**  
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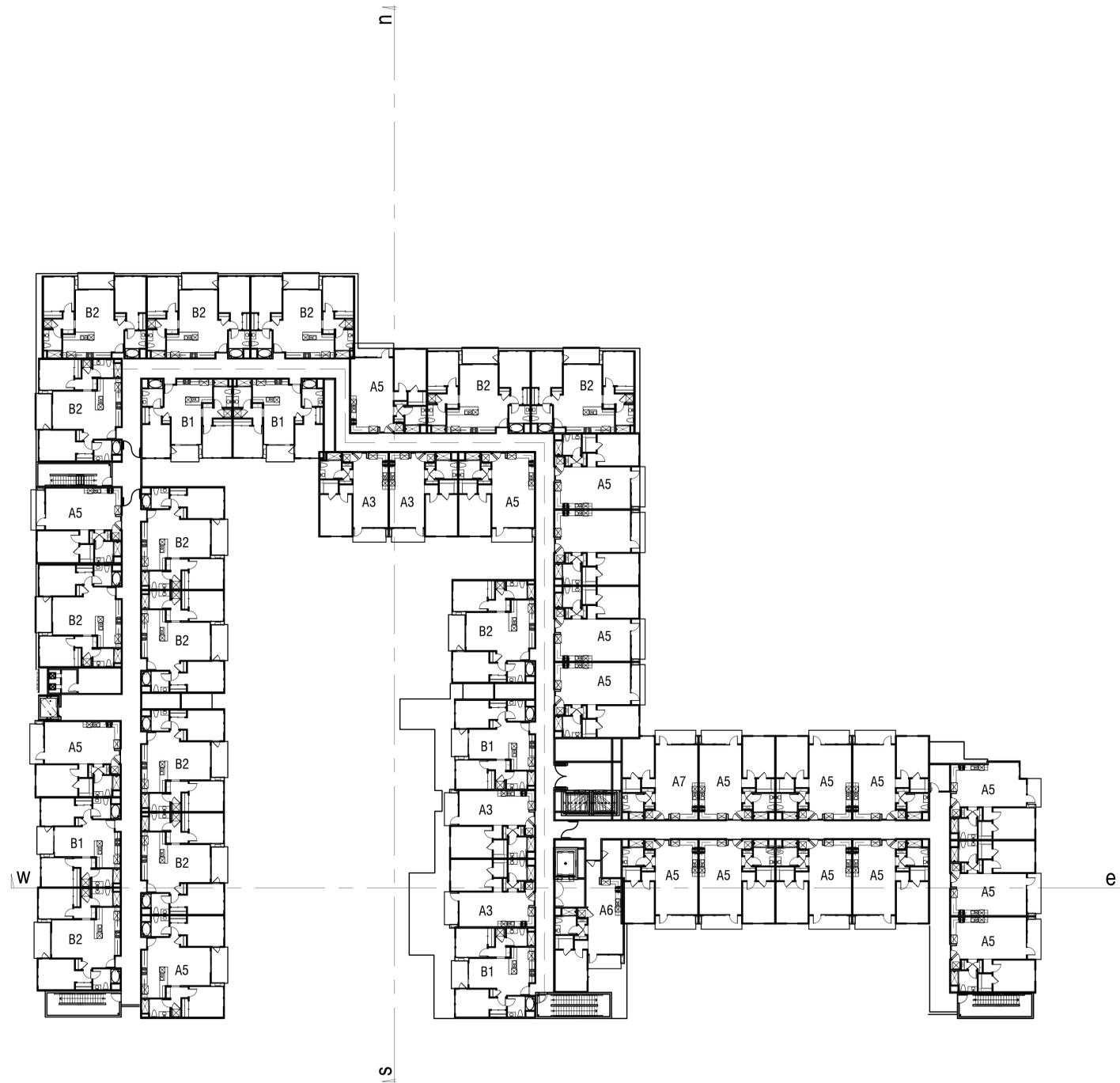




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**WHA**

ORANGE COUNTY . LOS ANGELES . BAY AREA

**LPVI LLC**

**LA PAZ VILLAGE SENIOR LIVING**

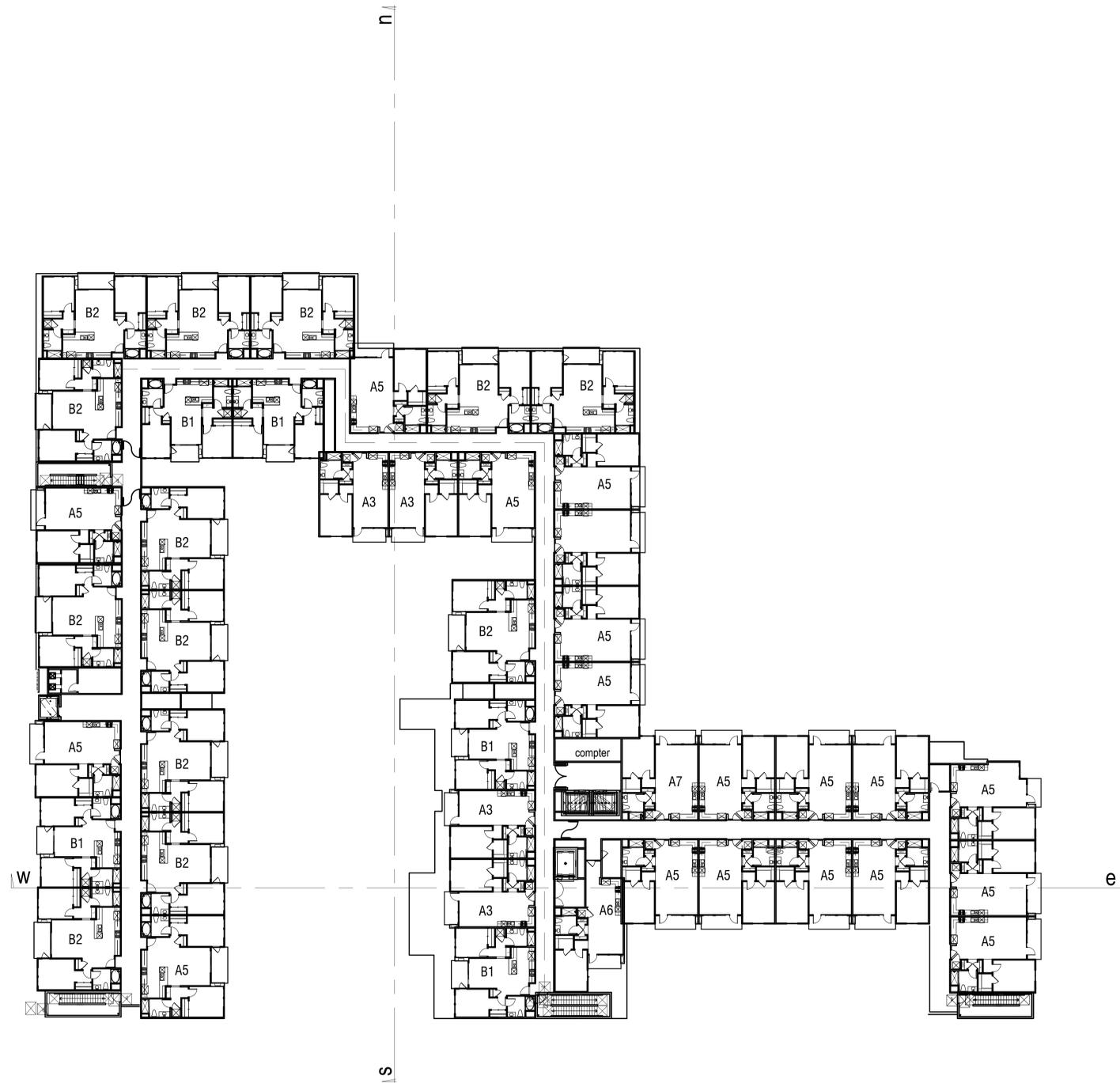
LAGUNA HILLS, CA

**A-05  
LEVEL 3**

0 8 16 32

**CONCEPTUAL DESIGN**

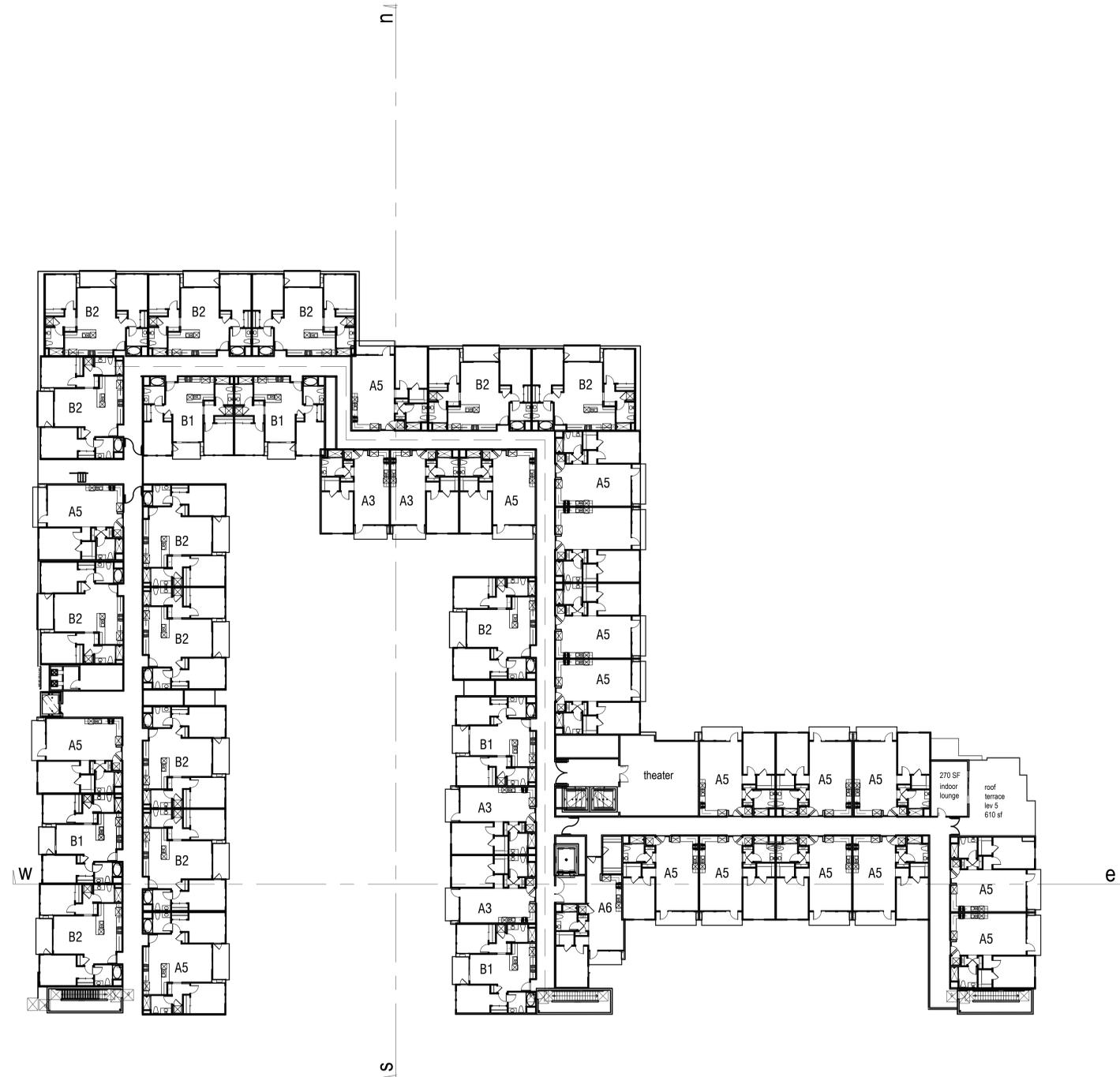
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ARCHITECTS . PLANNERS . DESIGNERS

**WHA**

ORANGE COUNTY . LOS ANGELES . BAY AREA

**LPVI LLC**

**LA PAZ VILLAGE SENIOR LIVING**

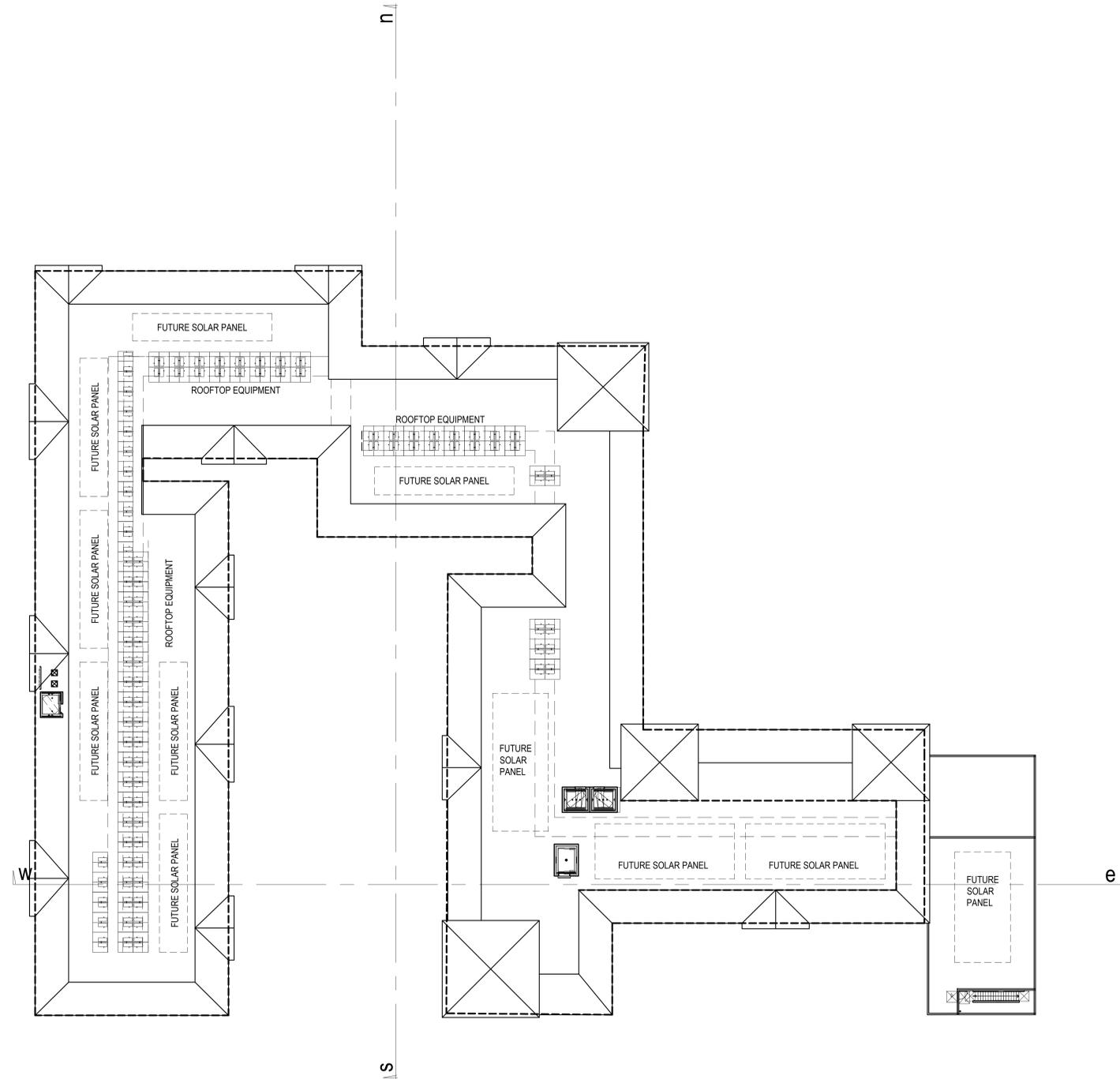
LAGUNA HILLS, CA

**A-07  
LEVEL 5**

0 8 16 32

**CONCEPTUAL DESIGN**

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**Notes:**

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ARCHITECTS . PLANNERS . DESIGNERS

**WHA**

ORANGE COUNTY . LOS ANGELES . BAY AREA

**LPVI LLC**

**LA PAZ VILLAGE SENIOR LIVING**

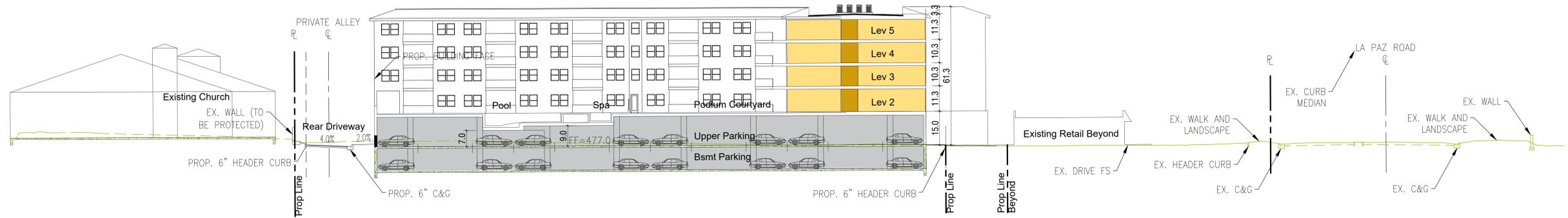
LAGUNA HILLS, CA

**A-08  
ROOF PLAN**

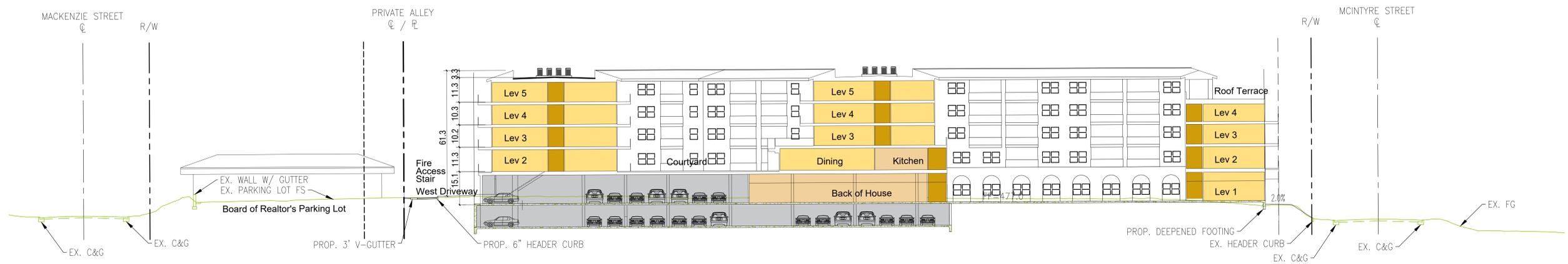
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**CONCEPTUAL DESIGN**

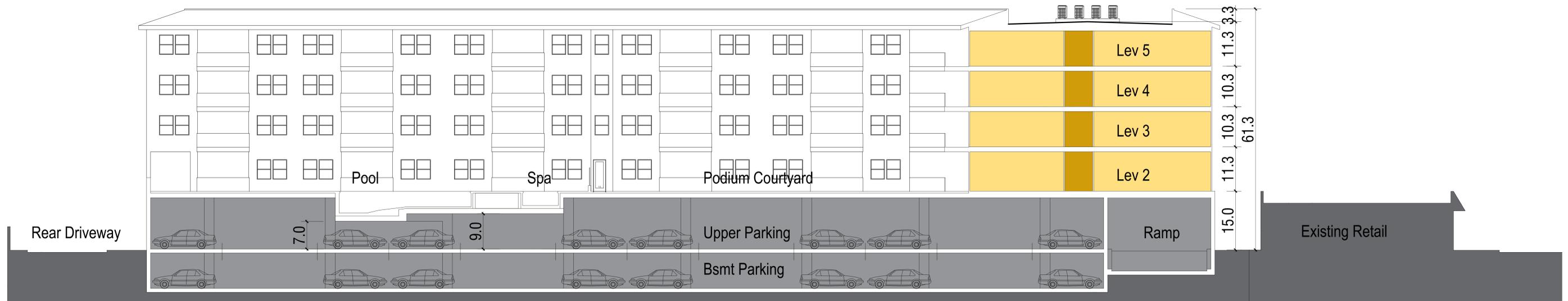
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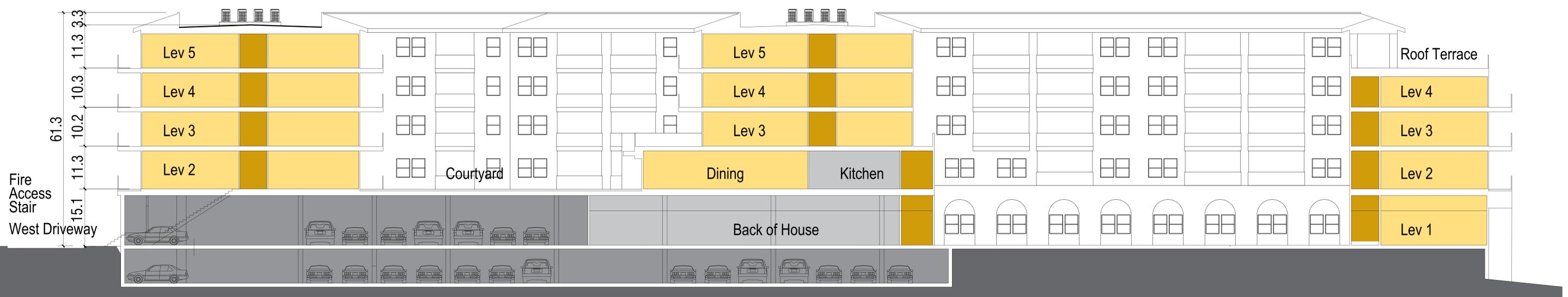
NORTH-SOUTH SECTION



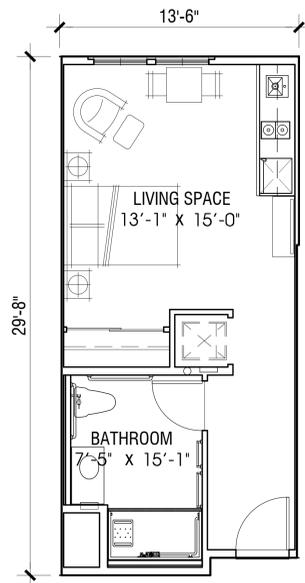
EAST-WEST SECTION



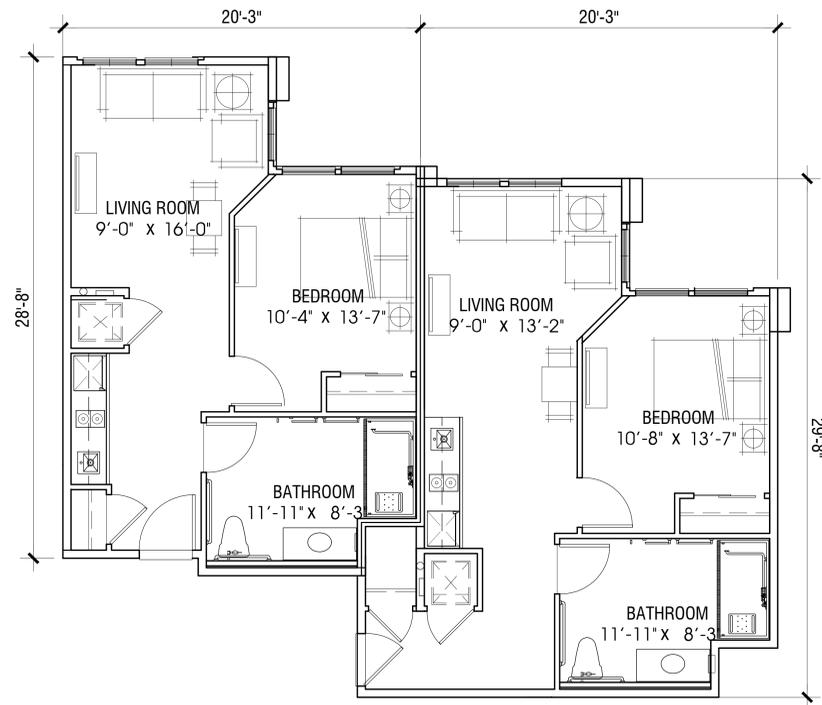
NORTH-SOUTH SECTION



EAST-WEST SECTION

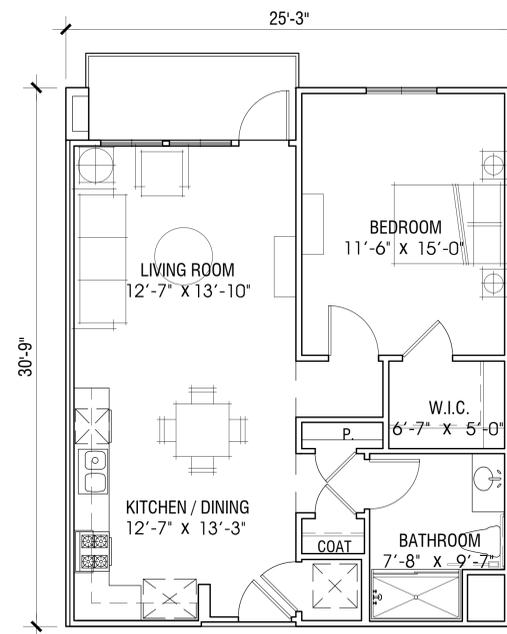


**UNIT: S1**  
**STUDIO**  
**AREA: 390 S.F.**

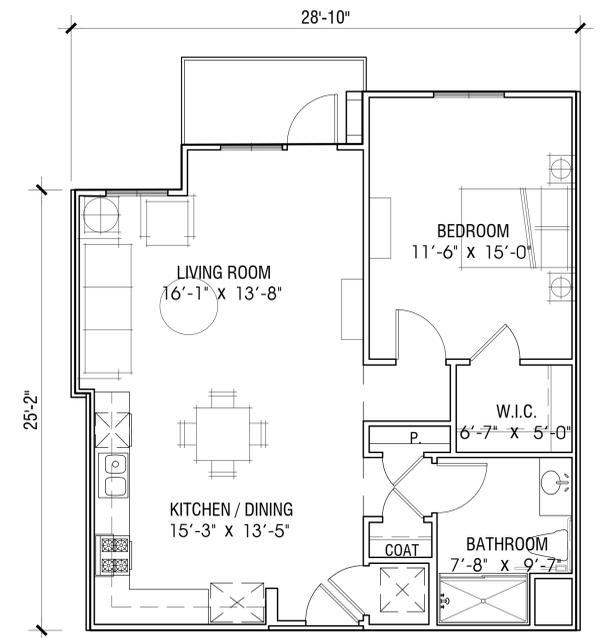


**UNIT: A1**  
**1 BEDROOM / 1 BATH**  
**AREA: 519 S.F.**

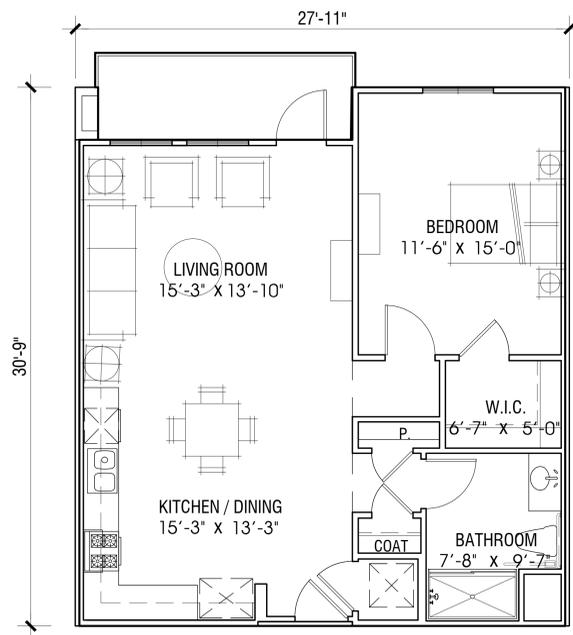
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**1 BEDROOM / 1 BATH**  
**AREA: 575 S.F.**



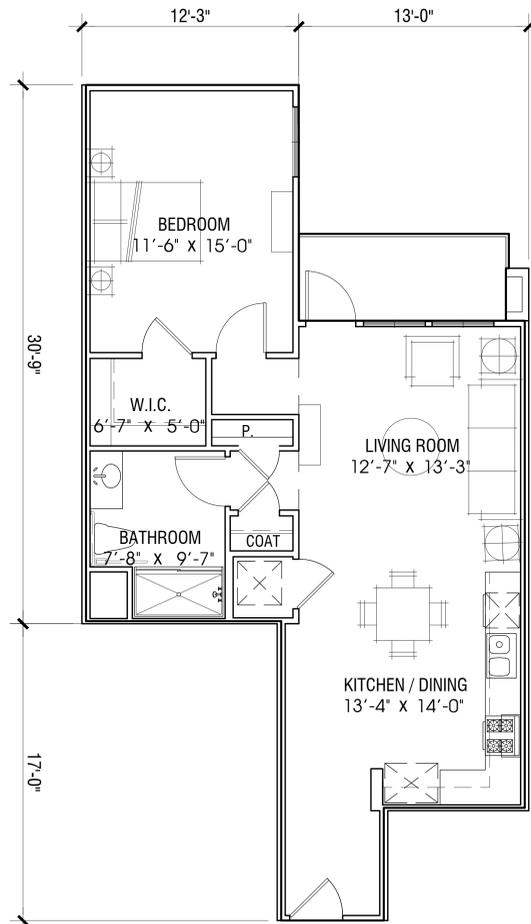
**UNIT: A3**  
**1 BEDROOM / 1 BATH**  
**AREA: 726 S.F.**  
**DECK: 60 S.F.**



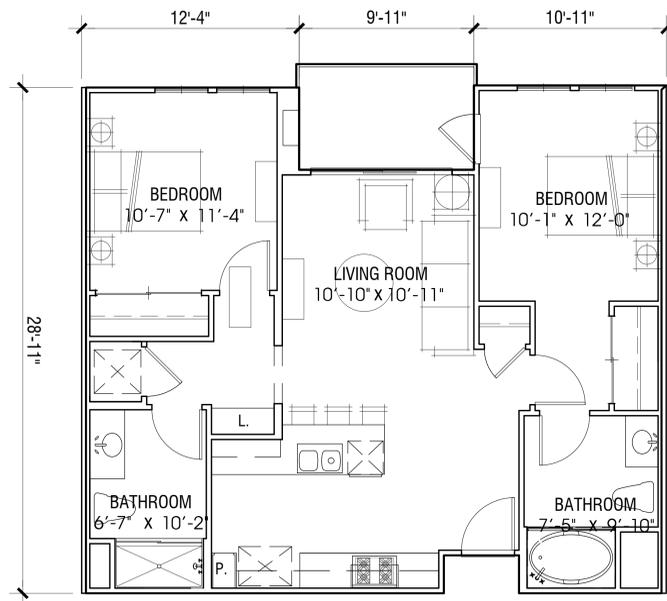
**UNIT: A4**  
**1 BEDROOM / 1 BATH**  
**AREA: 796 S.F.**  
**DECK: 48 S.F.**



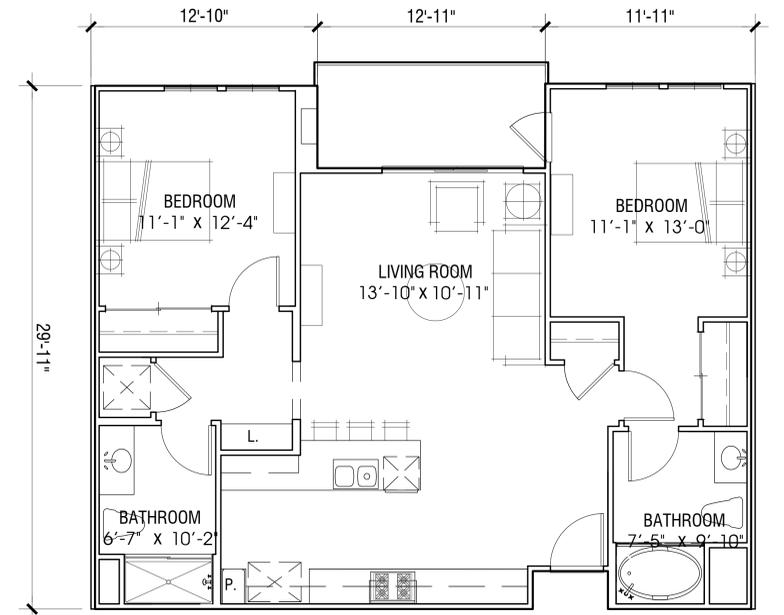
**UNIT: A5**  
**1 BEDROOM / 1 BATH**  
**AREA: 800 S.F.**  
**DECK: 71 S.F.**



**UNIT: A6**  
**1 BEDROOM / 1 BATH**  
**AREA: 772 S.F.**  
**DECK: 58 S.F.**



**UNIT: B1**  
**2 BEDROOM / 2 BATH**  
**AREA: 888 S.F.**  
**DECK: 60 S.F.**



**UNIT: B2**  
**2 BEDROOM / 2 BATH**  
**AREA: 1,040 S.F.**  
**DECK: 78 S.F.**



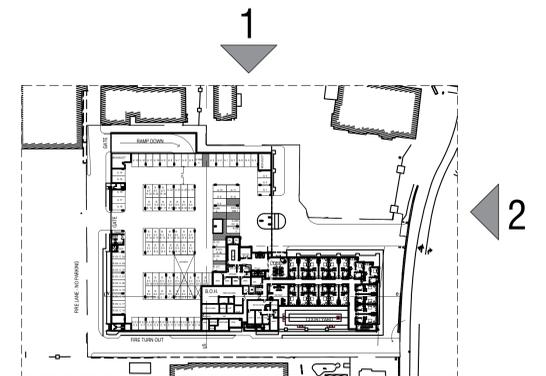
1- NORTH ELEVATION



2- EAST ELEVATION

LEGEND

- |                      |                                  |
|----------------------|----------------------------------|
| 1 STUCCO             | 8 CEMENTITIOUS BOARD (WOOD LIKE) |
| 2 CONCRETE ROOF      | 9 METAL SIGN                     |
| 3 METAL RAILING      | 10 PAINTED SIGN                  |
| 4 METAL CANOPY       | 11 ALUMINUM ENTRANCE DOOR        |
| 5 VINYL FRENCH DOOR  | 12 WOOD TRELLIS                  |
| 6 VINYL WINDOW       | 13 PARKING GARAGE OPENING        |
| 7 VINYL SLIDING DOOR | 14 CORNICE                       |
|                      | 15 WOOD WINDOW TRIM              |





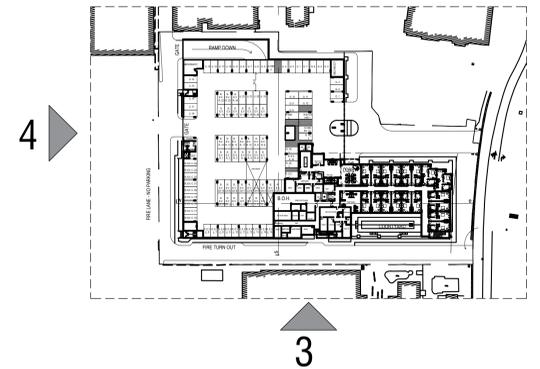
3- SOUTH ELEVATION

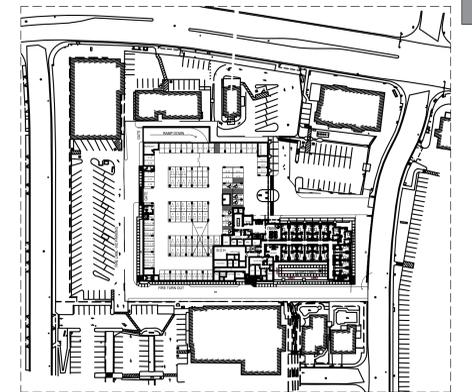


4- WEST ELEVATION

LEGEND

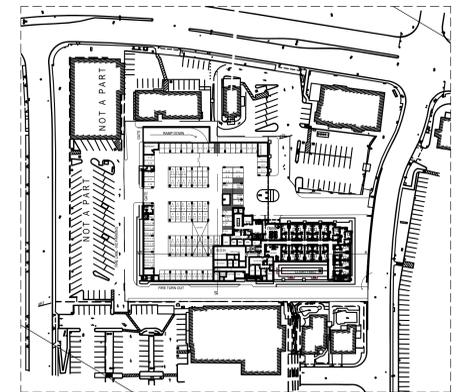
- |                      |                                  |
|----------------------|----------------------------------|
| 1 STUCCO             | 8 CEMENTITIOUS BOARD (WOOD LIKE) |
| 2 CONCRETE ROOF      | 9 METAL SIGN                     |
| 3 METAL RAILING      | 10 PAINTED SIGN                  |
| 4 METAL CANOPY       | 11 ALUMINUM ENTRANCE DOOR        |
| 5 VINYL FRENCH DOOR  | 12 WOOD TRELLIS                  |
| 6 VINYL WINDOW       | 13 PARKING GARAGE OPENING        |
| 7 VINYL SLIDING DOOR | 14 CORNICE                       |
|                      | 15 WOOD WINDOW TRIM              |

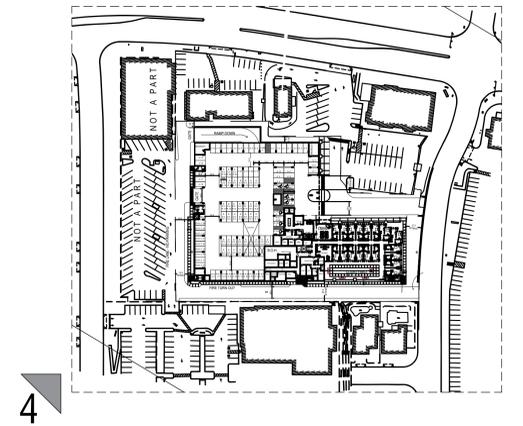


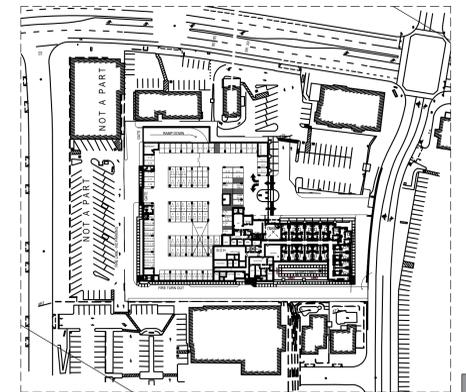




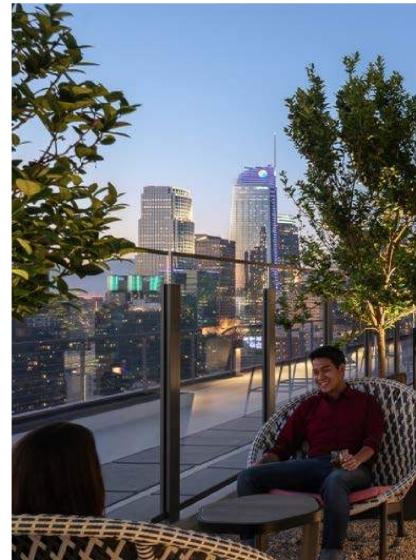
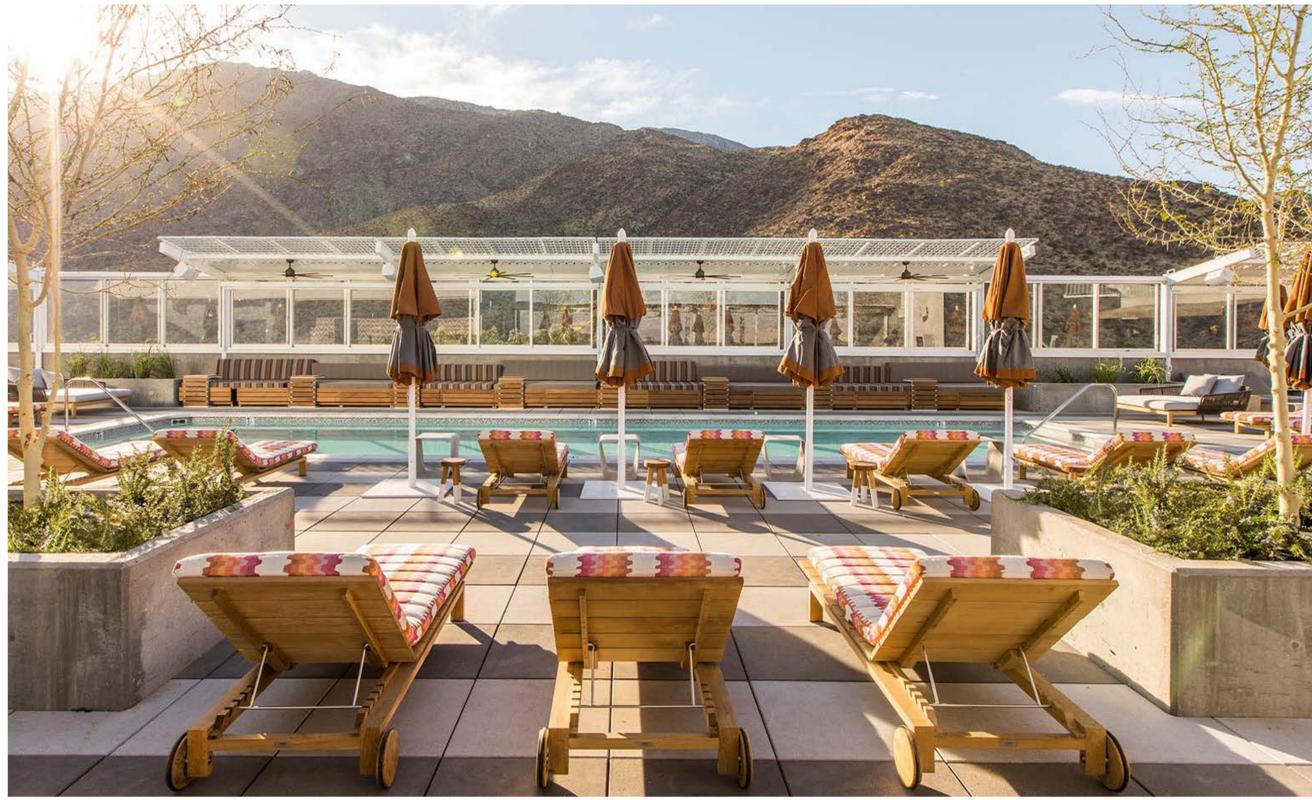
2







5



# LEGEND

- 1 Project Entry Corridor
- 2 Lobby Entrance with Enhanced Paving and Landscape
- 3 Buffer Hedge Planting
- 4 Re-Clad Existing Retaining Wall
- 5 Refresh Streetscape
- 6 Courtyard with Social Sitting and Decor Landscape
- 7 Shade Trees with Accent Planting



# LEGEND

- 1 Lawn Panel w/Bench Seating
- 2 Fireplace w/Lounge Seating
- 3 Dining Terrace w/Shade Structure
- 4 Barbecue Counter
- 5 Main Pedestrian Corridor w/Shade Structure
- 6 Pool - approx. 24'x58' (1,392 s.f.)
- 7 Cabana Structure
- 8 Chaise Lounge Furniture
- 9 Palm Trees in Planters
- 10 Accent Shade Trees
- 11 Spa w/Water Feature Wall 7'x13' (91 s.f.)
- 12 Glass Pool Fence
- 13 Parterre Garden w/Lounge Seating



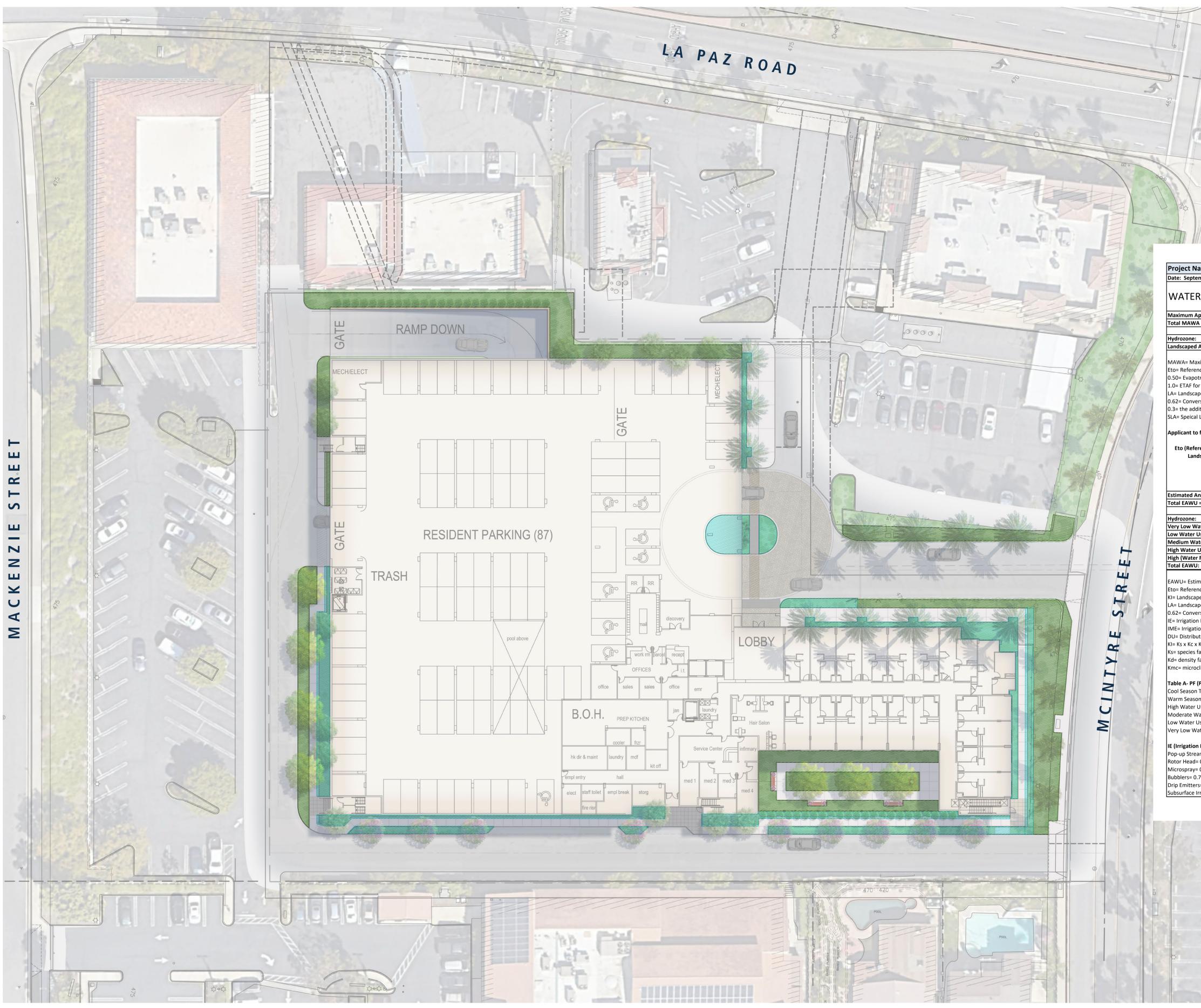
# LEGEND



LOW WATER USE



MEDIUM WATER USE



**Project Name:** La Paz Village  
**Date:** September 18, 2023

### WATER EFFICIENT WORK SHEET

**Maximum Applied Water Allowance (MAWA)**  
**Total MAWA = (Eto x 0.50 x LA in Sq.ft. x 0.62) + (Eto x 1.0 x SLA in Sq.ft. x 0.62) = Gallons per year for LA + SLA**

Hydrozone:	Eto:	KL	LA Sq. Ft.	Conversion	SLA Sq. Ft.	MAWA
Landscaped Area	47.8	0.55	13,496	0.62	NA	219,982

MAWA= Maximum Applied Water Allowance (gallons per year)  
 Eto= Reference Evapotranspiration from Appendix C (inches per year)  
 0.50= Evapotranspiration Adjustment Factor (ETAF)  
 1.0= ETAF for Special Landscaped Area  
 LA= Landscaped Area includes Special Landscape Area (square feet)  
 0.62= Conversion Factor (to gallons per square foot)  
 0.3= the additional ET adjustment Factor for Special Landscape Area (1.0- 0.7= 0.3)  
 SLA= Special Landscape Area (square feet)

Applicant to fill in boxes below:

Eto (Reference Evapotranspiration from Appendix C inches per year)	47.8
Landscaped Area includes Special Landscape Area (square feet)	13,496
Special Landscape Area (square feet)	0

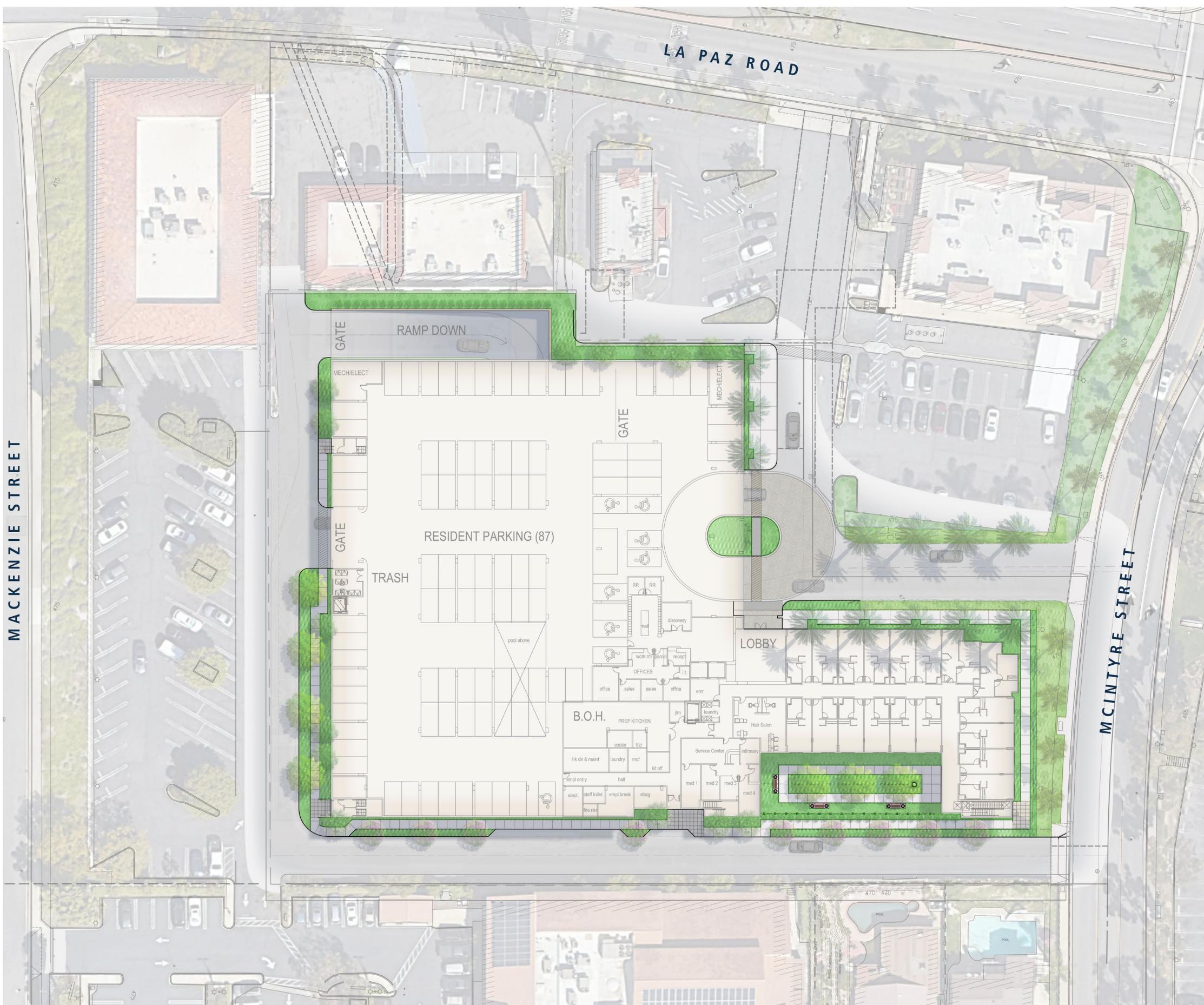
**Estimated Annual Water Use:**  
**Total EAWU = (Eto x KL x LA in Sq.ft. / IE) = Gallons Per Year**

Hydrozone:	Eto:	KL	Sq. Ft.	Conversion	IE	EAWU
Very Low Water Use	47.8	0.1	0	0.62	0.81	-
Low Water Use	47.8	0.2	8,390	0.62	0.81	61,394
Medium Water Use S	47.8	0.5	5,106	0.62	0.81	93,408
High Water Use	47.8	0.8	-	0.62	0.73	-
High (Water Feature)	47.8	1.0	-	0.62	1.00	-
<b>Total EAWU:</b>			<b>13,496</b>			<b>154,802</b>

EAWU= Estimated Applied Water Use (gallons per year)  
 Eto= Reference Evapotranspiration from Appendix C (inches per year)  
 KL= Landscape Coefficient  
 LA= Landscaped Area (square feet)  
 0.62= Conversion Factor (to gallons per square foot)  
 IE= Irrigation Efficiency= IME x DU (See definition in Appendix E for example IE percentages)  
 IME= Irrigation Management Efficiency (90%)  
 DU= Distribution Uniformity of Irrigation Head  
 KL= Ks x Kc x Kmc  
 Ks= species factor (range 1.0- 0.9) (see WUCOLS list for values)  
 Kd= density factor (range 0.5- 1.3) (see WUCOLS list for density value)  
 Kmc= microclimatic factor (range 0.5- 1.4) (see WUCOLS)

**Table A- PF (Plant Factor)**  
 Cool Season Turf= 0.8  
 Warm Season Turf= 0.7  
 High Water Use Plants= 0.7 (can be between 0.7-0.9)  
 Moderate Water Use Plants= 0.5 (can be between 0.4-0.6)  
 Low Water Use Plants= 0.2 (can be between 0.1-0.3)  
 Very Low Water Use Plants= 0.1

**IE (Irrigation Efficiency)- Appendix E**  
 Pop-Up Stream Rotor= 0.73  
 Rotor Head= 0.76  
 Microspray= 0.76  
 Bubblers= 0.77  
 Drip Emitters= 0.81  
 Subsurface Irrigation= 0.81



# LEGEND

OPEN SPACE: 29,682 SF  
 REQUIRED LANDSCAPE AREA (15%): 4,453 SF  
 TOTAL PROVIDED LANDSCAPE AREA: 13,500 SF

- PLANTING AREA: 10,333 SF
- REFRESH LANDSCAPE AREA: 3,167 SF

MACKENZIE STREET

LA PAZ ROAD

MCINTYRE STREET



**TREE SCHEDULE:**

BOTANICAL NAME	COMMON NAME	SIZE	WUCOL
Aloe bainesii	Aloe Tree	15 Gal	L
Dracena draco	Dragon Tree	15 Gal	L
Koelreuteria paniculata	Golden Rain Tree	15 Gal	L
Lagerstroemia indica	Crepe Myrtle	15 Gal	M
Laurus nobilis	Bay Laurel	15 Gal	L
Olea euopaea 'Swan Hill'	Swan Hill Olive	15 Gal	L
Parkinsonia x Desert Museum	Desert Museum Palo Verde	15 Gal	L
Phoenix dactylifera	Date Palm	16' BTH	L
Pinus canariensis	Canary Island Pine	15 Gal	M
Tristania conferta	Brisbane Box Tree	15 Gal	M
Washingtonia robusta	Mexican Fan Palm	16' BTH	



**SHRUB SCHEDULE:**

BOTANICAL NAME	COMMON NAME	SIZE	WUCOL
Agave	Agave spp.	5 gal	L
Bougainvillea	Bougainvillea 'Oo la la'	1 gal	L
Dianella tasmanica 'Variegata'	Variegated Flax Lily	1 gal	M
Disictis buccinatoria	Red Trumpet Vine	15 gal	M
Dietes bicolor	Fortnight Lily	5 gal	L
Echeveria spp.	Echeveria	5 gal	L
Festuca Glauca 'Elijah Blue'	Elijah Blue Fescue	1 gal	L
Furcraea foetida 'Mediopicta'	Mauritius Hemp	5 gal	L
Hemerocallis 'Pardon Me'	'Pardon Me' Day Lily	1 gal	M
Hesperaloe parviflora	Red Yucca	1 gal	L
Ligustrum Japonica	Japanese Privot	5 gal	L
Lomandra longifolia 'Breezel	Dwarf Mat Rush	5 gal	M
Podocarpus henkelii	Leafed Yellowwood	15 gal	M
Rhaphiolepis indica	Indian Hawthorn 'Clara'	1 gal	L
Rhaphiolepis 'Majestic Beauty'	'Majestic Beauty' Indian Hawthorn	5 gal	M
Rosmarinus officinalis 'Prostrate'	Prostrate Rosemary	1 gal	L
Senecio serpens	Blue Chopsticks	1 gal	L



**GROUNDCOVER SCHEDULE:**

BOTANICAL NAME	COMMON NAME	SIZE	WUCOL
Carissa macrocarpa 'Green Carpet'	Green Carpet Natal Plum	1 gal	L
Baccharis pilularis	Dwarf Coyote Brush	1 gal	L
Lonicera j. halliana	Hall's Japanese Honeysuckle	1 gal	L
Trachelospermum jasminoides	Star Jasmine	1 gal	M



May 26, 2023

Project No. 22023-01

Mr. Nick Buchanan  
**La Paz Village Investors, LLC**  
c/o Cape Point Development, LLC  
1010 South El Camino Real, Suite 200  
San Clemente, California 92672

**Subject: Preliminary Geotechnical Evaluation for Proposed La Paz Village – Senior Living Development, La Paz Road, Laguna Hills, California**

In accordance with your request and authorization, LGC Geotechnical, Inc. has performed a preliminary geotechnical evaluation for the proposed redevelopment for the La Paz Village – Senior Living development to be located at the property located at the southeast corner of La Paz Road and Mackenzie Street in Laguna Hills, California. The purpose of our study was to evaluate the existing onsite geotechnical conditions and to provide preliminary geotechnical recommendations relative to the proposed development.

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

Respectfully Submitted,

**LGC Geotechnical, Inc.**



Brad Zellmer, GE 2618  
Project Engineer

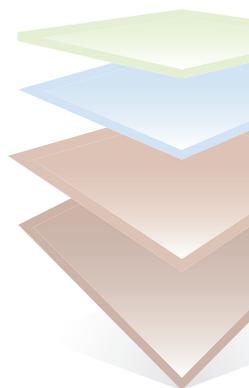


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BTZ/KBC/amm

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## **1.0 INTRODUCTION**

### **1.1 Purpose and Scope of Services**

This report presents the results of our preliminary geotechnical evaluation for the proposed senior living facility to be located at the property at the southeast corner of La Paz Road and Mackenzie Street in Laguna Hills, California. Refer to the Site Location Map (Figure 1).

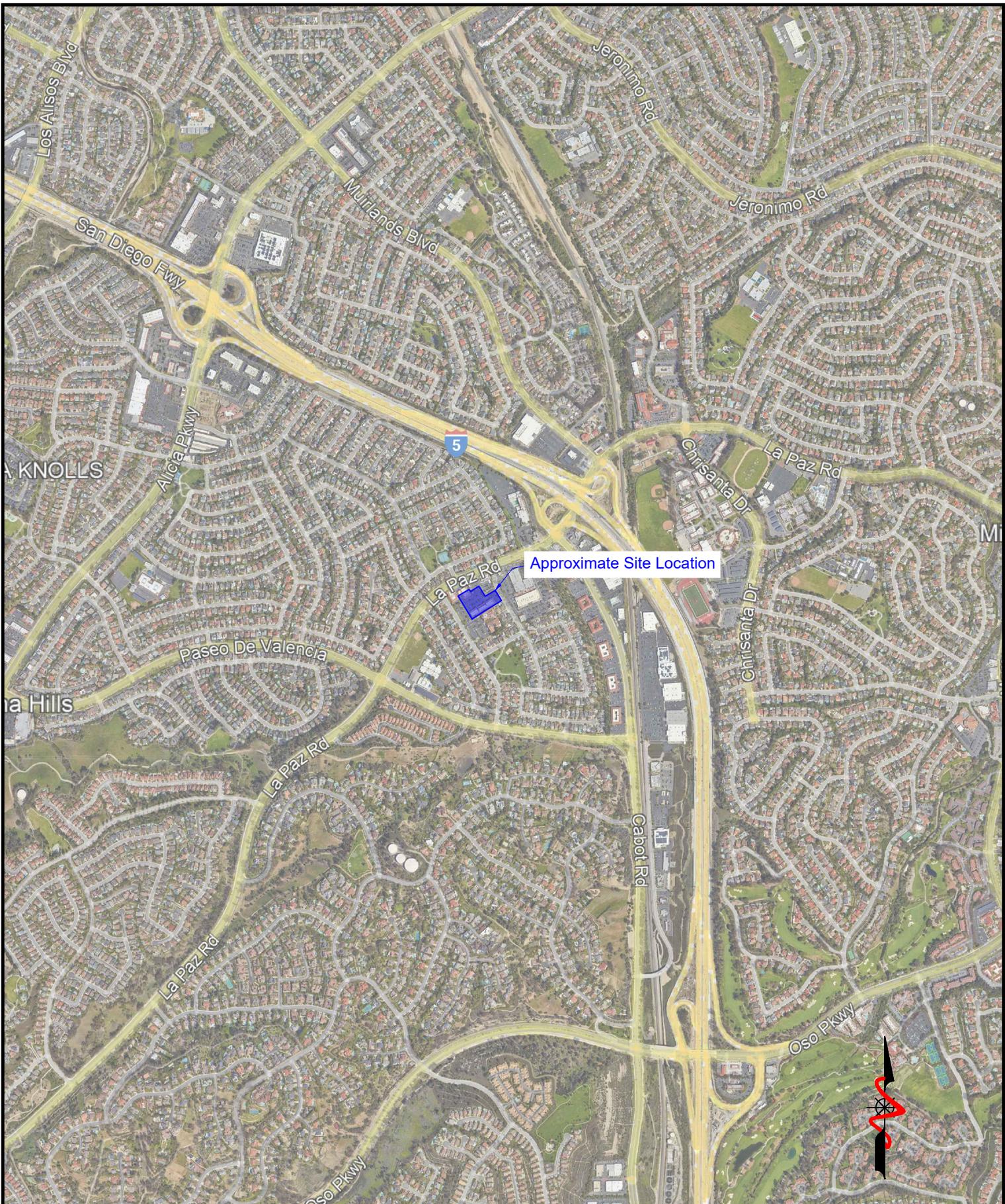
The purpose of our study was to perform a preliminary geotechnical evaluation relative to the proposed development. As part of our scope of work, we have: 1) reviewed available in-house geologic maps pertinent to the site (Appendix A); 2) performed a limited subsurface geotechnical evaluation of the site consisting of the excavation of four hollow-stem auger borings; 3) performed laboratory testing of select soil samples; and 4) prepared this preliminary geotechnical report presenting our findings, preliminary conclusions and recommendations for the development of the proposed project.

### **1.2 Project Description**

The relatively flat, site is approximately 2.4 acres and bound in the northerly direction by existing buildings and parking followed by La Paz Road, in the westerly direction existing parking and a commercial building followed by MacKenzie Street, and in easterly direction by existing parking and commercial building followed by McIntyre Street and in the southerly direction by existing commercial building and associated parking. Existing site elevations range from approximately 475 feet in the northeasterly direction to 482 feet in the southwesterly direction.

We understand that a portion of the property is to be redeveloped as senior living, podium-type structure, including four stories of above grade residential units over one story of at-grade parking over one-story of below-grade parking (WHA, 2022). The majority of the building footprint will include basement structure approximately 10 feet below grade, however, a portion of the building will be at grade in the easterly portion of the site. Building loads were not available at the time of this report. However, based on previous projects we have estimated maximum (dead plus live) column and wall loads of 350 kips and 10 kips/ft, respectively for the basement parking structure. The at-grade portion is estimated at maximum (dead plus live) column and wall loads of 150 kips and 6 kips/ft, respectively.

**The recommendations given in this report are based upon the estimated structural loads and grading/layout information as indicated above. LGC Geotechnical should be provided with structural loads and any updated project information, when they become available, in order to either confirm or modify the recommendations provided herein.**



Approximate Site Location



**FIGURE 1**  
**Site Location Map**

PROJECT NAME	Cape Point - La Paz Village
PROJECT NO.	22023-01
ENG. / GEOL.	BTZ/KBC
SCALE	Not to Scale
DATE	May 2023

### **1.3 Background**

Review of historical aerial photos indicate that the subject site consisted primarily of vacant land until at least 1972 (Historic Aerials, 2023). Between 1972 and 1980, the existing buildings were constructed. In the 1980 aerial photo, the existing buildings have been constructed the adjacent off-site building in the northwesterly corner appears to be under construction.

Previous site geotechnical reports were not available.

### **1.4 Subsurface Geotechnical Evaluation**

A geotechnical field evaluation was performed by LGC Geotechnical consisting of excavation of four hollow stem auger borings. The hollow stem auger borings (HS-1 through HS-4) were drilled to depths of approximately 60 feet below existing grade. An LGC Geotechnical representative observed the drilling operations, logged the borings, and collected soil samples for laboratory testing. The borings were performed using a track-mounted drill rig equipped with 8-inch-diameter, hollow stem augers. Bulk samples of the near-surface soils were logged and collected for laboratory testing from select borings. Driven soil samples were collected by means of the Standard Penetration Test (SPT) and Modified California Drive (MCD) sampler generally obtained at 5-foot vertical increments. The MCD is a split-barrel sampler with a tapered cutting tip and lined with a series of 1-inch-tall brass rings. The SPT sampler (1.4-inch ID) and MCD sampler (2.4-inch ID, 3.0-inch OD) were driven using a 140-pound automatic hammer falling 30 inches to advance the sampler a total depth of 18 inches or until refusal. The raw blow counts for each 6-inch increment of penetration were recorded on the boring logs. In select borings, after removal of the augers the depth of the boring due to caving was measured and is noted on the boring logs. At the completion of drilling, the borings were backfilled with soil cuttings and capped with AC Aquaphalt. Some settlement of the backfilled borings should be expected.

Boring logs are presented in Appendix B and approximate locations are depicted on the Boring Location Map (Figure 2).

### **1.5 Laboratory Testing**

Representative bulk and driven (relatively undisturbed) samples were obtained for laboratory testing during our field evaluation. Laboratory testing included in-situ moisture content and in-situ dry density, Atterberg Limits, fines content, expansion potential, direct shear, consolidation and corrosion (soluble sulfate, chloride, pH and minimum resistivity).

The following is a summary of the laboratory test results:

- Dry density of the samples collected ranged from approximately 90 pounds per cubic foot (pcf) to 126 pcf, with an average of 103 pcf. Field moisture contents ranged from approximately 2 to 27 percent, with an average of 18 percent.
- Four Atterberg Limit (liquid limit and plastic limit) tests were performed. Results indicated Plasticity Index (PI) values ranging from 17 to 22.
- Seven fines content/gradation tests were performed and indicated a fines content (passing No. 200 sieve) ranging from approximately 14 to 70 percent. Based on the Unified Soils

Classification System (USCS), five of the tested samples would be classified as “fine-grained.”

- Two Expansion Index (EI) tests indicated EI values of 64 and 68 corresponding to “Medium” expansion potential.
- A direct shear test was performed. The plot is provided in Appendix C.
- Five consolidation tests were performed. The load versus deformation plots are provided in Appendix C.
- Corrosion testing indicated soluble sulfate content values of 0.08 percent or less, chloride content of 80 parts per million (ppm), pH of 7.3 and minimum resistivity of 1,840 ohm-cm.

A summary of the laboratory test results is presented in Appendix C. The moisture and dry density results are presented on the boring logs in Appendix B.

## **2.0 GEOTECHNICAL CONDITIONS**

### **2.1 Regional Geology**

The site is located on the southwestern border of the Peninsular Ranges at the southwestern-most portion of the Los Angeles Basin. Specifically, the site lies in the sedimentary basin known as the Capistrano Embayment, an early Cenozoic Seaway, which trended northerly between the Peninsular Ranges and a hypothetical Catalina uplift off the Southern California coast. Locally, the Capistrano Embayment refers to the flat-bottomed structural trough formed by the downward displacement along the west side of the Cristianitos Fault and down-warping along the east side of the San Joaquin Hills. The embayment was subsequently in-filled with marine siltstone and clayey, siltstone bedrock of the late Miocene to early Pliocene (approximately 5 to 15 million years old) Capistrano Formation. This sedimentary unit, in excess of 3,000 feet thick near the center of the embayment, was uplifted, folded, and eroded in Pliocene and post-Pliocene times (approximately 2 to 3 million years ago) producing the low, rolling ridges observed today. More recently, the local geology has also been influenced by a rapid drop in sea level resulting in a series of wave-cut marine platforms along the coast and causing extensive erosion, which in turn, created numerous steep-sided drainage channels, and over-steepening of slopes.

### **2.2 Site-Specific Geology**

The subject site is comprised of bedrock of the Tertiary Niguel Formation and/or the Tertiary Capistrano Formation, Sandstone Facies. The Niguel Formation is known to overly the Capistrano Formation in a horizontal to gently-dipping unconformable contact. The bedrock material was generally observed to be interbedded dense sandstone and siltstone. Soil moisture content within the bedrock units varied with depth and generally ranged from slightly moist to moist. Minor fill may locally be present in portions of the site overlying the bedrock materials.

### **2.3 Generalized Subsurface Conditions**

The field explorations (borings) indicate primarily stiff to hard sandy clays and sandy silts with layers of dense to very dense silty sands and clayey sands to the maximum explored depth of approximately 60 feet below existing grade. Moisture contents were generally above optimum.

It should be noted that the explorations performed are only representative of the location and time where/when they are performed and varying subsurface conditions may exist outside of the performed location. In addition, subsurface conditions can change over time. The soil descriptions provided above should not be construed to mean that the subsurface profile is uniform, and that soil is homogeneous within the project area. For details on the stratigraphy at the exploration locations, refer to Appendix B.

### **2.4 Oversized Material**

Generation of a surplus of oversized material (material greater than 8 inches in maximum dimension) is generally not anticipated during site grading. However, some oversized material

may be encountered, which may result in excavation difficulty for narrow excavations. Recommendations are provided for appropriate handling of oversized materials in Appendix D.

## **2.5 Groundwater**

Groundwater was not encountered during our recent field evaluation to the maximum explored depth of approximately 60 feet below existing grade. Based on the Seismic Hazard Zone Report for the San Juan Capistrano Quadrangle (CDMG, 2001a), no depth to historic high groundwater is indicated in the vicinity of the site. Groundwater is anticipated to be greater than 60 feet below existing grade and not expected to be encountered during construction of the proposed project.

Seasonal fluctuations of groundwater elevations should be expected over time. In general, groundwater levels fluctuate with the seasons and local zones of perched groundwater may be present due to local seepage caused by irrigation and/or recent precipitation. Local perched groundwater conditions or surface seepage may develop once site development is completed.

## **2.6 Seismic Design Criteria**

The site seismic characteristics were evaluated per the guidelines set forth in Chapter 16, Section 1613 of the 2022 California Building Code (CBC) and applicable portions of ASCE 7-16 which has been adopted by the CBC. Please note that the following seismic parameters are only applicable for code-based acceleration response spectra and are not applicable for where site-specific ground motion procedures are required by ASCE 7-16. Representative site coordinates of latitude 33.5948 degrees north and longitude -117.6804 degrees west were utilized in our analyses. The maximum considered earthquake (MCE) spectral response accelerations ( $S_{MS}$  and  $S_{M1}$ ) and adjusted design spectral response acceleration parameters ( $S_{DS}$  and  $S_{D1}$ ) for Site Class C are provided in Table 1 on the following page. The structural designer should contact the geotechnical consultant if structural conditions (e.g., number of stories, seismically isolated structures, etc.) require site-specific ground motions.

**TABLE 1**  
**Seismic Design Parameters**

<b>Selected Parameters from 2022 CBC, Section 1613 - Earthquake Loads</b>	<b>Seismic Design Values</b>	<b>Notes/Exceptions</b>
Distance to applicable faults classifies the site as a "Near-Fault" site.		Section 11.4.1 of ASCE 7
Site Class	C	Chapter 20 of ASCE 7
S <sub>s</sub> (Risk-Targeted Spectral Acceleration for Short Periods)	1.199g	From SEAOC, 2023
S <sub>1</sub> (Risk-Targeted Spectral Accelerations for 1-Second Periods)	0.433g	From SEAOC, 2023
F <sub>a</sub> (per Table 1613.2.3(1))	1.2	For Simplified Design Procedure of Section 12.14 of ASCE 7, F <sub>a</sub> shall be taken as 1.4 (Section 12.14.8.1)
F <sub>v</sub> (per Table 1613.2.3(2))	1.5	-
S <sub>MS</sub> for Site Class C [Note: S <sub>MS</sub> = F <sub>a</sub> S <sub>s</sub> ]	1.438g	-
S <sub>M1</sub> for Site Class C [Note: S <sub>M1</sub> = F <sub>v</sub> S <sub>1</sub> ]	0.649g	-
S <sub>DS</sub> for Site Class C [Note: S <sub>DS</sub> = (2/3) S <sub>MS</sub> ]	0.959g	-
S <sub>D1</sub> for Site Class C [Note: S <sub>D1</sub> = (2/3) S <sub>M1</sub> ]	0.433g	-
C <sub>RS</sub> (Mapped Risk Coefficient at 0.2 sec)	0.937	ASCE 7 Chapter 22
C <sub>R1</sub> (Mapped Risk Coefficient at 1 sec)	0.934	ASCE 7 Chapter 22

A deaggregation of the PGA based on a 2,475-year average return period (MCE) indicates that an earthquake magnitude of 6.65 at a distance of approximately 10.61 km from the site would contribute the most to this ground motion. A deaggregation of the PGA based on a 475-year average return period (Design Earthquake) indicates that an earthquake magnitude of 6.58 at a distance of approximately 20.76 km from the site would contribute the most to this ground motion (USGS, 2014).

Section 1803.5.12 of the 2022 CBC (per Section 11.8.3 of ASCE 7) states that the maximum considered earthquake geometric mean (MCE<sub>G</sub>) Peak Ground Acceleration (PGA) should be used for liquefaction potential. The PGA<sub>M</sub> for the site is equal to 0.604g (SEAOC, 2023). The design PGA is equal to 0.403g (2/3 of PGA<sub>M</sub>).

## **2.7 Faulting**

California is located on the boundary between the Pacific and North American Lithospheric Plates. The average motion along this boundary is on the order of 50-mm/yr in a right-lateral

sense. The majority of the motion is expressed at the surface along the northwest trending San Andreas Fault Zone with lesser amounts of motion accommodated by sub-parallel faults located predominantly west of the San Andreas including the Elsinore, Newport-Inglewood, Rose Canyon, and Coronado Bank Faults. Within Southern California, a large bend in the San Andreas Fault north of the San Gabriel Mountains has resulted in a transfer of a portion of the right-lateral motion between the plates into left-lateral displacement and vertical uplift. Compression south and west of the bend has resulted in folding, left-lateral, reverse thrust faulting, and regional uplift creating the east-west trending Transverse Ranges and several east-west trending faults. Further south within the Los Angeles Basin, “blind thrust” faults are believed to have developed below the surface also as a result of this compression, which have resulted in earthquakes such as the 1994 Northridge event along faults with little to no surface expression.

Prompted by damaging earthquakes in Northern and Southern California, State legislation and policies concerning the classification and land-use criteria associated with faults have been developed. The Alquist-Priolo Earthquake Fault Zoning Act was implemented in 1972 to prevent the construction of urban developments across the trace of active faults. California Geologic Survey Special Publication 42 was created to provide guidance for following and implementing the law requirements. Special Publication 42 was most recently revised in 2018 (CGS, 2018). According to the State Geologist, an “active” fault is defined as one which has had surface displacement within Holocene time (roughly the last 11,700 years). Regulatory Earthquake Fault Zones have been delineated to encompass traces of known, Holocene-active faults to address hazards associated with surface fault rupture within California. Where developments for human occupation are proposed within these zones, the state requires detailed fault evaluations be performed so that engineering-geologists can identify the locations of active faults and recommend setbacks from locations of possible surface fault rupture.

The subject site is not located within a Fault Rupture Hazard Zone and there are no active or potentially active faults mapped on the site. The possibility of damage due to ground rupture, as a result of faulting, is considered very low since active faults are not known to cross the site.

Secondary effects of seismic shaking resulting from large earthquakes on the major faults in the Southern California region include soil liquefaction, dynamic settlement, ground lurching, shallow ground rupture, and seiches and tsunamis. These secondary effects of seismic shaking are a possibility throughout portions of the Southern California region and are dependent on the distance between the site and causative fault and the onsite geology. Parameters for seismic design are included in the sections below. The major active nearby faults that could produce these secondary effects include the onshore and offshore segments of the Newport-Inglewood Fault Zone, located over ten miles west of the site and the Elsinore Fault Zone located over ten miles east of the site. The presence of a blind thrust fault has been interpolated from limited data, to exist at a depth of approximately eight miles below the uplifted local hills; however, the San Joaquin Hills Blind Thrust Fault does not have a known location of surface rupture. A discussion of these secondary effects and their potential impact on the site is provided in the following sections.

### **2.7.1 Liquefaction and Dynamic Settlement**

Liquefaction is a seismic phenomenon in which loose, saturated, granular soils behave similarly to a fluid when subject to high-intensity ground shaking. Liquefaction occurs when three general conditions coexist: 1) shallow groundwater; 2) low density non-cohesive (granular) soils; and 3) high-intensity ground motion. Studies indicate that saturated, loose near-surface cohesionless soils exhibit the highest liquefaction potential, while dry, dense, cohesionless soils and cohesive soils exhibit low to negligible liquefaction potential. In general, cohesive soils are not considered susceptible to liquefaction, depending on their plasticity and moisture content (Bray & Sancio, 2006). Effects of liquefaction on level ground include settlement, sand boils, and bearing capacity failures below structures. Dynamic settlement of dry loose sands can occur as the sand particles tend to settle and densify as a result of a seismic event.

The site is not located within a State of California Seismic Hazard Zone (CDMG, 2001b) for liquefaction potential. Groundwater was not encountered to the maximum explored depth of approximately 60 feet below existing ground surface during our recent field evaluation and anticipated to be greater than 60 feet below existing ground surface. Based on the absence of a shallow groundwater table the potential for liquefaction is considered very low.

### **2.7.2 Lateral Spreading**

Lateral spreading is a type of liquefaction-induced ground failure associated with the lateral displacement of surficial blocks of sediment resulting from liquefaction in a subsurface layer. Once liquefaction transforms the subsurface layer into a fluid mass, gravity plus the earthquake inertial forces may cause the mass to move downslope towards a free face (such as a river channel or an embankment). Lateral spreading may cause large horizontal displacements and such movement typically damages pipelines, utilities, bridges, and structures.

Due to the very low potential for liquefaction, the potential for lateral spreading is considered very low.

### **3.0 CONCLUSIONS**

Based on the results of our geotechnical evaluation, it is our opinion that the proposed development is feasible from a geotechnical standpoint, provided the geotechnical recommendations and parameters provided herein are incorporated into the project design, grading and construction project.

The following is a summary of the primary geotechnical factors that may affect future development of the site:

- In general, our borings indicate primarily stiff to hard sandy clays and sandy silts with layers of dense to very dense silty sands and clayey sands to the maximum explored depth of approximately 60 feet below existing grade. Moisture contents were generally above optimum.
- Upper near-surface soils are not considered suitable for support of the planned building structure in their present condition (refer to Section 4.1). Upper soils will be removed for construction of the planned basement portion; however, removals will be required for the at-grade portion of the building structure.
- Due to the depth and proximity of the proposed basement level with property lines, and existing improvements, temporary shoring is anticipated to be required in portions of the site. The temporary shoring will be adjacent to an existing off-site structure in a portion of the site.
- From a geotechnical perspective, the existing onsite soils are suitable material for use as general fill, provided that they are relatively free from rocks (larger than 8 inches in maximum dimension), construction debris, and significant organic material.
- Groundwater was not encountered to maximum explored depth of approximately 60 feet below existing grade. Historic high groundwater is anticipated to be over 60 feet below existing ground surface.
- The subject site is not located within an Alquist-Priolo Earthquake Fault Zone. The main seismic hazard that may affect the site is ground shaking from one of the active regional faults. The subject site will likely experience strong seismic ground shaking during its design life.
- The site is not located within a State of California Seismic Hazard Zone (CDMG, 2001b) for liquefaction potential. Due to the absence of groundwater the potential for earthquake induced liquefaction and dynamic settlement is considered very low.
- Soils exposed near proposed foundation level are anticipated to have “Medium” expansion potential (Expansion Index of 90 or less). Mitigation measures are required for foundations and site improvements like concrete flatwork to minimize the impacts of expansive soils. Final design expansion potential must be determined at the completion of earthwork grading.
- Pre-soaking of the subgrade for at-grade building slabs and flatwork will be required due to site expansive soils. The duration of this process varies greatly based on the chosen method and is also dependent on factors such as soil type and weather conditions. Time duration for presoaking should be accounted for in the construction schedule (typically, approximately three weeks for high expansion). Additional time at the completion of presoaking may be necessary for the surface soils of the pad to dry back sufficiently to be capable of supporting trenching equipment.
- The site contains soils that are not suitable for basement/retaining wall backfill due to their fines (i.e., silt and clay) content, therefore import of sandy soils will be required by the contractor for obtaining suitable backfill soil for planned site basement/retaining walls.
- Based on our experience in the area, site soils should be considered corrosive.

#### **4.0 PRELIMINARY RECOMMENDATIONS**

The following recommendations are to be considered preliminary and should be confirmed upon completion of grading and earthwork operations. In addition, they should be considered minimal from a geotechnical viewpoint, as there may be more restrictive requirements from the architect, structural engineer, building codes, governing agencies, or the owner.

It should be noted that the following geotechnical recommendations are intended to provide sufficient information to develop the site in general accordance with the 2022 CBC requirements. With regard to the potential occurrence of potentially catastrophic geotechnical hazards such as fault rupture, earthquake-induced landslides, liquefaction, etc. the following geotechnical recommendations should provide adequate protection for the proposed development to the extent required to reduce seismic risk to an “acceptable level.” The “acceptable level” of risk is defined by the California Code of Regulations as “that level that provides reasonable protection of the public safety, though it does not necessarily ensure continued structural integrity and functionality of the project” [Section 3721(a)]. Therefore, repair and remedial work of the proposed improvements may be required after a significant seismic event. With regards to the potential for less significant geologic hazards to the proposed development, the recommendations contained herein are intended as a reasonable protection against the potential damaging effects of geotechnical phenomena such as expansive soils, fill settlement, groundwater seepage, etc. It should be understood, however, that although our recommendations are intended to maintain the structural integrity of the proposed development and structures given the site geotechnical conditions, they cannot preclude the potential for some cosmetic distress or nuisance issues to develop as a result of the site geotechnical conditions.

The geotechnical recommendations contained herein must be confirmed to be suitable or modified based on the actual as-graded conditions.

#### **4.1 Site Earthwork**

We anticipate that earthwork at the site will generally consist of excavation for the basement structure, remedial removals, foundation construction, basement wall and utility line installation and backfill. We recommend that earthwork onsite be performed in accordance with the following recommendations, future grading plan review report(s), the 2022 CBC/City of Laguna Hills grading requirements, and the General Earthwork and Grading Specifications included in Appendix D. In case of conflict, the following recommendations shall supersede those included in Appendix D. The following recommendations should be considered preliminary and may be revised within the future grading plan review report or based on the actual conditions encountered during site grading.

##### **4.1.1 Site Preparation**

Prior to grading of areas to receive structural fill or engineered improvements, the areas should be cleared of existing surface obstructions and demolition debris. Vegetation and debris should be removed and properly disposed of off-site. Holes resulting from the removal of buried obstructions, which extend below proposed finish grades, should be replaced with suitable compacted fill material. Any abandoned sewer or storm drain lines

should be completely removed and replaced with properly placed compacted fill. Deeper demolition may be required in order to remove existing foundations.

If cesspools or septic systems are encountered, they should be removed in their entirety. The resulting excavation should be backfilled with properly compacted fill soils. As an alternative, cesspools can be backfilled with lean sand-cement slurry. Any encountered wells should be properly abandoned in accordance with regulatory requirements. At the conclusion of the clearing operations, a representative of LGC Geotechnical should observe and accept the site prior to further grading.

#### **4.1.2 Removal Depths and Limits**

In order to provide a relatively uniform bearing condition for the planned improvements, upper loose/compressible soils are to be removed and replaced as properly compacted fills. For preliminary planning purposes, the depth of required removals may be estimated as indicated below. It should be noted that updated recommendations may be required based on additional field evaluation, changes to building layouts and/or structural loads.

Basement Structure at least 10 feet below Existing Grade: Excavations on the order of about 12 feet are anticipated for construction of the basement structure. It is anticipated that soils will be suitable (i.e., firm and relatively unyielding) materials at this depth for foundation construction. However, if soft or yielding soils are encountered, they should be completely removed and replaced with properly compacted fill. If a bedrock/fill transition is created, over-excavation is recommended as outlined below.

Interior Ramp Retaining Walls: Footings for retaining walls should be founded on suitable native soils or properly placed compacted fill. Any undocumented fill or unsuitable soils should be removed within a 1:1 projection from the bottom edge of the footing to suitable native soils and replaced with properly placed compacted fill.

At-Grade Portion of Building Structure: Removals should extend a minimum depth of 5 feet below existing grade or 2 feet below the proposed footings, whichever is greater. In general, the envelope for removals should extend laterally a minimum horizontal distance of 5 feet beyond the edges of the proposed improvements.

At-Grade Retaining Walls and Free-Standing Walls: Removals should extend a minimum of 3 feet below existing grade, or 2 feet below proposed footings, whichever is deeper. In general, the envelope for over-excavation should extend laterally a minimum horizontal distance of 2 feet beyond the edges of the footings.

Bedrock/Fill Transitions: Structural footings and Mat foundations should not be placed on a bedrock and fill transition. In order to provide a uniform bearing, the bedrock portion of the bedrock/fill transition should be over-excavated a minimum of 2-foot below the bottom of proposed foundation and where practical extend 3 feet laterally beyond the edges of the proposed footings/foundation.

Pavement and Hardscape Areas: Where not achieved by planned grading or remedial grading, we recommend that proposed pavement and hardscape areas be over-excavated to at least 2 feet below existing grade or so that they are underlain by at least 1-foot of compacted fill below the proposed finished subgrade (i.e., below planned aggregate base/asphalt concrete), whichever is greater. In general, the envelope for pavement and hardscape over-excavation should extend laterally a minimum lateral distance of 2 feet beyond the edges of the proposed improvements.

Local conditions may be encountered during excavation that could require additional over-excavation beyond the above noted minimum in order to obtain an acceptable removal bottom. The actual depths and lateral extents of grading will be determined by the geotechnical consultant, based on subsurface conditions encountered during grading. Removal areas should be accurately staked in the field by the Project Surveyor.

#### **4.1.3 Temporary Excavations**

Temporary excavations up to approximately 15 feet are anticipated for construction of the basement. Temporary excavations should be performed in accordance with project plans, specifications, and all Occupational Safety and Health Administration (OSHA) requirements. Excavations should be laid back or shored in accordance with OSHA requirements before personnel or equipment are allowed to enter. Excavation safety is the sole responsibility of the contractor.

Excavations should be sloped back to 1:1 or flatter or be properly shored. Vehicular traffic, stockpiles, and equipment storage should be set back from the perimeter of excavations a distance equivalent to a 1:1 projection from the bottom of the excavation or 5 feet, whichever is greater. Once an excavation has been initiated, it should be backfilled as soon as practical. Prolonged exposure of temporary excavations may result in some localized instability. Excavations should be planned so that they are not initiated without sufficient time to shore/fill them prior to weekends, holidays, or forecasted rain.

It should be noted that any excavation that extends below a 1:1 (horizontal to vertical) projection of an existing foundation will remove existing support of the structure foundation. Temporary shoring parameters are provided in Section 4.5.

#### **4.1.4 Removal Bottoms and Subgrade Preparation**

In general, over-excavated removal bottoms and areas to receive compacted fill should be scarified to a minimum depth of 6 inches, brought to a near-optimum moisture condition, and re-compacted per project recommendations.

Removal bottoms and areas to receive fill should be observed and accepted by the geotechnical consultant prior to subsequent fill placement.

#### **4.1.5 Material for Fill**

From a geotechnical perspective, the onsite soils are generally considered suitable for use as general compacted fill (not retaining/basement wall backfill), provided they are screened of organic materials, construction debris and oversized material (8 inches in greatest dimension).

From a geotechnical viewpoint, any required import soils for general fill (i.e., non-retaining wall backfill) should consist of clean, granular soils of “Very Low” to “Low” expansion potential (expansion index 50 or less based on American Society for Testing and Materials [ASTM] D 4829), and free of organic materials, construction debris and any material greater than 3 inches in maximum dimension. Import for basement/retaining wall backfill should meet the criteria outlined in the following paragraph. Source samples should be provided to the geotechnical consultant for laboratory testing a minimum of four working days prior to any planned importation.

Basement/retaining wall backfill should consist of sandy soils with a maximum of 35 percent fines (passing the No. 200 sieve) per ASTM Test Method D1140 (or ASTM D6913/D422) and a “Very Low” expansion potential (EI of 20 or less per ASTM D4829). Soils should also be screened of organic materials, construction debris, and any material greater than 3 inches in maximum dimension. The site contains soils that are not suitable for retaining wall backfill due to their fines content, therefore import or potentially select grading and stockpiling of site soils will be required by the contractor for obtaining suitable retaining wall backfill soil. The contractor should assume imports will be required for backfill of retaining walls.

Aggregate base (crushed aggregate base or crushed miscellaneous base) should conform to the requirements of Section 200-2 of the Standard Specifications for Public Works Construction (“Greenbook”) for untreated base materials (except processed miscellaneous base) or Caltrans Class 2 aggregate base.

#### **4.1.6 Placement and Compaction of Fills**

Material to be placed as fill should be brought to above optimum moisture content (generally about 2 percent above optimum moisture content) and recompact to at least 90 percent relative compaction (per ASTM D1557). Moisture conditioning of site soils will be required in order to achieve adequate compaction. The soils encountered in our borings were generally above optimum moisture content. The optimum lift thickness to produce a uniformly compacted fill will depend on the type and size of compaction equipment used. In general, fill should be placed in uniform lifts not exceeding 8 inches in compacted thickness. Each lift should be thoroughly compacted and accepted prior to subsequent lifts. Generally, placement and compaction of fill should be performed in accordance with local grading ordinances and with observation and testing performed by the geotechnical consultant. Oversized material as previously defined should be removed from site fills.

During backfill of excavations, the fill should be properly benched into firm and competent soils of temporary backcut slopes as it is placed in lifts.

Aggregate base material should be compacted to at least 95 percent relative compaction at or slightly above optimum moisture content per ASTM D1557. Subgrade below aggregate base should be compacted to at least 90 percent relative compaction per ASTM D1557 at or slightly above optimum moisture content.

If gap-graded ¾-inch rock is used for backfill (around storm drain storage chambers, retaining wall backfill, etc.) it will require compaction. Rock shall be placed in thin lifts (typically not exceeding 6 inches) and mechanically compacted with observation by geotechnical consultant. Backfill rock shall meet the requirements of ASTM D2321. Gap-graded rock is required to be wrapped in filter fabric to prevent the migration of fines into the rock backfill.

#### **4.1.7 Trench and Retaining/Basement Wall Backfill and Compaction**

Bedding material used within the pipe zone should conform to the requirements of the current Greenbook and the pipe manufacturer. Where applicable, sand having a sand equivalent (SE) of 20 or greater (per Caltrans Test Method [CTM] 217) may be used to bed and shade the pipes within the bedding zone. Sand backfill should be densified by jetting or flooding and then tamped to ensure adequate compaction. Bedding sand should be from a natural source, manufactured sand from recycled material is not suitable for jetting. The onsite soils may generally be considered suitable as trench backfill (zone defined as 12 inches above the pipe to subgrade), provided the soils are screened of rocks greater than 6 inches in maximum dimension, construction debris and organic material. Trench backfill should be compacted in uniform lifts (as outlined in Section “Material for Fill”) by mechanical means to at least 90 percent relative compaction (per ASTM D1557). If gap-graded rock is used for trench backfill, refer to Section 4.1.6.

Basement/retaining wall backfill should consist of sandy soils meeting the criteria outlined in above Section 4.1.5. For basement/subterranean walls the select zone meeting the criteria outlined above should extend a minimum of a 1:1 (horizontal to vertical) upward projection from the bottom of the basement wall subdrain, refer to Figure 3. For conventional retaining walls the limits of select backfill zone outlined above should extend at minimum ½ the height of the retaining wall or the width of the heel (if applicable), whichever is greater, refer to Figure 4. Retaining wall backfill soils should be compacted in relatively uniform thin lifts to a minimum of 90 percent relative compaction (per ASTM D1557). Jetting or flooding of retaining wall backfill materials should not be permitted.

In backfill areas where mechanical compaction of soil backfill is impractical due to space constraints, typically sand-cement slurry may be substituted for compacted backfill. The slurry should contain about one sack of cement per cubic yard. When set, such a mix typically has the consistency of compacted soil. Sand cement slurry placed near the surface within landscape areas should be evaluated for potential impacts on planned improvements.

A representative from LGC Geotechnical should observe, probe, and test the backfill to verify compliance with the project recommendations.

## **4.2 Foundation Recommendations**

The site contains soils with an expansion index greater than 20 therefore mitigation measures will be required for planned foundations to minimize the impacts of expansive soils. Typical methods for design of foundations to resist expansive soils include the Wire Reinforcement Institute (WRI) procedure for conventional foundations and the Post-Tensioning Institute (PTI) method for post-tensioned foundations as referenced in Chapter 18 of the 2022 CBC. Other types of stiff slabs may be used in place of the WRI/ PTI methods provided that, in the opinion of the foundation structural designer, the alternative type of slab is at least as stiff and strong as that designed by the WRI/ PTI method to resist expansive soils.

Please note that the following foundation recommendations are preliminary and must be confirmed by LGC Geotechnical at the completion of project plans (i.e., foundation, grading and site layout plans) as well as completion of earthwork.

### **4.2.1 Preliminary Conventional Foundation Design Parameters**

Given that the onsite soils are expansive, the foundation systems shall be designed for effects of expansive soil. Conventional foundations may be designed in accordance with Wire Reinforcement Institute (WRI) procedure for slab-on-ground foundations per Section 1808 of the 2022 CBC to resist expansive soils. The following preliminary soil parameters may be used:

- Effective Plasticity Index: 30
- Climatic Rating:  $C_w = 15$
- Reinforcement: Per structural designer.
- Minimum Perimeter Embedment Depth: 18 inches below lowest adjacent grade.
- Moisture condition at-grade slab subgrade soils to 120% of optimum moisture content to a depth of 18 inches prior to trenching for footings. (Not required for basement foundations.)

The recommended moisture content should be maintained up to the time of concrete placement.

### **4.2.2 Provisional Post-Tensioned Foundation Design Parameters**

The geotechnical parameters provided herein may be used for post-tensioned slab foundations. These parameters have been determined in general accordance with the Post-Tensioning Institute (PTI, 2012) Standard Requirements (PTI DC 10.5), referenced in Chapter 18 of the 2022 CBC. In utilizing these parameters, the foundation engineer should design the foundation system in accordance with the allowable deflection criteria of applicable codes and the requirements of the structural designer/architect.

Our design parameters are based on our experience with similar projects and the anticipated nature of the soil (with respect to expansion potential). Please note that implementation of our recommendations will not eliminate foundation movement (and related distress) should the moisture content of the subgrade soils fluctuate. It is the

intent of these recommendations to help maintain the integrity of the proposed structures and reduce (not eliminate) movement, based upon the anticipated site soil conditions. Should future owners not properly maintain the areas surrounding the foundation, for example by overwatering, then we anticipate for highly expansive soils the maximum differential movement of the perimeter of the foundation to the center of the foundation to be on the order of a couple of inches. Soils of lower expansion potential are anticipated to show less movement.

#### **4.2.3 Foundation Subgrade Preparation and Maintenance**

The recommendations specific to anticipated site soil conditions are presented in Table 2. The subgrade moisture condition of the building pad soils should be maintained at the recommended moisture content up to the time of concrete placement. This moisture content should be maintained around the immediate perimeter of the slab during construction and up to occupancy of the building structures.

The geotechnical parameters provided herein assume that if the areas adjacent to the foundation are planted and irrigated, these areas will be designed with proper drainage and adequately maintained so that ponding, which causes significant moisture changes below the foundation, does not occur. Our recommendations do not account for excessive irrigation and/or incorrect landscape design. Plants should only be provided with sufficient irrigation for life and not overwatered to saturate subgrade soils. Sunken planters placed adjacent to the foundation should either be designed with an efficient drainage system or liners to prevent moisture infiltration below the foundation. Some lifting of the perimeter foundation beam should be expected even with properly constructed planters.

In addition to the factors mentioned above, roots that extend near the vicinity of foundations can cause distress to foundations. Trees/large shrubs should not be planted closer to the foundations than a distance equal to half the mature height of the tree or 20 feet, whichever is more conservative unless specifically provided with root barriers to prevent root growth below the building foundation.

The owner must perform periodic maintenance during hot and dry periods to ensure that adequate watering has been provided to keep soil from separating or pulling back from the foundation. It is critical to maintain a constant level of soil-moisture. The owner and any property management personnel should be aware of the potential negative consequences of both excessive watering, as well as allowing potentially expansive soils to become too dry. Expansive soils can undergo shrinkage during drying, and swelling during the rainy winter season, or when irrigation is resumed. This can result in distress to building structures and hardscape improvements.

**TABLE 2**

**Provisional Geotechnical Parameters for Post-Tensioned Foundation Slab Design<sup>1</sup>**

<b>Parameter</b>	<b>PT Slab with Perimeter Embedment/Footing</b>
Center Lift Edge moisture variation distance, $e_m$ Center lift, $y_m$	9.0 feet 0.50 inch
Edge Lift Edge moisture variation distance, $e_m$ Edge lift, $y_m$	4.7 feet 1.1 inch
Minimum Perimeter footing/thickened edge embedment below finish grade	18 inches
1. For preliminary design purposes. Confirmation and further evaluation is needed at the completion of grading.	

**4.2.4 Slab Underlayment Guidelines**

The following is for informational purposes only since slab underlayment (e.g., moisture retarder, sand or gravel layers for concrete curing and/or capillary break) is unrelated to the geotechnical performance of the foundation and thereby not the purview of the geotechnical consultant. Post-construction moisture migration should be expected below the foundation. The foundation engineer/architect should determine whether the use of a capillary break (sand or gravel layer), in conjunction with the vapor retarder, is necessary or required by code. Sand layer thickness and location (above and/or below vapor retarder) should also be determined by the foundation engineer/architect.

**4.3 Soil Bearing and Lateral Resistance**

The following minimum footing widths and embedments are recommended for the corresponding allowable bearing pressures for both continuous wall and column spread footings. These net bearing pressures (exclusive of the weight of the footings) are for dead plus live loads and may be increased one-third for short-term, transient, wind and seismic loading. For any bearing pressures less than 2,000 psf, a minimum footing width of 1.5 feet and embedment depth of 1.5 feet below lowest adjacent grade should be used. These allowable bearing pressures are applicable for level (ground slope equal to or flatter than 5 horizontal feet to 1-foot vertical) conditions only.

**TABLE 3**

**Allowable Soil Bearing Pressures**

<b>Location</b>	<b>Static Bearing Pressure (psf)</b>	<b>Minimum Footing Width (feet)</b>	<b>Minimum Footing Embedment** (feet)</b>
Basement Level *	3,500	3	2
	3,000	2	2
	2,500	1.5	1.5
At-Grade	3,000	3	2
	2,500	2	1.5
	2,000	1.5	1.5

\*Basement level at a minimum of 10 feet below existing grade.

\*\*Refers to minimum depth below lowest adjacent grade.

Soil settlement is a function of footing dimensions and applied soil bearing pressure. In utilizing the above-mentioned allowable bearing capacity, assumed structural loads, and provided our earthwork recommendations are implemented, foundation settlement due to structural loads is anticipated to be on the order of 1-inch. Differential settlement should be anticipated between nearby columns or walls where a large differential loading condition exists. Settlement estimates should be evaluated by LGC Geotechnical when foundation plans are available.

Resistance to lateral loads can be provided by friction acting at the base of foundations and by passive earth pressure. For concrete/soil frictional resistance, an allowable coefficient of friction of 0.25 may be assumed with dead-load forces. For concrete/soil frictional resistance with a keyway extended below the retaining wall base, an increased allowable coefficient of friction of 0.35 may be assumed with dead-load forces. An allowable passive lateral earth pressure of 240 psf per foot of depth (or pcf) to a maximum of 2,400 psf may be used for the sides of footings poured against properly compacted fill. Allowable passive pressure may be increased to 320 pcf (maximum of 3,200 psf) for short duration seismic loading. This passive pressure is applicable for level (ground slope equal to or flatter than 5H:1V) conditions. Frictional resistance and passive pressure may be used in combination without reduction. We recommend that the upper foot of passive resistance be neglected if finished grade will not be covered with concrete or asphalt. The provided allowable passive pressures are based on a factor of safety of 1.5 and 1.1 for static and seismic loading conditions, respectively.

**4.4 Lateral Earth Pressures for Basement/Retaining Walls Design**

Basement walls up to about 10 feet in height are anticipated for the site. Lateral earth pressures for approved native soils in a cut condition and approved sandy soils meeting indicated project requirements are provided below. Lateral earth pressures are provided as equivalent fluid unit weights, in psf per foot of depth (or pcf). These values do not contain an appreciable factor of safety, so the retaining wall designer should apply the applicable factors of safety and/or load factors during design. A soil unit weight of 120 pcf may be assumed for calculating the actual

weight of soil over the wall footing.

If the wall can yield enough to mobilize the full shear strength of the soil, it can be designed for “active” pressure. If the wall cannot yield under the applied load, the shear strength of the soil cannot be mobilized, and the earth pressure will be higher. Such walls should be designed for “at-rest” conditions. If a structure moves toward the soils, the resulting resistance developed by the soil is the “passive” resistance. The equivalent fluid pressure values assume free-draining conditions and a drainage system will be installed and maintained to prevent the build-up of hydrostatic pressures. Typically, a basement wall constructed directly against temporary shoring is provided with a composite drainage mat (e.g., Miradrain, etc.) placed over the lagging and collected at the wall bottom by a manifold pipe system properly outletted to a suitable discharge point. Basement walls not requiring shoring due to adequate horizontal distance for temporary slopes are subsequently backfilled with sandy soils and a subdrain pipe is wrapped in drainage aggregate and filter fabric (e.g., “burrito” subdrain) and properly outletted to a suitable discharge point (Refer to Figures 3 and 4). If a sump pump is required to outlet accumulated water behind retaining/basement walls, the owner and any subsequent owners must be made aware that it will be their responsibility to ensure the sump pump continues to perform properly for the life of the project. Basement/retaining wall structures should be provided with appropriate drainage and appropriately waterproofed. Please note that waterproofing and specification of the drainage mat and outlet system are not the purview of the geotechnical consultant. If conditions other than those assumed above are anticipated, the equivalent fluid pressure values should be provided on an individual-case basis by the geotechnical consultant. Refer to Figures 3 and 4.

The following lateral earth pressures are presented on Table 4A for design of site basement/retaining walls constructed against the shoring wall (i.e., cut condition not requiring backfill).

**TABLE 4A**

**Lateral Earth Pressures – Cut Condition**

Condition	Equivalent Fluid Unit Weight (pcf)
	Cut Condition w/Shoring Wall
	Level Backfill
Active	50
At-Rest	75

The following lateral earth pressures are presented on Table 4B are for backfilled basement/retaining walls using approved select granular soils with a maximum of 35 percent fines (passing the No. 200 sieve per ASTM D-421/422) and a maximum Expansion Index of 20 (per ASTM D-4829). The retaining wall designer should clearly indicate on the retaining wall plans the required sandy soil backfill criteria. If the limits of select sandy backfill indicated on Figures 3 and 4 cannot be extended due to property line constraints, the lateral earth pressures provided in Table 4A should be used.

**TABLE 4B**

**Lateral Earth Pressures - Conventional Backfilled  
Basement/Retaining Wall**

<b>Condition</b>	<b>Equivalent Fluid Unit Weight (pcf)</b>
	<b>Approved Sandy Backfill Material</b>
	<b>Level Backfill</b>
Active	35
At-Rest	55

Surcharge loading effects from any adjacent structures should be evaluated by the basement/retaining wall designer. In general, structural loads within a 1:1 (horizontal to vertical) upward projection from the bottom of the proposed basement/retaining wall footing will surcharge the proposed retaining structure. In addition to the recommended earth pressure, basement/retaining walls adjacent to streets should be designed to resist vehicular traffic if applicable. Uniform surcharges may be estimated using the applicable coefficient of lateral earth pressure using a rectangular distribution. A factor of 0.3 and 0.5 may be used for the active and at-rest conditions, respectively. The vertical traffic surcharge may be determined by the structural designer. The retaining/basement wall designer should contact the geotechnical consultant for any required geotechnical input in estimating any applicable surcharge loads.

If required, the basement/retaining wall designer may use a seismic lateral earth pressure increment of 10 pcf for a level backfill. This increment should be applied in addition to the provided static lateral earth pressure using a triangular distribution with the resultant acting at H/3 in relation to the base of the retaining structure (where H is the retained height). Per Section 1803.5.12 of the 2022 CBC, the seismic lateral earth pressure is applicable to structures assigned to Seismic Design Category D through F for retaining wall structures supporting more than 6 feet of backfill height. For the restrained, at-rest condition, the seismic increment may be added to the applicable active lateral earth pressure (in lieu of the at-rest lateral earth pressure) when analyzing short duration seismic loading. It should be noted that the provided seismic lateral earth pressures are for a maximum basement/retaining wall of 14 feet in height. While not anticipated at this time, if a basement/retaining wall greater than 14 feet in height is proposed, the retaining wall designer should contact the geotechnical consultant for specific seismic lateral earth pressure increments based on the configuration of the planned retaining wall structures. Seismic lateral earth pressures are estimated using the procedure outlined by the Structural Engineers Association of California (Lew, et al, 2010) and the Federal Highway Administration (FHWA, 2011).

Soil bearing and lateral resistance (friction coefficient and passive resistance) are provided in Section 4.3. Earthwork considerations (temporary backcuts, backfill, compaction, etc.) for basement/retaining walls are provided in Section 4.1 (Site Earthwork) and the subsequent earthwork related sub-sections.

#### 4.5 Temporary Shoring

Temporary shoring up to about 12 feet in height is anticipated to be required in portions of the site for construction of the basement. The provided lateral earth pressures for temporary shoring assume a fully drained condition and do not include any hydrostatic pressures. Typical cantilever temporary shoring, where deflection of the shoring will not impact the performance of adjacent structures, may be designed using the active equivalent fluid pressures of 35 pounds per square foot (psf) per foot of depth (or pcf) for a level backfill. Braced shoring may be used in areas where the shoring will be located close to existing structures in order to limit shoring deflections or required due to the proposed depth of excavation. Braced shoring with a level backfill may be designed using a uniform soil pressure of  $23H$  in pounds per square foot (psf), where  $H$  is equal to the depth in feet of the excavation being shored. These lateral earth pressures do not include any hydrostatic pressures and any slopes above the temporary shoring will increase the above-noted lateral earth pressures and can be provided on a case-by-case basis.

Any building, equipment or traffic loads located within a 1:1 (horizontal to vertical) projection from the base of the shoring should be added to the applicable lateral earth pressure. Refer to the discussion provided in above section "Lateral Earth Pressures for Basement/Retaining Wall Design." The shoring designer should contact the geotechnical consultant for any required geotechnical input in estimating any applicable lateral surcharge loads.

For piles generally spaced a minimum of 2.5 pile diameters on-center, an allowable passive pressure of 550 pcf may be used for passive resistance below the excavation. The provided passive pressure includes an arching factor of 2 (e.g., 275 pcf x 2) and should be limited to a maximum of 12 times the value provided above (e.g., 550 pcf to a maximum of 6,600 psf). The passive pressure is only applicable for level (5 horizontal feet to 1-foot vertical or flatter) soil conditions. To develop the full lateral value, provisions should be made to assure firm contact between the soldier piles and the undisturbed soils. The concrete placed in the soldier pile excavation below the excavated level should be of adequate strength to transfer the imposed loads to the surrounding soils. The structural designer should incorporate the appropriate factor of safety and/or load factor in the design. The provided allowable passive pressure is based on a factor of safety of 1.3.

Continuous lagging should be provided between the soldier piles. Lagging should be placed in a timely manner during excavation in order to minimize potential spalling and sloughing. Careful installation of the lagging will be necessary to achieve bearing against the retained earth. The backfill of the lagging should consist of sand-cement slurry. Means and methods are per the contractor in order to ultimately ensure full bearing (direct contact) of retained earth to the lagging. The soldier piles should be designed for the full anticipated lateral earth pressure; however, the pressure on the lagging will be less due to soil arching between the piles. We recommend that the lagging be designed for the recommended earth pressure but may be limited to a maximum value of 400 psf if surcharge loads are not present. Lagging placed behind the soldier piles will negate the soil arching effect.

It is difficult to accurately predict the amount of deflection of the shored embankment. It should be realized, however, that some deflection will occur. The shoring should be designed to limit deflection to within tolerable limits. If greater deflection occurs during construction, additional bracing may be necessary. In areas where less deflection is desired, such as adjacent

to existing settlement sensitive improvements, the shoring should be designed for higher lateral earth pressures.

During construction, monitoring should consist of periodic surveying of the lateral and vertical locations of the tops of the soldier piles as determined by the shoring designer. It would also be prudent to perform a detailed survey of any improvements to be supported above the planned shoring prior to and during the shoring installation. The survey should include topographic data and documentation of the condition of the existing improvements, including cracks or signs of distress.

The contractor should evaluate the potential drilling conditions when planning the installation methods, refer to Section "Boreholes for Temporary Shoring" (Section 4.11) and the boring logs (Appendix B).

#### **4.6 Control of Surface Water and Drainage Control**

From a geotechnical perspective, we recommend that compacted finished grade soils adjacent to proposed structure be sloped away from the proposed structure and towards an approved drainage device or unobstructed swale. Drainage swales, wherever feasible, should not be constructed within 5 feet of buildings. Where lot and building geometry necessitates that the drainage swales be routed closer than 5 feet to structural foundations, we recommend the use of area drains together with drainage swales. Drainage swales used in conjunction with area drains should be designed by the project civil engineer so that a properly constructed and maintained system will prevent ponding within 5 feet of the foundation. Code compliance of grades is not the purview of the geotechnical consultant.

Planters with open bottoms adjacent to buildings should be avoided. Planters should not be designed adjacent to buildings unless provisions for drainage, such as catch basins, liners, and/or area drains, are made. Overwatering must be avoided.

#### **4.7 Subsurface Water Infiltration**

Recent regulatory changes have occurred that mandate that stormwater be infiltrated below grade rather than collected in a conventional storm drain system. Typically, a combination of methods are implemented to reduce surface water runoff and increase infiltration including; permeable pavements/pavers for roadways and walkways, directing surface water runoff to grass-lined swales, retention areas, and/or drywells, etc.

It should be noted that collecting and concentrating surface water for the purpose of intentionally infiltrating it below grade, conflicts with the geotechnical engineering objective of directing surface water away from slopes, structures and other improvements. The geotechnical stability and integrity of a site is reliant upon appropriately handling surface water. In general, the vast majority of geotechnical distress issues are directly related to improper drainage. In general, distress in the form of movement of improvements could occur as a result of soil saturation and loss of soil support, expansion, internal soil erosion, collapse and/or settlement.

Our field evaluation of the site indicates that significant amounts of fine-grained silts and clays

would be expected to have very low rates of infiltration. We do not recommend that surface water be intentionally infiltrated into subsurface soils at this site.

**4.8 Preliminary Pavement Sections**

The following preliminary minimum asphalt concrete (AC) pavement sections are provided in Table 5 based on an assumed R-value of 5 and assumed Traffic Index (TI) values. These recommendations must be confirmed with R-value testing of representative near-surface soils at the completion of grading and after underground utilities have been installed and backfilled. A traffic study has not been conducted by or provided to our firm for this project and our opinion regarding the applicability of the assumed traffic indices is judgmental. Determination of the TI is not the purview of the geotechnical consultant. Final pavement sections should be confirmed by the project civil/transportation engineer based upon the final design Traffic Index. If requested, LGC Geotechnical will provide sections for alternate TI values.

**TABLE 5**  
**Asphalt Concrete Pavement Section Options**

Pavement Area	Assumed Traffic Index*	Section Thickness (inches)	
		Asphalt Concrete	Aggregate Base
Auto Parking	4.5	4.0	5.5
Circulation Drives (little to no truck traffic)	5.0	4.0	7.5
Truck Driveways (limited truck traffic)	6.0	5.0	9.5

\*Determination of the Traffic Index is not the purview of the geotechnical consultant

Typically, pavers for vehicular traffic are 80 mm (approximately 3 and 1/8 inches) thick. Based on a TI of 5.0, concrete pavers should be underlain with a minimum of 11 inches of compacted aggregate base. A herringbone pattern is recommended for pavers subject to vehicular traffic. Manufacturer’s specific recommendations regarding the pavers (required bedding and jointing sand, fabric, edge restraint, etc.) should be implemented during design and construction. It should be noted that pavers are typically installed on 1-inch of bedding sand that is placed on the compacted aggregate base. For a design TI other than 5.0, alternate aggregate base thickness underling the pavers can be provided.

The thicknesses shown are for minimum thicknesses. Increasing the thickness of any or all of the above layers will reduce the likelihood of the pavement/pavers experiencing distress during its service life. The above recommendations are based on the assumption that proper maintenance and irrigation of the areas adjacent to the roadway will occur throughout the design life of the pavement/pavers. Failure to maintain a proper maintenance and/or irrigation program may jeopardize the integrity of the pavement/pavers.

Earthwork recommendations regarding aggregate base and subgrade are provided in the previous section “Site Earthwork” and the related sub-sections of this report.

#### **4.9 Soil Corrosivity**

Although not corrosion engineers (LGC Geotechnical is not a corrosion consultant), several governing agencies in Southern California require the geotechnical consultant to determine the corrosion potential of soils to buried concrete and metal facilities. We therefore present the results of our testing with regard to corrosion for the use of the client and other consultants, as they determine necessary.

Corrosion testing indicated soluble sulfate content values of 0.08 percent or less, chloride content of 80 parts per million (ppm), pH of 7.3 and minimum resistivity of 1,840 ohm-cm. Based on Caltrans Corrosion Guidelines (2021), soils are considered corrosive if the pH is 5.5 or less, or the chloride concentration is 500 ppm or greater, or the sulfate concentration is 1,500 ppm (0.15 percent) or greater.

Based on our experience in the area, the near-surface soils should be considered to have an exposure class of "S2" per ACI 318-19, Table 19.3.1.1 with respect to sulfates. This must be verified based on as-graded conditions.

#### **4.10 Nonstructural Concrete Flatwork**

Nonstructural concrete flatwork (such as walkways, patio slabs, etc.) has a potential for cracking due to changes in soil volume related to soil-moisture fluctuations. To reduce the potential for excessive cracking and lifting, concrete may be designed in accordance with the minimum guidelines outlined in Table 6 on the following page. These guidelines will reduce the potential for irregular cracking and promote cracking along control joints; but will not eliminate all cracking or lifting. Thickening the concrete and/or adding additional reinforcement will further reduce cosmetic distress.

**TABLE 6**

**Nonstructural Concrete Flatwork for Expansive Soils**

	<b>Flatwork</b>	<b>City Sidewalk Curb and Gutters</b>
<b>Minimum Thickness (in.)</b>	5	City/Agency Standard
<b>Presoaking</b>	Presoak to 12 inches	City/Agency Standard
<b>Reinforcement</b>	No. 3 at 24 inches on centers	City/Agency Standard
<b>Thickened Edge (in.)</b>	—	City/Agency Standard
<b>Crack Control Joints</b>	Saw cut or deep open tool joint to a minimum of $\frac{1}{3}$ the concrete thickness	City/Agency Standard
<b>Maximum Joint Spacing</b>	6 feet	City/Agency Standard
<b>Aggregate Base Thickness (in.)</b>	—	City/Agency Standard

**4.11 Boreholes for Temporary Shoring**

Boreholes for temporary shoring should be plumb and free of loose or softened material. Extreme care in drilling, placement of reinforcement steel, and the pouring of concrete will be essential to avoid excessive disturbance of borehole walls. Immediately after drilling the soldier pile steel section should be installed and the concrete pumped. Where applicable, concrete placement by pumping or tremie tube to the bottom of borehole excavation is recommended. No pier borehole should be left open overnight. We recommend that pier boreholes not be drilled immediately adjacent to another pier until the concrete in the other pier has attained its initial set. A representative from LGC Geotechnical should be onsite during the drilling of piers to verify the assumptions made during the design stages.

Our borings encountered zones of sands with relatively low fines content (i.e., minimal silts and clays) and these soils are very susceptible to caving. Difficult drilling, caving of drilled holes and encountering oversized material should be anticipated. The contractor should anticipate that any borehole left open for any extended period of time will likely experience additional caving and potential perched groundwater typically from local irrigation.

The contractor should carefully evaluate the onsite geotechnical conditions as it relates to selecting an appropriate construction technique (including, but not limited to, auger type, construction sequence, etc.) for installation of temporary shoring. Refer to the boring logs provided in Appendix B.

#### **4.12 Geotechnical Plan Review**

When available, grading, retaining wall and foundation plans should be reviewed by LGC Geotechnical in order to verify our geotechnical recommendations are implemented. Updated recommendations and/or additional fieldwork may be necessary.

#### **4.13 Geotechnical Observation and Testing During Construction**

The recommendations provided in this report are based on limited subsurface observations and geotechnical analysis. The interpolated subsurface conditions should be checked in the field during construction by a representative of LGC Geotechnical. Geotechnical observation and testing is required per Section 1705 of the 2022 California Building Code (CBC).

Geotechnical observation and/or testing should be performed by LGC Geotechnical at the following stages:

- During temporary shoring installation;
- During grading (e.g., subgrade, removal bottoms, fill placement, etc);
- During basement and retaining wall backfill and compaction;
- During utility trench backfill and compaction;
- After presoaking concrete-flatwork subgrades prior to placement of aggregate base or concrete;
- Preparation of pavement subgrade and placement of aggregate base;
- After building and wall footing excavation and prior to placing reinforcement and/or concrete; and
- When any unusual soil conditions are encountered during any construction operation subsequent to issuance of this report.

## **5.0 LIMITATIONS**

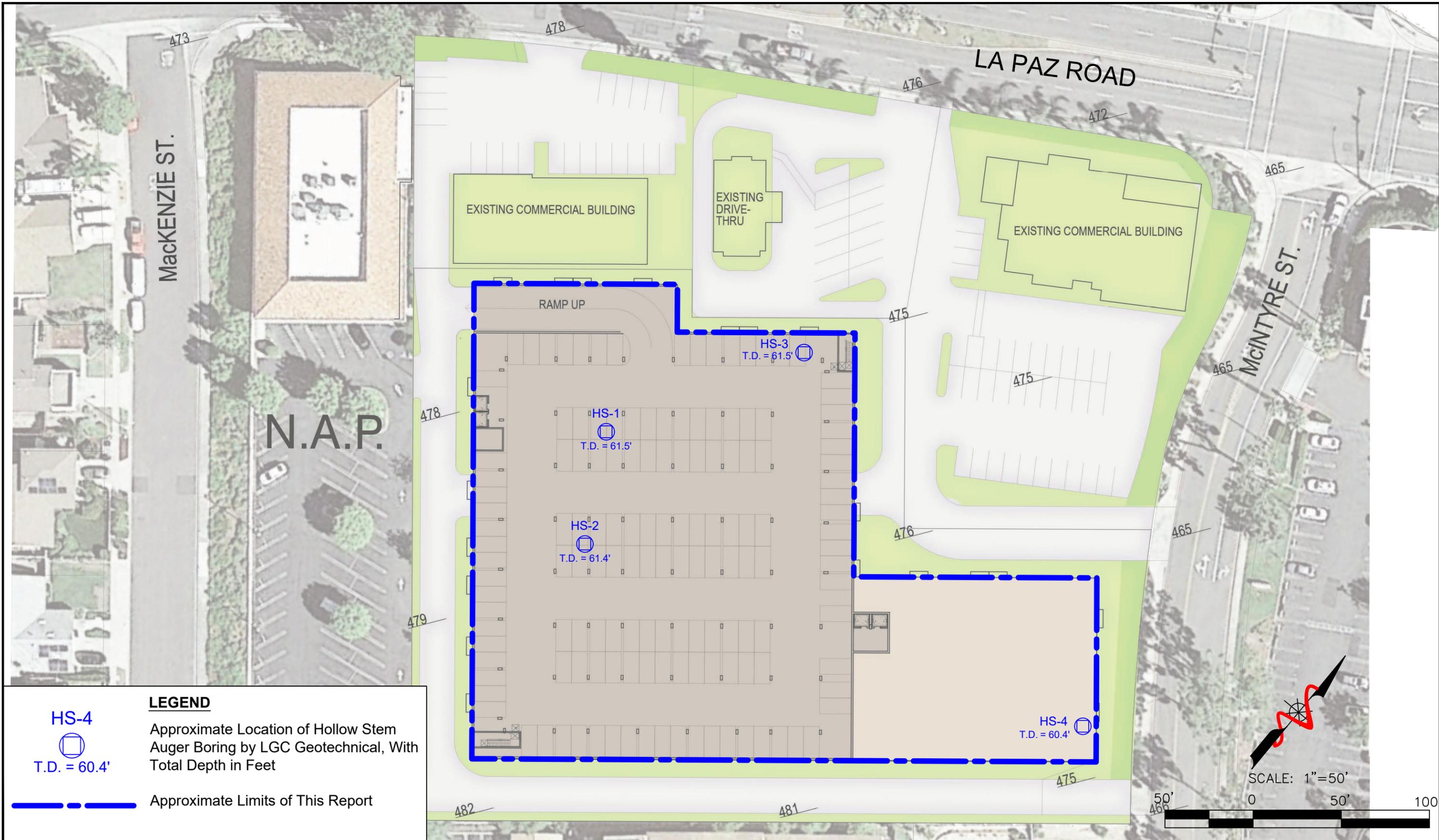
Our services were performed using the degree of care and skill ordinarily exercised, under similar circumstances, by reputable soils engineers and geologists practicing in this or similar localities. No other warranty, expressed or implied, is made as to the conclusions and professional advice included in this report.

This report is based on data obtained from limited observations of the site, which have been extrapolated to characterize the site. While the scope of services performed is considered suitable to adequately characterize the site geotechnical conditions relative to the proposed development, no practical evaluation can completely eliminate uncertainty regarding the anticipated geotechnical conditions in connection with a subject site. Variations may exist and conditions not observed or described in this report may be encountered during grading and construction.

This report is issued with the understanding that it is the responsibility of the owner, or of his/her representative, to ensure that the information and recommendations contained herein are brought to the attention of the other consultants (at a minimum the civil engineer, structural engineer, landscape architect) and incorporated into their plans. The contractor should properly implement the recommendations during construction and notify the owner if they consider any of the recommendations presented herein to be unsafe, or unsuitable.

The findings of this report are valid as of the present date. However, changes in the conditions of a site can and do occur with the passage of time, whether they be due to natural processes or the works of man on this or adjacent properties. The findings, conclusions, and recommendations presented in this report can be relied upon only if LGC Geotechnical has the opportunity to observe the subsurface conditions during grading and construction of the project, in order to confirm that our preliminary findings are representative for the site. This report is intended exclusively for use by the client, any use of or reliance on this report by a third party shall be at such party's sole risk.

In addition, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated wholly or partially by changes outside our control. Therefore, this report is subject to review and modification.



**LEGEND**

**HS-4**  
 T.D. = 60.4'

**HS-1**  
 T.D. = 61.5'

**HS-2**  
 T.D. = 61.4'

**HS-3**  
 T.D. = 61.5'

**HS-4**  
 T.D. = 60.4'

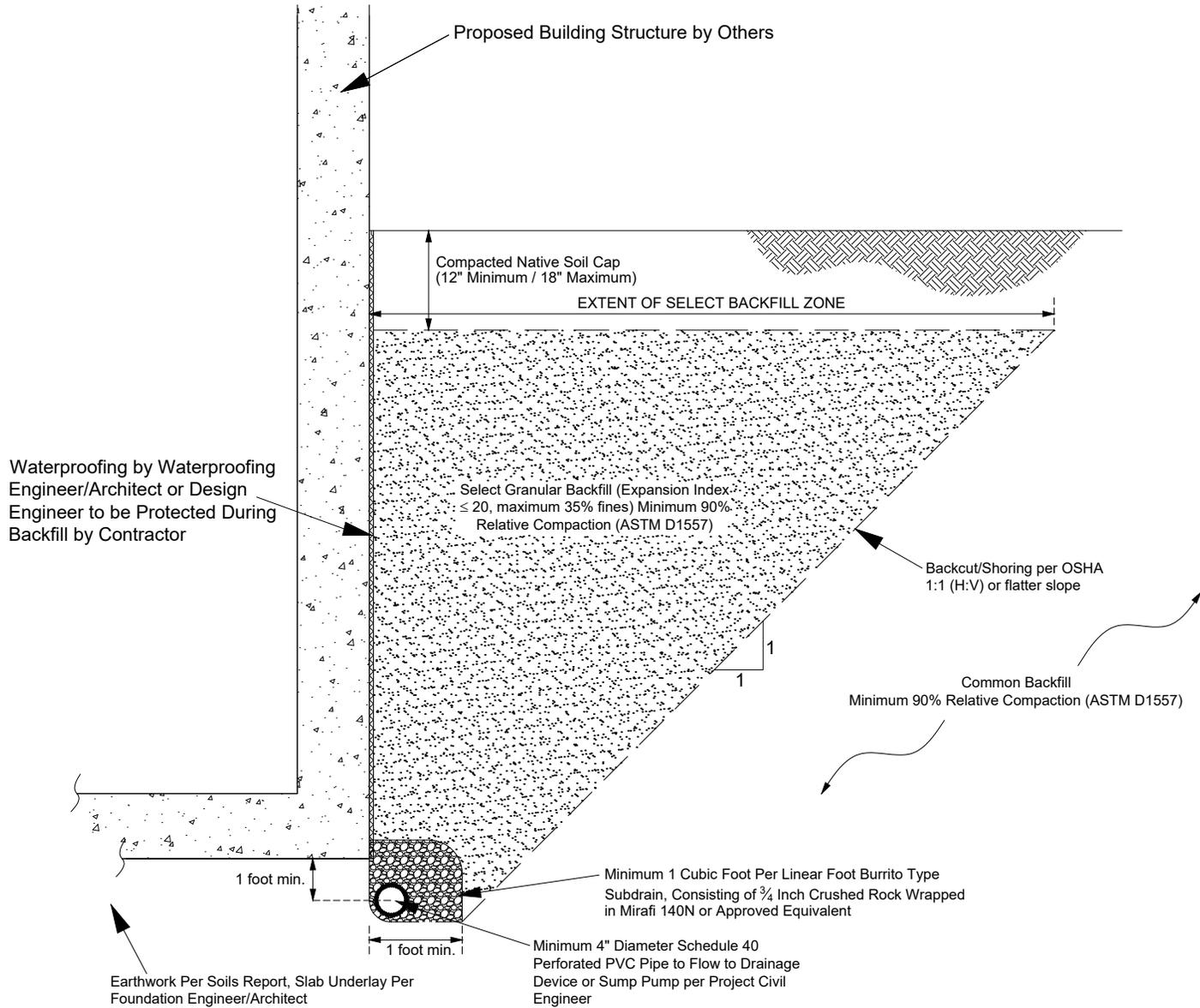
Approximate Limits of This Report

**LGC**  
 Geotechnical, Inc.

**LGC Geotechnical, Inc.**  
 131 Calle Iglesia, Ste. 200  
 San Clemente, CA 92672  
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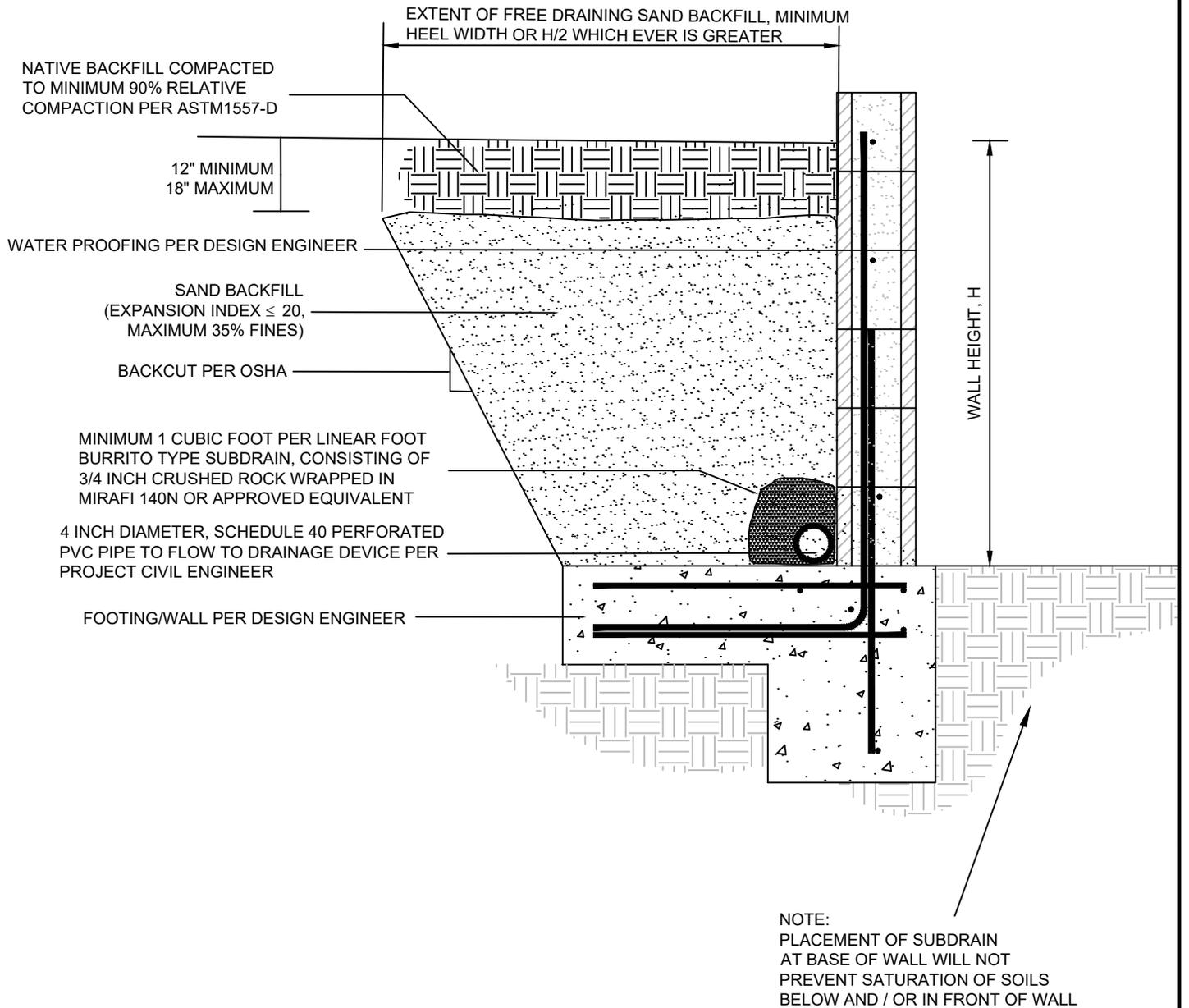
**FIGURE 2**  
**Boring Location Map**

PROJECT NAME	Cape Point - La Paz Village
PROJECT NO.	22023-01
ENG. / GEOL.	BTZ/KBC
SCALE	1" = 50'
DATE	May 2023



NOTE : Granular backfill may be substituted with 3/4 inch crushed compacted rock wrapped in filter fabric. Geotechnical drainage detail will not prevent water seepage into structure, it is only to prevent build up of water pressure against wall.

	<b>FIGURE 3</b> <b>Basement Subterranean Structure Backfill/Subdrain Detail</b>	PROJECT NAME	Cape Point - La Paz Village
		PROJECT NO.	22023-01
		ENG. / GEOL.	BTZ / KBC
		SCALE	Not to Scale
		DATE	May 2023



**FIGURE 4**  
**Retaining Wall**  
**Backfill Detail**

PROJECT NAME	Cape Point - La Paz Village
PROJECT NO.	22023-01
ENG. / GEOL.	BTZ / KBC
SCALE	Not to Scale
DATE	May 2023

***Appendix A***  
***References***

## ***APPENDIX A***

### ***References***

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***Appendix B***  
***Field Exploration Logs***

# Geotechnical Boring Log Borehole HS-1

<b>Date:</b> 4/27/2023	<b>Drilling Company:</b> 2R Drilling
<b>Project Name:</b> Cape Point - La Paz Village	<b>Type of Rig:</b> Truck Mounted Rig
<b>Project Number:</b> 22023-01	<b>Drop:</b> 30" <span style="float: right;"><b>Hole Diameter:</b> 6"</span>
<b>Elevation of Top of Hole:</b> ~479' MSL	<b>Drive Weight:</b> 140 pounds
<b>Hole Location:</b> See Geotechnical Map	Page 1 of 3

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	0							@ 0' - 3" Asphalt Concrete, 3" Aggregate Base	EI SO4
475	2.5	B-1	R-1	7 27 37	107.8	24.4	CL	@ 2.5' - Sandy CLAY: olive gray, very moist, hard	
	5		SPT-1	3 5 10		22.7	ML	@ 5' - Sandy SILT: olive gray, very moist, very stiff	#200
470	7.5		R-2	6 15 18	98.1	26.8	CL-ML	@ 7.5' - Silty CLAY: olive gray, very moist, very stiff	DS
	10		SPT-2	4 7 10		21.8	CL	@ 10' - Sandy CLAY: olive gray, very moist, very stiff	#200 AL
465	15		R-3	10 23 33	103.1	23.0	ML	@ 15' - SILT: olive gray, very moist, hard	CN
460	20		SPT-3	7 12 18		22.6	CL	@ 20' - Sandy CLAY: olive, very moist, hard	#200
455	25		R-4	12 27 47	103.4	22.8		@ 25' - CLAY: olive gray, very moist, hard	
450	30								

	<p style="font-size: small;">THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED. THE DESCRIPTIONS PROVIDED ARE QUALITATIVE FIELD DESCRIPTIONS AND ARE NOT BASED ON QUANTITATIVE ENGINEERING ANALYSIS.</p>	<p style="font-size: x-small;"><b>SAMPLE TYPES:</b></p> <p>B BULK SAMPLE R RING SAMPLE (CA Modified Sampler) G GRAB SAMPLE SPT STANDARD PENETRATION TEST SAMPLE</p> <p style="text-align: center;"> GROUNDWATER TABLE</p>	<p style="font-size: x-small;"><b>TEST TYPES:</b></p> <p>DS DIRECT SHEAR MD MAXIMUM DENSITY SA SIEVE ANALYSIS S&amp;H SIEVE AND HYDROMETER EI EXPANSION INDEX CN CONSOLIDATION CR CORROSION AL ATTERBERG LIMITS CO COLLAPSE/SWELL SO4 SULFATE CONTENT #200 % PASSING # 200 SIEVE</p>
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# Geotechnical Boring Log Borehole HS-1

<b>Date:</b> 4/27/2023	<b>Drilling Company:</b> 2R Drilling
<b>Project Name:</b> Cape Point - La Paz Village	<b>Type of Rig:</b> Truck Mounted Rig
<b>Project Number:</b> 22023-01	<b>Drop:</b> 30" <span style="float: right;"><b>Hole Diameter:</b> 6"</span>
<b>Elevation of Top of Hole:</b> ~479' MSL	<b>Drive Weight:</b> 140 pounds
<b>Hole Location:</b> See Geotechnical Map	Page 2 of 3

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	30		SPT-4	8 18 43		18.9	SC	@ 30' - Clayey SAND: olive, very moist, very dense	-#200
445	35		R-5	47 50/5"	109.5	4.2	SM	@ 35' - Silty SAND: very light brown, slightly moist, very dense	
440	40		SPT-5	13 34 48		10.6	SM	@ 40' - Silty SAND: gray, moist, very dense	-#200
435	45		R-6	30 50/5"	96.5	3.9		@ 45' - Silty SAND: grayish brown, slightly moist, very dense	
430	50		SPT-6	14 26 40		4.3		@ 50' - Silty SAND: olive yellow, slightly moist, very dense	
425	55		R-7	50/5"	102.6	5.8		@ 55' - Silty SAND: light yellowish gray, slightly moist, very dense	
420	60								

	<p>THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED. THE DESCRIPTIONS PROVIDED ARE QUALITATIVE FIELD DESCRIPTIONS AND ARE NOT BASED ON QUANTITATIVE ENGINEERING ANALYSIS.</p>	<p><b>SAMPLE TYPES:</b>                  B BULK SAMPLE                  R RING SAMPLE (CA Modified Sampler)                  G GRAB SAMPLE                  SPT STANDARD PENETRATION TEST SAMPLE</p> <p> GROUNDWATER TABLE</p>	<p><b>TEST TYPES:</b>                  DS DIRECT SHEAR                  MD MAXIMUM DENSITY                  SA SIEVE ANALYSIS                  S&amp;H SIEVE AND HYDROMETER                  EI EXPANSION INDEX                  CN CONSOLIDATION                  CR CORROSION                  AL ATTERBERG LIMITS                  CO COLLAPSE/SWELL                  RV R-VALUE                  #200 % PASSING # 200 SIEVE</p>
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# Geotechnical Boring Log Borehole HS-1

<b>Date:</b> 4/27/2023	<b>Drilling Company:</b> 2R Drilling
<b>Project Name:</b> Cape Point - La Paz Village	<b>Type of Rig:</b> Truck Mounted Rig
<b>Project Number:</b> 22023-01	<b>Drop:</b> 30" <span style="float: right;"><b>Hole Diameter:</b> 6"</span>
<b>Elevation of Top of Hole:</b> ~479' MSL	<b>Drive Weight:</b> 140 pounds
<b>Hole Location:</b> See Geotechnical Map	Page 3 of 3

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	60		SPT-7	11 21 36		22.6	ML	@ 60' - Sandy SILT: grayish brown, very moist, hard	
415	65							Total Depth = 61.5' Groundwater Not Encountered Backfilled with Cuttings and Capped with AC Aquaphalt on 4/27/2023	
410	70								
405	75								
400	80								
395	85								
390	90								

	THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED. THE DESCRIPTIONS PROVIDED ARE QUALITATIVE FIELD DESCRIPTIONS AND ARE NOT BASED ON QUANTITATIVE ENGINEERING ANALYSIS.	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <b>SAMPLE TYPES:</b>                      B BULK SAMPLE                      R RING SAMPLE (CA Modified Sampler)                      G GRAB SAMPLE                      SPT STANDARD PENETRATION TEST SAMPLE    GROUNDWATER TABLE                 </td> <td style="width: 50%; vertical-align: top;"> <b>TEST TYPES:</b>                      DS DIRECT SHEAR                      MD MAXIMUM DENSITY                      SA SIEVE ANALYSIS                      S&amp;H SIEVE AND HYDROMETER                      EI EXPANSION INDEX                      CN CONSOLIDATION                      CR CORROSION                      AL ATTERBERG LIMITS                      CO COLLAPSE/SWELL                      RV R-VALUE                      #200 % PASSING # 200 SIEVE                 </td> </tr> </table>	<b>SAMPLE TYPES:</b> B BULK SAMPLE R RING SAMPLE (CA Modified Sampler) G GRAB SAMPLE SPT STANDARD PENETRATION TEST SAMPLE   GROUNDWATER TABLE	<b>TEST TYPES:</b> DS DIRECT SHEAR MD MAXIMUM DENSITY SA SIEVE ANALYSIS S&H SIEVE AND HYDROMETER EI EXPANSION INDEX CN CONSOLIDATION CR CORROSION AL ATTERBERG LIMITS CO COLLAPSE/SWELL RV R-VALUE #200 % PASSING # 200 SIEVE
<b>SAMPLE TYPES:</b> B BULK SAMPLE R RING SAMPLE (CA Modified Sampler) G GRAB SAMPLE SPT STANDARD PENETRATION TEST SAMPLE   GROUNDWATER TABLE	<b>TEST TYPES:</b> DS DIRECT SHEAR MD MAXIMUM DENSITY SA SIEVE ANALYSIS S&H SIEVE AND HYDROMETER EI EXPANSION INDEX CN CONSOLIDATION CR CORROSION AL ATTERBERG LIMITS CO COLLAPSE/SWELL RV R-VALUE #200 % PASSING # 200 SIEVE			

# Geotechnical Boring Log Borehole HS-2

<b>Date:</b> 4/27/2023	<b>Drilling Company:</b> 2R Drilling
<b>Project Name:</b> Cape Point - La Paz Village	<b>Type of Rig:</b> Truck Mounted Rig
<b>Project Number:</b> 22023-01	<b>Drop:</b> 30" <span style="float: right;"><b>Hole Diameter:</b> 6"</span>
<b>Elevation of Top of Hole:</b> ~477' MSL	<b>Drive Weight:</b> 140 pounds
<b>Hole Location:</b> See Geotechnical Map	Page 1 of 3

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	0							@ 0' - 3" Asphalt Concrete, 4" Aggregate Base	
475		B-1	SPT-1	3 5 10		24.6	CL	@ 2.5' - CLAY: gray, very moist, very stiff	
	5		R-1	8 18 31	103.2	22.5	ML	@ 5' - Sandy SILT: gray, very moist, hard	
470			SPT-2	3 7 12		23.7	CL	@ 7.5' - CLAY: gray, very moist, very stiff	
	10		R-2	7 18 27	99.7	24.8	CL	@ 10' - CLAY: Olive gray, very moist, hard	AL CN
465			SPT-3	7 27 35		19.7	ML	@ 15' - Sandy SILT: grayish brown, very moist, hard	
460			R-3	13 27 40	103.7	21.9	ML	@ 20' - Sandy SILT: pale brown, very moist, hard	
455			SPT-4	4 6 13		23.3	CL	@ 25' - CLAY: grayish brown, very moist, very stiff	
450									
	30								



THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED. THE DESCRIPTIONS PROVIDED ARE QUALITATIVE FIELD DESCRIPTIONS AND ARE NOT BASED ON QUANTITATIVE ENGINEERING ANALYSIS.

<b>SAMPLE TYPES:</b> B BULK SAMPLE R RING SAMPLE (CA Modified Sampler) G GRAB SAMPLE SPT STANDARD PENETRATION TEST SAMPLE  GROUNDWATER TABLE	<b>TEST TYPES:</b> DS DIRECT SHEAR MD MAXIMUM DENSITY SA SIEVE ANALYSIS S&H SIEVE AND HYDROMETER EI EXPANSION INDEX CN CONSOLIDATION CR CORROSION AL ATTERBERG LIMITS CO COLLAPSE/SWELL RV R-VALUE #200 % PASSING # 200 SIEVE
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# Geotechnical Boring Log Borehole HS-2

<b>Date:</b> 4/27/2023	<b>Drilling Company:</b> 2R Drilling
<b>Project Name:</b> Cape Point - La Paz Village	<b>Type of Rig:</b> Truck Mounted Rig
<b>Project Number:</b> 22023-01	<b>Drop:</b> 30" <span style="float: right;"><b>Hole Diameter:</b> 6"</span>
<b>Elevation of Top of Hole:</b> ~477' MSL	<b>Drive Weight:</b> 140 pounds
<b>Hole Location:</b> See Geotechnical Map	Page 2 of 3

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
445	30		R-4	10 34 50/5"	106.7	18.9	SM	@ 30' - Silty SAND: grayish brown, very moist, very dense	
440	35		SPT-5	16 30 23		18.6	SC	@ 35' - Clayey SAND: grayish brown, very moist, very dense	
435	40		R-5	16 50/5"	103.9	21.0	ML	@ 40' - Sandy SILT: olive, very moist, hard	
430	45		SPT-6	15 34 24		11.2	SC	@ 45' - Clayey SAND: light yellowish brown, moist, very dense	
425	50		R-6	35 50/4"	95.6	4.4	SM	@ 50' - Silty SAND: grayish yellow, slightly moist, very dense	
420	55		SPT-7	50/5"		9.7	GC	@ 55' - Clayey Gravel with SAND: olive brown, moist, very dense	

	<p>THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED. THE DESCRIPTIONS PROVIDED ARE QUALITATIVE FIELD DESCRIPTIONS AND ARE NOT BASED ON QUANTITATIVE ENGINEERING ANALYSIS.</p>	<p><b>SAMPLE TYPES:</b>                  B BULK SAMPLE                  R RING SAMPLE (CA Modified Sampler)                  G GRAB SAMPLE                  SPT STANDARD PENETRATION TEST SAMPLE</p> <p> GROUNDWATER TABLE</p>	<p><b>TEST TYPES:</b>                  DS DIRECT SHEAR                  MD MAXIMUM DENSITY                  SA SIEVE ANALYSIS                  S&amp;H SIEVE AND HYDROMETER                  EI EXPANSION INDEX                  CN CONSOLIDATION                  CR CORROSION                  AL ATTERBERG LIMITS                  CO COLLAPSE/SWELL                  RV R-VALUE                  #200 % PASSING # 200 SIEVE</p>
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# Geotechnical Boring Log Borehole HS-2

<b>Date:</b> 4/27/2023	<b>Drilling Company:</b> 2R Drilling
<b>Project Name:</b> Cape Point - La Paz Village	<b>Type of Rig:</b> Truck Mounted Rig
<b>Project Number:</b> 22023-01	<b>Drop:</b> 30" <span style="float: right;"><b>Hole Diameter:</b> 6"</span>
<b>Elevation of Top of Hole:</b> ~477' MSL	<b>Drive Weight:</b> 140 pounds
<b>Hole Location:</b> See Geotechnical Map	Page 3 of 3

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
415	60		R-7	15 32 50/5"	100.3	23.7	CL-ML	@ 60' - Silty CLAY: olive brown, very moist, very stiff	
410	65							Total Depth = 61.4' Groundwater Not Encountered Caving: Hole Measured Approximately 37' After Removal of the Augers Backfilled with Cuttings and Capped with AC Aquaphalt on 4/27/2023	
405	70								
400	75								
395	80								
390	85								
90									

	<p>THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED. THE DESCRIPTIONS PROVIDED ARE QUALITATIVE FIELD DESCRIPTIONS AND ARE NOT BASED ON QUANTITATIVE ENGINEERING ANALYSIS.</p>	<p><b>SAMPLE TYPES:</b>                  B BULK SAMPLE                  R RING SAMPLE (CA Modified Sampler)                  G GRAB SAMPLE                  SPT STANDARD PENETRATION TEST SAMPLE</p> <p style="text-align: center;"> GROUNDWATER TABLE</p>	<p><b>TEST TYPES:</b>                  DS DIRECT SHEAR                  MD MAXIMUM DENSITY                  SA SIEVE ANALYSIS                  S&amp;H SIEVE AND HYDROMETER                  EI EXPANSION INDEX                  CN CONSOLIDATION                  CR CORROSION                  AL ATTERBERG LIMITS                  CO COLLAPSE/SWELL                  RV R-VALUE                  #200 % PASSING # 200 SIEVE</p>
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# Geotechnical Boring Log Borehole HS-3

<b>Date:</b> 4/27/2023	<b>Drilling Company:</b> 2R Drilling
<b>Project Name:</b> Cape Point - La Paz Village	<b>Type of Rig:</b> Truck Mounted Rig
<b>Project Number:</b> 22023-01	<b>Drop:</b> 30" <span style="float: right;"><b>Hole Diameter:</b> 6"</span>
<b>Elevation of Top of Hole:</b> ~476' MSL	<b>Drive Weight:</b> 140 pounds
<b>Hole Location:</b> See Geotechnical Map	Page 1 of 3

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
475	0							@ 0' - 4" Asphalt Concrete, 3" Aggregate Base	
			R-1	14 21 29	102.4	22.2	CL	@ 2.5' - Sandy CLAY: olive, very moist, hard	
470	5	B-1	SPT-1	3 8 14		23.4		@ 5' - Sandy CLAY: olive, very moist, very stiff	#200
			R-2	13 25 32	104.6	21.9	ML	@ 7.5' - Sandy SILT: olive gray, very moist, hard	
465	10		SPT-2	4 8 12		22.4		@ 10' - Sandy SILT: olive, very moist, very stiff	#200
460	15		R-3	11 23 45	104.9	21.6	CL	@ 15' - CLAY: olive gray, very moist, hard	AL CN
455	20		SPT-3	5 15 26		18.6		@ 20' - Sandy CLAY: brownish gray, very moist, hard	
450	25		R-4	22 50/5"	111.7	16.3	SM	@ 25' - Silty SAND: brownish gray, very moist, very dense	
	30								

Last Edited: 5/1/2023



THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED. THE DESCRIPTIONS PROVIDED ARE QUALITATIVE FIELD DESCRIPTIONS AND ARE NOT BASED ON QUANTITATIVE ENGINEERING ANALYSIS.

<b>SAMPLE TYPES:</b> B BULK SAMPLE R RING SAMPLE (CA Modified Sampler) G GRAB SAMPLE SPT STANDARD PENETRATION TEST SAMPLE  GROUNDWATER TABLE	<b>TEST TYPES:</b> DS DIRECT SHEAR MD MAXIMUM DENSITY SA SIEVE ANALYSIS S&H SIEVE AND HYDROMETER EI EXPANSION INDEX CN CONSOLIDATION CR CORROSION AL ATTERBERG LIMITS CO COLLAPSE/SWELL RV R-VALUE #200 % PASSING # 200 SIEVE
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# Geotechnical Boring Log Borehole HS-3

<b>Date:</b> 4/27/2023	<b>Drilling Company:</b> 2R Drilling
<b>Project Name:</b> Cape Point - La Paz Village	<b>Type of Rig:</b> Truck Mounted Rig
<b>Project Number:</b> 22023-01	<b>Drop:</b> 30" <span style="float: right;"><b>Hole Diameter:</b> 6"</span>
<b>Elevation of Top of Hole:</b> ~476' MSL	<b>Drive Weight:</b> 140 pounds
<b>Hole Location:</b> See Geotechnical Map	Page 2 of 3

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
445	30		SPT-4	11 26 30		10.3	SM	@ 30' - Silty SAND: grayish brown, moist, very dense	
440	35		R-5	40 50/5"	90.3	6.0		@ 35' - Silty SAND: yellowish brown, slightly moist, very dense	
435	40		SPT-5	13 14 24		22.1	ML	@ 40' - Silt with SAND: olive gray, very moist, hard	
430	45		R-6	15 50/5"	100.5	24.4	CL-SM	@ 45' - CLAY transitioning to Silty SAND: grayish brown, very moist, hard/very dense	
425	50		SPT-6	15 17 19		20.9	SC	@ 50' - Clayey SAND: brown, very moist, dense	
420	55		R-7	19 30 48	100.7	24.5	ML	@ 55' - Sandy SILT: grayish brown, very moist, hard	
60									

	<p>THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED. THE DESCRIPTIONS PROVIDED ARE QUALITATIVE FIELD DESCRIPTIONS AND ARE NOT BASED ON QUANTITATIVE ENGINEERING ANALYSIS.</p>	<p><b>SAMPLE TYPES:</b>                  B BULK SAMPLE                  R RING SAMPLE (CA Modified Sampler)                  G GRAB SAMPLE                  SPT STANDARD PENETRATION TEST SAMPLE</p> <p> GROUNDWATER TABLE</p>	<p><b>TEST TYPES:</b>                  DS DIRECT SHEAR                  MD MAXIMUM DENSITY                  SA SIEVE ANALYSIS                  S&amp;H SIEVE AND HYDROMETER                  EI EXPANSION INDEX                  CN CONSOLIDATION                  CR CORROSION                  AL ATTERBERG LIMITS                  CO COLLAPSE/SWELL                  RV R-VALUE                  #200 % PASSING # 200 SIEVE</p>
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# Geotechnical Boring Log Borehole HS-3

<b>Date:</b> 4/27/2023	<b>Drilling Company:</b> 2R Drilling
<b>Project Name:</b> Cape Point - La Paz Village	<b>Type of Rig:</b> Truck Mounted Rig
<b>Project Number:</b> 22023-01	<b>Drop:</b> 30" <span style="float: right;"><b>Hole Diameter:</b> 6"</span>
<b>Elevation of Top of Hole:</b> ~476' MSL	<b>Drive Weight:</b> 140 pounds
<b>Hole Location:</b> See Geotechnical Map	Page 3 of 3

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
415	60		SPT-7	11 15 18		22.6	ML	@ 60' - Sandy SILT: grayish brown, very moist, hard	
	65							Total Depth = 61.5' Groundwater Not Encountered Caving: Hole Measured Approximately 37' After Removal of the Augers Backfilled with Cuttings and Capped with AC Aquaphalt on 4/27/2023	
410									
405	70								
400	75								
395	80								
	85								
390									
	90								



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# Geotechnical Boring Log Borehole HS-4

<b>Date:</b> 4/27/2023	<b>Drilling Company:</b> 2R Drilling
<b>Project Name:</b> Cape Point - La Paz Village	<b>Type of Rig:</b> Truck Mounted Rig
<b>Project Number:</b> 22023-01	<b>Drop:</b> 30" <span style="float: right;"><b>Hole Diameter:</b> 6"</span>
<b>Elevation of Top of Hole:</b> ~473' MSL	<b>Drive Weight:</b> 140 pounds
<b>Hole Location:</b> See Geotechnical Map	Page 1 of 3

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	0							@ 0' - 4" Asphalt Concrete, 3" Aggregate Base	EI CR
470		SPT-1		3 5 7		24.4	CL	@ 2.5' - Sandy CLAY: grayish brown, very moist, stiff	
	5	R-1		7 13 19	102.7	22.3		@ 5' - CLAY: olive gray, very moist, very stiff	AL CN
465		SPT-2		3 6 8		24.7		@ 7.5' - Sandy CLAY: grayish brown, very moist, very stiff	
	10	R-2		7 18 25	99.7	25.4	CL-ML	@ 10' - Silty CLAY: olive gray, very moist, hard	CN
460									
	15	SPT-3		5 7 10		25.4	CL	@ 15' - CLAY: gray, very moist, hard	
455									
	20	R-3		5 23 37	101.1	24.4		@ 20' - CLAY: gray, very moist, hard	
450									
	25	SPT-4		5 13 18		21.7	ML	@ 25' - Sandy SILT: grayish brown, very moist, hard	
445									
	30								

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	#200 % PASSING # 200 SIEVE																									

Last Edited: 5/1/2023

# Geotechnical Boring Log Borehole HS-4

<b>Date:</b> 4/27/2023	<b>Drilling Company:</b> 2R Drilling
<b>Project Name:</b> Cape Point - La Paz Village	<b>Type of Rig:</b> Truck Mounted Rig
<b>Project Number:</b> 22023-01	<b>Drop:</b> 30" <span style="float: right;"><b>Hole Diameter:</b> 6"</span>
<b>Elevation of Top of Hole:</b> ~473' MSL	<b>Drive Weight:</b> 140 pounds
<b>Hole Location:</b> See Geotechnical Map	Page 2 of 3

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	30		R-4	18 50/5"	103.4	10.6	SM	@ 30' - Silty SAND: light brown, moist, very dense	
440									
	35		SPT-5	12 20 50/5"		17.5	SC	@ 35' - Clayey SAND: yellowish brown, moist, very dense	
435									
	40		R-5	35 50/5"	110.5	3.9	SP-SC	@ 40' - SAND with Clay: yellowish brown, slightly moist, very dense	
430									
	45		SPT-6	15 40 50/5"		8.5		@ 45' - SAND with Clay: yellowish brown, moist, very dense	
425									
	50		R-6	50/5"	126.0	2.0	SP-SM	@ 50' - SAND with Silt: light yellowish brown, slightly moist, very dense	
420									
	55		SPT-7	50/5"		3.3		@ 55' - SAND with Silt: pale brown, slightly moist, very dense	
415									
	60								

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# Geotechnical Boring Log Borehole HS-4

<b>Date:</b> 4/27/2023	<b>Drilling Company:</b> 2R Drilling
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<b>Hole Location:</b> See Geotechnical Map	Page 3 of 3

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	60		R-7	50/5"	91.3	11.0	SM	Logged By JMN Sampled By JMN Checked By BTZ/KBC  @ 60' - Silty SAND: grayish brown, moist, very dense	
410								Total Depth = 60.4' Groundwater Not Encountered Caving: Hole Measured Approximately 37' After Removal of the Augers Backfilled with Cuttings and Capped with AC Aquaphalt on 4/27/2023	
65									
405									
70									
400									
75									
395									
80									
390									
85									
385									
90									

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***Appendix C***  
***Laboratory Test Results***

## **APPENDIX C**

### **Laboratory Test Results**

The laboratory testing program was directed towards providing quantitative data relating to the relevant engineering properties of the soils. Samples considered representative of site conditions were tested in general accordance with American Society for Testing and Materials (ASTM) procedure and/or California Test Methods (CTM), where applicable. The following summary is a brief outline of the test type and a table summarizing the test results.

Moisture and Density Determination Tests: Moisture content (ASTM D2216) and dry density determinations (ASTM D2937) were performed on driven samples obtained from the test borings. The results of these tests are presented in the boring logs.

Atterberg Limits: The liquid and plastic limits (“Atterberg Limits”) were determined per ASTM D4318 for engineering classification of fine-grained material and presented in the table below. The USCS soil classification indicated in the table below is based on the portion of sample passing the No. 40 sieve and may not necessarily be representative of the entire sample. The plots are provided in this Appendix.

<b>Sample Location</b>	<b>Liquid Limit (%)</b>	<b>Plastic Limit (%)</b>	<b>Plasticity Index (%)</b>	<b>USCS Soil Classification</b>
HS-1 @ 10 ft	42	22	20	CL
HS-2 @ 10 ft	42	25	17	CL
HS-3 @ 15 ft	42	23	19	CL
HS-4 @ 5 ft	44	22	22	CL

Grain Size Distribution/Fines Content: Representative samples were dried, weighed, and soaked in water until individual soil particles were separated (per ASTM D421) and then washed on a No. 200 sieve (ASTM D1140). Where applicable, the portion retained on the No. 200 sieve was dried and then sieved on a U.S. Standard brass sieve set in accordance with ASTM D6913 (sieve).

<b>Sample Location</b>	<b>Description</b>	<b>% Passing # 200 Sieve</b>
HS-1 @ 5 ft	Sandy Silt	70
HS-1 @ 10 ft	Sandy Clay	67
HS-1 @ 20 ft	Sandy Clay	55
HS-1 @ 30 ft	Clayey Sand	41
HS-1 @ 40 ft	Silty Sand	14
HS-3 @ 5 ft	Sandy Clay	61
HS-3 @ 10 ft	Sandy Silt	55

**APPENDIX C (Cont'd)**

**Laboratory Test Results**

Expansion Index: The expansion potential of selected representative samples was evaluated by the Expansion Index Test per ASTM D4829. The results are presented in the table below.

<b>Sample Location</b>	<b>Expansion Index</b>	<b>Expansion Potential*</b>
HS-1 @ 0-5 ft	64	Medium
HS-4 @ 0-5 ft	68	Medium

\* Per ASTM D4829

Direct Shear: A direct shear test was performed on a driven samples, which were soaked for a minimum of 24 hours prior to testing. The samples were tested under various normal loads using a motor-driven, strain-controlled, direct-shear testing apparatus (ASTM D3080). The plot is provided in this Appendix.

Consolidation: Consolidation tests were performed per ASTM D2435. Samples (2.4 inches in diameter and 1 inch in height) were placed in a consolidometer and increasing loads were applied. The samples were allowed to consolidate under “double drainage” and total deformation for each loading step was recorded. The percent consolidation for each load step was recorded as the ratio of the amount of vertical compression to the original sample height. The consolidation pressure curves are provided in this Appendix.

Soluble Sulfates: The soluble sulfate contents of selected samples were determined by standard geochemical methods (CTM 417). The test results are presented in the table below.

<b>Sample Location</b>	<b>Sulfate Content (ppm)</b>	<b>Sulfate Content (%)</b>
HS-1 @ 0-5 ft	753	0.08
HS-4 @ 0-5 ft	95	0.01

Chloride Content: Chloride content was tested per CTM 422. The results are presented below.

<b>Sample Location</b>	<b>Chloride Content (ppm)</b>
HS-4 @ 0-5 ft	80

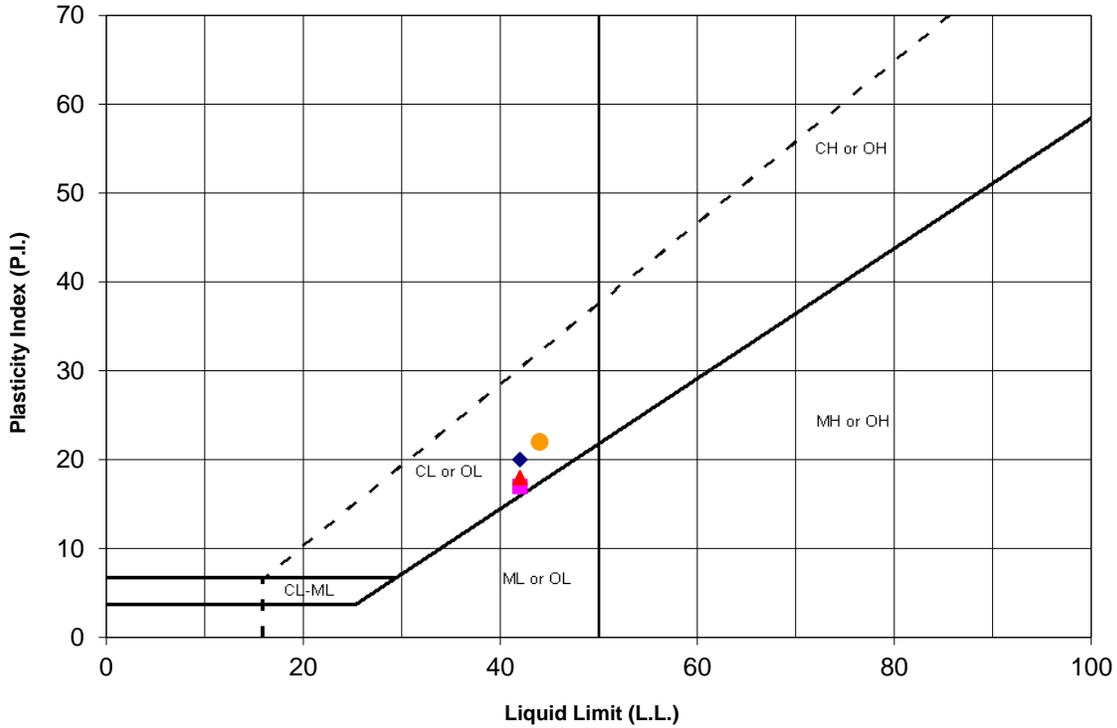
***APPENDIX C (Cont'd)***

**Laboratory Test Results**

Minimum Resistivity and pH Tests: Minimum resistivity and pH tests were performed in general accordance with CTM 643 and standard geochemical methods. The results are presented in the table below.

<b>Sample Location</b>	<b>pH</b>	<b>Minimum Resistivity (ohm-cm)</b>
HS-4 @ 0-5 ft	7.3	1,840

PLASTICITY CHART - CLASSIFICATION OF FINE-GRAINED SOILS



Symbol	Location.:	Sample No.:	Depth (ft)	Passing No. 200 Sieve (%)	Liquid Limit (%) LL	Plastic Limit (%) PL	Plasticity Index (%) PI	USCS
◆	HS-1	SPT-2	10'	67	42	22	20	CL
■	HS-2	R-2	10'	-	42	25	17	CL
▲	HS-3	R-3	15'	-	42	23	19	CL
●	HS-4	R-1	5'	-	44	22	22	CL



**ATTERBERG LIMITS**  
(ASTM D 4318)

Project Number: 22023-01  
Date: May-23

**La Paz Village, Laguna Hills**

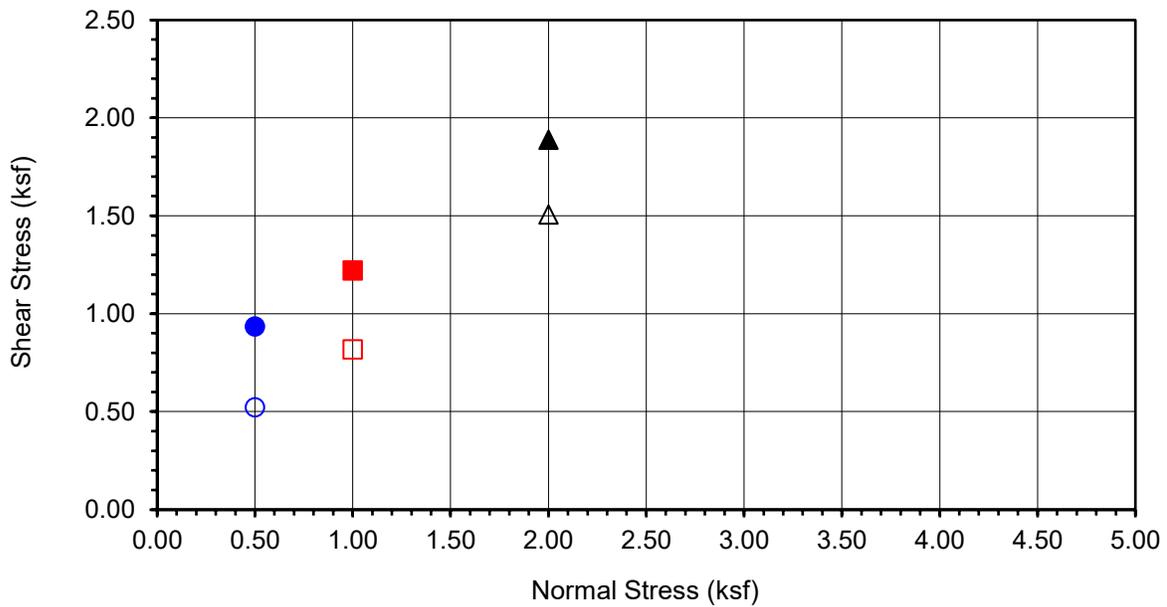
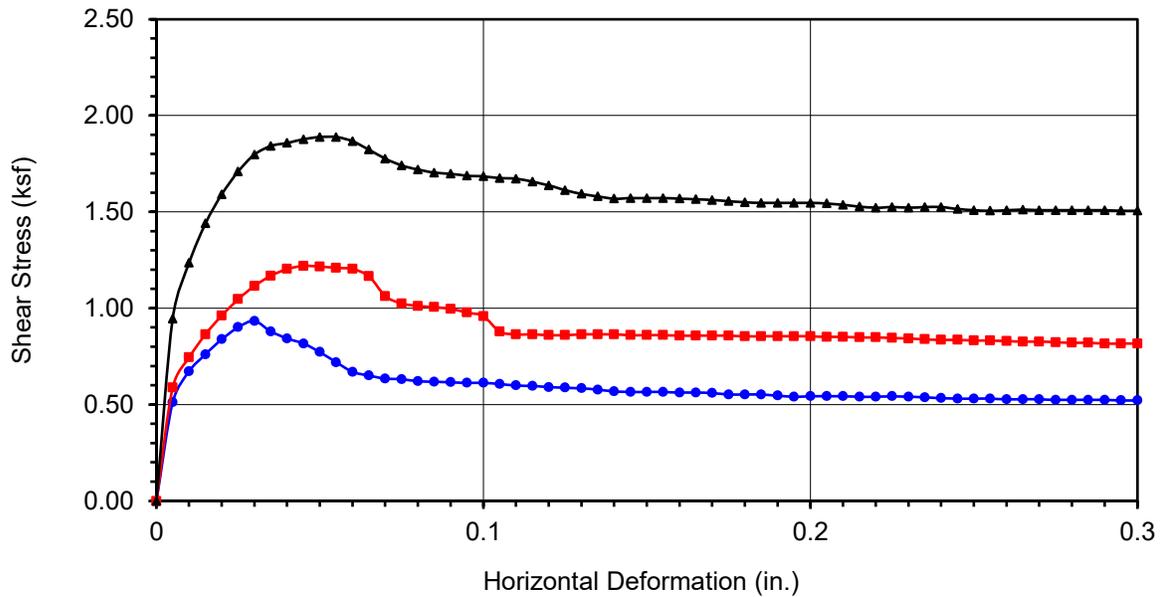
Location	Sample No.	Depth (ft)	Molding Moisture Content (%)	Initial Dry Density (pcf)	Final Moisture Content (%)	Expansion Index	Expansion Classification <sup>1</sup>
HS-1	B-1	0-5'	12.6	100.4	27.8	64	Medium
HS-4	B-1	0-5'	12.9	100.3	27.9	68	Medium



**EXPANSION INDEX**  
(ASTM D 4829)

Project Number: 22023-01  
Date: May-23

**La Paz Village, Laguna Hills**



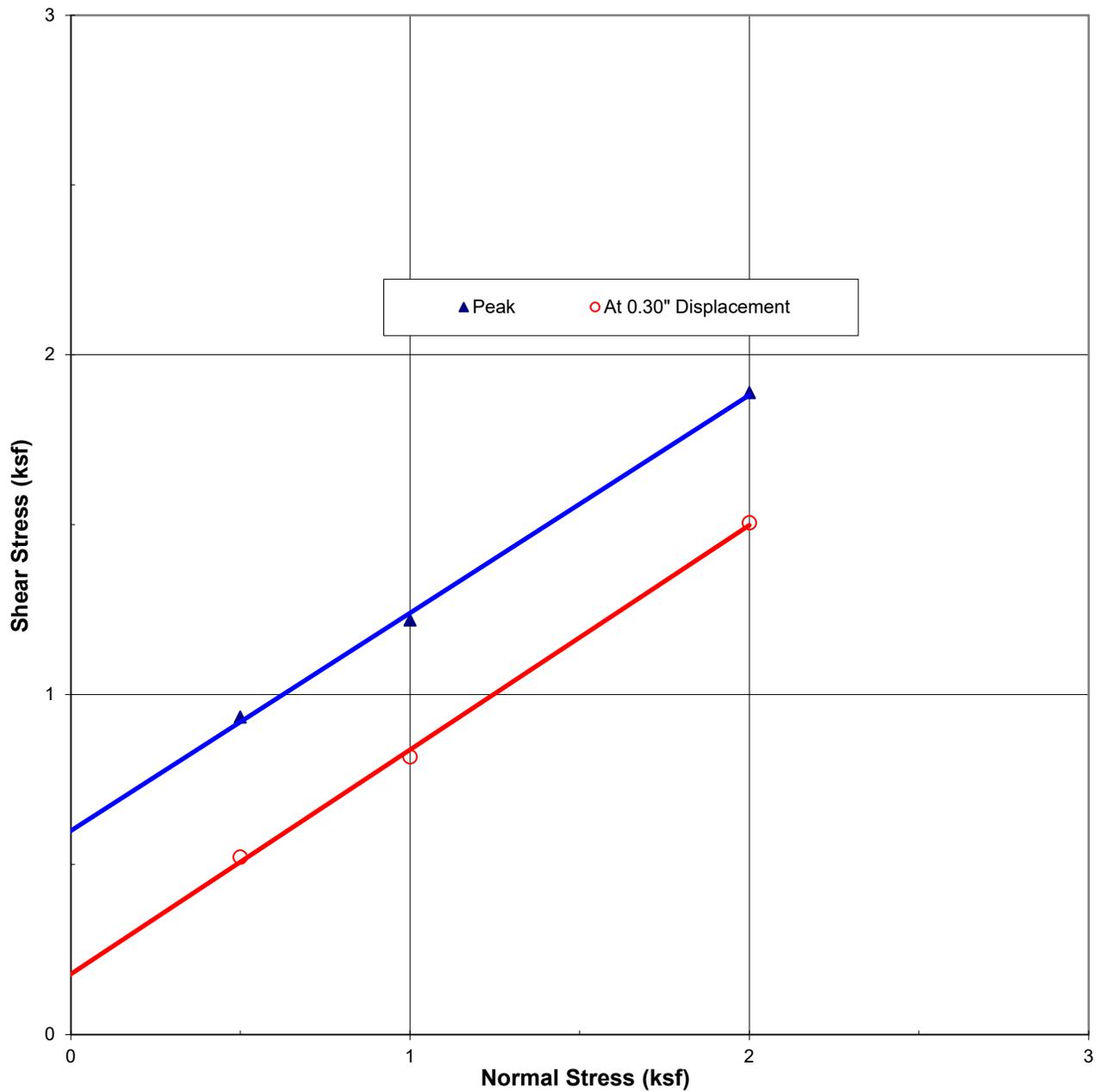
<b>Boring No.</b>	<b>HS-1</b>
<b>Sample No.</b>	<b>R-2</b>
<b>Depth (ft)</b>	<b>7.5</b>
<u>Sample Type:</u>	
Ring	
<u>Soil Identification:</u>	
Olive gray silty clay (CL-ML)	

Normal Stress (kip/ft <sup>2</sup> )	0.500	1.000	2.000
Peak Shear Stress (kip/ft <sup>2</sup> )	● 0.934	■ 1.220	▲ 1.889
Shear Stress @ End of Test (ksf)	○ 0.522	□ 0.817	△ 1.506
Deformation Rate (in./min.)	0.0017	0.0017	0.0017
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	26.76	26.76	26.76
Dry Density (pcf)	97.5	98.3	98.5
Saturation (%)	99.0	101.0	101.5
Soil Height Before Shearing (in.)	1.0012	0.9918	0.9821
Final Moisture Content (%)	30.5	29.6	28.9

**DIRECT SHEAR TEST RESULTS**  
Consolidated Drained - ASTM D 3080

Project No.: 22023-01

La Paz Village, Laguna Hills



Tested Sample:  
HS-1 at 7.5 ft

Peak:  
32.7 Degrees  
0.60 ksf

At 0.30\" Displacement:  
33.5 Degrees  
0.18 ksf



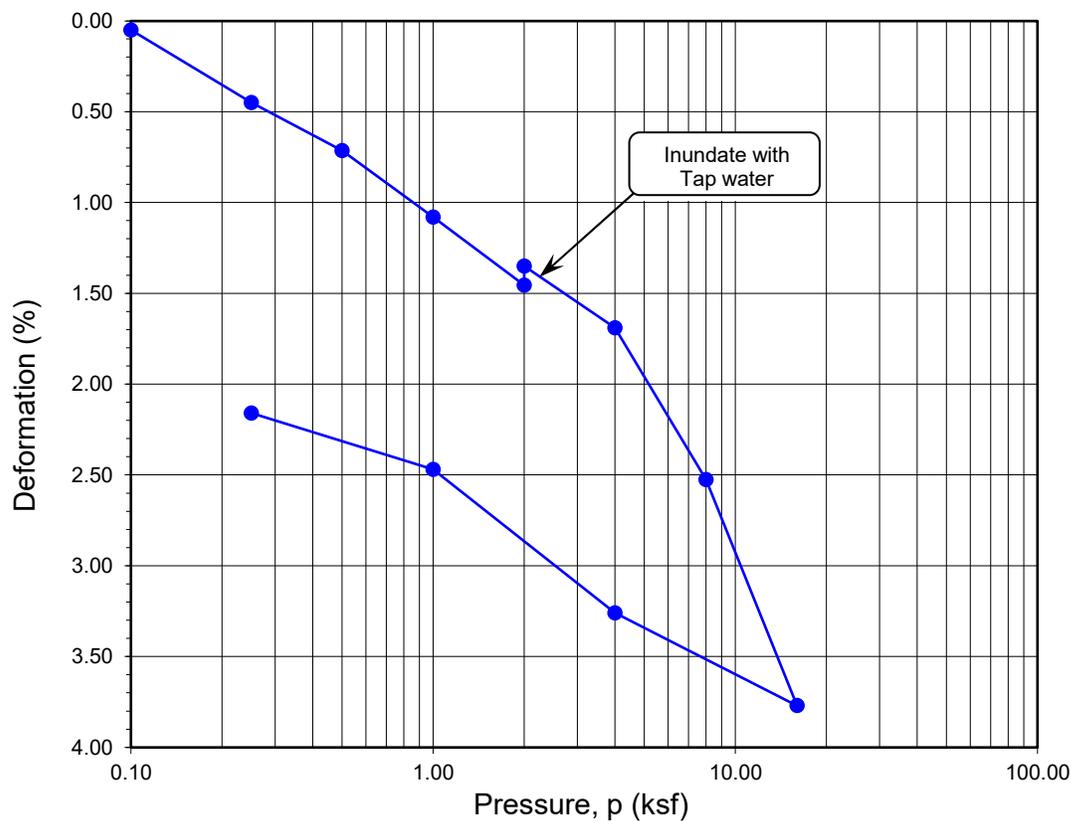
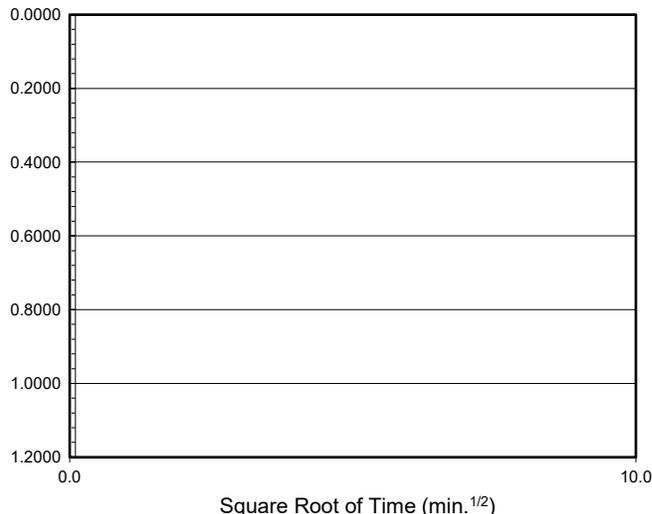
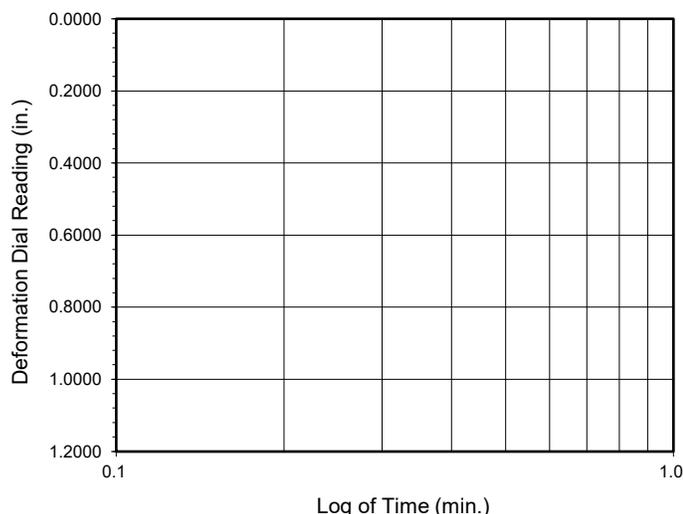
**DIRECT SHEAR PLOT**

Project Number: 22023-01  
Date: May-23

**La Paz Village, Laguna Hills**



Time Readings



Boring No.	Sample No.	Depth (ft.)	Moisture Content (%)		Dry Density (pcf)		Void Ratio		Degree of Saturation (%)	
			Initial	Final	Initial	Final	Initial	Final	Initial	Final
<b>HS-1</b>	<b>R-3</b>	<b>15</b>	<b>23.0</b>	<b>22.6</b>	<b>103.1</b>	<b>105.5</b>	<b>0.653</b>	<b>0.617</b>	<b>96</b>	<b>100</b>

Soil Identification: Olive gray silt (ML)

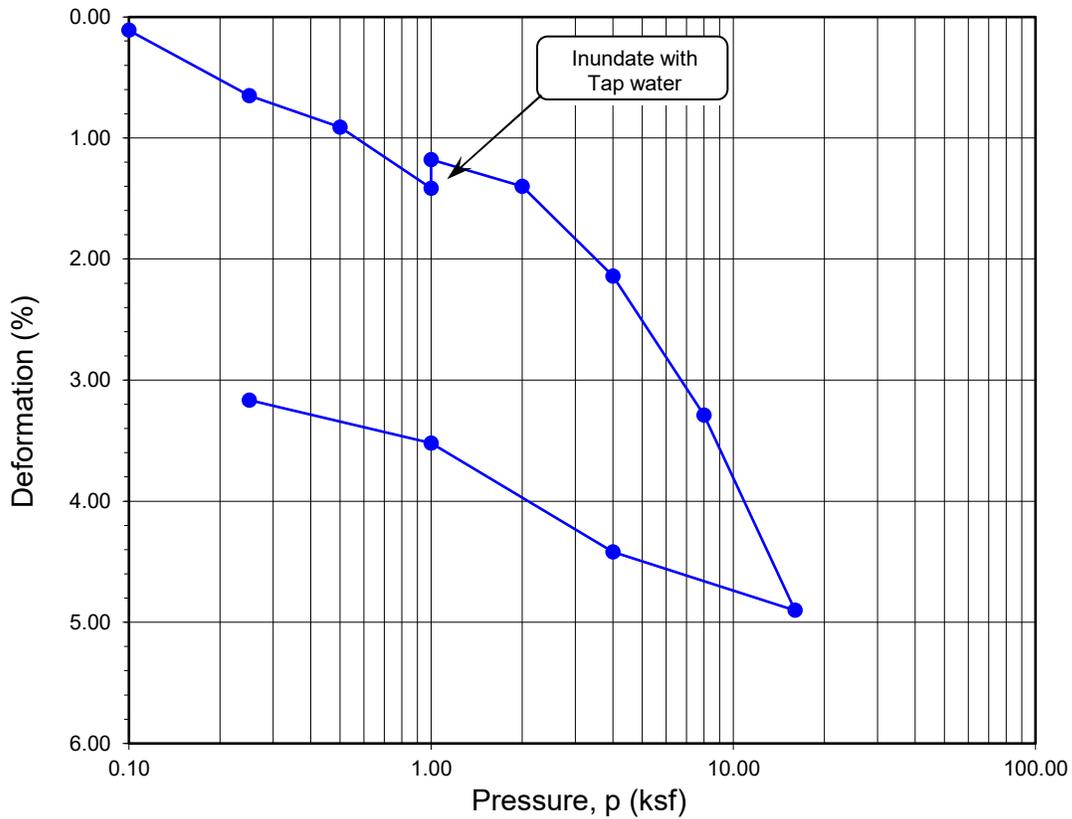
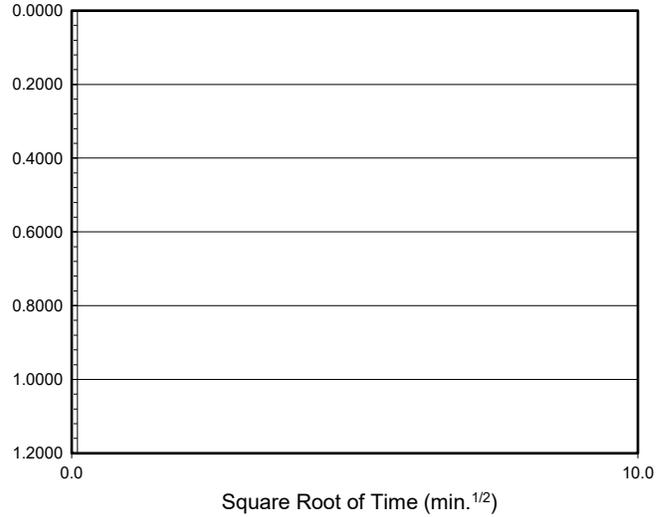
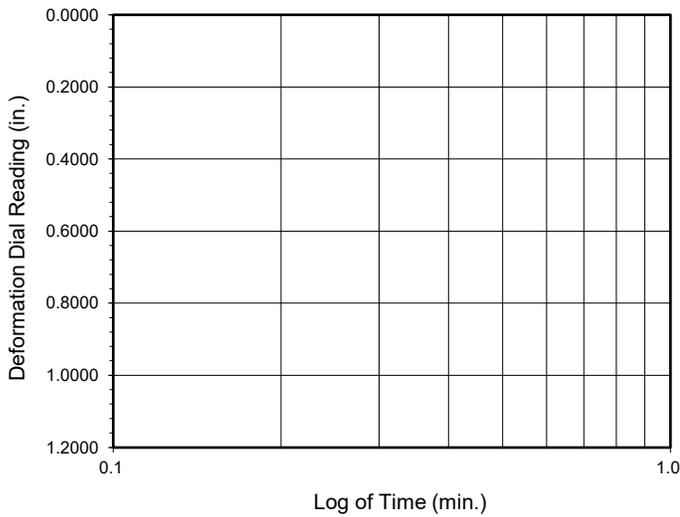
**ONE-DIMENSIONAL CONSOLIDATION  
PROPERTIES of SOILS  
ASTM D 2435**

Project No.: 22023-01

La Paz Village, Laguna Hills



### Time Readings



Boring No.	Sample No.	Depth (ft.)	Moisture Content (%)		Dry Density (pcf)		Void Ratio		Degree of Saturation (%)	
			Initial	Final	Initial	Final	Initial	Final	Initial	Final
<b>HS-2</b>	<b>R-2</b>	<b>10</b>	<b>24.8</b>	<b>25.3</b>	<b>100.7</b>	<b>102.7</b>	<b>0.742</b>	<b>0.687</b>	<b>94</b>	<b>100</b>

Soil Identification: Olive gray clay (CL)

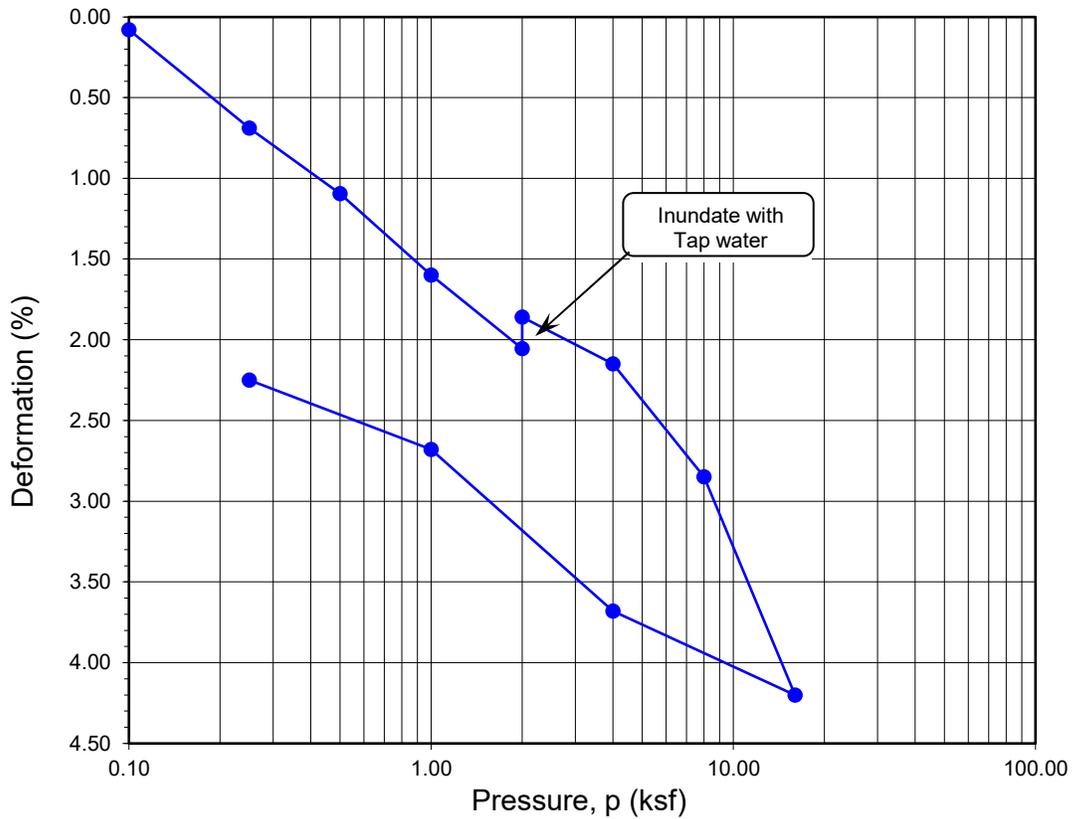
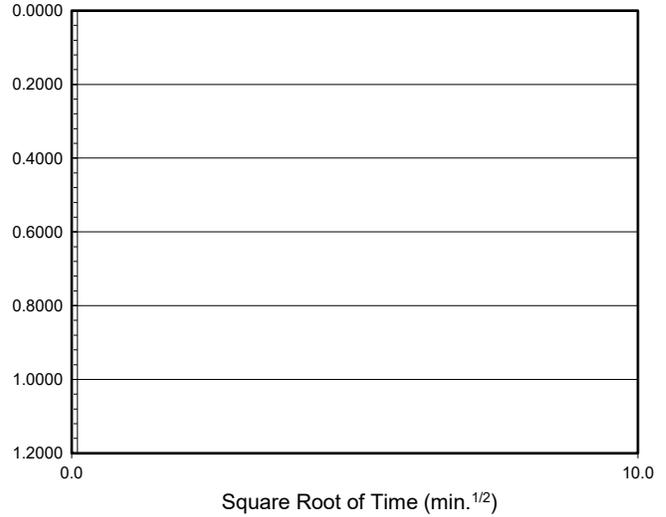
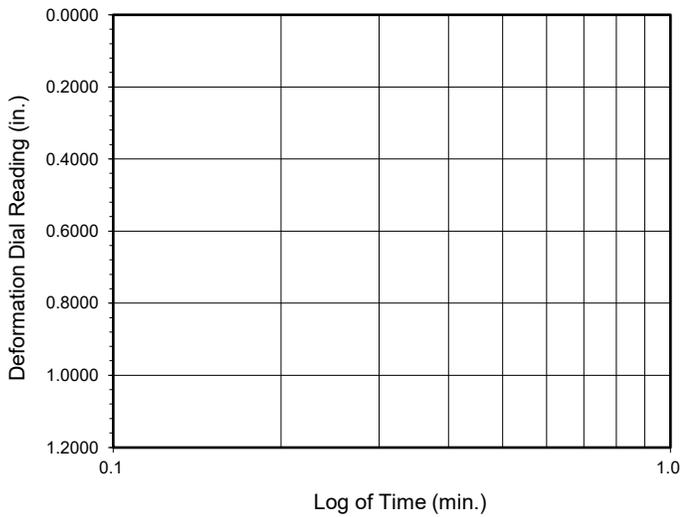
**ONE-DIMENSIONAL CONSOLIDATION  
PROPERTIES of SOILS  
ASTM D 2435**

Project No.: 22023-01

La Paz Village, Laguna Hills



### Time Readings



Boring No.	Sample No.	Depth (ft.)	Moisture Content (%)		Dry Density (pcf)		Void Ratio		Degree of Saturation (%)	
			Initial	Final	Initial	Final	Initial	Final	Initial	Final
<b>HS-3</b>	<b>R-3</b>	<b>15</b>	<b>21.6</b>	<b>22.0</b>	<b>104.9</b>	<b>106.9</b>	<b>0.637</b>	<b>0.600</b>	<b>93</b>	<b>100</b>

Soil Identification: Olive gray clay (CL)

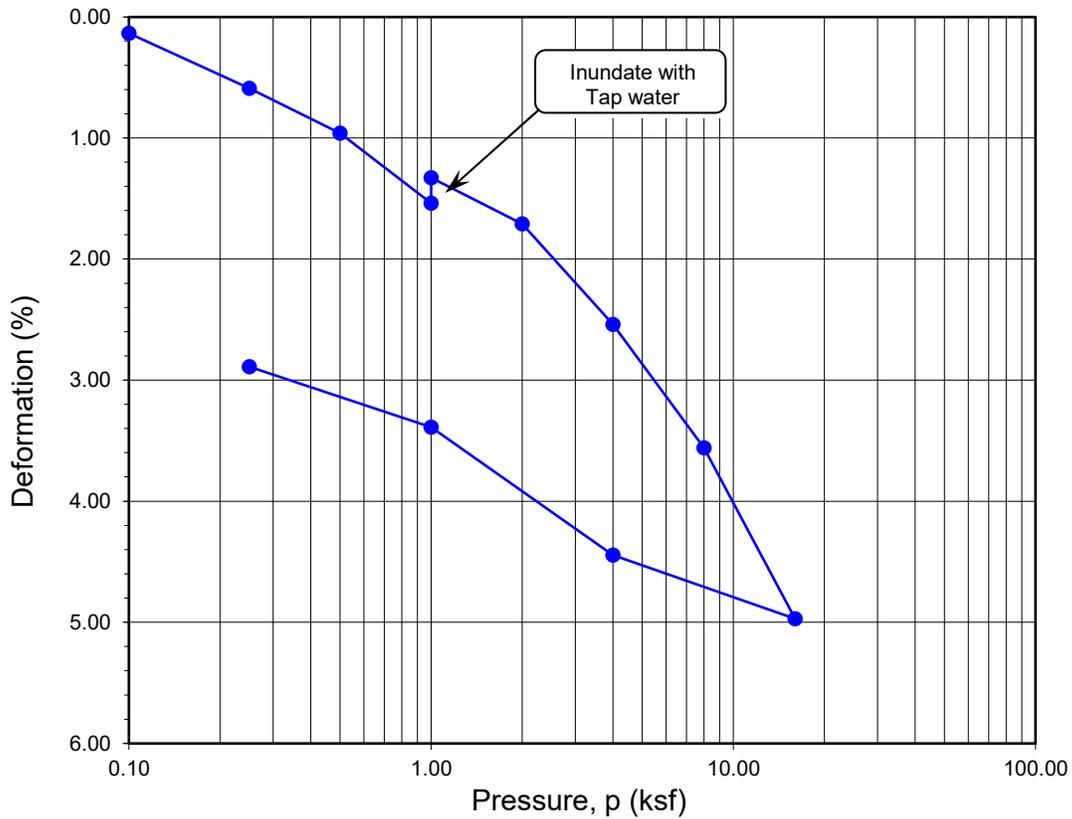
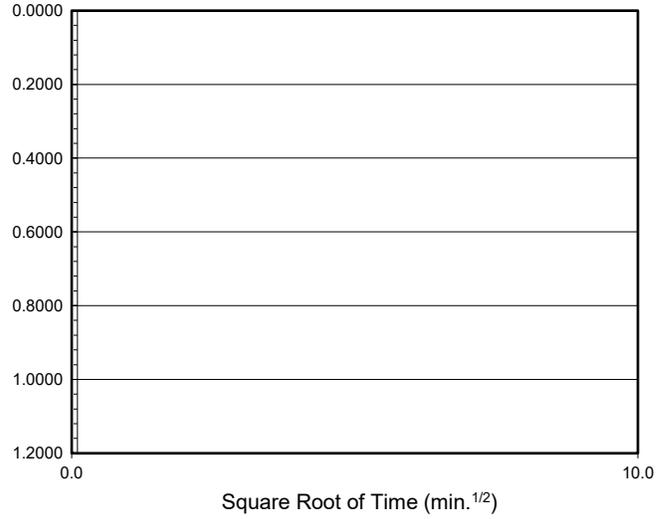
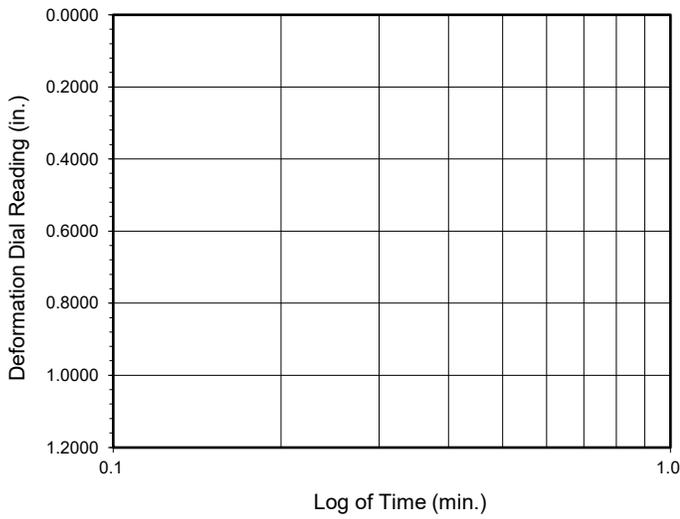
**ONE-DIMENSIONAL CONSOLIDATION  
PROPERTIES of SOILS  
ASTM D 2435**

Project No.: 22023-01

La Paz Village, Laguna Hills



### Time Readings



Boring No.	Sample No.	Depth (ft.)	Moisture Content (%)		Dry Density (pcf)		Void Ratio		Degree of Saturation (%)	
			Initial	Final	Initial	Final	Initial	Final	Initial	Final
<b>HS-4</b>	<b>R-1</b>	<b>5</b>	<b>22.3</b>	<b>23.2</b>	<b>102.7</b>	<b>104.8</b>	<b>0.672</b>	<b>0.624</b>	<b>91</b>	<b>100</b>

Soil Identification: Olive gray clay (CL)

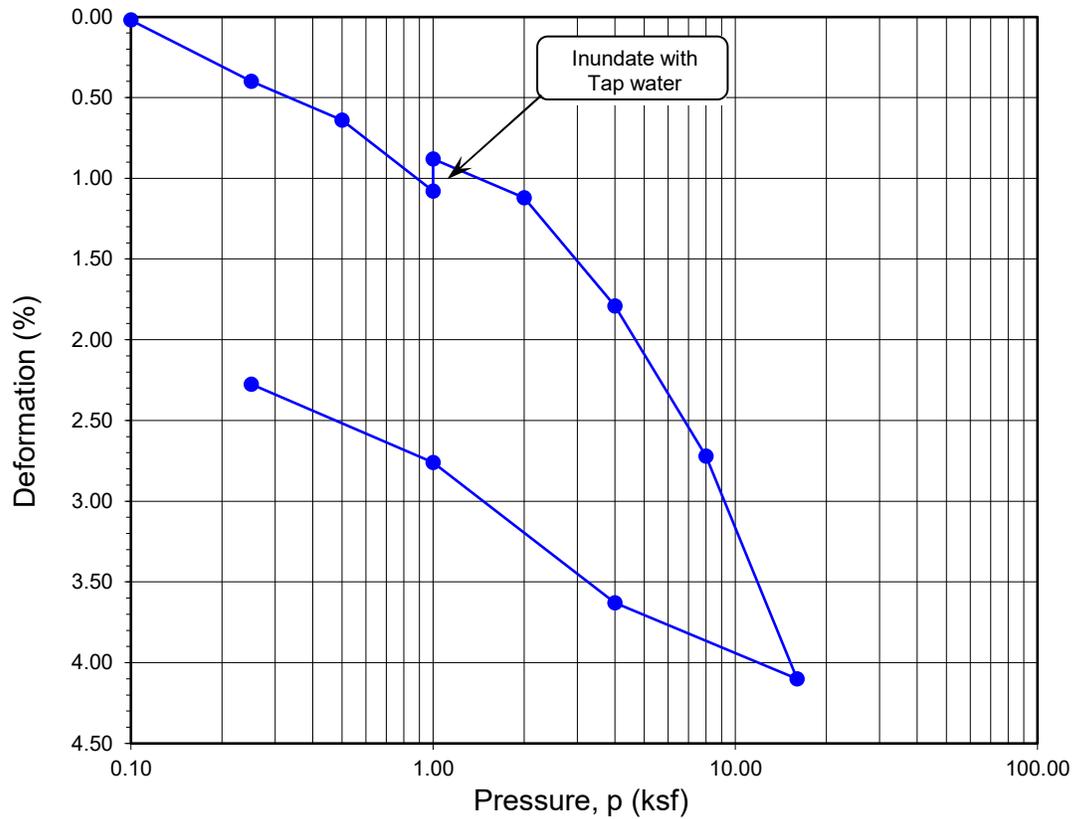
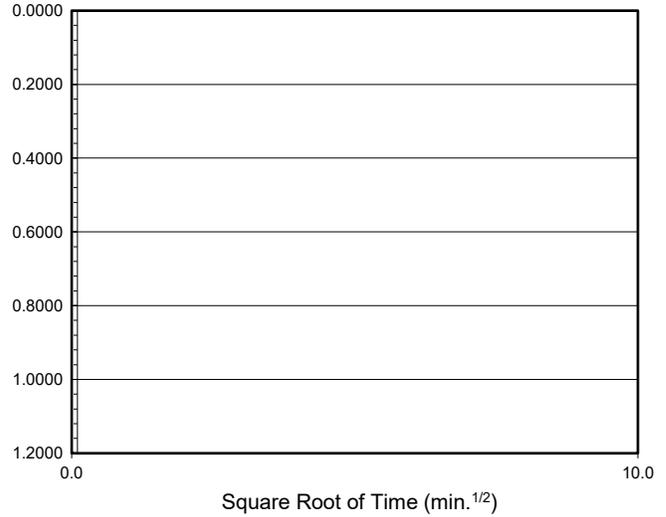
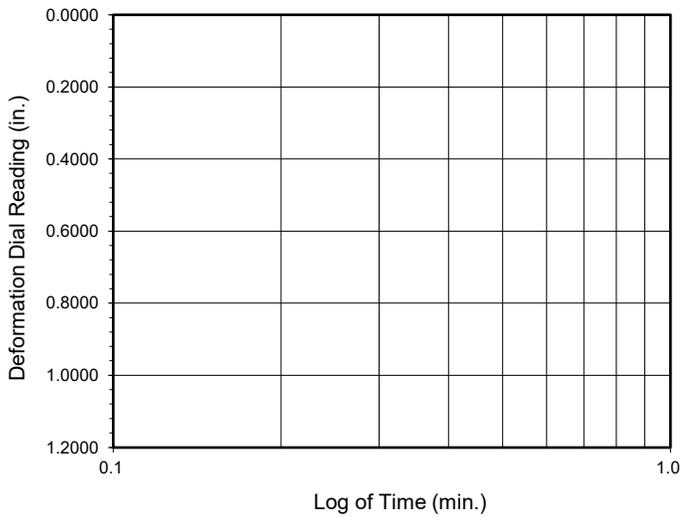
**ONE-DIMENSIONAL CONSOLIDATION  
PROPERTIES of SOILS  
ASTM D 2435**

Project No.: 22023-01

La Paz Village, Laguna Hills



### Time Readings



Boring No.	Sample No.	Depth (ft.)	Moisture Content (%)		Dry Density (pcf)		Void Ratio		Degree of Saturation (%)	
			Initial	Final	Initial	Final	Initial	Final	Initial	Final
<b>HS-4</b>	<b>R-2</b>	<b>10</b>	<b>25.4</b>	<b>23.6</b>	<b>99.7</b>	<b>103.3</b>	<b>0.697</b>	<b>0.658</b>	<b>99</b>	<b>100</b>

Soil Identification: Olive gray silty clay (CL-ML)

**ONE-DIMENSIONAL CONSOLIDATION  
PROPERTIES of SOILS  
ASTM D 2435**

Project No.: 22023-01

La Paz Village, Laguna Hills

**TESTS for SULFATE CONTENT  
CHLORIDE CONTENT and pH of SOILS**

Project Name: La Paz Village, Laguna Hills Tested By : G. Berdy Date: 05/03/23  
 Project No. : 22023-01 Checked By: J. Ward Date: 05/16/23

Boring No.	HS-4			
Sample No.	B-1			
Sample Depth (ft)	0-5			
Soil Identification:	Olive CL			
Wet Weight of Soil + Container (g)	0.00			
Dry Weight of Soil + Container (g)	0.00			
Weight of Container (g)	1.00			
Moisture Content (%)	0.00			
Weight of Soaked Soil (g)	100.41			

**SULFATE CONTENT, DOT California Test 417, Part II**

Beaker No.	61			
Crucible No.	4			
Furnace Temperature (°C)	860			
Time In / Time Out	7:30/8:15			
Duration of Combustion (min)	45			
Wt. of Crucible + Residue (g)	21.6302			
Wt. of Crucible (g)	21.6279			
Wt. of Residue (g) (A)	0.0023			
PPM of Sulfate (A) x 41150	94.64			
<b>PPM of Sulfate, Dry Weight Basis</b>	<b>95</b>			

**CHLORIDE CONTENT, DOT California Test 422**

ml of Extract For Titration (B)	15			
ml of AgNO <sub>3</sub> Soln. Used in Titration (C)	0.6			
PPM of Chloride (C -0.2) * 100 * 30 / B	80			
<b>PPM of Chloride, Dry Wt. Basis</b>	<b>80</b>			

**pH TEST, DOT California Test 643**

pH Value	7.28			
Temperature °C	20.6			

# SOIL RESISTIVITY TEST

## DOT CA TEST 643

Project Name: La Paz Village, Laguna Hills  
 Project No. : 22023-01  
 Boring No.: HS-4  
 Sample No. : B-1

Tested By : G. Berdy Date: 05/08/23  
 Checked By: J. Ward Date: 05/16/23  
 Depth (ft.) : 0-5

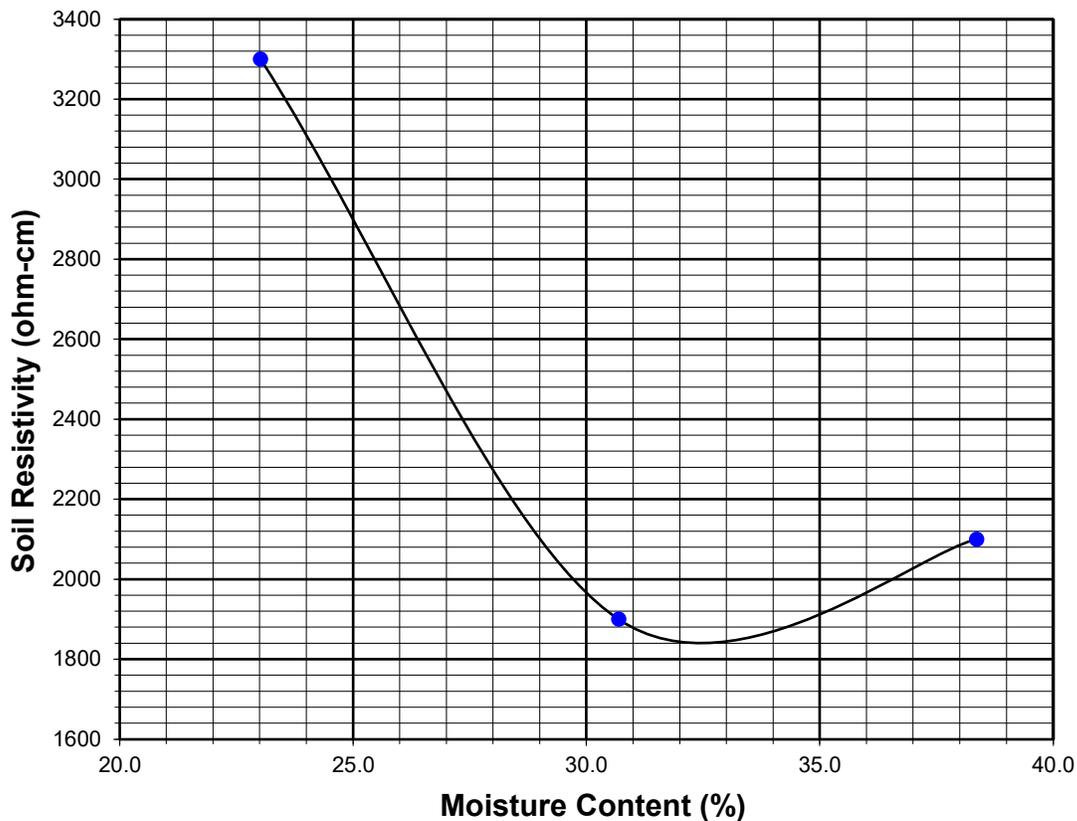
Soil Identification:\* Olive CL

\*California Test 643 requires soil specimens to consist only of portions of samples passing through the No. 8 US Standard Sieve before resistivity testing. Therefore, this test method may not be representative for coarser materials.

Specimen No.	Water Added (ml) (Wa)	Adjusted Moisture Content (MC)	Resistance Reading (ohm)	Soil Resistivity (ohm-cm)
1	30	23.02	3300	3300
2	40	30.69	1900	1900
3	50	38.36	2100	2100
4				
5				

Moisture Content (%) (Mci)	0.00
Wet Wt. of Soil + Cont. (g)	0.00
Dry Wt. of Soil + Cont. (g)	0.00
Wt. of Container (g)	1.00
Container No.	
Initial Soil Wt. (g) (Wt)	130.33
Box Constant	1.000
$MC = (((1 + Mci / 100) \times (Wa / Wt + 1)) - 1) \times 100$	

Min. Resistivity (ohm-cm)	Moisture Content (%)	Sulfate Content (ppm)	Chloride Content (ppm)	Soil pH	
				pH	Temp. (°C)
DOT CA Test 643		DOT CA Test 417 Part II		DOT CA Test 643	
<b>1840</b>	<b>32.5</b>	<b>95</b>	<b>80</b>	<b>7.28</b>	<b>20.6</b>



**TESTS for SULFATE CONTENT  
CHLORIDE CONTENT and pH of SOILS**

Project Name: La Paz Village, Laguna Hills Tested By : G. Berdy Date: 05/03/23  
 Project No. : 22023-01 Checked By: J. Ward Date: 05/16/23

Boring No.	HS-1			
Sample No.	B-1			
Sample Depth (ft)	0-5			
Soil Identification:	Olive CL			
Wet Weight of Soil + Container (g)	0.00			
Dry Weight of Soil + Container (g)	0.00			
Weight of Container (g)	1.00			
Moisture Content (%)	0.00			
Weight of Soaked Soil (g)	100.34			

**SULFATE CONTENT, DOT California Test 417, Part II**

Beaker No.	4			
Crucible No.	2			
Furnace Temperature (°C)	860			
Time In / Time Out	7:30/8:15			
Duration of Combustion (min)	45			
Wt. of Crucible + Residue (g)	28.7368			
Wt. of Crucible (g)	28.7185			
Wt. of Residue (g) (A)	0.0183			
PPM of Sulfate (A) x 41150	753.04			
<b>PPM of Sulfate, Dry Weight Basis</b>	<b>753</b>			

**CHLORIDE CONTENT, DOT California Test 422**

ml of Extract For Titration (B)				
ml of AgNO <sub>3</sub> Soln. Used in Titration (C)				
PPM of Chloride (C -0.2) * 100 * 30 / B				
<b>PPM of Chloride, Dry Wt. Basis</b>	<b>N/A</b>			

**pH TEST, DOT California Test 643**

pH Value	N/A			
Temperature °C				

***Appendix D***  
***General Earthwork & Grading Specifications***

## **General Earthwork and Grading Specifications for Rough Grading**

### **1.0 General**

#### **1.1 Intent**

These General Earthwork and Grading Specifications are for the grading and earthwork shown on the approved grading plan(s) and/or indicated in the geotechnical report(s). These Specifications are a part of the recommendations contained in the geotechnical report(s). In case of conflict, the specific recommendations in the geotechnical report shall supersede these more general Specifications. Observations of the earthwork by the project Geotechnical Consultant during the course of grading may result in new or revised recommendations that could supersede these specifications or the recommendations in the geotechnical report(s).

#### **1.2 The Geotechnical Consultant of Record**

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

Prior to commencement of grading, the Geotechnical Consultant shall review the "work plan" prepared by the Earthwork Contractor (Contractor) and schedule sufficient personnel to perform the appropriate level of observation, mapping, and compaction testing.

During the grading and earthwork operations, the Geotechnical Consultant shall observe, map, and document the subsurface exposures to verify the geotechnical design assumptions. If the observed conditions are found to be significantly different than the interpreted assumptions during the design phase, the Geotechnical Consultant shall inform the owner, recommend appropriate changes in design to accommodate the observed conditions, and notify the review agency where required.

The Geotechnical Consultant shall observe the moisture-conditioning and processing of the subgrade and fill materials and perform relative compaction testing of fill to confirm that the attained level of compaction is being accomplished as specified. The Geotechnical Consultant shall provide the test results to the owner and the Contractor on a routine and frequent basis.

#### **1.3 The Earthwork Contractor**

The Earthwork Contractor (Contractor) shall be qualified, experienced, and knowledgeable in earthwork logistics, preparation and processing of ground to receive fill, moisture-conditioning and processing of fill, and compacting fill. The Contractor shall review and accept the plans, geotechnical report(s), and these Specifications prior to commencement of grading. The Contractor shall be solely responsible for performing the grading in accordance with the project plans and specifications. The Contractor shall prepare and submit to the owner and the Geotechnical Consultant a work plan that indicates the sequence of earthwork grading, the number of "equipment" of work and the estimated quantities of daily earthwork

contemplated for the site prior to commencement of grading. The Contractor shall inform the owner and the Geotechnical Consultant of changes in work schedules and updates to the work plan at least 24 hours in advance of such changes so that appropriate personnel will be available for observation and testing. The Contractor shall not assume that the Geotechnical Consultant is aware of all grading operations.

The Contractor shall have the sole responsibility to provide adequate equipment and methods to accomplish the earthwork in accordance with the applicable grading codes and agency ordinances, these Specifications, and the recommendations in the approved geotechnical report(s) and grading plan(s). If, in the opinion of the Geotechnical Consultant, unsatisfactory conditions, such as unsuitable soil, improper moisture condition, inadequate compaction, insufficient buttress key size, adverse weather, etc., are resulting in a quality of work less than required in these specifications, the Geotechnical Consultant shall reject the work and may recommend to the owner that construction be stopped until the conditions are rectified. It is the contractor's sole responsibility to provide proper fill compaction.

## **2.0 Preparation of Areas to be Filled**

### **2.1 Clearing and Grubbing**

Vegetation, such as brush, grass, roots, and other deleterious material shall be sufficiently removed and properly disposed of in a method acceptable to the owner, governing agencies, and the Geotechnical Consultant.

The Geotechnical Consultant shall evaluate the extent of these removals depending on specific site conditions. Earth fill material shall not contain more than 1 percent of organic materials (by volume). Nesting of the organic materials shall not be allowed.

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

As presently defined by the State of California, most refined petroleum products (gasoline, diesel fuel, motor oil, grease, coolant, etc.) have chemical constituents that are considered to be hazardous waste. As such, the indiscriminate dumping or spillage of these fluids onto the ground may constitute a misdemeanor, punishable by fines and/or imprisonment, and shall not be allowed. The contractor is responsible for all hazardous waste relating to his work. The Geotechnical Consultant does not have expertise in this area. If hazardous waste is a concern, then the Client should acquire the services of a qualified environmental assessor.

### **2.2 Processing**

Existing ground that has been declared satisfactory for support of fill by the Geotechnical Consultant shall be scarified to a minimum depth of 6 inches. Existing ground that is not satisfactory shall be over-excavated as specified in the following section. Scarification shall continue until soils are broken down and free of oversize material and the working surface is reasonably uniform, flat, and free of uneven features that would inhibit uniform compaction.

### **2.3 Over-excavation**

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

### **2.4 Benching**

Where fills are to be placed on ground with slopes steeper than 5:1 (horizontal to vertical units), the ground shall be stepped or benched. Please see the Standard Details for a graphic illustration. The lowest bench or key shall be a minimum of 15 feet wide and at least 2 feet deep, into competent material as evaluated by the Geotechnical Consultant. Other benches shall be excavated a minimum height of 4 feet into competent material or as otherwise recommended by the Geotechnical Consultant. Fill placed on ground sloping flatter than 5:1 shall also be benched or otherwise over-excavated to provide a flat subgrade for the fill.

### **2.5 Evaluation/Acceptance of Fill Areas**

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

## **3.0 Fill Material**

### **3.1 General**

Material to be used as fill shall be essentially free of organic matter and other deleterious substances evaluated and accepted by the Geotechnical Consultant prior to placement. Soils of poor quality, such as those with unacceptable gradation, high expansion potential, or low strength shall be placed in areas acceptable to the Geotechnical Consultant or mixed with other soils to achieve satisfactory fill material.

### **3.2 Oversize**

Oversize material defined as rock, or other irreducible material with a maximum dimension greater than 8 inches, shall not be buried or placed in fill unless location, materials, and placement methods are specifically accepted by the Geotechnical Consultant. Placement operations shall be such that nesting of oversized material does not occur and such that oversize material is completely surrounded by compacted or densified fill. Oversize material shall not be placed within 10 vertical feet of finish grade or within 2 feet of future utilities or underground construction.

### **3.3 Import**

If importing of fill material is required for grading, proposed import material shall meet the requirements of the geotechnical consultant. The potential import source shall be given to the Geotechnical Consultant at least 48 hours (2 working days) before importing begins so that its suitability can be determined and appropriate tests performed.

## **4.0 Fill Placement and Compaction**

### **4.1 Fill Layers**

Approved fill material shall be placed in areas prepared to receive fill (per Section 3.0) in near-horizontal layers not exceeding 8 inches in loose thickness. The Geotechnical Consultant may accept thicker layers if testing indicates the grading procedures can adequately compact the thicker layers. Each layer shall be spread evenly and mixed thoroughly to attain relative uniformity of material and moisture throughout.

### **4.2 Fill Moisture Conditioning**

Fill soils shall be watered, dried back, blended, and/or mixed, as necessary to attain a relatively uniform moisture content at or slightly over optimum. Maximum density and optimum soil moisture content tests shall be performed in accordance with the American Society of Testing and Materials (ASTM Test Method D1557).

### **4.3 Compaction of Fill**

After each layer has been moisture-conditioned, mixed, and evenly spread, it shall be uniformly compacted to not less than 90 percent of maximum dry density (ASTM Test Method D1557). Compaction equipment shall be adequately sized and be either specifically designed for soil compaction or of proven reliability to efficiently achieve the specified level of compaction with uniformity.

### **4.4 Compaction of Fill Slopes**

In addition to normal compaction procedures specified above, compaction of slopes shall be accomplished by backrolling of slopes with sheepfoot rollers at increments of 3 to 4 feet in fill elevation, or by other methods producing satisfactory results acceptable to the Geotechnical Consultant. Upon completion of grading, relative compaction of the fill, out to the slope face, shall be at least 90 percent of maximum density per ASTM Test Method D1557.

### **4.5 Compaction Testing**

Field tests for moisture content and relative compaction of the fill soils shall be performed by the Geotechnical Consultant. Location and frequency of tests shall be at the Consultant's discretion based on field conditions encountered. Compaction test locations will not necessarily be selected on a random basis. Test locations shall be selected to verify adequacy of compaction levels in areas that are judged to be prone to inadequate compaction (such as close to slope faces and at the fill/bedrock benches).

#### **4.6 Frequency of Compaction Testing**

Tests shall be taken at intervals not exceeding 2 feet in vertical rise and/or 1,000 cubic yards of compacted fill soils embankment. In addition, as a guideline, at least one test shall be taken on slope faces for each 5,000 square feet of slope face and/or each 10 feet of vertical height of slope. The Contractor shall assure that fill construction is such that the testing schedule can be accomplished by the Geotechnical Consultant. The Contractor shall stop or slow down the earthwork construction if these minimum standards are not met.

#### **4.7 Compaction Test Locations**

The Geotechnical Consultant shall document the approximate elevation and horizontal coordinates of each test location. The Contractor shall coordinate with the project surveyor to assure that sufficient grade stakes are established so that the Geotechnical Consultant can determine the test locations with sufficient accuracy. At a minimum, two grade stakes within a horizontal distance of 100 feet and vertically less than 5 feet apart from potential test locations shall be provided.

#### **5.0 Subdrain Installation**

Subdrain systems shall be installed in accordance with the approved geotechnical report(s), the grading plan, and the Standard Details. The Geotechnical Consultant may recommend additional subdrains and/or changes in subdrain extent, location, grade, or material depending on conditions encountered during grading. All subdrains shall be surveyed by a land surveyor/civil engineer for line and grade after installation and prior to burial. Sufficient time should be allowed by the Contractor for these surveys.

#### **6.0 Excavation**

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

#### **7.0 Trench Backfills**

**7.1** The Contractor shall follow all OSHA and Cal/OSHA requirements for safety of trench excavations.

**7.2** All bedding and backfill of utility trenches shall be done in accordance with the applicable provisions of Standard Specifications of Public Works Construction. Bedding material shall have a Sand Equivalent greater than 30 (SE>30). The bedding shall be placed to 1 foot over

the top of the conduit and densified by jetting. Backfill shall be placed and densified to a minimum of 90 percent of maximum from 1 foot above the top of the conduit to the surface.

- 7.3 The jetting of the bedding around the conduits shall be observed by the Geotechnical Consultant.
- 7.4 The Geotechnical Consultant shall test the trench backfill for relative compaction. At least one test should be made for every 300 feet of trench and 2 feet of fill.
- 7.5 Lift thickness of trench backfill shall not exceed those allowed in the Standard Specifications of Public Works Construction unless the Contractor can demonstrate to the Geotechnical Consultant that the fill lift can be compacted to the minimum relative compaction by his alternative equipment and method.



Overland Traffic Consultants, Inc.  
952 Manhattan Beach Boulevard, # 100  
Manhattan Beach, CA 90266  
Phone (661) 799 - 8423  
E-mail: otc@overlandtraffic.com

October 2, 2023

Mr. Nick Buchanan  
La Paz Village Investors, LLC  
1010 S El Camino Real, Suite 200  
San Clemente, CA 92672

RE: Update to Transportation VMT Screening Form & Scoping Form - La Paz Village Senior Living, Laguna Hills

Dear Mr. Buchanan,

Overland Traffic Consultants has prepared an updated City of Laguna Hills transportation evaluation based on an updated September 6, 2023 site plan. The update includes a new project description with all housing designated as independent senior living units and excludes retail services that will remain and are not a part of the Project. This transportation analysis package includes an updated Vehicle Miles Traveled (VMT) Screening Form and Traffic Scoping Agreement and trip generation. The Project evaluated includes the removal 28,780 square feet of retail and construction of 180 independent living senior housing units of which 36 are affordable units.

The City of Laguna Hills VMT Guidelines under the California Environmental Quality Act and General Plan Development Review Traffic Study Guidelines, August 2021 (City Guidelines) were used to conduct the analysis. A trip generation evaluation was prepared based on Institute of Transportation Engineers, Trip Generation Manual, 11th Edition. It was found that the proposed Project is estimated to create a net reduction in vehicle trips after trip credits for removal of retail uses. A net 827 fewer daily trips with 25 fewer AM Peak Hour trips and 126 fewer PM Peak Hour trips have been determined.

Included is the City of Laguna Hills required (VMT) Screening Form for Land Use Projects demonstrating that the project meets the Net Daily Trip VMT Screening Criteria (2.2-5 on page 6-7 of the City Guidelines). Based on this finding, the proposed Project would create a less than significant impact on VMT.

Additionally, as required by the City Guidelines, a Traffic Scoping Agreement Form has been prepared. This form presents the parameters for an access and circulation study. The existing driveways to the proposed Project Site and adjacent retail will remain. No new driveways are proposed. The Project's negative net trip generation indicates that fewer vehicle trips would be on the surrounding roadways and would therefore reduce potential

traffic delays on the surrounding roadways. It is proposed in this document that further transportation evaluation would not be necessary.

Please contact me if you have any questions.

Sincerely,



Liz Fleming, TR 1788  
Vice President

## TRAFFIC STUDY SCOPING AGREEMENT

This letter acknowledges the City of Laguna Hills requirements for traffic impact analysis of the following project. The analysis must follow the City of Laguna Hills Traffic Impact Study Guidelines.

The Traffic Study pertains to which of the following:

- Access / Internal Circulation / Parking Review (less than 50 peak hour trips or 500 ADT)
- Project Buildout Traffic Impact Study (50 or more peak hour trips or 500 ADT)
- Zone Change / General Plan Amendment Traffic Impact Study (more trips than existing zoning / General Plan)
- Parking Study Only
- Other: \_\_\_\_\_

Case Numbers: \_\_\_\_\_

Project Name: La Paz Village Senior Living

Project Address: 25250 - 25758 La Paz Road, Laguna Hills, CA 92653

Project Description: Remove 28,780 sf of retail & construct 180 units of independent living senior housing (includes 36 affordable units)

Consultant  
 Name: Overland Traffic, Liz Fleming  
 Address: 952 Manhattan Bch Bl, #100  
Manhattan Bch, CA 90266  
 Telephone: 310 545-1235

Developer  
 Name: La Paz Village Investors, LLC  
 Address: 1010 S El Camino Real #200  
San Clemente, CA 92672  
 Telephone: 949 441-7442

**A. Trip Generation Source:** ITE Trip Generation, Latest Edition or other approved source

Current GP Land Use \_\_\_\_\_  
 Current Zoning \_\_\_\_\_

Proposed Land Use \_\_\_\_\_  
 Proposed Zoning \_\_\_\_\_

	<u>Current Trip Generation to be Credited:</u>			<u>Project Trip Generation:</u>			<u>Net Trip Generation:</u>		
	In	Out	Total	In	Out	Total	In	Out	Total
AM Trips	<u>37</u>	<u>24</u>	<u>61</u>	<u>12</u>	<u>24</u>	<u>36</u>	<u>-25</u>	<u>0</u>	<u>-25</u>
PM Trips	<u>85</u>	<u>86</u>	<u>171</u>	<u>25</u>	<u>20</u>	<u>45</u>	<u>-60</u>	<u>-66</u>	<u>-126</u>

Internal Trip Allowance  Yes  No \_\_\_\_\_ 0 % Trip Discount  
 Pass-By Trip Allowance  Yes  No \_\_\_\_\_ 10 % Trip Discount Existing Retail only

The full project trips should be applied to the trips at adjacent study area intersections and project driveways and shall be indicated on a report figure.

All existing driveways for the proposed Project Site and adjacent retail will remain. No new driveways are proposed. Net negative trips, fewer vehicles on the surrounding roadway. Further Study not necessary.

**B. Trip Geographic Distribution (%):** North = \_\_\_\_\_ % South = \_\_\_\_\_ % East = \_\_\_\_\_ % West = \_\_\_\_\_ %  
 (attached exhibit for detailed assignment)

**C. Background Traffic**

Project Build-out Year \_\_\_\_\_ Annual Ambient Growth Rate: \_\_\_\_\_ %  
 Phase Year(s) \_\_\_\_\_  
 Other area projects to be analyzed: To be provided by the City of Laguna Hills.  
 Model/Forecast methodology \_\_\_\_\_

**D. Study intersections:** (NOTE: Subject to revision after other projects, trip generation and distribution are determined, or comments from other agencies.)

- |          |           |
|----------|-----------|
| 1. _____ | 8. _____  |
| 2. _____ | 9. _____  |
| 3. _____ | 10. _____ |
| 4. _____ | 11. _____ |
| 5. _____ | 12. _____ |
| 6. _____ | 13. _____ |
| 7. _____ | 14. _____ |

**E. Other Jurisdictional Impacts:**

Is this project within a City's Sphere of Influence or one-mile radius of City boundaries?  Yes  NO

If so, name of adjacent City Jurisdiction: \_\_\_\_\_

**F. Site Plan** (please attach reduced copy)

**G. Specific issues to be addressed in the Study** (To be filled out by the City of Laguna Hills)

\_\_\_\_\_

**H. Existing Conditions**

Traffic count data must be new or recent. Provide traffic count dates if using other than new counts.

Date of counts: \_\_\_\_\_

**I. Level of Service (LOS)**

Acceptable intersection LOS for this study:         D or Better        

**Recommended by:**

  
\_\_\_\_\_  
Consultant's Representative

10/2/23  
Date

**Approved Traffic Study Specifications:**

\_\_\_\_\_  
City of Laguna Hills

\_\_\_\_\_  
Date

# LA PAZ VILLAGE INVESTORS, LLC

September 20, 2023

Larry Longenecker  
Community Development Director  
City of Laguna Hills  
24035 El Toro Road, Laguna Hills, CA 92653

## **RE: Site Development Permit No. 0147-2023 (La Paz Village Senior Living) Resubmittal**

Dear Larry,

We have reviewed your letter 'Notice of Incomplete Application' dated July 11, 2023 and are re-submitting an updated set of plans that address and or clarify a number of issues brought up in your letter.

As part of our SB330 Builders Remedy application we are required to submit a residential project that has a minimum of 20% of the units made available to person who qualify as Low Income. Within the latitude granted under builders remedy the applicant has the discretion to determine a considerable portion of the project – such as amount of parking provided, the height, density, setbacks and so on. Our response includes a 180 unit residential project with a full set of architectural plans, addressing comments relating to fire life safety (including fire department ladder access to the roof), parking program, cross sections, grading plans, landscaping plan, ADA path of travel, pedestrian access, etc. As you will see in our updated set of plans, the project consists of a residential 180-unit age-restricted residential development with fully separate and independent dwelling units, which qualify as “residential units” per RHNA and the Housing Accountability Act (i.e. not a congregate care facility, group living arrangement or convalescent care facility) with common areas that will be used by 3<sup>rd</sup> party vendors for the purpose of providing services to the residents of the building. The services will be provided as part of an ‘a la carte’ program that residents can choose to participate in as they see fit (services to include home help, beauty salon, health care check-ups and other services that might be of a concierge nature in a ‘wellness center’).

Additionally, we would like to address items that we believe either do not apply to our SB330 Builders Remedy application or should be deferred until plans are further along. These items are identified below.

## Section I. Completeness Review

### Item 3 (Checklist Item A5) – Letter of Justification:

- The Notice of Incomplete Application asks for the application to provide a Letter of Justification to summarize how the project is consistent with the general plan and zoning requirements, including how it complies with General Plan requirements and Zoning requirements. A project submitted under SB330 ‘builders remedy’ does not need to be consistent the City’s General Plan or Zoning as long as the project meets the requirements of SB330 which our proposed project does. Therefore, a Letter of Justification is not applicable to our application and should not affect our application’s level of completeness. In lieu of a “Letter of Justification,” we reference the March 2, 2023, letter of our legal counsel, Michael W. Shonafelt to you, which provides a more detailed explanation of how the builder remedy applies to this project.
- Our application is a residential project with 180 residential units that meet HCD’s definition, it includes 20% of the units as low income and all the amenity and ground floor ‘service space’ such as hair salons and treatment rooms are within the scope contemplated under builders remedy.

### Item 4 – Plan Set Title Sheet

- Please see attached plan sheet A-1 for all project data including project square footage, parking, unit count etc.
- Note that the project is still in the approval stage so we have not gone out for construction pricing or financing bids, but at this stage the intent is to use private financing sources.

### Item 5 (Checklist Item C4) – Proposed Site Plan

- Project plans have been updated to include gross building area, building setbacks, easement, ADA path of travel, parking areas and so on.
- The Incomplete Notice requests the submittal address Title 24. The plans submitted are detailed but are schematic drawings. Title 24 will be addressed as a part of our construction drawings later in the design process, which, as you know, is the usual sequence in entitlements and permitting.
- Preliminary lighting plans will also be incorporated later in our planning process.
- Striping and signage plans will also be incorporated later in our planning process.
- We have provided 20 foot wide min fire lanes around the property (on the South and West sides).
- The Notice requests additional information to determine parking compliance with LHMC Section 9-40.030. Because it proceeds in the absence of zoning, a builders remedy project affords flexibility to determine parking for the project, and does not obligate the applicant to comply with LHMC. The applicant has studied parking needs and uses in similar active adult and independent living projects and has provided what we believe is adequate parking for the residents and guests (see sheet A-1 on the project plans).

As it relates to parking on adjacent commercial properties we have not seen and formal parking obligations encumbering the subject property – i.e. the rear 2.5 acre parcel (APN: 620-211-17) that cannot be terminated or won’t go away when the current use changes.

### Item 8 Project Site Cross Section

- These are included in the resubmittal package

Item 9 Colored renderings

- These are included in the resubmittal package

Item 11 (Checklist Item C11) – Preliminary Lighting Plan

- The plans submitted are detailed schematic plans however, a preliminary lighting plan will be provided later in the design process.

Item 13 (Checklist Item C13) – Sign Plan/Master Sign Program

- The plans submitted are detailed schematic plans however, a sign plan/master sign program will be provided later in the design process.
- The City's comment regarding the signage on McIntyre Street is not applicable as that signage is existing.

Item 14 (Checklist Item C14) – Housing Plan

- Applicant will submit a housing plan that is consistent with the requirements of a SB330 Builders Remedy application. We intend to make 20% of each unit type available to tenants that qualify as Low Income (and at rental rates that comply with the Housing Accountability Act) – sheet proposed BMR unit allocation on sheet A-1 which shows 36 units set aside as Low Income. These units will be restricted pursuant to the required affordability period.

Item 15 Preliminary Grading Plan

- See updated preliminary grading plan as part of the revised submittal

Item 16 Preliminary Water Quality Management Plan

- Included in revise submittal

Item 17 Will-Serve Letters

- SDG&E and Moulton Niguel Water are already providing water, sewer and electricity to the site. They have said they will continue to provide those services to the future project and will review and comment on the capacity once we submit our applicant designs for the future project. Since they already serve the subject property they have said they do not need to provide 'Will-Serve' letters.

Item 18 Hazardous Waste Statement

- See attached

Item 19 (Checklist Item C21) – Waste Management Plan

- Applicant will provide a waste management plan later in the design process once we have an approved project to share with CR&R.

#### Item 20 Fire Master Plan

- Applicant will use this next round of City comments to refine the design and use that to prepare the Fire Master Plan. The Applicant did review the project plans with a Fire Consultant and have made adjustments to the plans to provide 'ladder tunnels' allowing firemen access to the podium deck with their ladders and have widened the alley adjacent to the podium deck so as to allow fire ladder trucks the necessary angles to extend their truck's ladder up to access the south west corner of the building's roof. The ladder truck would also be able to access the roof from the parking lots on the north east corner of the building and the OC Board of Realtors access easement on the south west side of the property providing access to the opposite corners of the building roof.

#### Item 23 and 24 Parking and Traffic Study

- The traffic study has been updated to address the discrepancy in the previous report.

#### Fee table

- Since this application is being processed under SB330 Builders Remedy the Applicant does not need to process a General Plan Amendment or Development Code Amendment. The Applicant will pay the appropriate fees as required under Builders Remedy. Could you please review the deposits requested and adjust the request so that it is consistent with a builders remedy application? Applicant is happy to provide an additional deposit to allow the project to continue to be processed while the fees are being reviewed.

#### **Section II. California Environmental Quality Act (CEQA)**

Applicant notes that the City has retained CEQA consultant Dudek to conduct initial studies. We don't yet have a schedule from a General Contractor for the construction of the project nor do we have construction vehicle counts or trips, but will be able to work with Dudek and provide that information as the plans develop. The Applicant will supply the CAD files to the consultant for the shade and shadow studies or alternatively will produce those studies for the City based on direction on specific angles and so on. It is worth noting that the Permit Streamlining Act makes clear that an applicant need not produce the all the information required for the public agency (the City) to make a final action on the project, not all the information necessary to conduct its CEQA review as a requirement for submitting a complete application. (Gov. Code, § 65944, subd. (b), (c).)

The Applicant as part of their own environmental due diligence conducted Phase I and Phase II studies and determined that while there was a dry cleaner on the subject property, the contamination levels of TCE are fairly low, didn't impact the ground water and will likely be relatively simple to remediate as part of the demolition of the existing building. The application has also provided an initial traffic study which includes VMT scoping which shows that the existing center generates more traffic than the proposed development. Applicant will provide further information such as shade and shadow analysis, construction related items such as phasing and equipment type, excavation depth and so on later in the design process.

### Section III Statutory Non-Compliance

The Applicant submitted our builders remedy application on December 12<sup>th</sup>, 2022 while the City of Laguna Hills' Housing Element was out of compliance with HCD, and followed up with a formal submittal on July 11<sup>th</sup>, 2023, which was within the 180 day period allowed. Our letter to the City dated July 20<sup>th</sup>, 2023 (see attached) addresses the majority of the issues brought up in this section, but we would like to reaffirm that application is for 180 residential units with 20% of them offered as Low Income which is within the 20% allowed deviation from the project we submitted on December 12<sup>th</sup>, thereby vesting our rights under builders remedy. (See Gov. Code, § 65589.5.)

We are confident that this project will comply with all OCFA fire life safety requirements and that we will be able to address any CEQA impacts to the extent they arise in the initial studies.

The enclosed information and attached plans should be sufficient satisfy the 'Deemed Complete' threshold, but to the extent there is additional information required we will continue to work with City staff until we meet that goal.

We look forward to continued discussions on this exciting project.

Sincerely

A handwritten signature in black ink, appearing to read "Nick Buchanan". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Nick Buchanan

La Paz Village Investors, LLC

1010 S El Camino Real, Suite 200, San Clemente, CA 92672



Newmeyer & Dillion LLP  
895 Dove Street  
Fifth Floor  
Newport Beach, CA 92660  
949 854 7000

March 2, 2023

Michael W. Shonafelt  
Michael.Shonafelt@ndlf.com

**VIA EMAIL AND U.S. MAIL**

Larry Longenecker, AICP  
City of Laguna Hills  
24035 El Toro Road  
Laguna Hills, CA 92653  
llongenecker@lagunahillsca.gov

Re: La Paz Village Investors, LLC: 25250 La Paz Road

Dear Mr. Longenecker,

This office represents La Paz Village Investors, LLC (“LPV”) with respect to the above-referenced, mixed-use/affordable housing development proposed at 25250 La Paz Road (“Project”) in the City of Laguna Hills (“City”). This letter supports LPV’s Preliminary Application for the Project (“Preliminary Application”), submitted to the City on December 14, 2022. The Preliminary Application was submitted pursuant to Government Code sections 65941.1 and 65589.5 subdivision (d), colloquially referred to as the “Builders Remedy” of the Housing Accountability Act (“HAA”).

The Builder’s Remedy arises from Government Code section 65589.5 subdivision (d)(5), which provides, in relevant part, that a “local agency **shall not** disapprove a housing development project ... for very low, low-, or moderate-income households ... or condition approval in a manner that renders the housing development project infeasible for development for the use of very low, low-, or moderate-income households” ... **unless** it makes written findings, based upon a preponderance of the evidence in the record” of one of the following:

- (1) The jurisdiction has adopted a housing element in substantial compliance with the Housing Element Law (Gov. Code, § 65580, et seq.), and the jurisdiction has met or exceeded its share of the regional housing need allocation;
- (2) The housing development project as proposed would have a specific, adverse impact upon the public health or safety, and there is no feasible method to satisfactorily mitigate or avoid the specific adverse impact without rendering the development unaffordable to low- and moderate-income households infeasible. A “specific, adverse impact” means a

5299.001 / 10126431.2

significant, quantifiable, direct, and unavoidable impact, based on objective, identified written public health or safety standards, policies, or conditions as they existed on the date the application was deemed complete.

- (3) The denial of the housing development project or imposition of conditions is required to comply with specific state or federal law, and there is no feasible method to comply without rendering the development unaffordable to low- and moderate-income households or rendering the development of the emergency shelter financially infeasible.
- (4) The housing development project is proposed on land zoned for agriculture or resource preservation that is surrounded on at least two sides by land being used for agricultural or resource preservation purposes, or which does not have adequate water or wastewater facilities to serve the project;
- (5) The housing development project “is inconsistent with both the jurisdiction's zoning ordinance and general plan land use designation as specified in any element of the general plan as it existed on the date the application was deemed complete, **and** the jurisdiction has adopted a revised housing element in accordance with Section 65588 that is in substantial compliance with this article.”

(Gov. Code, § 65589.5, subd. (d)(1)-(5), emphasis added.) If none of the above findings can be made based on a preponderance of the evidence in the record, and if the housing development project sets aside at least 20 percent of its units for very low or low-income households (or 100 percent for moderate-income households) the Builders Remedy applies. In most cases, a local government cannot make the first four of the above findings. Indeed, the Legislature made clear its intent that any “adverse impacts” findings would be made only “infrequently.” (*Id.*, § 65589.5, subd. (a)(3).) While the fifth finding is the easiest to satisfy, even that finding cannot be made if the local government does not have a compliant housing element. In such cases, the “remedy” is to require approval of affordable housing projects **even** if they are inconsistent with zoning and the jurisdiction’s general plan. (*Id.*, § 65589.5, subd. (d)(1)-(5).)

The above findings can only be made based on the zoning code and housing element as they existed on the date the application was “deemed complete.” (Gov. Code, § 65589.5, subd. (d)(5).) The Housing Crisis Act of 2019 (SB330), amended the Housing Accountability Act to provide that an application is “deemed complete” on the date of submittal of the preliminary application. In this case, it is a matter of record that: (1) LPV submitted the Preliminary Application on December 14, 2022 (<https://www.lagunahillsca.gov/537/Builders-Remedy>); and (2) the City’s Housing Element was classified by the HCD as “out of compliance” on December 14, 2022, and to this day still carries an “out-of-compliance” designation on the California Department

of Housing and Community Development (“HCD”) Housing Element Compliance Report. An excerpt of that report as of February 27, 2023, is presented here:

Element Compliance Status	ADOPTED		CONDITIONAL		DRAFT		INITIAL DRAFT		NEW CYCLE		SUBSEQUENT DRAFT		Total		Total Jurisdictions
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	
CONDITIONAL	2	0.52%											2	0.37%	539
IN	271	70.21%	9	100.00%	1	12.50%	2	2.94%					283	52.50%	
OUT	113	29.27%			7	87.50%	66	97.06%	17	100.00%	51	100.00%	254	47.12%	
<b>Total</b>	<b>386</b>	<b>100.00%</b>	<b>9</b>	<b>100.00%</b>	<b>8</b>	<b>100.00%</b>	<b>68</b>	<b>100.00%</b>	<b>17</b>	<b>100.00%</b>	<b>51</b>	<b>100.00%</b>	<b>539</b>	<b>100.00%</b>	

County	Jurisdiction	Planning Period	Record Type	Review Status	Date Received	Date Reviewed	Compliance Status
ORANGE	GARDEN GROVE	6	ADOPTED	OUT	11/12/2021	2/10/2022	OUT
ORANGE	HUNTINGTON BEACH	6	SUBSEQUENT DRAFT	IN	8/1/2022	9/30/2022	OUT
ORANGE	IRVINE	6	ADOPTED	IN	5/12/2022	5/24/2022	IN
ORANGE	LA HABRA	6	ADOPTED	IN REVIEW	2/22/2023		OUT
ORANGE	LA PALMA	6	ADOPTED	OUT	10/12/2021	1/10/2022	OUT
ORANGE	LAGUNA BEACH	6	ADOPTED	IN	1/27/2023	2/7/2023	IN
ORANGE	LAGUNA HILLS	6	SUBSEQUENT DRAFT	OUT	8/15/2022	9/28/2022	OUT
ORANGE	LAGUNA NIGUEL	6	ADOPTED	OUT	10/21/2021	1/19/2022	OUT
ORANGE	LAGUNA WOODS	6	ADOPTED	OUT	8/12/2022	10/11/2022	OUT
ORANGE	LAKE FOREST	6	ADOPTED	IN	1/6/2023	2/24/2023	IN
ORANGE	LOS Alamitos	6	SUBSEQUENT	IN	11/22/2022	11/23/2022	OUT

(See <https://www.hcd.ca.gov/planning-and-community-development/housing-open-data-tools/housing-element-review-and-compliance-report>.) The submittal of a preliminary application pursuant to Government Code section 65941.1 gives rise to a vested right to develop a housing development project in accordance with the ordinances, policies, and standards as they were in effect when the preliminary application was submitted. (Gov. Code §65589.5, subs. (d)(5), (o)(1).) Accordingly, because the Preliminary Application was submitted to the City while the City’s Housing Element was out of compliance with the Housing Element Law, the City cannot make any of the required findings under Government Code section 65589.5 subdivision (d) and therefore must comply with the Builders Remedy.

We understand the City’s attorneys have opined, without any evidence, that the City’s Housing Element is, in fact, in “substantial compliance” with the Housing Element Law, despite the HCD’s determination to the contrary. The opinion of the City’s attorneys collides with Government Code section 65589.5 subdivision (d), which requires “**written findings**, based upon a **preponderance of the evidence in the record**” that “the jurisdiction has adopted a revised housing element in accordance with Section 65588 that is in substantial compliance with this article ... .” (Gov. Code, § 65589.5, subd. (d)(5), emphasis added.) The Legislature’s requirement to adopt “written findings” supported by a “preponderance of the evidence in the record” concerning the status of the local government’s housing element makes clear that it requires a far higher standard of proving compliance with the Housing Element Law than merely invoking an off-the-cuff assertion of “substantial compliance.”

In fact, all the evidence in the public records overwhelmingly contradicts the assertion of the City’s legal team. The HCD’s September 28, 2022, letter presents a robust analysis -- on a point-by-point basis -- of the Housing Element’s shortcomings. For instance, the HCD’s letter demonstrates that the Housing Element: (1) does not yet feature an assessment of fair housing (Gov. Code, § 65583 subd. (c)(10)(A)); (2) does not set forth “specific commitment, timing, geographic targeting, and metrics” for delivery of fair housing; (3) does not identify an “inventory of land suitable and available

Larry Longenecker, AICP

March 2, 2023

Page 4

for residential development, including vacant sites and sites having realistic and demonstrated potential for redevelopment” for designated income levels; (4) does not provide an analysis of the relationship of zoning and public facilities and services to those sites (*id.*, § 65583, subd. (a)(3)); (5) does not identify specific actions to “make sites available during the planning period with appropriate zoning and development standards and with services and facilities” to deliver on RHNA shortfalls for each income level that could not be accommodated in the RHNA inventory (*id.*, § 65583, subd. (c)(1)); (6) does not provide sufficient analysis to demonstrate the potential for redevelopment in the planning period; (7) does not adequately describe, with substantial evidence, how existing uses will not present an impediment to additional residential development (*id.*, § 65583.2, subd. (g)(2)). (See Letter of P. McDougall, Senior Program Manager, HCD, to Larry Longenecker regarding the City of Laguna Hills Sixth Cycle Housing Element, 2021-2029 (HCD, Sept. 28, 2023), enclosed.)

On a final note, the HCD determines compliance to arise as of the date it issues its compliance certification pursuant to Government Code section 65585 subdivision (d). (See Letter of Technical Assistance from HCD, dated October 5, 2022, entitled “3030 Nebraska Avenue, Santa Monica – Letter of Technical Assistance,” enclosed). Until that time, the HCD’s Housing Element Review and Compliance Report identify the City’s Housing Element as “Out of Compliance.” The HCD’s determination is the operative date of compliance under the Housing Element Law. Any conclusion to the contrary would upset the carefully crafted statutory process for obtaining approval of housing elements set forth at Government Code sections 65580, et seq. It also would create confusion throughout the State by allowing contradictory assertions of compliance by local jurisdictions. Finally, it would eliminate the efficacy of the HCD’s objective to provide reliable notice to the public regarding the compliance status of housing elements.

If you have any questions about this letter, please do not hesitate to call me.

Very truly yours,



Michael W. Shonafelt

**DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT  
DIVISION OF HOUSING POLICY DEVELOPMENT**

2020 W. El Camino Avenue, Suite 500  
Sacramento, CA 95833  
(916) 263-2911 / FAX (916) 263-7453  
[www.hcd.ca.gov](http://www.hcd.ca.gov)



September 28, 2022

Larry Longenecker, Director  
Community Development Department  
City of Laguna Hills  
24035 El Toro Road  
Laguna Hills, CA 92653

Dear Larry Longenecker:

**RE: City of Laguna Hill's 6<sup>th</sup> Cycle (2021-2029) Revised Draft Housing Element**

Thank you for submitting the City of Laguna Hill's (City) revised draft housing element received for review on August 15, 2022. Pursuant to Government Code section 65585, subdivision (b), the California Department of Housing and Community Development (HCD) is reporting the results of its review. Our review was facilitated by conversations on September 19 and 27, 2022 with you and consultants Jennifer Gastelum and Nicole West. In addition, HCD considered comments from ValueRock Investment Partners, Welcoming Neighbors Home, Cape Point Development, Josh Albrekton, and Stevie Grant pursuant to Government Code section 65585, subdivision (c).

The revised draft element addresses many statutory requirements; however, revisions will be necessary to comply with State Housing Element Law (Article 10.6 of the Gov. Code), as follows:

1. *Affirmatively further[ing] fair housing in accordance with Chapter 15 (commencing with Section 8899.50) of Division 1 of Title 2...shall include an assessment of fair housing in the jurisdiction. (Gov. Code, § 65583, subd. (c)(10)(A).)*

*Promote and affirmatively further fair housing opportunities and promote housing throughout the community or communities for all persons regardless of race, religion, sex, marital status, ancestry, national origin, color, familial status, or disability, and other characteristics... (Gov. Code, § 65583, subd. (c)(5).)*

**Identified Sites and Affirmatively Furthering Fair Housing (AFFH):** The element does not meet this requirement. The element should quantify and evaluate the regional housing need allocation (RHNA) by income group and location and provide analysis at the neighborhood or planning area level. Please see the August 2, 2022 review for more information.

Goals, Actions, Metrics, and Milestones: While the element has added actions to various programs, programs must generally be revised with specific commitment, timing, geographic targeting, and metrics to have a significant and beneficial impact on fair housing conditions. As noted in the August 2, 2022 review, programs that should be revised with geographic targeting include Program 5 (Foreclosure Referral Program), 9 (SB 2 Grant Implementation), 13 (Continuum of Care funding), 14 (Displacement Prevention and Mitigation), 15 (Affordable Housing Developer Partnerships), 17 (Accessibility), and 21 (Facilitate Affordable Development on Identified Sites). Programs that should be revised with AFFH metrics include Program 2 (State Franchise Tax Board Code Enforcement), 3 (Housing Rehabilitation), 4 (At-Risk Units), 5 (Foreclosure Referral), 6 (Urban Village Specific Plan), 7 (Zoning Ordinance Update), 8 (Accessory Dwelling Units), 9 (SB 2 Grant Implementation), 12 (CDBG Funding), 13 (Continuum of Care funding), 14 (Displacement Prevention and Mitigation), 15 (Affordable Housing Developer Partnerships), 16 (Fair Housing Program), 17 (Accessibility), and 21 (Facilitate Affordable Development on Identified Sites). Programs that should be revised with specific commitment to timing include Program 5 (Foreclosure Referral Program), 6 (Urban Village Specific Plan), and 8 (Accessory Dwelling Units). In addition, Program 3 should be revised to incorporate a metric such as the percentage of homes rehabilitated in lower-income neighborhoods and Program 18 should be revised to include actions that affirmatively further fair housing with a commitment to adjust should actions not be met.

2. *An inventory of land suitable and available for residential development, including vacant sites and sites having realistic and demonstrated potential for redevelopment during the planning period to meet the locality's housing need for a designated income level, and an analysis of the relationship of zoning and public facilities and services to these sites. (Gov. Code, § 65583, subd. (a)(3).)*

*Identify actions that will be taken to make sites available during the planning period with appropriate zoning and development standards and with services and facilities to accommodate that portion of the city's or county's share of the regional housing need for each income level that could not be accommodated on sites identified in the inventory... (Gov. Code, § 65583, subd. (c)(1).)*

Suitability of Nonvacant Sites: While the element adds analysis for some sites, sites 81, 101, and 103 must provide additional analysis as described in the prior review to demonstrate the potential for redevelopment in the planning period. In addition, as noted in the August 2, 2022 review, the element should also consider public commenters on the revised draft, particularly the inclusion of sites that have expressed interest in residential development in the planning period.

In addition, while the element notes the replacement ratio for the AV and AP apartments, it must still demonstrate how these apartments will likely redevelop and add a program to implement displacement protection strategies. Please see HCD's prior review for additional information.

As a reminder, as noted in the housing element, the housing element relies upon nonvacant sites to accommodate more than 50 percent of the RHNA for lower-income households. For your information, the housing element must demonstrate existing uses are not an impediment to additional residential development and will likely discontinue in the planning period. (Gov. Code, § 65583.2, subd. (g)(2).) Absent findings (e.g., adoption resolution) based on substantial evidence, the existing uses will be presumed to impede additional residential development and will not be utilized toward demonstrating adequate sites to accommodate the RHNA.

Electronic Sites Inventory: For your information, pursuant to Government Code section 65583.3, the City must submit an electronic sites inventory with its adopted housing element. The City must utilize standards, forms, and definitions adopted by HCD. Please see HCD's housing element webpage at <https://www.hcd.ca.gov/community-development/housing-element/index.shtml#element> for a copy of the form and instructions. The City can reach out to HCD at [sitesinventory@hcd.ca.gov](mailto:sitesinventory@hcd.ca.gov) for technical assistance.

Programs: As noted above, the element does not include a complete site analysis; therefore, the adequacy of sites and zoning were not established. Based on the results of a complete sites inventory and analysis, the City may need to add or revise programs to address a shortfall of sites or zoning available to encourage a variety of housing types.

3. *Local governments shall make a diligent effort to achieve public participation of all economic segments of the community in the development of the Housing Element, and the element shall describe this effort. (Gov. Code, § 65583, subd.(c)(9).)*

As noted in the August 2, 2022 review, the element must continue to make a diligent effort to include all segments of the community throughout the preparation of the housing element. For example, once revised, the element should be proactively sent out to all stakeholders who have provided public input at any point in the housing element update process. In addition, the element should explicitly evaluate and incorporate, as appropriate, public comments, describe how the element was shaped by public comments, and describe reasons why public comments were not incorporated into the review.

The element will meet the statutory requirements of State Housing Element Law once it has been revised and adopted to comply with the above requirements.

For your information, pursuant to Senate Bill 197 (Chapter 70, Statutes of 2022), as the City did not adopt a compliant housing element within 120 days of the statutory deadline (October 15, 2021), as of this writing, any rezoning must be completed within one year of the statutory deadline (October 15, 2022). If the element is not found in compliance by October 15, 2022, HCD cannot find the element in compliance until the rezoning is complete.

Several federal, state, and regional funding programs consider housing element compliance as an eligibility or ranking criteria. For example, the CalTrans Senate Bill (SB) 1 Sustainable Communities grant; the Strategic Growth Council and HCD's Affordable Housing and Sustainable Communities programs; and HCD's Permanent Local Housing Allocation consider housing element compliance and/or annual reporting requirements pursuant to Government Code section 65400. With a compliant housing element, the City will meet housing element requirements for these and other funding sources.

Public participation in the development, adoption and implementation of the housing element is essential to effective housing planning. Throughout the housing element process, the City should continue to engage the community, including organizations that represent lower-income and special needs households, by making information regularly available and considering and incorporating comments where appropriate. Please be aware, any revisions to the element must be posted on the local government's website and to email a link to all individuals and organizations that have previously requested notices relating to the local government's housing element at least seven days before submitting to HCD.

For your information, some general plan element updates are triggered by housing element adoption. HCD reminds the City to consider timing provisions and welcomes the opportunity to provide assistance. For information, please see the Technical Advisories issued by the Governor's Office of Planning and Research at: <https://www.opr.ca.gov/planning/general-plan/guidelines.html>.

HCD appreciates the responsiveness, dedication, and hard work you, Jay Wu, Senior Planner; and consultants Jennifer Gastelum and Nicole West provided during the review. We are committed to assisting the City in addressing all statutory requirements of State Housing Element Law. If you have any questions or need additional technical assistance, please contact Jose Ayala, of our staff, at [Jose.Ayala@hcd.ca.gov](mailto:Jose.Ayala@hcd.ca.gov).

Sincerely,

A handwritten signature in blue ink, appearing to read "Paul McDougall", with a stylized flourish at the end.

Paul McDougall  
Senior Program Manager

---

### Hazardous Waste and Substances Statement

Pursuant to Section 65962.5 of the California Government Code, I have consulted the pertinent Hazardous Waste and Substances Sites Lists (Cortese List), consolidated by the State of California, Environmental Protection Agency and have determined the following:

- | Yes                      | No                                  |  |
|--------------------------|-------------------------------------|--|
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Is the site(s), including any alternatives, within the California Department of Toxic and Substance Control (DTSC) <u>EnviroStar</u> <sup>1</sup> database?  |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Is the site(s), including any alternatives, within the State Water Resources Control Board <u>Geotracker</u> <sup>2</sup> database?  |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Has the site(s), including any alternatives, been identified by the State Water Resources Control Board as a solid waste disposal <u>site</u> <sup>3</sup> ?   |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Has the site(s), including any alternatives, listed by the State Water Resources Control Board as "active" with a cease and desist order or been issued a cleanup or abatement <u>order</u> <sup>4</sup> ? |

If any of the above boxes were checked 'yes', the information below is required to be submitted with the project application along with any environmental assessments prepared for the site (e.g. Phase I and Phase II reports):

Name of applicant: LA PAZ VILLAGE INVESTORS, LLC

Address of site (street name and number if available, and ZIP Code): 25254 LA PAZ ROAD, LAGUNA

Assessor's parcel number: APN: 620 - 211 - 17 HILLS, CA

Specify any list pursuant to Section 65962.5 of the Government Code:

Regulatory identification number:

Date of list:

I declare under the penalty of perjury of the laws of the State of California that the foregoing is true and correct.

  
\_\_\_\_\_  
Applicant Signature

09/19/2023  
\_\_\_\_\_  
Date

<sup>1</sup> The full URL is: <https://www.envirostor.dtsc.ca.gov/public/map/?myaddress=concord>

<sup>2</sup> The full URL is: <https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=concord>

<sup>3</sup> The full URL is: <https://calepa.ca.gov/wp-content/uploads/sites/6/2016/10/SiteCleanup-CorteseList-CurrentList.pdf>

<sup>4</sup> The full URL is: <https://calepa.ca.gov/wp-content/uploads/sites/6/2016/10/SiteCleanup-CorteseList-CDOCAOList.xlsx>

## TRAFFIC STUDY SCOPING AGREEMENT

This letter acknowledges the City of Laguna Hills requirements for traffic impact analysis of the following project. The analysis must follow the City of Laguna Hills Traffic Impact Study Guidelines.

The Traffic Study pertains to which of the following:

- Access / Internal Circulation / Parking Review (less than 50 peak hour trips or 500 ADT)
- Project Buildout Traffic Impact Study (50 or more peak hour trips or 500 ADT)
- Zone Change / General Plan Amendment Traffic Impact Study (more trips than existing zoning / General Plan)
- Parking Study Only
- Other: \_\_\_\_\_

Case Numbers: \_\_\_\_\_

Project Name: La Paz Village Senior Living

Project Address: 25250 - 25758 La Paz Road, Laguna Hills, CA 92653

Project Description: Remove 28,780 sf of retail & construct 180 units of independent living senior housing (includes 36 affordable units)

Consultant

Name: Overland Traffic, Liz Fleming  
 Address: 952 Manhattan Bch Bl, #100  
Manhattan Bch, CA 90266  
 Telephone: 310 545-1235

Developer

Name: La Paz Village Investors, LLC  
 Address: 1010 S El Camino Real #200  
San Clemente, CA 92672  
 Telephone: 949 441-7442

**A. Trip Generation Source:** ITE Trip Generation, Latest Edition or other approved source

Current GP Land Use \_\_\_\_\_  
 Current Zoning \_\_\_\_\_

Proposed Land Use \_\_\_\_\_  
 Proposed Zoning \_\_\_\_\_

	<u>Current Trip Generation to be Credited:</u>			<u>Project Trip Generation:</u>			<u>Net Trip Generation:</u>		
	In	Out	Total	In	Out	Total	In	Out	Total
AM Trips	<u>37</u>	<u>24</u>	<u>61</u>	<u>12</u>	<u>24</u>	<u>36</u>	<u>-25</u>	<u>0</u>	<u>-25</u>
PM Trips	<u>85</u>	<u>86</u>	<u>171</u>	<u>25</u>	<u>20</u>	<u>45</u>	<u>-60</u>	<u>-66</u>	<u>-126</u>

Internal Trip Allowance  Yes  No \_\_\_\_\_ 0 % Trip Discount  
 Pass-By Trip Allowance  Yes  No \_\_\_\_\_ 10 % Trip Discount Existing Retail only

The full project trips should be applied to the trips at adjacent study area intersections and project driveways and shall be indicated on a report figure.

All existing driveways for the proposed Project Site and adjacent retail will remain. No new driveways are proposed. Net negative trips, fewer vehicles on the surrounding roadway. Further Study not necessary.

**B. Trip Geographic Distribution (%):** North = \_\_\_\_\_ % South = \_\_\_\_\_ % East = \_\_\_\_\_ % West = \_\_\_\_\_ %  
 (attached exhibit for detailed assignment)

**C. Background Traffic**

Project Build-out Year \_\_\_\_\_ Annual Ambient Growth Rate: \_\_\_\_\_ %  
 Phase Year(s) \_\_\_\_\_  
 Other area projects to be analyzed: To be provided by the City of Laguna Hills.  
 Model/Forecast methodology \_\_\_\_\_

**D. Study intersections:** (NOTE: Subject to revision after other projects, trip generation and distribution are determined, or comments from other agencies.)

- |          |           |
|----------|-----------|
| 1. _____ | 8. _____  |
| 2. _____ | 9. _____  |
| 3. _____ | 10. _____ |
| 4. _____ | 11. _____ |
| 5. _____ | 12. _____ |
| 6. _____ | 13. _____ |
| 7. _____ | 14. _____ |

**E. Other Jurisdictional Impacts:**

Is this project within a City's Sphere of Influence or one-mile radius of City boundaries?  Yes  NO

If so, name of adjacent City Jurisdiction: \_\_\_\_\_

**F. Site Plan** (please attach reduced copy)

**G. Specific issues to be addressed in the Study** (To be filled out by the City of Laguna Hills)

\_\_\_\_\_

**H. Existing Conditions**

Traffic count data must be new or recent. Provide traffic count dates if using other than new counts.

Date of counts: \_\_\_\_\_

**I. Level of Service (LOS)**

Acceptable intersection LOS for this study:         D or Better        

**Recommended by:**

  
\_\_\_\_\_  
Consultant's Representative

10/2/23  
Date

**Approved Traffic Study Specifications:**

\_\_\_\_\_  
City of Laguna Hills

\_\_\_\_\_  
Date