APPENDIX A

ARCHITECTURAL PLANS

MASTER SITE PLAN

SCALE 1" = 60'-0"

SITE DEVELOPMENT DATA:

ADDRESS:	3586 AIRLINE HIGHWAY HOLLISTER CA 95023
A.P.N.:	020-330-010
LAND USE (GENERAL PLAN):	RESIDENTIAL MEDIUM
ZONING:	RM

TOTAL LAND AREA: 7.0 ACRES

SITE A:

BUILDING AREA:

LOWER LEVEL	33 679 S.F
MAIN LEVEL	48 951 S.F
UPPER LEVEL	38 905 S.F.
SUB-TOTAL	121 981 S.F

ROOMS / BEDS:

"A" PLAN (1 BD. / 1 BA)	48 ROOMS =	48 BEDS
"B" PLAN (1 BD. / 1 BA)	18 ROOMS =	18 BEDS
"C" PLAN (1 BD. / 1 BA)	7 ROOMS =	7 BEDS
"D" PLAN (1 BD. / 1 BA)	33 ROOMS =	33 BEDS
"E" PLAN (2 BD. / 1 BA)	11 ROOMS =	22 BEDS
"F" PLAN (2 BD. / 1 BA)	6 ROOMS =	12 BEDS
"L" PLAN (1 BD. / 1 BA)	6 ROOMS =	6 BEDS
"M" PLAN (1 BD. / 1 BA)	3 ROOMS =	3 BEDS
"N" PLAN (2 BD. / 1 BA)	6 ROOMS =	12 BEDS
"P" PLAN (1 BD. / 1 BA)	3 ROOMS =	3 BEDS
SUB-TOTAL =	136 ROOMS =	159 BEDS

SITE B:

BUILDING AREA:

LOWER LEVEL	4 614 S.F
MAIN LEVEL	4 886 S.F.
UPPER LEVEL	4 886 S.F.
SUB-TOTAL	14 386 S.F

ROOMS / UNITS:

"A" PLAN (1 BD. / 1 BA)	12 ROOMS =	12 BEDS
"G" PLAN (1 BD. / 1 BA)	2 ROOMS =	2 BEDS
"H" PLAN (2 BD. / 1 BA)	2 ROOMS =	4 BEDS
"J" PLAN (1 BD. / 1 BA)	3 ROOMS =	3 BEDS
SUB-TOTAL	19 ROOMS =	21 BEDS

TOTAL BUILDING AREA = 136 367 S.F.

TOTAL ROOM / BEDS = 155 ROOMS = 180 BEDS

PARKING REQUIRED:

1 STALL STAFF	=	[illegible] STALLS
1 STALL 4 BEDS (180 / 4)	=	45 STALLS
TOTAL REQUIRED	=	55 STALLS

PARKING PROVIDED: = 65 STALLS

SHEET INDEX

"RIDGEMARK"

AN ASSISTED CARE COMMUNITY

HOLLISTER, CA

SITE LOCATION
AIRLINE HIGHWAY
HOLLISTER CA

VICINITY MAP: HOLLISTER, CA

SCALE: N.T.S.

NORTH

R.L. Davidson, Inc.
ARCHITECTS
7600 North Ingram, #232
Fresno, CA 93711
559.435.3303
www.rldavidson.com

RIDGEMARK
ASSISTED CARE
COMMUNITY
3586 AIRLINE HIGHWAY
HOLLISTER, CA 95023

FOR:
JOHN WYNN

NO.	DATE	ISSUE
	07.19.2017	PRELIMINARY DESIGN
	11.08.2017	COMPLETED PRELIMINARY DESIGN

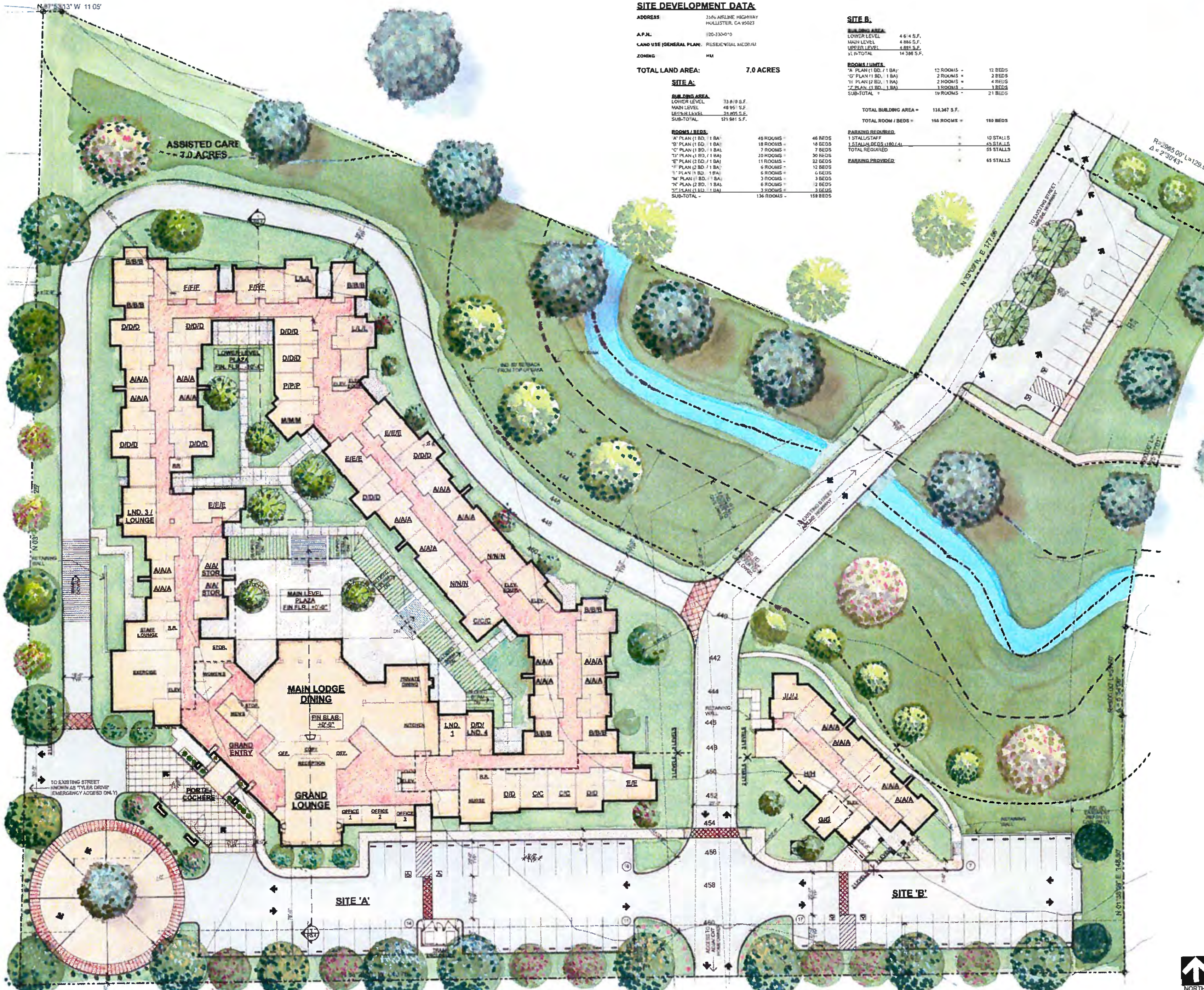
SHEET TITLE

MASTER SITE PLAN

SCALE: AS SHOWN

SHEET NO.

P1.0



SITE DEVELOPMENT DATA:

ADDRESS: 3586 AIRLINE HIGHWAY, HOLLISTER, CA 95023

A.P.N.: 020-330-010

LAND USE (GENERAL PLAN): RESIDENTIAL MEDIUM

ZONING: RM

TOTAL LAND AREA: 7.0 ACRES

SITE A:

BUILDING AREA:

LOWER LEVEL	33 810 S.F.
MAIN LEVEL	48 951 S.F.
UPPER LEVEL	[illegible] S.F.
SUB-TOTAL	121 981 S.F.

ROOMS / BEDS:

"A" PLAN (1 BD. / 1 BA)	46 ROOMS =	46 BEDS
"B" PLAN (1 BD. / 1 BA)	18 ROOMS =	18 BEDS
"C" PLAN (1 BD. / 1 BA)	7 ROOMS =	7 BEDS
"D" PLAN (1 BD. / 1 BA)	30 ROOMS =	30 BEDS
"E" PLAN (2 BD. / 1 BA)	11 ROOMS =	22 BEDS
"F" PLAN (2 BD. / 1 BA)	6 ROOMS =	12 BEDS
"I" PLAN (1 BD. / 1 BA)	6 ROOMS =	6 BEDS
"M" PLAN (1 BD. / 1 BA)	3 ROOMS =	3 BEDS
"N" PLAN (2 BD. / 1 BA)	6 ROOMS =	12 BEDS
"L" PLAN (1 BD. / 1 BA)	3 ROOMS =	3 BEDS
SUB-TOTAL =	136 ROOMS =	159 BEDS

SITE B:

BUILDING AREA:

LOWER LEVEL	4 614 S.F.
MAIN LEVEL	4 886 S.F.
UPPER LEVEL	4 886 S.F.
SUB-TOTAL	14 386 S.F.

ROOMS / UNITS:

"A" PLAN (1 BD. / 1 BA)	12 ROOMS =	12 BEDS
"G" PLAN (1 BD. / 1 BA)	2 ROOMS =	2 BEDS
"H" PLAN (2 BD. / 1 BA)	2 ROOMS =	4 BEDS
"L" PLAN (1 BD. / 1 BA)	1 ROOMS =	1 BEDS
SUB-TOTAL =	19 ROOMS =	21 BEDS

TOTAL BUILDING AREA =	136,367 S.F.	
TOTAL ROOM / BEDS =	155 ROOMS =	180 BEDS

PARKING REQUIRED:

1 STALL/STAFF	= 10 STALLS
1 STALL/4 BEDS (180 / 4)	= 45 STALLS
TOTAL REQUIRED	55 STALLS

PARKING PROVIDED = 65 STALLS

R.L. Davidson, Inc.
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7600 NORTH INGRAM, #232
FRESNO, CA 93711
559.435.3303
www.rldavidson.com

LICENSED ARCHITECT ROBERT L. DAVIDSON NO. C5883 STATE OF CALIFORNIA

RIDGEMARK ASSISTED CARE COMMUNITY
3586 AIRLINE HIGHWAY
HOLLISTER, CA 95023

FOR:
JOHN WYNN

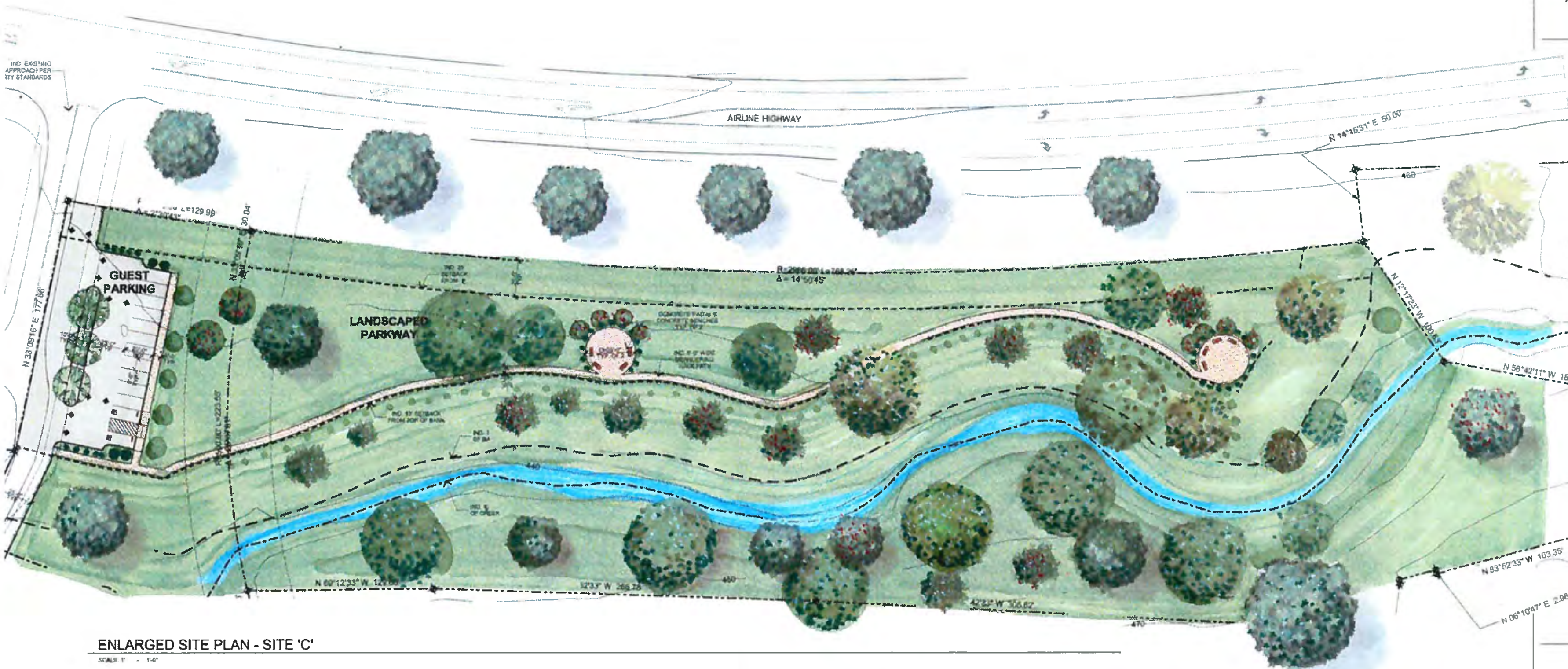
NO.	DATE	ISSUE
	05.15.2017	PRELIMINARY DESIGN
	11.03.2017	COMPLETED PRELIMINARY DESIGN

SHEET TITLE:
PARTIAL MASTER SITE PLAN (SITE 'A' & SITE 'B')

SCALE: 1" = 20'-0"

NORTH

SHEET: P1.1



ENLARGED SITE PLAN - SITE 'C'

R.L. Davidson, Inc.
ARCHITECTS

7600 NORTH INGRAM, #232
FRESNO, CA 93711
559.435.3303

RIDGEMARK
ASSISTED CARE
COMMUNITY
3566 AIRLINE HIGHWAY
HOLLISTER, CA

FOR
JOHN WYNN

	PRELIMINARY DESIGN	
	COMPLETED PRELIMINARY DESIGN	

ENLARGED SITE PLAN - SITE 'C'

AS SHOWN

P1.4

R.L. Davidson, Inc.
ARCHITECTS
7608 North Ingram, #232
Fresno, CA 93711
559.435.3303
www.rldavidson.com

ELEVATION 2 - WEST

SCALE: 1/8" = 1'-0"

ELEVATION 1 - SOUTHWEST

SCALE: 1/8" = 1'-0"

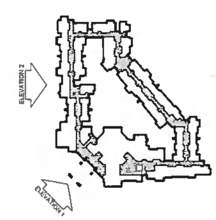
EXTERIOR FINISH MATERIAL SCHEDULE

(A) ROOFING -	EAGLE ROOFING #3636 PIEDMONT BLEND - PROVIDE 30% BOOST MAX 1" BOOST BOOST ALL EAVES TILES	
(B) CEMENT PLASTER -	SMOOTH TROWEL w/ PRIMER AND PAINT COLOR: SHERWIN WILLIAMS SW7008 "ALABASTER"	
(C) BRICK WALL CAP -	USED BRICK - HEADER COURSE w/ FULL JOINT GROUT	
(D) PRE-CAST SIMULATED LIMESTONE -	TAN LIMESTONE	
(E) EXTERIOR DOORS -	COLOR TO MATCH:	SHERWIN WILLIAMS SW6447 "EVERGREENS"
(F) WROUGHT IRON RAILING -	COLOR TO MATCH:	SHERWIN WILLIAMS SW6992 "INKWELL"
(G) WINDOWS, STOREFRONT & FRENCH DOORS	COLOR TO MATCH:	SHERWIN WILLIAMS SW6447 "EVERGREENS"
(H) GUTTERS -	COPPER	
(I) EXPOSED RAFTER TAILS & SHEATHING -	COLOR TO MATCH:	SHERWIN WILLIAMS SW6067 "MOCHA"
(J) DOWNSPOUTS-	COPPER	
(K) WOOD TRIM POSTS & FASCIAS	COLOR TO MATCH:	SHERWIN WILLIAMS SW6067 "MOCHA"
(L) QUATREFOIL -	TAN "LIMESTONE"	
(M) TILE INSETS -	PROVIDE 6" SQ. PORCELAIN TILE - SET ONTO SCRATCH COAT. FLOAT BROWN & DASH COATS FLUSH. - G.C. TO SUBMIT SPANISH THEME TILE SAMPLES FOR ARCHITECT'S APPROVAL	
(N) SHUTTERS -	COLOR TO MATCH:	SHERWIN WILLIAMS SW6447 "EVERGREENS"
(O) WINDOW & DOOR TRIM	COLOR TO MATCH:	SHERWIN WILLIAMS SW7008 "ALABASTER" NOTE: PAINT ALL 5 SIDES OF TRIM. PROVIDE SMOOTH TROWEL FINISH.

ELEVATION KEY NOTES:

THE FOLLOWING KEYNOTES SHALL APPLY WHERE INDICATED ON THIS SHEET

1. SPANISH 'S' CONCRETE ROOFING TILES (30% BOOSTED) w/BATTENS o/30# FELT UNDERLAYMENT o/ROOF SHEATHING
   - INSTALL ROOF PER MANUF. SPECIFICATIONS.
2. INDICATES 7/8" THK. CEMENT PLASTER FINISH o/TWO LAYERS OF GRADE 'D' BACKED WIRE LATH w/ SMOOTH TROWEL FINISH.
   - COLOR: OFF-WHITE
3. IND. HEAD & SILL TRIM AT TYP. DOOR AND WINDOW CONDITIONS
   - PROVIDE SMOOTH TROWEL FINISH
4. EXPOSED RAFTER TAILS (PAINTED)
5. INDICATES W.I. GUARDRAIL WITH ALTERNATING 3/4" SQUARE TWISTED PICKETS & UN-TWISTED (PROVIDE KNUCKLES AT UN-TWISTED PICKETS)
6. EXPOSED WOOD HEADER
7. PATIO / PERIMETER HALF WALL
8. RECESSED DECORATIVE SPANISH STYLE CERAMIC WALL TILES (6" SQ. TILES)
9. INDICATES CHIMNEY CAP
10. PRE-CAST SIMULATED LIMESTONE MOLDING
11. 4'-0" SQ. PRE-CAST QUATREFOIL w/ 6"x6" TILE INLAY (4) - TYP.
12. FIBERGLASS EXTERIOR WOOD INTERIOR WINDOW SYSTEM
    - MILGARD "ESSENCE" SERIES (OR EQUAL)
    - GREEN FIBERGLASS AT EXTERIOR
13. AUTOMATIC SLIDING DOORS AT MAIN ENTRY
14. DECORATIVE W.I. FINIAL
15. ALUMINUM STOREFRONT ENTRY DOOR



SITE 'A' - KEY PLAN

NOT TO SCALE

RIDGEMARK ASSISTED CARE COMMUNITY
3586 AIRLINE HIGHWAY
HOLLISTER, CA 95023

FOR
JOHN WYNN

PRELIMINARY DESIGN
COMPLETED PRELIMINARY DESIGN

SITE 'A' - EXTERIOR ELEVATIONS

SCALE: AS SHOWN

P5.1

ELEVATION 3 - NORTH

SCALE: 1/8" = 1'-0"

ELEVATION 4 - WEST

SCALE: 1/8" = 1'-0"

ELEVATION 5 - NORTHWEST

SCALE: 1/8" = 1'-0"

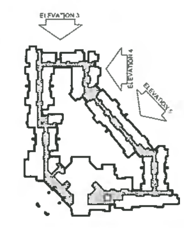
EXTERIOR FINISH MATERIAL SCHEDULE

(A) ROOFING -	EAGLE ROOFING #3616 PIEDMONT BLEND - PROVIDE 30% BOOST MAX 1" BOOST BOOST ALL EAVES TILES	
(B) CEMENT PLASTER -	SMOOTH TROWEL w/ PRIMER AND PAINT COLOR, SHERWIN WILLIAMS SW7008 "ALABASTER"	
(C) BRICK WALL CAP -	USED BRICK - HEADER COURSE w/ FULL JOINT GROUT	
(D) PRE-CAST SIMULATED LIMESTONE -	TAN LIMESTONE	
(E) EXTERIOR DOORS -	COLOR TO MATCH	SHERWIN WILLIAMS SW6447 "EVERGREENS"
(F) WROUGHT IRON RAILING -	COLOR TO MATCH	SHERWIN WILLIAMS SW6992 "INKWELL"
(G) WINDOWS, STOREFRONT & FRENCH DOORS	COLOR TO MATCH	SHERWIN WILLIAMS SW6447 "EVERGREENS"
(H) GUTTERS -	COPPER	
(I) EXPOSED RAFTER TAILS & SHEATHING -	COLOR TO MATCH	SHERWIN WILLIAMS SW6067 "MOCHA"
(J) DOWNSPOUTS-	COPPER	
(K) WOOD TRIM POSTS & FASCIAS	COLOR TO MATCH	SHERWIN WILLIAMS SW6067 "MOCHA"
(L) QUATREFOIL -	TAN "LIMESTONE"	
(M) TILE INSETS -	PROVIDE 6" SQ. PORCELAIN TILE - SET ONTO SCRATCH COAT. FLOAT BROWN & DASH COATS FLUSH. - G.C. TO SUBMIT SPANISH THEME TILE SAMPLES FOR ARCHITECT'S APPROVAL	
(N) SHUTTERS -	COLOR TO MATCH	SHERWIN WILLIAMS SW6447 "EVERGREENS"
(O) WINDOW & DOOR TRIM	COLOR TO MATCH	SHERWIN WILLIAMS SW7008 "ALABASTER" NOTE: PAINT ALL 5 SIDES OF TRIM. PROVIDE SMOOTH TROWEL FINISH.

ELEVATION KEY NOTES:

THE FOLLOWING KEYNOTES SHALL APPLY WHERE INDICATED ON THIS SHEET

1. SPANISH 'S' CONCRETE ROOFING TILES (30% BOOSTED) w/BATTENS w/30# FELT UNDERLAYMENT w/ROOF SHEATHING - INSTALL ROOF PER MANUF. SPECIFICATIONS.
2. INDICATES 7/8" THK. CEMENT PLASTER FINISH w/TWO LAYERS OF GRADE 'D' BACKED WIRE LATH. SMOOTH TROWEL FINISH. - COLOR: OFF-WHITE
3. IND. HEAD & SILL TRIM AT TYP. DOOR AND WINDOW CONDITIONS - PROVIDE SMOOTH TROWEL FINISH
4. EXPOSED RAFTER TAILS (PAINTED)
5. INDICATES W.I. GUARDRAIL WITH ALTERNATING 3/4" SQUARE TWISTED PICKETS & UN-TWISTED (PROVIDE KNUCKLES AT UN-TWISTED PICKETS)
6. EXPOSED WOOD HEADER
7. PATIO PERIMETER HALF WALL
8. RECESSED DECORATIVE SPANISH STYLE CERAMIC WALL TILES (6" SQ. TILES)
9. INDICATES CHIMNEY CAP.
10. PRE-CAST SIMULATED LIMESTONE MOLDING
11. 4'-0" SQ. PRE-CAST QUATREFOIL w/ 6"x6" TILE INLAY (4) - TYP.
12. FIBERGLASS EXTERIOR/WOOD INTERIOR WINDOW SYSTEM - MILGARD "ESSENCE" SERIES (OR EQUAL) - GREEN FIBERGLASS AT EXTERIOR
13. AUTOMATIC SLIDING DOORS AT MAIN ENTRY
14. DECORATIVE W.I. FINIAL
15. ALUMINUM STOREFRONT ENTRY DOOR



SITE 'A' - KEY PLAN

NOT TO SCALE

R.L. Davidson, Inc.
ARCHITECTS

7600 NORTH INGRAM, #232
FRESNO, CA 93711
559.435.3303

RIDGEMARK ASSISTED CARE COMMUNITY
3586 AIRLINE HIGHWAY
HOLLISTER, CA 95023

FOR:
JOHN WYNN

NO.	DATE	ISSUE
	05.19.2017	PRELIMINARY DESIGN
	11.03.2017	COMPLETED PRELIMINARY DESIGN

SHEET TITLE

SITE 'A' - EXTERIOR ELEVATIONS

SCALE: AS SHOWN

SHEET #

P5.2

ELEVATION 6 - NORTH

SCALE: 1/8" = 1'-0"

ELEVATION 7 - WEST

SCALE: 1/8" = 1'-0"

ELEVATION 8 - SOUTH

SCALE: 1/8" = 1'-0"

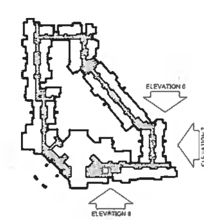
ELEVATION KEY NOTES:

THE FOLLOWING KEYNOTES SHALL APPLY WHERE INDICATED ON THIS SHEET

1. SPANISH 'S' CONCRETE ROOFING TILES (30% BOOSTED) o/BATTENS o/30# FELT UNDERLAYMENT o/ROOF SHEATHING
   - INSTALL ROOF PER MANUF. SPECIFICATIONS
2. INDICATES 7/8" THK. CEMENT PLASTER FINISH o/TWO LAYERS OF GRADE 'D' BACKED WIRE LATH. SMOOTH TROWEL FINISH.
   - COLOR: OFF-WHITE
3. IND. HEAD & SILL TRIM AT TYP. DOOR AND WINDOW CONDITIONS
   - PROVIDE SMOOTH TROWEL FINISH
4. EXPOSED RAFTER TAILS (PAINTED)
5. INDICATES W.I. GUARDRAIL WITH ALTERNATING 1/4" SQUARE TWISTED PICKETS & UN-TWISTED (PROVIDE KNUCKLES AT UN-TWISTED PICKETS)
6. EXPOSED WOOD HEADER
7. PATIO / PERIMETER HALF WALL
8. RECESSED DECORATIVE SPANISH STYLE CERAMIC WALL TILES (6" SQ. TILES)
9. INDICATES CHIMNEY CAP
10. PRE-CAST SIMULATED LIMESTONE MOLDING
11. 4'-0" SQ. PRE-CAST QUATREFOIL w/ 6"x6" TILE INLAY (4) - TYP.
12. FIBERGLASS EXTERIOR/WOOD INTERIOR WINDOW SYSTEM
    - MILGARD "ESSENCE" SERIES (OR EQUAL)
    - GREEN FIBERGLASS AT EXTERIOR
13. AUTOMATIC SLIDING DOORS AT MAIN ENTRY
14. DECORATIVE W.I. FINIAL
15. ALUMINUM STOREFRONT ENTRY DOOR

EXTERIOR FINISH MATERIAL SCHEDULE

(A) ROOFING -	EAGLE ROOFING #3636 PIEDMONT BLEND - PROVIDE 30% BOOST. MAX 1" BOOST. BOOST ALL EAVES TILES	
(B) CEMENT PLASTER -	SMOOTH TROWEL w/ PRIMER AND PAINT COLOR, SHERWIN WILLIAMS SW7008 "ALABASTER"	
(C) BRICK WALL CAP -	USED BRICK - HEADER COURSE w/ FULL JOINT GROUT	
(D) PRE-CAST SIMULATED LIMESTONE -	TAN LIMESTONE	
(E) EXTERIOR DOORS -	COLOR TO MATCH:	SHERWIN WILLIAMS SW6447 "EVERGREENS"
(F) WROUGHT IRON RAILING -	COLOR TO MATCH:	SHERWIN WILLIAMS SW6992 "INKWELL"
(G) WINDOWS, STOREFRONT & FRENCH DOORS	COLOR TO MATCH:	SHERWIN WILLIAMS SW6447 "EVERGREENS"
(H) GUTTERS -	COPPER	
(I) EXPOSED RAFTER TAILS & SHEATHING -	COLOR TO MATCH:	SHERWIN WILLIAMS SW6067 "MOCHA"
(J) DOWNSPOUTS-	COPPER	
(K) WOOD TRIM, POSTS & FASCIAS	COLOR TO MATCH:	SHERWIN WILLIAMS SW6067 "MOCHA"
(L) QUATREFOIL -	TAN "LIMESTONE"	
(M) TILE INSETS -	PROVIDE 6" SQ. PORCELAIN TILE - SET ONTO SCRATCH COAT. FLOAT BROWN & DASH COATS FLUSH. - G.C. TO SUBMIT SPANISH THEME TILE SAMPLES FOR ARCHITECT'S APPROVAL.	
(N) SHUTTERS -	COLOR TO MATCH:	SHERWIN WILLIAMS SW6447 "EVERGREENS"
(O) WINDOW & DOOR TRIM	COLOR TO MATCH:	SHERWIN WILLIAMS SW7008 "ALABASTER" NOTE: PAINT ALL 5 SIDES OF TRIM. PROVIDE SMOOTH TROWEL FINISH.



SITE 'A' - KEY PLAN

NOT TO SCALE

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COMMUNITY
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HOLLISTER, CA 95023

FOR:
JOHN WYNN

NO.	DATE	ISSUE
	05.19.2017	PRELIMINARY DESIGN
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SHEET TITLE

SITE 'A' - EXTERIOR ELEVATIONS

SCALE: AS SHOWN

P5.3

1607

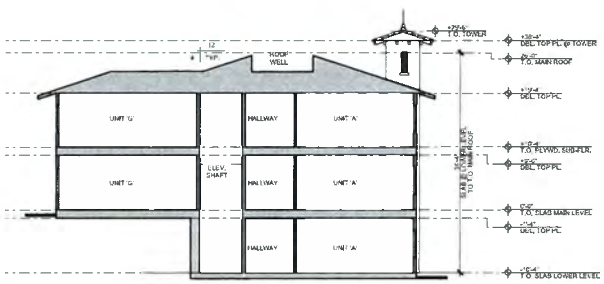
ELEVATION 1 - SOUTHWEST

ELEVATION 2 - WEST

ELEVATION 3 - NORTHWEST

ELEVATION 4 - NORTHEAST

ELEVATION 5 - SOUTHEAST



SITE 'B' - SECTION 1

EXTERIOR FINISH MATERIAL SCHEDULE

(A) ROOFING -	EAGLE ROOFING #3636 PIEDMONT BLEND - PROVIDE 30 + BOOST, MAX 1" BOOST BOOST ALL EAVES TILES	
(B) CEMENT PLASTER -	SMOOTH TROWEL w/ PRIMER AND PAINT COLOR: SHERWIN WILLIAMS SW7008 "ALABASTER"	
(C) BRICK WALL CAP -	USED BRICK - HEADER COURSE w/ FULL JOINT GROUT	
(D) PRE-CAST SIMULATED LIMESTONE -	TAN LIMESTONE	
(E) EXTERIOR DOORS -	COLOR TO MATCH	SHERWIN WILLIAMS SW6447 "EVERGREENS"
(F) WROUGHT IRON RAILING -	COLOR TO MATCH	SHERWIN WILLIAMS SW6992 "INKWELL"
(G) WINDOWS, STOREFRONT & FRENCH DOORS	COLOR TO MATCH	SHERWIN WILLIAMS SW6447 "EVERGREENS"
(H) GUTTERS -	COPPER	
(I) EXPOSED RAFTER TAILS & SHEATHING -	COLOR TO MATCH	SHERWIN WILLIAMS SW6067 "MOCHA"
(J) DOWNSPOUTS-	COPPER	
(K) WOOD TRIM, POSTS & FASCIAS	COLOR TO MATCH	SHERWIN WILLIAMS SW6067 "MOCHA"
(L) QUATREFOIL -	TAN "LIMESTONE"	
(M) TILE INSETS -	PROVIDE 6" SQ. PORCELAIN TILE - SET ONTO SCRATCH COAT. FLOAT BROWN & DASH COATS FLUSH. - G.C. TO SUBMIT SPANISH THEME TILE SAMPLES FOR ARCHITECT'S APPROVAL.	
(N) SHUTTERS	COLOR TO MATCH	SHERWIN WILLIAMS SW6447 "EVERGREENS"
(O) WINDOW & DOOR TRIM	COLOR TO MATCH	SHERWIN WILLIAMS SW7008 "ALABASTER" NOTE: PAINT ALL 5 SIDES OF TRIM. PROVIDE SMOOTH TROWEL FINISH.

ELEVATION KEY NOTES:

THE FOLLOWING KEYNOTES SHALL APPLY WHERE INDICATED ON THIS SHEET

1 SPANISH 'S' CONCRETE ROOFING TILES (30% BOOSTED) o/BATTENS o/30# FELT UNDERLAYMENT o/ROOF SHEATHING
- INSTALL ROOF PER MANUF. SPECIFICATIONS

2 INDICATES 7/8" THK. CEMENT PLASTER FINISH o/TWO LAYERS OF GRADE 'D' PAPER BACKED WIRE LATH SMOOTH TROWEL FINISH.
- COLOR: OFF-WHITE

3 INDICATES HEAD & SILL TRIM AT TYP. DOOR AND WINDOW CONDITIONS
- PROVIDE SMOOTH TROWEL FINISH

4 EXPOSED RAFTER TAILS (PAINTED)

5 INDICATES W.I. GUARDRAIL WITH ALTERNATING 3/4" SQUARE TWISTED PICKETS & UN-TWISTED (PROVIDE KNUCKLES AT UN-TWISTED PICKETS)

6 EXPOSED WOOD HEADER

7 PATIO PERIMETER HALF WALL

8 RECESSED DECORATIVE SPANISH STYLE CERAMIC WALL TILES (6" SQ. TILES)

9 INDICATES CHIMNEY CAP

10 PRE-CAST SIMULATED LIMESTONE MOLDING

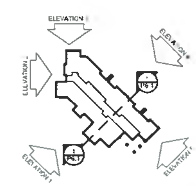
11 1'-0" SQ. PRE-CAST QUATREFOIL w/ 4"x6" TILE INLAY (4) - TYP

12 FIBERGLASS EXTERIOR/WOOD INTERIOR WINDOW SYSTEM
- MILGARD "ESSENCE" SERIES (OR EQUAL)
- GREEN FIBERGLASS AT EXTERIOR

13 AUTOMATIC SLIDING DOORS AT MAIN ENTRY

14 DECORATIVE W.I. FINIAL

15 ALUMINUM STOREFRONT ENTRY DOOR



SITE 'B' - KEY PLAN

NOT TO SCALE

R.L. Davidson, Inc.
ARCHITECTS
7600 North Ingram, #232
Fresno, CA 93711
559.439.3303

RIDGEMARK ASSISTED CARE COMMUNITY
3580 AIRLINE HIGHWAY
HOLLISTER, CA 95023

FOR
JOHN WYNN

NO.	DATE	ISSUE
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	11.03.2017	COMPLETED PRELIMINARY DESIGN

SITE 'B' - EXTERIOR ELEVATIONS

AS SHOWN

P6.1

APPENDIX B

Civil Plans

BY	DATE	REVISIONS	APPR

In accordance with section 6735 (a) of the Professional Engineer's Act these plans are

PRELIMINARY

and therefore do not bear the signature and seal of a registered civil engineer.

KELLEY
Engineering & Surveying
400 Park Center Drive, Suite #4
Hollister, CA 95023
Office (831) 636-1104 Fax (831) 636-1837

Date:	August 2018
Scale:	1" = 30'
Designed:	MJK, TJK
Drawn:	TJK, DLF
Job No.:	16004

Existing Site and Demolition Plan
Assisted Living Project
Airline Highway, Hollister, CA

SHEET
1
OF 6

PRELIMINARY EARTHWORK ESTIMATE

CUT (BANK YARDAGE)	-18700 CY
FIILL (BANK YARDAGE)	+ 7100 CY
NET (BANK YARDAGE)	-11600 CY

NOTE:
THE EARTHWORK QUANTITIES ABOVE ARE APPROXIMATE.
THE EARTHWORK QUANTITIES ABOVE MAY OR MAY NOT REPRESENT THE FINAL EARTHWORK AT THE COMPLETION OF THE PROJECT/PHASE DUE TO, BUT NOT LIMITED TO: SHRINKAGE, SPOILS, CONSTRUCTION TOLERANCES, TOPOGRAPHIC SURVEY TOLERANCES, PAD FINISH GRADING, CHANGES TO PAD ELEVATIONS, AND UNFORESEEN CHANGES TO DESIGN. QUANTITIES ARE EXPRESS IN BANK YARDAGE.

FLOOD ZONE

ALL PORTIONS OF THIS PROJECT SITE LIE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN ACCORDING TO FIRMS 06069C0205D. MAPS REVISED 4/16/2009.

SEISMIC SPECIAL STUDIES ZONE

ACCORDING TO THE ALQUIST PRIOLO SPECIAL STUDIES ZONE MAP, TRES PINOS QUADRANGLE, DATED 1/1/1982 NO PORTIONS OF THIS PROJECT LIE WITHIN A SPECIAL STUDIES ZONE.

BOUNDARY NOTE

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In accordance with section 6735 (a) of the Professional Engineer's Act these plans are

PRELIMINARY

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BY	DATE	REVISIONS	APPR

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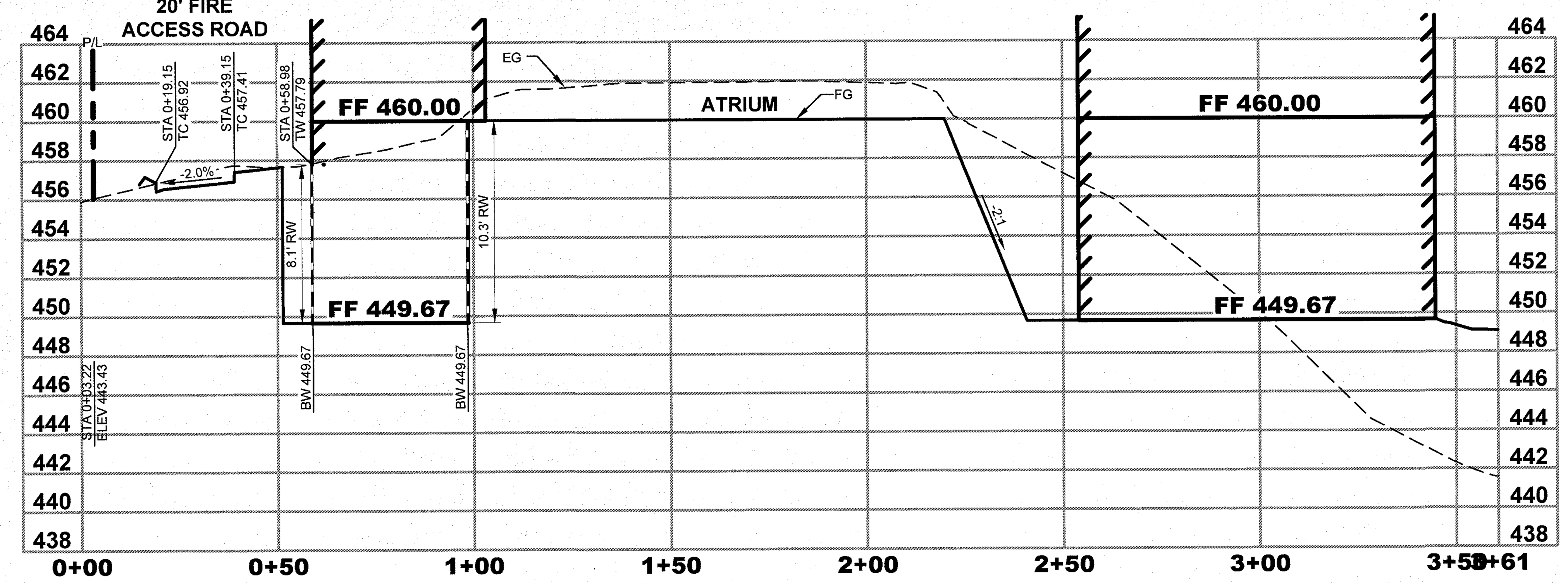
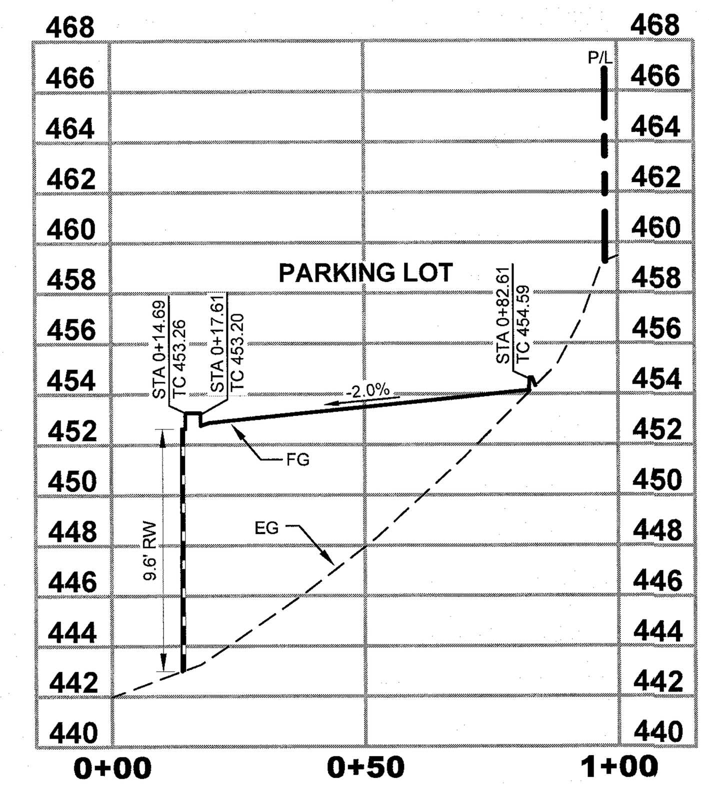
SCALE:	1" = 30'
DESIGNED:	MJK, TJK
DRAWN:	TJK, DLF
JOB NO.:	16004

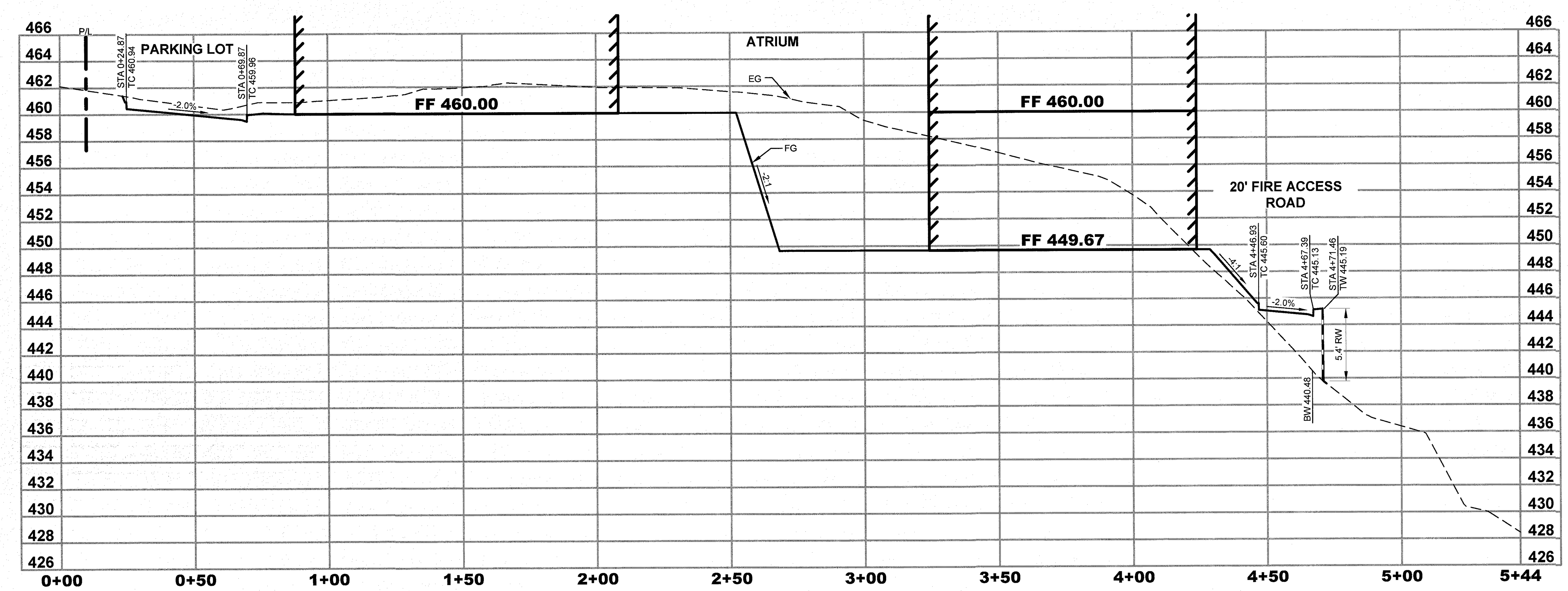
PRELIMINARY GRADING PLAN
ASSISTED LIVING PROJECT
AIRLINE HIGHWAY, HOLLISTER, CA



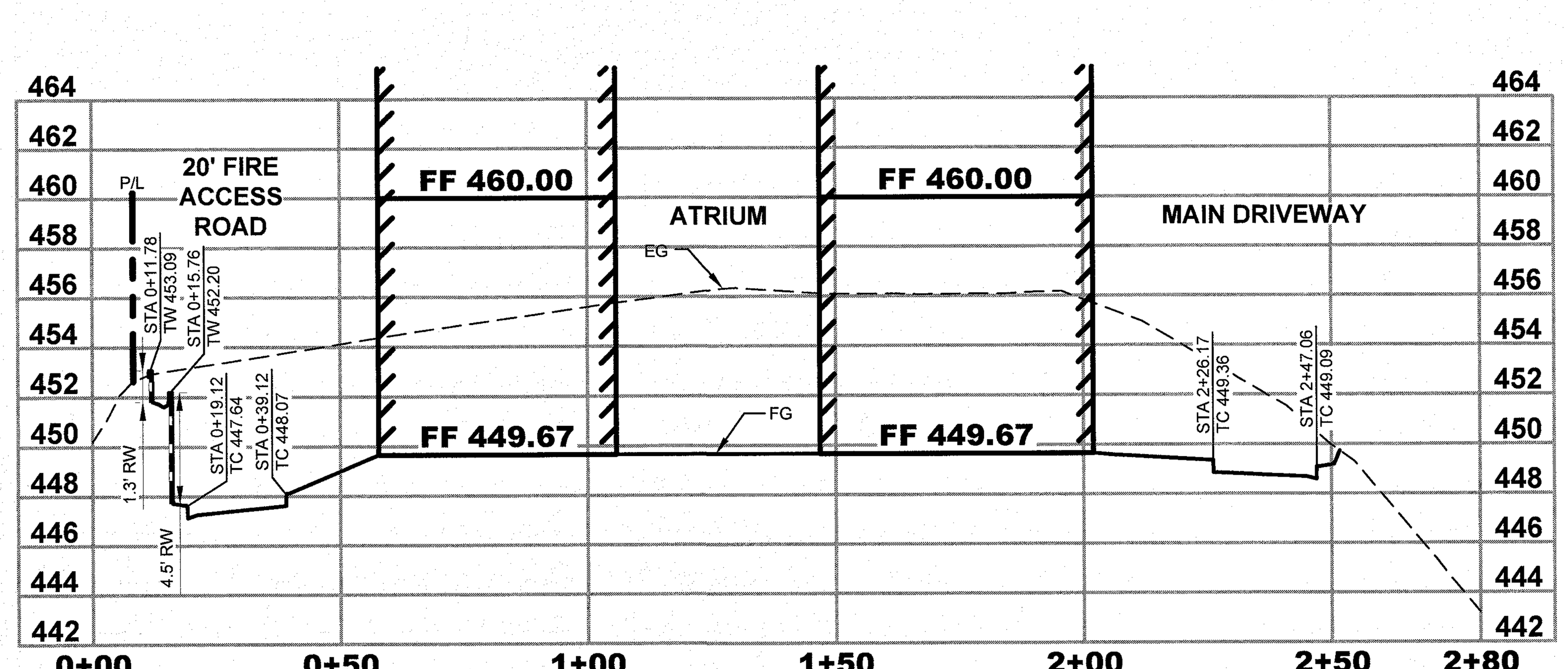
A/3 **SECTION A-A**
SCALE: H: 1" = 30' V: 1" = 6' (5x)



D/3 **SECTION D-D**
SCALE: H: 1" = 30' V: 1" = 6' (5x)



B/3 **SECTION B-B**
SCALE: H: 1" = 30' V: 1" = 6' (5x)



C/3 **SECTION C-C**
SCALE: H: 1" = 30' V: 1" = 6' (5x)

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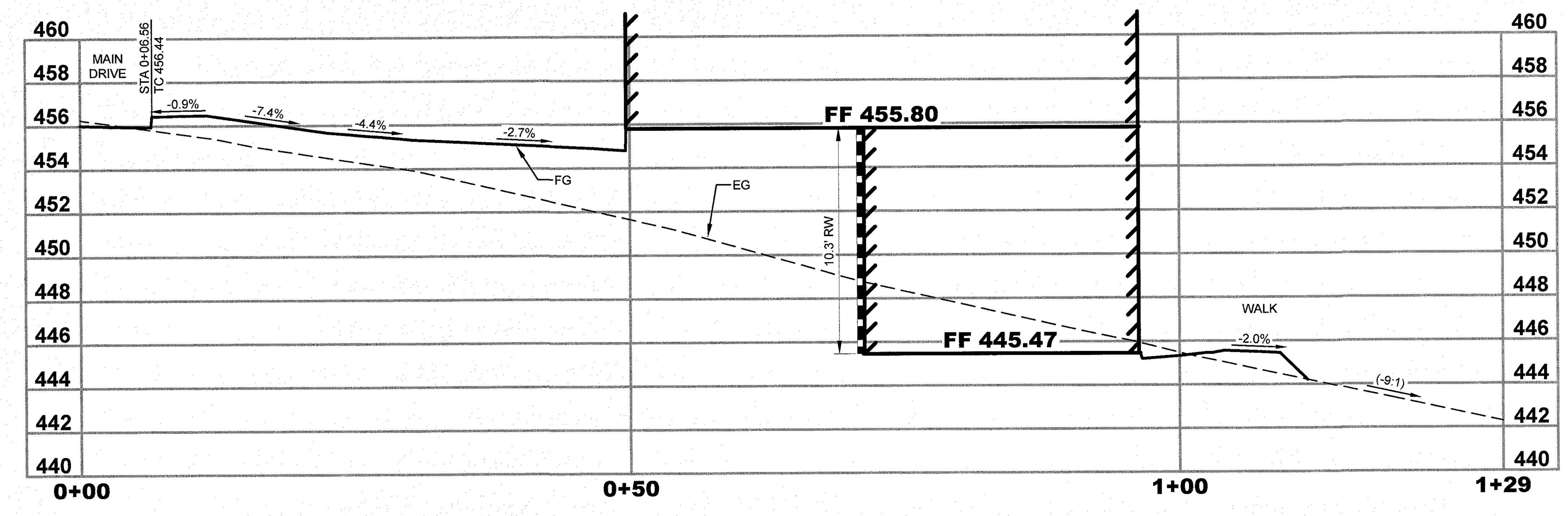
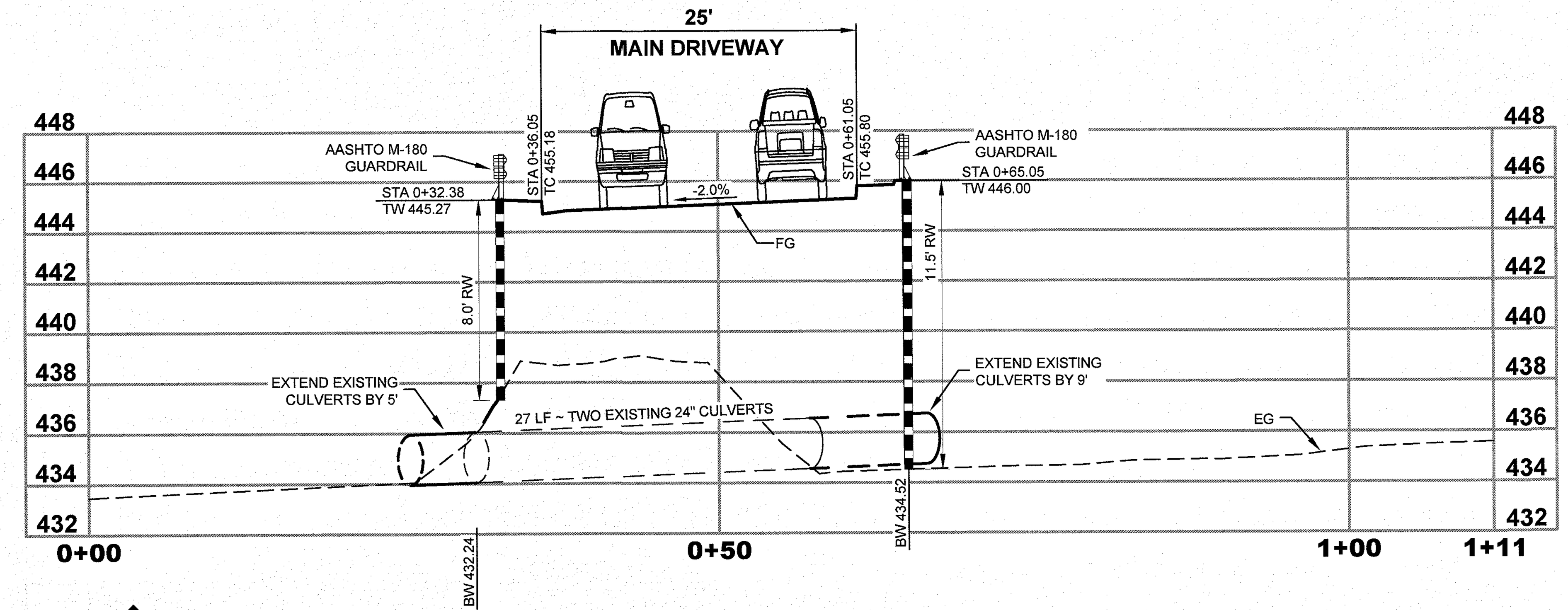
DATE:	AUGUST 2018
SCALE:	H: 1" = 30', V: 1" = 6' (5X)
DESIGNED:	MJK, TJK
DRAWN:	TJK
JOB NO.:	16004

PRELIMINARY CROSS SECTIONS
ASSISTED LIVING PROJECT
AIRLINE HIGHWAY, HOLLISTER, CA

* FILE NAME: \\SERVER\vol1\Projects 2016\16004 - Wynn - Assisted Living\dwg\16004 Assisted Living UP 03 Cross Sections.dwg * Plotted on: Monday, 13 August 2018 at 2:14pm by: TJ *



SECTION E-E
SCALE: H: 1" = 10' V: 1" =5' (2x)



SECTION F-F
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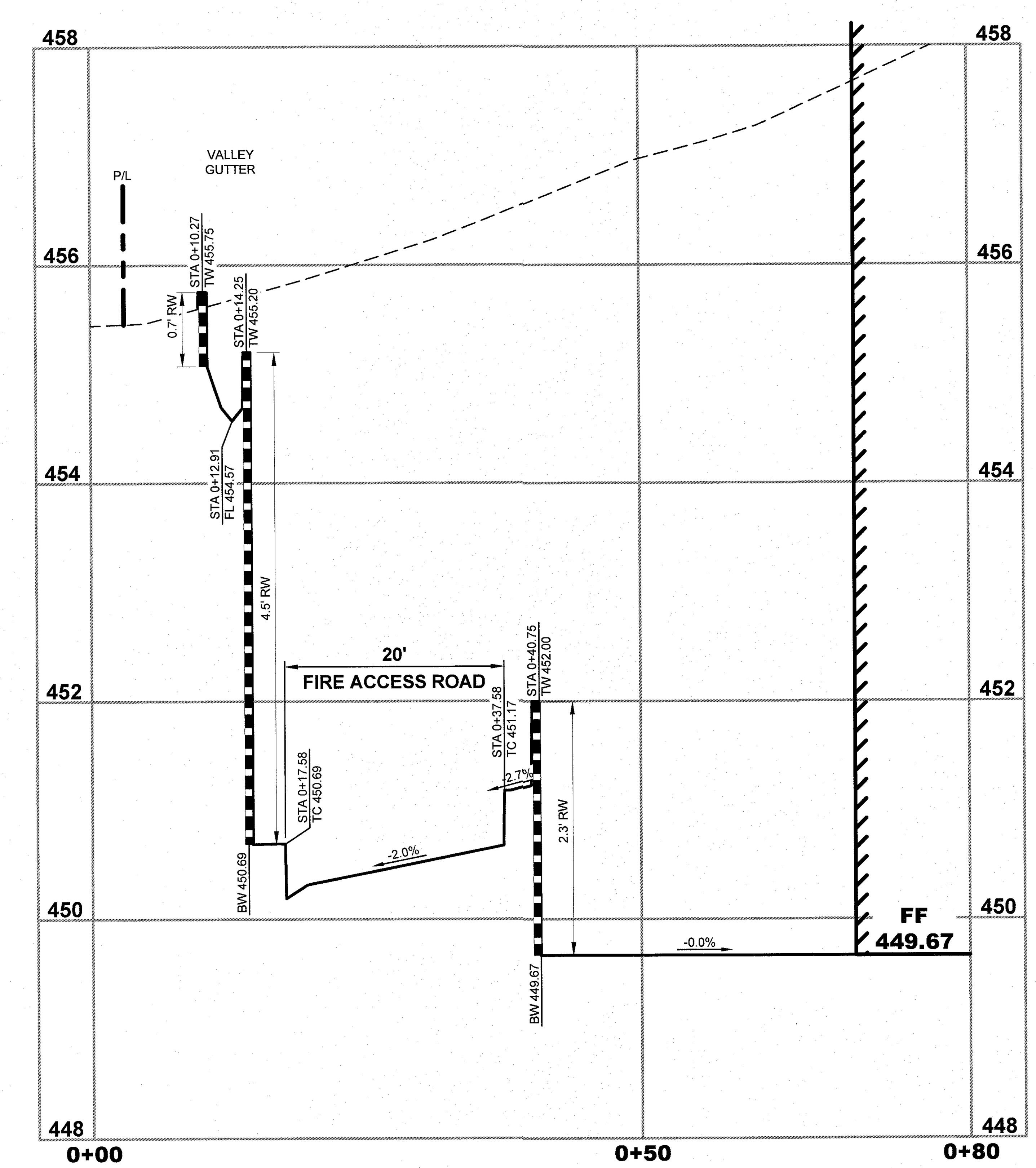
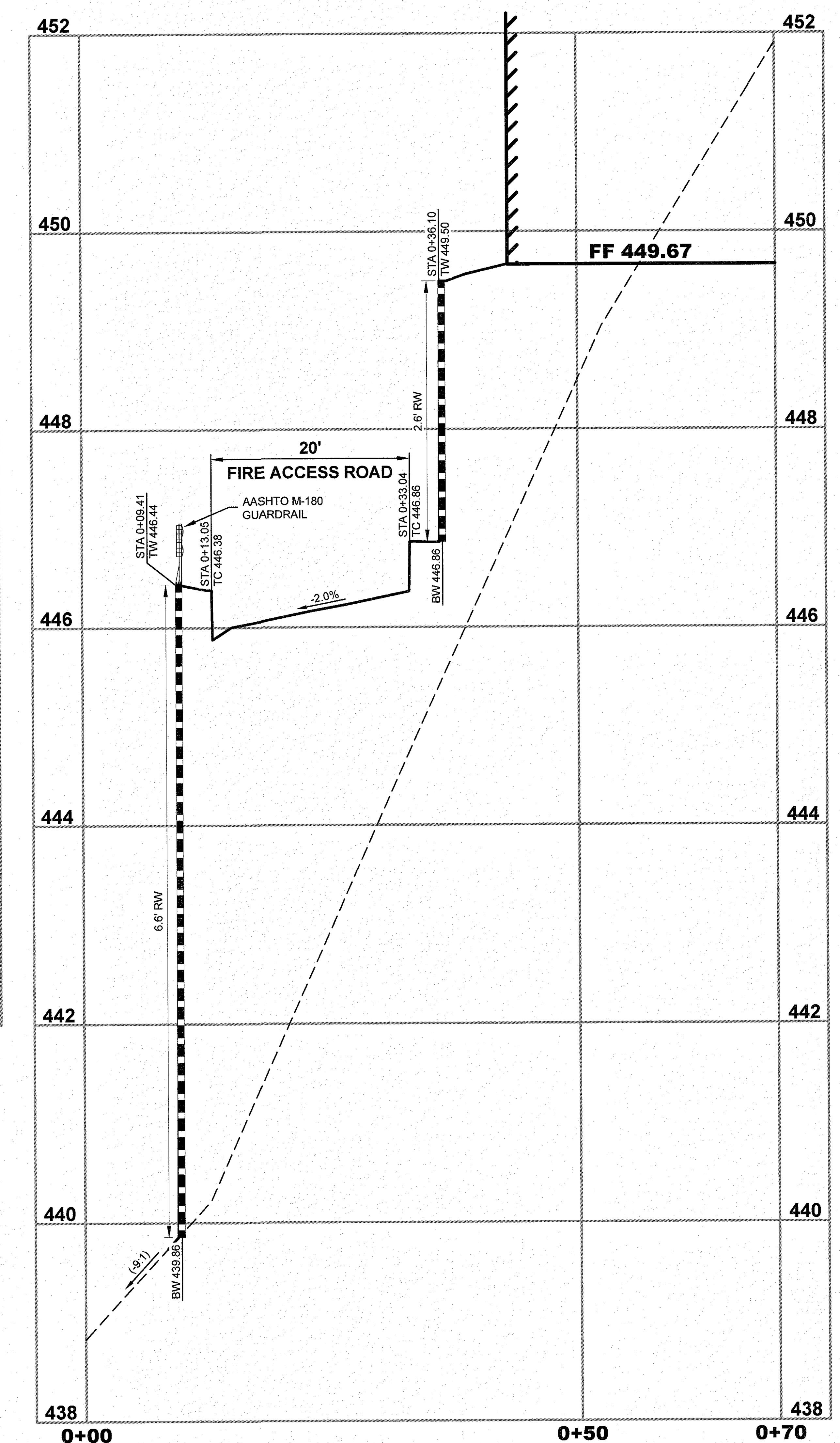


SECTION H-H
SCALE: H: 1" = 10' V: 1" = 1' (10x)



SECTION J-J
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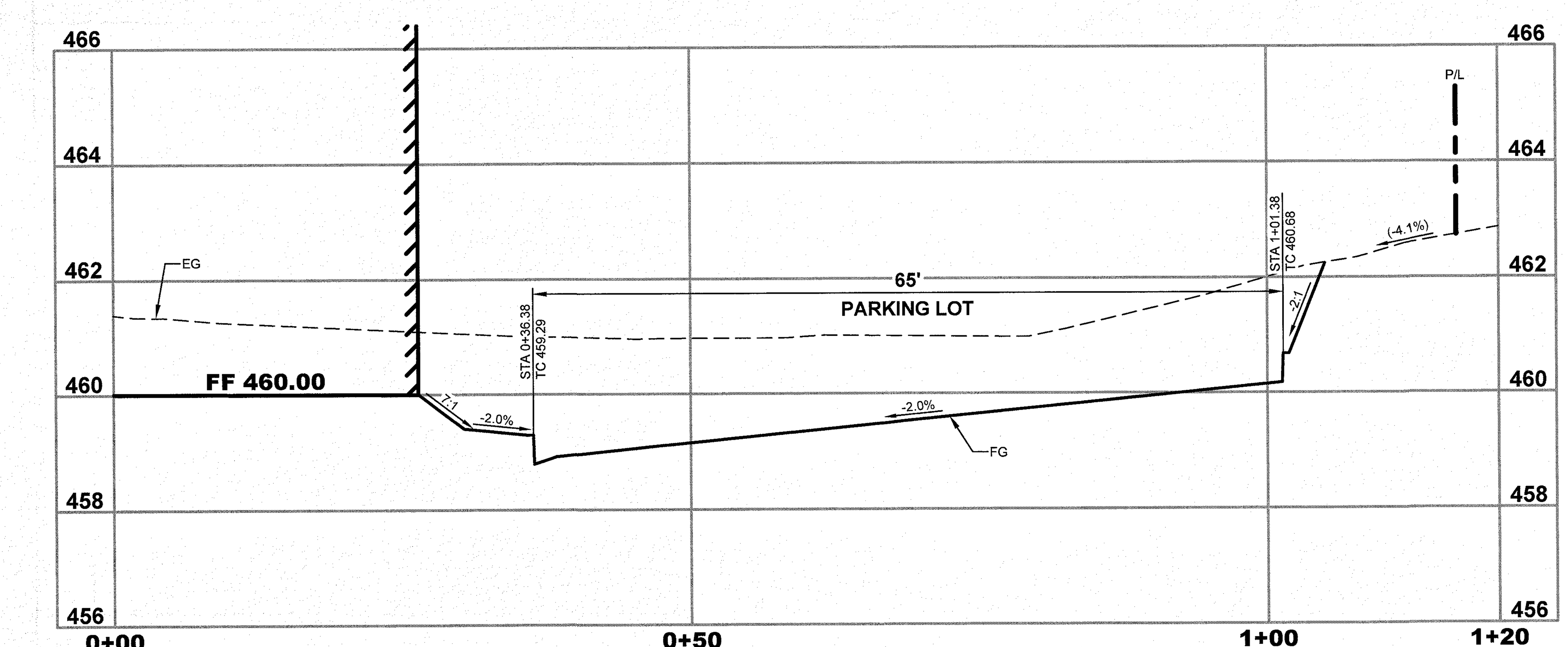

SECTION G-G
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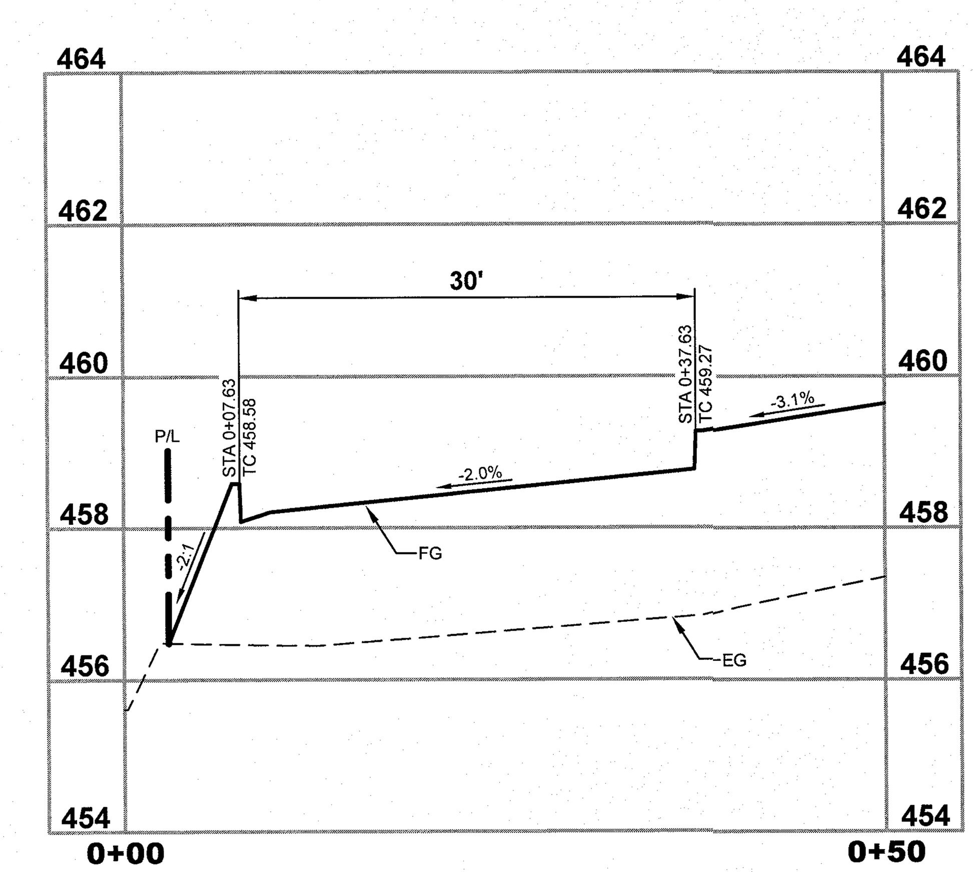

SECTION I-I
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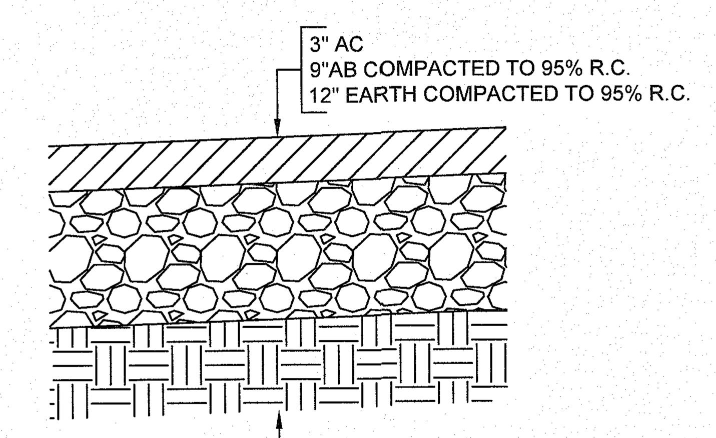

TYPICAL STRUCTURAL ROAD SECTION
NTS

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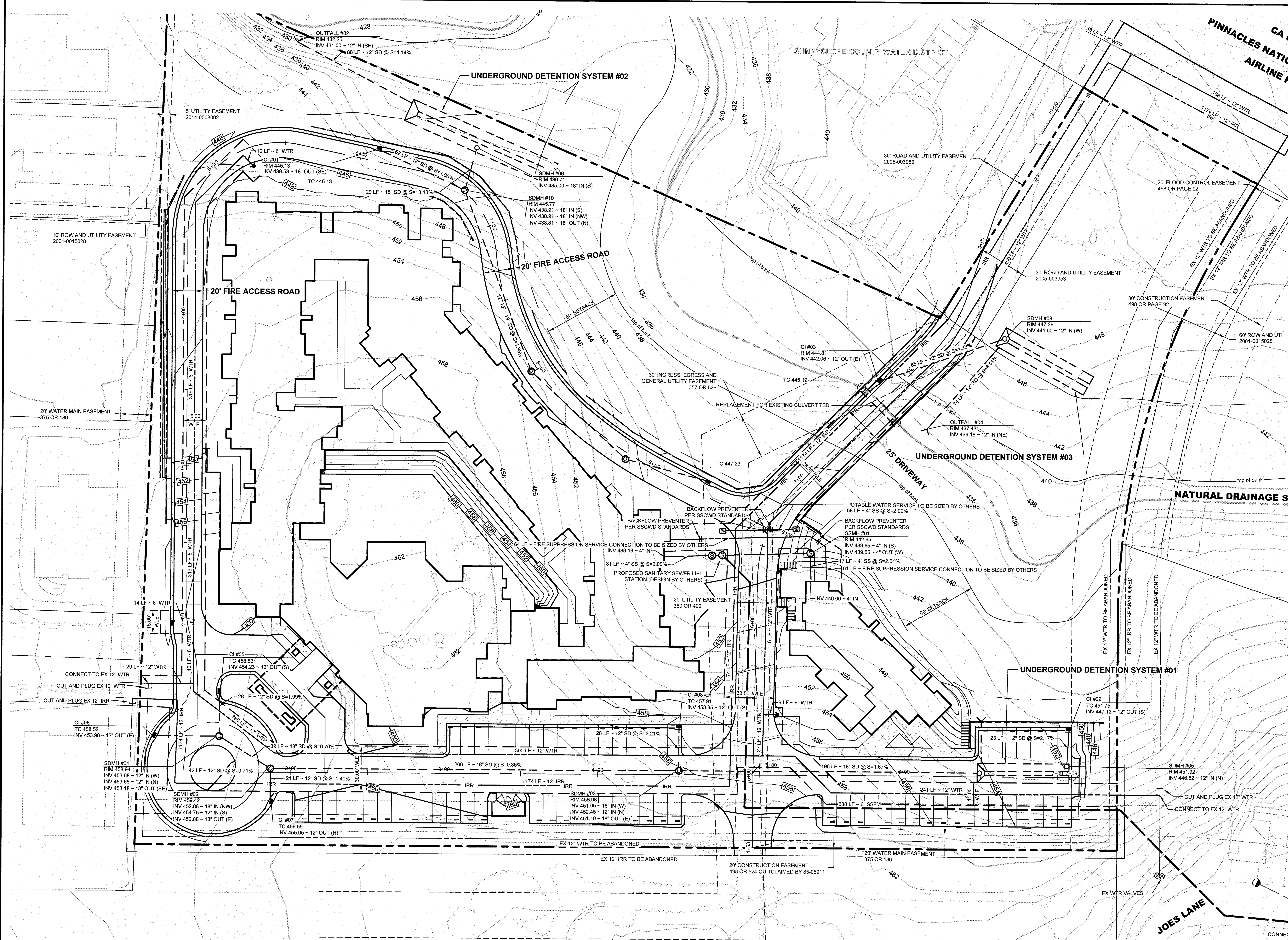
DESIGNED:	MJK, TJK
DRAWN:	TJK, DLF
JOB NO.:	16004

PRELIMINARY CROSS SECTIONS 2
ASSISTED LIVING PROJECT
AIRLINE HIGHWAY, HOLLISTER, CA

SHEET
4
OF 6



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UNDERGROUND UTILITY NOTE

THE TYPES, LOCATIONS, SIZES AND/OR DEPTHS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS PLAN ARE APPROXIMATE AND WERE OBTAINED FROM SOURCES OF VARYING RELIABILITY. **ONLY ACTUAL EXCAVATION** WILL REVEAL THE TYPES, EXTENT, SIZES, LOCATIONS, AND DEPTHS OF SUCH UNDERGROUND UTILITIES. A **PRELIMINARY** EFFORT HAS BEEN MADE TO LOCATE AND DELINEATE ALL KNOWN UNDERGROUND UTILITIES. CONSEQUENTIALLY, THE ENGINEER CAN ASSUME NO RESPONSIBILITY FOR THE COMPLETENESS OR ACCURACY OF ITS DELINEATION OF SUCH UNDERGROUND UTILITIES WHICH MAY BE ENCOUNTERED, SHOWN OR NOT SHOWN ON THIS PLAN. A **REASONABLE** EFFORT WILL BE MADE FOR IMPROVEMENT PLANS.

SUNNYSLOPE WATER DISTRICT NOTES

1. ALL LANDSCAPE IRRIGATION MUST BE PLUMBED OFF OF THE DEDICATED IRRIGATION / RECYCLED WATER PIPELINE WITH A BACKFLOW PREVENTER. THE IRRIGATION / RECYCLED WATER PIPELINE SHOULD MAINTAIN 10 FEET MINIMUM HORIZONTAL SEPARATION FROM THE POTABLE WATER MAIN.
2. THE POTABLE WATER SERVICE CONNECTION AND THE FIRE SUPPRESSION SERVICE CONNECTION MUST BE ON SEPARATE LATERALS FROM THE MAIN. BOTH POTABLE WATER AND FIRE SUPPRESSION SERVICE MUST HAVE BACKFLOW PREVENTERS AND MEET ALL SUNNYSLOPE COUNTY WATER DISTRICT STANDARDS. ACTUAL SIZE OF LATERALS WILL BE DESIGNED BY OTHERS.
3. A PRIVATE SEWER LIFT STATION AND FORCE MAIN WILL BE NEEDED TO PUMP WASTEWATER FROM THE FACILITY TO THE COLLECTIONS SYSTEM IN JOES LANE. OPERATION AND MAINTENANCE OF THE LIFT STATION AND FORCE MAIN WILL SOLELY BE THE RESPONSIBILITY OF THE FACILITY.
4. AN ADEQUATE GREASE TRAP, APPROVED BY SUNNYSLOPE COUNTY WATER DISTRICT, WILL BE REQUIRED FOR ALL KITCHEN AND DINING FACILITIES.

In accordance with section 6735 (a) of the Professional Engineer's Act these plans are

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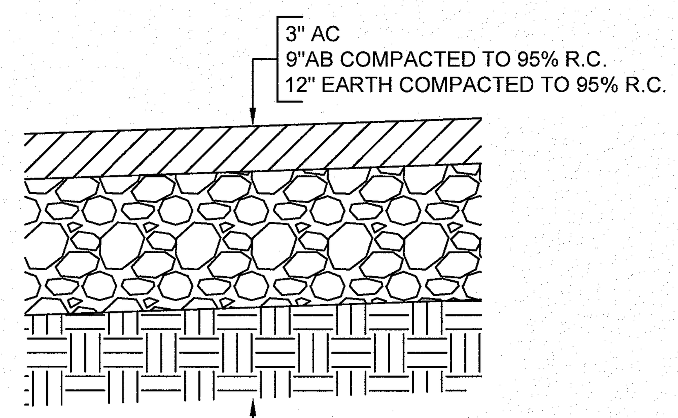
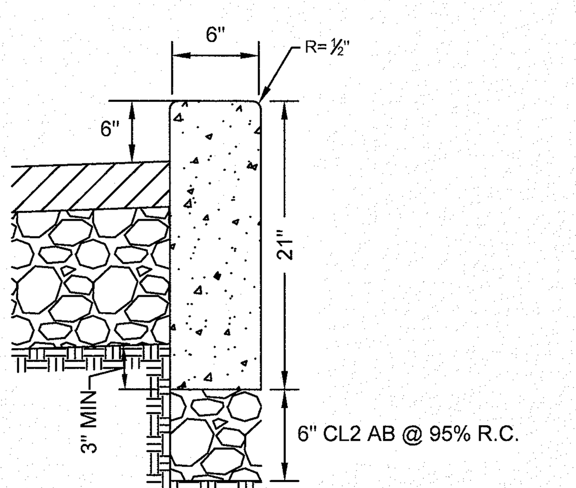
JOB NO.:	16004

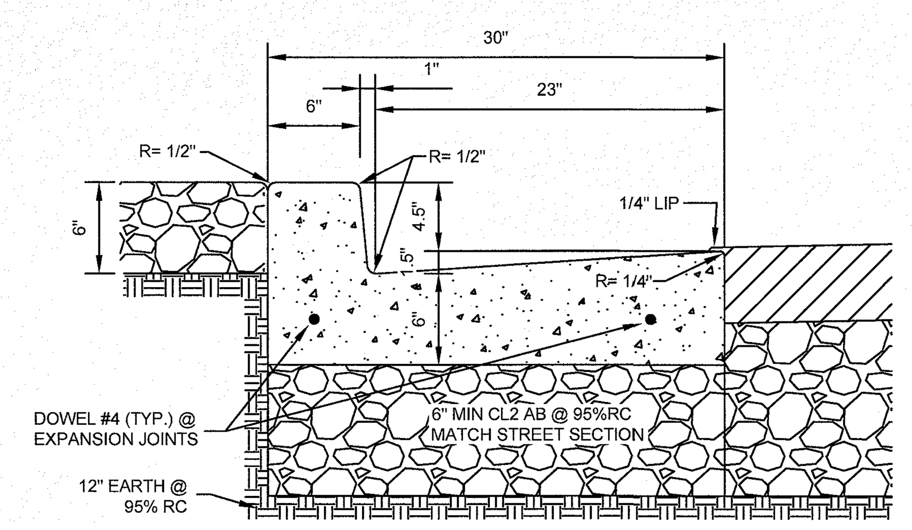
PRELIMINARY UTILITY PLAN
ASSISTED LIVING PROJECT
AIRLINE HIGHWAY, HOLLISTER, CA



TYPICAL STRUCTURAL ROAD SECTION
NTS



VERTICAL CURB DETAIL
NTS



CURB AND GUTTER DETAIL
NTS

CONCRETE NOTES:
THESE NOTES ARE APPLICABLE TO ALL CURB, GUTTER, SIDEWALK, AND VALLEY GUTTER WORK:
1. COMPACT SUBGRADE MATERIAL UNDER ALL CURB & GUTTER TO MINIMUM 95% RELATIVE COMPACTION FOR A DEPTH OF 12", EXCEPT AS OTHERWISE SPECIFIED.
2. COMPACT AGGREGATE BASE MATERIAL TO MINIMUM 95% RELATIVE COMPACTION
3. ALL CURB AND GUTTER TO BE CLASS 520-C-2500 P.C.C. EXTRUDED CURB & GUTTER MAY BE CLASS 520-D-2500 P.C.C.
4. EXPANSION JOINTS SHALL BE 1/4" X FULL P.C.C. DEPTH. PLACED AT EACH SIDE OF CATCH BASINS, AT BEGINNING CURB RETURN & END CURB RETURN, AND AT MAXIMUM DISTANCE OF 30 FEET.
5. WEAKENED PLANE JOINTS SHALL BE 1/8" X 2" DEEP WHEN CUT AND 1/8" X 1/2" DEEP WHEN FINISHED. AND PLACED EVERY 10 FEET.
6. ALL CONCRETE SURFACES SHALL HAVE A LIGHT BROOM FINISH PARALLEL WITH THE STREET AND BE TREATED WITH CURING COMPOUND.

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DETAILS
ASSISTED LIVING PROJECT
AIRLINE HIGHWAY, HOLLISTER, CA

SHEET
6
OF 6

APPENDIX C

LANDSCAPE PLAN

	GROUNDCOVERS				
G1	HEDERA HELIX 'HAHN'S' — HAHN'S IVY	FLATS	AS REQ.	SPACE TRI. @ 12" O.C.
G2	NATIVE AND NATURALIZED GRASSES TO REMAIN, MOW SEASONALLY	FLATS	AS REQ.	SPACE TRI. @ 12" O.C.
G3	ANNUAL / PERENNIAL COLOR, TO BE SELECTED.	4" POTS	AS REQ.	SPACE TRI. @ 8" O.C.
G4	COTONEASTER D. 'LOWFAST' — BEARBERRY COTONEASTER	1 G.C.	AS REQ.	SPACE TRI. @ 4' O.C.
G5	MYOPORUM PARVIFOLIUM — N.C.N.	FLATS	AS REQ.	SPACE TRI. @ 24" O.C.
G6	FRAGARIA CHILOENSIS — ORNAMENTAL STRAWBERRY	FLATS	AS REQ.	SPACE TRI. @ 12" O.C.

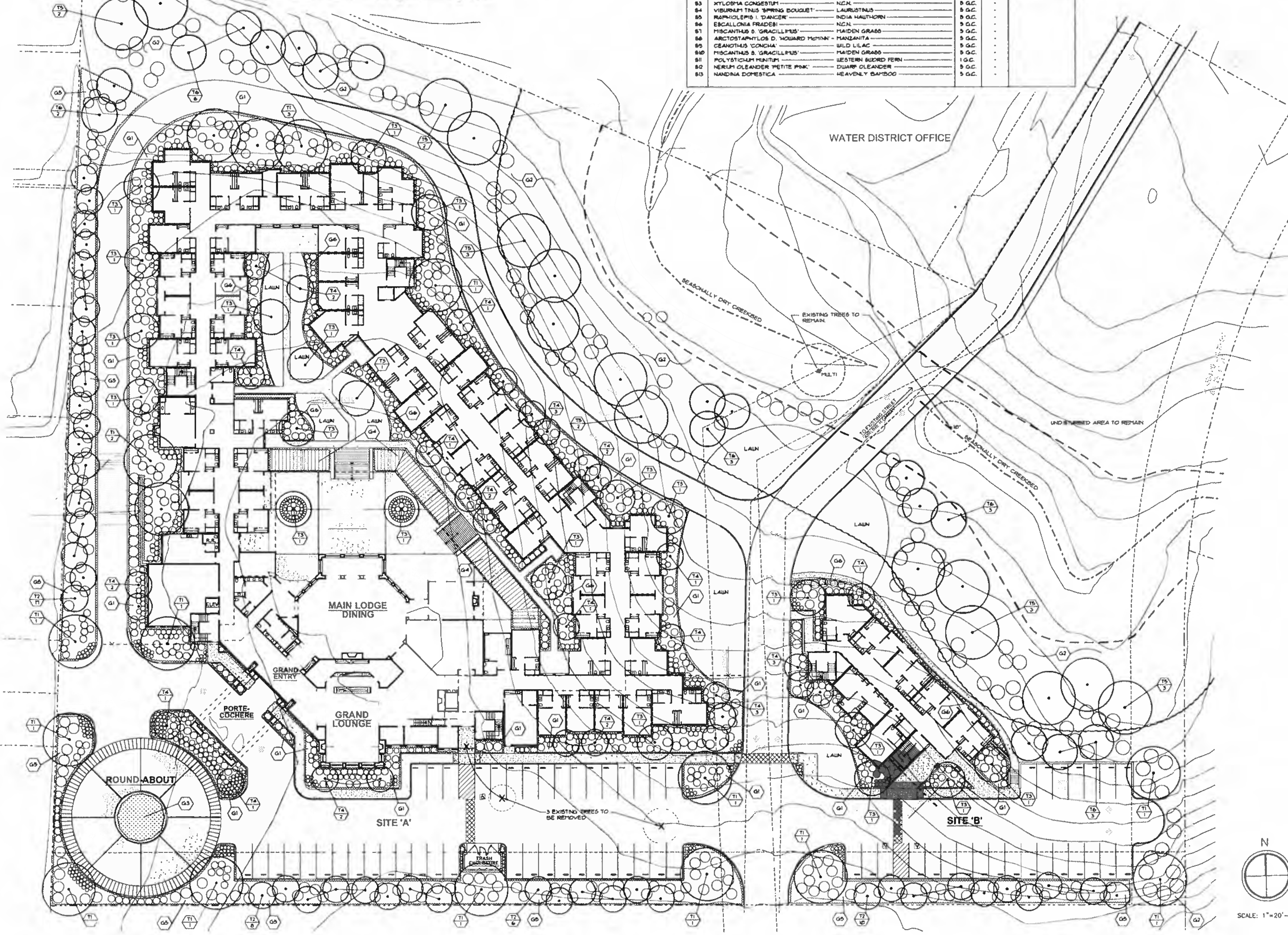
NOTES

1. A WATER CONSERVING AUTOMATIC IRRIGATION SYSTEM CONFORMING TO ALL LOCAL WATER CONSERVATION STANDARDS WILL BE PROVIDED FOR ALL FORMALLY LANDSCAPED AREAS.
2. A 2" LAYER OF BARK MULCH WILL BE APPLIED IN ALL GROUNDCOVER AREAS
3. LAWN WILL BE DOUBLE-DWARF TALL FESCUE MIX SOD
4. DISTURBED GRASSLAND AREAS WILL BE RE-SEEDED AFTER CONSTRUCTION.

PLANT LEGEND

(S1 / 3) INDICATES PLANT KEY / INDICATES PLANT QUANTITY

KEY	BOTANICAL/COMMON NAME	SIZE	QTY.	REMARKS
	TREES			
T1	PLATANUS ACERIFOLIA 'COLUMBIA' — LONDON PLANE TREE	15 G.C.	-	STANDARD FORM
T2	PINUS CANARIENSIS — CANARY ISLAND PINE	15 G.C.	-	
T3	PISTACHIA CHINENSIS — CHINESE PISTACHE	15 G.C.	-	
T4	ARBUTUS 'MARINA' — N.C.N.	15 G.C.	-	
T5	QUERCUS AGRIFOLIA — COAST LIVE OAK	15 G.C.	-	STANDARD FORM
T6	ALNUS RHOMBIFOLIA — WHITE ALDER	15 G.C.	-	
	SHRUBS, GRASSES AND PERENNIALS			
S1	HEMEROCALLIS VAR'S. — DAYLILY	1 G.C.	-	MIXED EVRGRN VAR'S.
S2	PHORMIUM T. 'APRICOT QUEEN' — NEW ZEALAND FLAX	5 G.C.	-	
S3	XYLOSMA CONGESTUM — N.C.N.	5 G.C.	-	
S4	VIBURNUM TINUS 'SPRING BOUQUET' — LAURUSTINUS	5 G.C.	-	
S5	RAPHIOLEPIS I. 'DANCER' — INDIA HAWTHORN	5 G.C.	-	
S6	ESCALLONIA FRADESI — N.C.N.	5 G.C.	-	
S7	MISCANTHUS S. 'GRACILLIMUS' — MAIDEN GRASS	5 G.C.	-	
S8	ARCTOSTAPHYLOS D. 'HOWARD McMINN' — MANZANITA	5 G.C.	-	
S9	CEANOTHUS 'CONCHA' — WILD LILAC	5 G.C.	-	
S10	MISCANTHUS S. 'GRACILLIMUS' — MAIDEN GRASS	5 G.C.	-	
S11	POLYSTICHUM MUNITUM — WESTERN SWORD FERN	1 G.C.	-	
S12	NERIUM OLEANDER 'PETITE PINK' — DWARF OLEANDER	5 G.C.	-	
S13	NANDINA DOMESTICA — HEAVENLY BAMBOO	5 G.C.	-	



WILSON & ASSOCIATES
LANDSCAPE ARCHITECTURE

RIDGEMARK
ASSISTED CARE
COMMUNITY
AIRLINE DRIVE
HOLLISTER, CA

FOR:
JOHN WYNN

NO.	DATE	ISSUE
	01.25.2018	PRELIMINARY DESIGN

PRELIMINARY
LANDSCAPE
PLAN

PL1.0

APPENDIX D

AIR QUALITY MANAGEMENT PLAN CONSISTENCY ANALYSIS

row

MBUAPCD CONSISTENCY DETERMINATION PROCEDURE Ver. 4.0

Data entry		*Data entered by user.*
Consistency Finding	NO	YES

row					
6	Jurisdiction:	**County of San Benito Unincorp**			*Lead Agency selects from pull down*
7	Project Name:	**Ridgemark Assisted Care Facility**			*Lead Agency enters*
8	Base Year for this determination:	**2015**	Project Buildout/ Occupancy Year	**2022**	*Lead Agency enters*
9			Proposed Project Occupied DU	**155**	*Total buildout of Project. Sum of all years, row 26.*

JURISDICTION DATA FROM AQMP & DOF (no data entry)

row		Base Year	Period ending January 1st of:					
		2015	**2020**	**2025**	**2030**	**2035**	**2040**	***Notes***
14	DOF Population	19,095	*From Calif. Dept of Finance. Est. for Jan 1 -- released in June of each year.*					
15	AMBAG DU Forecast for Jurisdiction	6,755	7,429	8,262	8,678	9,147	9,519	*DUs from AMBAG Travel Model, current version.*
16	AMBAG Pop Forecast for Jurisdiction	18,308	20,360	22,745	23,879	25,116	26,195	*Latest AMBAG Pop. & Employment forecasts.*
17	AMBAG Forecast Population/ DU	2.71	2.74	2.75	2.75	2.75	2.75	*Row 16/ row 15*
18	Estimated Built DUs	6,755	*Entry for 2015 is the DOF 1/2015 Housing Unit Estimate. Lead agency may overwrite if they have better data.*					

JURISDICTION DUs w/o PROJECT

row			2015	2020	2025	2030	2035	
21	Housing Stock (Built DUs, Total)		6,676	7,002	7,028	7,028	7,028	*2015 Housing Stock is baseline across the project life*
22	Approved but not Built DUs			26				*Lead Agency estimates value at period end.*
23	Total Built & Approved DUs		6,676	7,028	7,028	7,028	7,028	*Sum of Row 21 + 22*

PROPOSED NEW PROJECT DUs

row		2015	2020	2025	2030	2035	
26	Proposed New Project DUs			**155**			*Data entry by Lead Agency.*
27	TOTAL, New Project + Built & Approved DUs	**6,676**	**7,028**	**7,183**	**7,028**	**7,028**	*Sum of Row 23 + 26*

NEW PROJECT CONSISTENCY DETERMINATION

row							
29	Over (Under) AQMP DUs	**(753)**	**(1,234)**	**(1,495)**	**(2,119)**	**(2,491)**	*Row 27 - Row 15*
30	Is the project consistent in this Period?	**YES**	**YES**	**YES**	**YES**	**YES**	*If Row 30 is (negative) = YES, if positive = NO.*

OPTIONS IF INCONSISTENT (Choose one):

row	Year:	2020	2025	2030	2035	2040	
38	**A. Consult CEQA Statute and Guidelines for appropriate mitigation options**						
	B. Lead Agency preparation of consistency determination via an alternative method						
40	**C. Regional offset of significant cumulative air quality impact; For EIRs, declare Statement of Overriding Consideration**						

APPENDIX E

CalEEMod Memorandum and Results

EMC PLANNING GROUP INC.
A LAND USE PLANNING & DESIGN FIRM

301 Lighthouse Avenue Suite C Monterey California 93940
Tel 831·649·1799 Fax 831·649·8399 www.emcplanning.com

To: Teri Wissler Adam, Senior Principal

From: Tanya Kalaskar, Assistant Planner

Cc: File

Date: August 19, 2019

Re: Ridgemark Assisted Care Facility – Air Quality and Greenhouse Gas Emissions Modeling Assessment

---

Project Description

The proposed project is the construction and operations of an assisted care facility for senior adults on a seven acre site located at 3586 Airline Highway, southeast of the City of Hollister in unincorporated San Benito County. The project site is developed with a single-family residence, outbuildings, and a driveway. Much of the site is pasture; several goats and horses were observed in this area during the site visit. The proposed facility will include a total of 155 rooms and 180 beds in two three-story buildings with a combined floor area of 136,367 square feet. Grading for the proposed project includes a total cut of 18,700 cubic yards and a total fill of 7,100 cubic yards, resulting in an export of 11,600 cubic yards. The proposed project includes demolition of the existing residence and outbuildings, removal of 17 trees and planting of 141 new trees on the project site.

The project site is located within the North Central Coast Air Basin, which is within the jurisdiction of the Monterey Bay Air Resources District (air district). An initial study is being prepared by the county to evaluate the environmental impacts of the proposed project.

Scope of Assessment

This assessment provides an estimate of the proposed project's criteria air pollutant and greenhouse gas (GHG) emissions using the California Emissions Estimator Model (CalEEMod) Version 2016.3.2 software, a modeling platform recommended by the California Air Resources Board (CARB) and accepted by the air district. Model results are attached to this memorandum. For modeling purposes, data inputs to the model take into account the type and size of existing and proposed uses utilizing CalEEMod default land uses based on the size metrics provided by the applicant's architect (R. L. Davidson Architects 2017) and trip generation information provided by the applicant's traffic consultant (Pinnacle Traffic Engineering 2018).

Emissions Model

The CalEEMod software utilizes emissions models USEPA AP-42 emission factors, CARB vehicle emission models studies and studies commissioned by other California agencies such as the California Energy Commission and CalRecycle. The CalEEMod platform allows calculations of both construction and operational criteria pollutant and GHG emissions from land use projects. The model also calculates indirect emissions from processes "downstream" of the proposed project such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use.

CalEEMod is capable of estimating changes in the carbon sequestration potential of a site based on changes in natural vegetation communities and the net number of new trees that would be planted as part of the project. The model calculates a one-time only loss in the carbon sequestration potential of the site that would result from changes in land use such as converting vegetation to built or paved surfaces, and can provide an estimate of the change in the carbon sequestration potential that would result from planting new trees greater than the number of trees to be removed (net number of new trees).

Existing plant communities on the project site consist of approximately 5.51 acres of grassland. A preliminary landscape plan has been prepared that includes proposed tree replacement plantings for the project site (R. L. Davidson Architects 2017). Therefore, this assessment includes quantification of the one-time change in carbon sequestration potential of the project site.

Existing and Proposed Emissions Sources

The size and type of existing and proposed sources of criteria air pollutant and GHG emissions on the project site and their respective CalEEMod land use default categories are presented in Table 1, Project Characteristics.

Table 1 Project Characteristics

Project Components	CalEEMod Land Use[1]	Existing	Proposed
Single-family home	Single Family Housing[2]	1 unit[3]	0
Assisted care facility	Congregate Care (Assisted Living)[2]	0	155 units[4]
Vehicle Accessways[5]	Other Asphalt Surfaces	0	49,835 square feet
Sidewalks/Patios/Courtyards/Pathways	Other Non-Asphalt Surfaces	0	9,277 square feet

SOURCE: Trinity Consultants 2017, Google Earth 2018, R. L. Davidson Architects 2017, San Benito County 2019.
NOTES:
1. CalEEMod default land use subtype. Descriptions of the model default land use categories and subtypes are found in the User's Guide for CalEEMod Version 2016.3.2 available online at: http://www.aqmd.gov/caleemod/user's-guide
2. No separate parking land use for a driveway or garage needs to be identified for residential land uses because parking is already included in the calculation (Trinity Consultants 2017, page 20).
3. The area of the existing home is estimated as 4,000 square feet.
4. The proposed project includes 180 beds in155 rooms for a total building area of 136,367.
5. Vehicle accessways refers to paved surfaces on the project site excluding parking.

Methodology

Unmitigated and mitigated emissions that would be generated by the proposed project estimates are calculated in this assessment, based upon the information provided by the applicant regarding the proposed activities refer to Table 1). Unless otherwise noted, the calculated emissions estimates are based primarily on model default emissions factors for construction and operations of the project. Manual adjustments are made to the 2016 model to update building energy and low carbon intensity efficiencies that have occurred since the model was released. These adjustments are described in greater detail later in this assessment in the discussion of operational emissions data inputs.

Modeling Scenarios

Two model scenarios are used in this assessment; baseline and proposed project.

Baseline

CalEEMod default values for baseline conditions assume new development on a vacant site. However, the baseline for criteria air pollutant emissions that affect air quality are already quantified in air quality management plans. Unmitigated estimates of GHG emissions are quantified in the baseline scenario, which consists of the GHG emissions volumes that are generated by existing use of the project site (refer to Table 1). No model adjustments for building energy efficiencies or water conservation requirements are included in the baseline assessment.

Proposed Project

The proposed project modeling scenario assumes that the project will be fully operational in the year 2022. This modeling scenario includes model default adjustments for compliance with State requirements for building energy efficiency and water conservation for new development, which are discussed in greater detail in the operational emissions data inputs below.

Modeling under this scenario includes a "standard mitigated" output that reflects estimated reductions in emissions volumes that would occur through project compliance with State building energy efficiency and water conservation requirements for new development.

Assumptions

Unless otherwise noted, data inputs for the model scenarios are based on the following primary assumptions:

1. The assumed construction start date for the proposed project is March 2020.
2. The assumed operational year for the proposed project is 2022.
3. Operational GHG emissions generated by the existing single-family home on the site are estimated using the CalEEMod default land use subtype "Single Family Housing", which is defined as a single-family detached home on an individual lot.
4. The approximate floor area of the existing one-story single-family home is 4,000 square feet and the approximate floor area of the outbuildings is 2,058 square feet, based on 2018 Google Earth imagery.

5. The existing asphalt driveway on the site is not a source of substantial operational emissions and is not included in the modeling for baseline (existing) operational conditions; however, the demolition of the driveway is included in the construction estimates of cut and fill.
6. Emissions generated by the proposed assisted living facility are assumed to be similar to emissions that would be generated by the construction and operations of the CalEEMod default residential land use subtype "Congregate Care (Assisted Living)", which is defined as an independent living development that provides centralized amenities such as dining, housekeeping, transportation and organized social/recreational activities. The model default trip generation rate for "Congregate Care (Assisted Living)" has been modified based on information provided by the applicant's traffic consultant (Pinnacle Traffic Engineering 2018).
7. Emissions from the construction of on-site parking are included in the model's default factors for residential land uses. Therefore, a separate land use category for on-site parking is not needed.
8. Construction emissions from installing a new driveway are assumed to be similar to emissions that would be generated by the construction of the CalEEMod default land use subtype "Other Asphalt Surfaces", which are described as asphalt areas not used as a parking lot.
9. Emissions from sidewalks, patios, pathways, or other non-asphalt impervious surfaces, and landscaping are assumed to be generally similar to emissions that would be generated by the CalEEMod default land use subtype "Other Non-Asphalt Surfaces."

Operational Emissions Data Input

Unmitigated operational emissions estimates were modeled for baseline conditions (existing project site land use conditions) and for proposed project conditions. The proposed project conditions model run includes unmitigated operational emissions as well as "mitigated" operational emissions that reflect adjustments made to account for project compliance with the State requirements for Model Water Efficient Landscape Ordinance (MWELO) and 2019 Title 24 building energy efficiency standards.

The Title 24 building energy efficiency defaults in CalEEMod Version 2016.3.2 are the 2016 Title 24 standards. Title 24 standards are updated every three years. The 2019 Title 24 standards were recently adopted and become effective on January 1, 2020 (California Energy Commission 2018). Projects that buildout after January 1, 2020 will be required to comply with the 2019 Title 24 standards. An adjustment of 30 percent was made to the energy mitigation screen under the proposed project scenario to account for an increase in commercial building energy efficiencies above the 2016 Title 24 standards that are anticipated by California Energy Commission through compliance with 2019 Title 24 standards.

The model's default CO_2 intensity factor of 641 pounds/megawatt hour is adjusted to 290 pounds/megawatt hour to reflect Pacific Gas & Electric energy intensity projections for 2020, which is the horizon year for the provider's energy intensity factor projections. The intensity factor has been falling, in significant part due to the increasing percentage of Pacific Gas & Electric's energy portfolio obtained from renewable energy. Emissions intensity data is from Pacific Gas & Electric's *Greenhouse Gas Factors: Guidance for PG&E Customers*, dated November 2015.

Each air district (or county) assigns trip lengths for urban and rural settings, which are incorporated into the CalEEMod defaults. The air district default values for the North Central Coast Air Basin are the same regardless of a project's location within the tri-county area; therefore, the model's defaults were set to "urban" and the jurisdictional authority parameters are based on the model defaults for the air district. As noted previously, the model default trip generation rates for the proposed single-family homes are adjusted based on information provided by the applicant's traffic consultant (Pinnacle Traffic Engineering 2018). The proposed 155 living units are a mix of one and two-bedrooms for a total of 180 beds. The traffic consultant provided a trip rate of 2.60 trips per bed for a total of 468 trips based on 180 beds. The CalEEMod default trip rate value is based on the number of dwelling units in the facility. The trip rate per bed was converted to trip rate per unit by dividing the total trips by the number of proposed units (468/155). This yielded an equivalent trip rate of 3.02 trips per unit, which was used in the model.

Construction Emissions Data Inputs

The CalEEMod program models construction GHG emissions associated with land use development projects and allows for the input of project-specific construction information including phasing and equipment information, if known. CalEEMod default construction parameters allow estimates of short term construction GHG emissions based upon empirical data collected and analyzed by the California Air Resources Board.

Use of the model's default construction emissions data for a proposed project is recommended by the local air district if detailed construction information is not yet available. To accurately represent construction emissions, the available cut (18,700 cubic yards) and fill (7,100 cubic yards) information was used as inputs to the "Dust from Material Movement" screen. The total building area of 6,058 square feet (Google Earth 2018) associated with demolition of the existing home and storage sheds was used as an input to the "Demolition" screen. Adjustments were made to the hauling trip lengths on the "Trips and VMT" screen to account for the distance to the nearest landfill. The nearest landfill is the John Smith Road Landfill, located approximately four miles from the project site (Google Earth 2018).

The air district also recommends amortizing the short term construction GHG emissions over a 30-year time period to yield an annual emissions volume. Information regarding type of construction equipment by phase for the proposed project was not yet available in detail sufficient to provide data inputs to the model; therefore, consistent with air district guidance, the model defaults were utilized for construction equipment, based on the project size and land use data presented in Table 1.

Carbon Sequestration Potential Data Inputs

CalEEMod estimates a one-time only change in sequestration potential resulting from changes in natural communities. The proposed project would remove approximately 5.51 acres of grassland that is currently present on the site. Grassland is identified as a natural community with carbon sequestration value in the model; therefore, an estimate of the one-time loss in carbon sequestration value attributable to the loss of grassland is included in this assessment. CalEEMod also calculates the change in carbon sequestration potential based upon the net number of trees (the difference between trees removed and new tree plantings) on a site, averaged over a 20-year growth cycle. The proposed project includes removal of 17 trees on the project site (Kelley Engineering and Surveying 2018), and planting of 141 new trees (R. L. Davidson Architects 2017), for a net total of 124 new trees. Changes in sequestration potential are reported in metric tons of carbon dioxide equivalent (MT CO_2e).

Results

Criteria air pollutant emissions results are reported in pounds per day. GHG construction and operational emissions model results are reported on an annual basis in metric tons of carbon dioxide equivalent (MT CO_2e). Detailed model results for criteria pollutant (summer and winter) and annual GHG emissions are included as attachments to this assessment.

Operational Criteria Pollutant Emissions

Operational criteria pollutant emissions generated by the proposed project during summer and winter are reported in this assessment. Unmitigated operational criteria pollutant emissions resulting from project operations in summer and winter are summarized in Table 2, Unmitigated Operational Criteria Pollutant Emissions.

Table 2 Unmitigated Operational Criteria Pollutant Emissions[1,2]

Emissions	Reactive Organic Gases (ROG)	Nitrogen Oxides (NO_X)	Sulfur Oxides (SO_X)	Suspended Particulate Matter (PM_{10})	Carbon Monoxide (CO)
Summer	4.95	5.90	0.04	3.02	25.26
Winter	4.88	6.21	0.04	3.02	25.75

SOURCE: EMC Planning Group 2019
NOTES:
1. Results may vary due to rounding.
2. Expressed in pounds per day.

GHG Emissions

Baseline GHG Emissions

Baseline (existing) uses on the site generate approximately 17.76 MT CO_2e of GHG emissions per year.

Construction GHG Emissions

Construction activity would generate an estimated 598.74 MT CO_2e of unmitigated GHG emissions. When averaged over a 30-year operational lifetime, the annual amortized emissions equal 19.96 MT CO_2e per year.

Operational GHG Emissions

The model results indicate that proposed project would generate annual unmitigated operational GHG emissions of 864.30 MT CO_2e. As noted previously, model results identified as "mitigated" assume compliance with the State thresholds for the MWELO and 2019 Title 24 building energy efficiency standards. The mitigated emissions estimates are summarized in Table 3, Annual Mitigated Operational GHG Emissions. Mitigated GHG emissions are estimated as 838.69 MT CO_2e per year.

Table 3 Annual Mitigated Operational GHG Emissions[1,2]

Emissions Sources	Bio CO_2	NBio CO_2	CH_4	N_2O	CO_2e
Area	0.00	2.61	<0.01	0.00	2.68
Energy[3]	0.00	167.14	0.01	<0.01	168.37
Mobile	0.00	572.00	0.03	0.00	572.74
Waste	28.71	0.00	1.70	0.00	71.13
Water[4]	3.20	9.94	0.33	<0.01	23.77
Total	31.91	751.69	2.07	0.01	838.69

SOURCE: EMC Planning Group 2019
NOTES:
1. Results may vary due to rounding.
2. Expressed in MT CO_2e per year.
3. Results include emissions reductions from compliance with 2019 Title 24 building energy efficiency standards.
4. Results include emissions reductions from compliance with State thresholds for MWELO.

Carbon Sequestration Potential

Model results indicating the change in carbon sequestration potential on the project site are shown in Section 2.3 of the model results for annual emissions. The model estimates the net gain in sequestration potential as 64.04 MT CO_2e over the lifetime of the project. Averaged over a 30-year lifetime, the annual gain in sequestration potential associated with the proposed project would be equivalent to 64.04 MT CO_2e / 30 years or 2.13 MT CO_2e per year. This amount is deducted from the project's annual operational GHG emissions.

GHG Emissions Attributable to the Proposed Project

The estimated total GHG emissions that would be attributable to the proposed project consist of amortized construction emissions added to the mitigated operational emissions, less the amortized annual loss of carbon sequestration potential on the site. The net mitigated GHG emissions attributable to the proposed project are presented in Table 4, Summary of Mitigated GHG Emissions Attributable to the Project.

Table 4 Summary of Mitigated GHG Emissions Attributable to the Project[1,2]

Annual Operations[3]	Amortized Construction	Annual Project Emissions[4]	Existing Emissions[5]	Sequestration Potential[5]	Net Project Emissions
838.69	19.96	858.65	<17.76>	<2.13>	838.76

SOURCE: EMC Planning Group 2019
NOTES:
1. Results may vary due to rounding.
2. Expressed in MT CO_2e per year.
3. Mitigated Annual MT CO_2e (See Table 3).
4. Sum of amortized construction and mitigated operational emissions.
5. <Brackets> Indicate deductions.

Sources

1. Trinity Consultants. California Emissions Estimator (CalEEMod) Version 2016.3.2. November 2017. Available online at: http://www.aqmd.gov/caleemod/home
2. Trinity Consultants. CalEEMod User's Guide (Version 2016.3.2). November 2017. Available online at: http://www.aqmd.gov/caleemod/user's-guide
3. Monterey Bay Air Resources District (MBARD). February 2008. *CEQA Air Quality Guidelines*. http://mbard.org/pdf/CEQA_full%20(1).pdf
4. R. L. Davidson Architects. November 2017. Site Plan. Fresno, CA.
5. Kelley Engineering and Surveying. August 2018. Civil Plans. Hollister, CA.
6. Pinnacle Traffic Engineering. August 3, 2018. *Ridgemark Assisted Care Community San Benito County, California: Traffic Impact Analysis*. Hollister, CA.
7. Kelly, Michael, Associate Planner, San Benito County. Email message to consultant, 18 July 2019.
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9. Pacific Gas & Electric. November 2015. *Greenhouse Gas Factors: Guidance for PG&E Customers*; Accessed August 1, 2018. https://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf

10. California Energy Commission. March 2018. *2019 Building Energy Efficiency Standards Frequently Asked Questions.* https://www.energy.ca.gov/title24/2019standards/documents/2018_Title_24_2019_Building_Standards_FAQ.pdf

Ridgemark Assisted Care Facility_Existing

Monterey Bay Unified APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	1.00	Dwelling Unit	0.32	4,000.00	3

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.8	**Precipitation Freq (Days)**	53
Climate Zone	3			**Operational Year**	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E CO2 Intensity Factor for 2020

Land Use - floor area estimated using Google Earth

Construction Phase - Existing Conditions. No Construction.

Energy Use -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	1.00
tblConstructionPhase	NumDays	100.00	1.00
tblConstructionPhase	NumDays	10.00	1.00

tblConstructionPhase	NumDays	2.00	1.00
tblConstructionPhase	NumDays	5.00	1.00
tblConstructionPhase	PhaseEndDate	5/22/2019	12/10/2018
tblConstructionPhase	PhaseEndDate	5/8/2019	12/6/2018
tblConstructionPhase	PhaseEndDate	12/14/2018	12/3/2018
tblConstructionPhase	PhaseEndDate	12/19/2018	12/5/2018
tblConstructionPhase	PhaseEndDate	5/15/2019	12/7/2018
tblConstructionPhase	PhaseEndDate	12/17/2018	12/4/2018
tblConstructionPhase	PhaseStartDate	5/16/2019	12/8/2018
tblConstructionPhase	PhaseStartDate	12/20/2018	12/6/2018
tblConstructionPhase	PhaseStartDate	12/18/2018	12/5/2018
tblConstructionPhase	PhaseStartDate	5/9/2019	12/7/2018
tblConstructionPhase	PhaseStartDate	12/15/2018	12/4/2018
tblLandUse	LandUseSquareFeet	1,800.00	4,000.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	290

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0498	9.9000e-004	0.0534	9.0000e-005		6.2100e-003	6.2100e-003		6.2100e-003	6.2100e-003	0.6159	0.4501	1.0659	1.0000e-003	4.0000e-005	1.1040
Energy	1.4000e-004	1.2000e-003	5.1000e-004	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	2.5476	2.5476	1.4000e-004	5.0000e-005	2.5659
Mobile	4.9000e-003	0.0250	0.0587	1.4000e-004	0.0102	2.1000e-004	0.0105	2.7500e-003	2.0000e-004	2.9500e-003	0.0000	13.2478	13.2478	7.8000e-004	0.0000	13.2674
Waste						0.0000	0.0000		0.0000	0.0000	0.2680	0.0000	0.2680	0.0158	0.0000	0.6638
Water						0.0000	0.0000		0.0000	0.0000	0.0207	0.0653	0.0860	2.1300e-003	5.0000e-005	0.1545

Total	0.0548	0.0272	0.1126	2.4000e-004	0.0102	6.5200e-003	0.0168	2.7500e-003	6.5100e-003	9.2600e-003	0.9045	16.3107	17.2152	0.0199	1.4000e-004	17.7557

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.9000e-003	0.0250	0.0587	1.4000e-004	0.0102	2.1000e-004	0.0105	2.7500e-003	2.0000e-004	2.9500e-003	0.0000	13.2478	13.2478	7.8000e-004	0.0000	13.2674
Unmitigated	4.9000e-003	0.0250	0.0587	1.4000e-004	0.0102	2.1000e-004	0.0105	2.7500e-003	2.0000e-004	2.9500e-003	0.0000	13.2478	13.2478	7.8000e-004	0.0000	13.2674

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	9.52	9.91	8.62	27,216	27,216
Total	9.52	9.91	8.62	27,216	27,216

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.526310	0.032374	0.198537	0.139584	0.026888	0.006107	0.017909	0.036642	0.003065	0.002931	0.007432	0.001121	0.001102

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1.1524	1.1524	1.2000e-004	2.0000e-005	1.1624
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1.1524	1.1524	1.2000e-004	2.0000e-005	1.1624
NaturalGas Mitigated	1.4000e-004	1.2000e-003	5.1000e-004	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.3952	1.3952	3.0000e-005	3.0000e-005	1.4035
NaturalGas Unmitigated	1.4000e-004	1.2000e-003	5.1000e-004	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.3952	1.3952	3.0000e-005	3.0000e-005	1.4035

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	26145.2	1.4000e-004	1.2000e-003	5.1000e-004	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.3952	1.3952	3.0000e-005	3.0000e-005	1.4035
Total		**1.4000e-004**	**1.2000e-003**	**5.1000e-004**	**1.0000e-005**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**	**0.0000**	**1.3952**	**1.3952**	**3.0000e-005**	**3.0000e-005**	**1.4035**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	8760.74	1.1524	1.2000e-004	2.0000e-005	1.1624
Total		**1.1524**	**1.2000e-004**	**2.0000e-005**	**1.1624**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0498	9.9000e-004	0.0534	9.0000e-005		6.2100e-003	6.2100e-003		6.2100e-003	6.2100e-003	0.6159	0.4501	1.0659	1.0000e-003	4.0000e-005	1.1040

Unmitigated	0.0498	9.9000e-004	0.0534	9.0000e-005		6.2100e-003	6.2100e-003		6.2100e-003	6.2100e-003	0.6159	0.4501	1.0659	1.0000e-003	4.0000e-005	1.1040

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.5000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0156					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0313	8.7000e-004	0.0431	9.0000e-005		6.1600e-003	6.1600e-003		6.1600e-003	6.1600e-003	0.6159	0.4332	1.0491	9.8000e-004	4.0000e-005	1.0868
Landscaping	3.2000e-004	1.2000e-004	0.0104	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0169	0.0169	2.0000e-005	0.0000	0.0173
Total	**0.0498**	**9.9000e-004**	**0.0534**	**9.0000e-005**		**6.2200e-003**	**6.2200e-003**		**6.2200e-003**	**6.2200e-003**	**0.6159**	**0.4501**	**1.0659**	**1.0000e-003**	**4.0000e-005**	**1.1040**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0860	2.1300e-003	5.0000e-005	0.1545
Unmitigated	0.0860	2.1300e-003	5.0000e-005	0.1545

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	0.065154 / 0.0410754	0.0860	2.1300e-003	5.0000e-005	0.1545

Total		0.0860	2.1300e-003	5.0000e-005	0.1545

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.2680	0.0158	0.0000	0.6638
Unmitigated	0.2680	0.0158	0.0000	0.6638

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	1.32	0.2680	0.0158	0.0000	0.6638
Total		**0.2680**	**0.0158**	**0.0000**	**0.6638**

Ridgemark Assisted Care Facility_Proposed

Monterey Bay Unified APCD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Congregate Care (Assisted Living)	155.00	Dwelling Unit	5.65	136,367.00	180
Other Asphalt Surfaces	49.84	1000sqft	1.14	49,835.00	0
Other Non-Asphalt Surfaces	9.28	1000sqft	0.21	9,277.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.8	**Precipitation Freq (Days)**	53
Climate Zone	3			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E CO2 Intensity Factor for 2020

Land Use - from site plans and applicant's engineer

Construction Phase -

Trips and VMT - Demo and grading spoils to John Smith Landfill 4 miles distant

Demolition - demolition of existing home and outbuildings

Grading - cut = 18,700 cubic yard, fill = 7,100 cubic yards

Vehicle Trips - Daily trips/bed for 180 beds = 2.60 from traffic report. Total trips = 468. Daily trips/room = 468/155 = 3.02

Energy Use -

Sequestration - trees removed = 17. trees planted = 141. Net new trees = 124

Area Mitigation -

Energy Mitigation - Ajustment to account for compliance with 2019 Title 24 Standards

Water Mitigation - compliance with MWELO

Land Use Change - existing grassland will be removed

Table Name	Column Name	Default Value	New Value
tblGrading	MaterialExported	0.00	11,600.00
tblLandUse	LandUseSquareFeet	155,000.00	136,367.00
tblLandUse	LotAcreage	9.69	5.65
tblLandUse	Population	443.00	180.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblSequestration	NumberOfNewTrees	0.00	124.00
tblTripsAndVMT	HaulingTripLength	20.00	8.00
tblTripsAndVMT	HaulingTripLength	20.00	8.00
tblVehicleTrips	WD_TR	2.74	3.02

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.1551	42.4798	22.6854	0.0606	18.2141	2.1986	20.4128	9.9699	2.0228	11.9927	0.0000	6,130.7988	6,130.7988	1.1983	0.0000	6,159.0179
2021	86.8893	20.7903	21.8636	0.0458	1.2932	0.9765	2.2697	0.3470	0.9180	1.2651	0.0000	4,476.2351	4,476.2351	0.7186	0.0000	4,493.6945
Maximum	**86.8893**	**42.4798**	**22.6854**	**0.0606**	**18.2141**	**2.1986**	**20.4128**	**9.9699**	**2.0228**	**11.9927**	**0.0000**	**6,130.7988**	**6,130.7988**	**1.1983**	**0.0000**	**6,159.0179**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.1551	42.4798	22.6854	0.0606	18.2141	2.1986	20.4128	9.9699	2.0228	11.9927	0.0000	6,130.7988	6,130.7988	1.1983	0.0000	6,159.0179
2021	86.8893	20.7903	21.8636	0.0458	1.2932	0.9765	2.2697	0.3470	0.9180	1.2651	0.0000	4,476.2351	4,476.2351	0.7186	0.0000	4,493.6945
Maximum	**86.8893**	**42.4798**	**22.6854**	**0.0606**	**18.2141**	**2.1986**	**20.4128**	**9.9699**	**2.0228**	**11.9927**	**0.0000**	**6,130.7988**	**6,130.7988**	**1.1983**	**0.0000**	**6,159.0179**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.8007	0.1477	12.8075	6.8000e-004		0.0708	0.0708		0.0708	0.0708	0.0000	23.0386	23.0386	0.0223	0.0000	23.5948
Energy	0.0558	0.4766	0.2028	3.0400e-003		0.0385	0.0385		0.0385	0.0385		608.4024	608.4024	0.0117	0.0112	612.0178
Mobile	1.0982	5.2799	12.2537	0.0383	2.8739	0.0364	2.9103	0.7698	0.0342	0.8039		3,875.9242	3,875.9242	0.1917		3,880.7156
Total	**4.9546**	**5.9041**	**25.2640**	**0.0420**	**2.8739**	**0.1457**	**3.0196**	**0.7698**	**0.1434**	**0.9132**	**0.0000**	**4,507.3651**	**4,507.3651**	**0.2256**	**0.0112**	**4,516.3281**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.8007	0.1477	12.8075	6.8000e-004		0.0708	0.0708		0.0708	0.0708	0.0000	23.0386	23.0386	0.0223	0.0000	23.5948
Energy	0.0442	0.3773	0.1606	2.4100e-003		0.0305	0.0305		0.0305	0.0305		481.6817	481.6817	9.2300e-003	8.8300e-003	484.5440

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mobile	1.0982	5.2799	12.2537	0.0383	2.8739	0.0364	2.9103	0.7698	0.0342	0.8039		3,875.9242	3,875.9242	0.1917		3,880.7156
Total	**4.9430**	**5.8049**	**25.2218**	**0.0414**	**2.8739**	**0.1377**	**3.0116**	**0.7698**	**0.1354**	**0.9052**	**0.0000**	**4,380.6444**	**4,380.6444**	**0.2231**	**8.8300e-003**	**4,388.8544**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.23**	**1.68**	**0.17**	**1.50**	**0.00**	**5.50**	**0.27**	**0.00**	**5.59**	**0.88**	**0.00**	**2.81**	**2.81**	**1.08**	**20.81**	**2.82**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0982	5.2799	12.2537	0.0383	2.8739	0.0364	2.9103	0.7698	0.0342	0.8039		3,875.9242	3,875.9242	0.1917		3,880.7156
Unmitigated	1.0982	5.2799	12.2537	0.0383	2.8739	0.0364	2.9103	0.7698	0.0342	0.8039		3,875.9242	3,875.9242	0.1917		3,880.7156

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Congregate Care (Assisted Living)	468.10	341.00	378.20	1,259,237	1,259,237
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	468.10	341.00	378.20	1,259,237	1,259,237

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Congregate Care (Assisted Living)	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH

Congregate Care (Assisted Living)	0.543525	0.028472	0.201539	0.126188	0.021864	0.005301	0.018669	0.039782	0.003072	0.002565	0.007028	0.001098	0.000897
Other Asphalt Surfaces	0.543525	0.028472	0.201539	0.126188	0.021864	0.005301	0.018669	0.039782	0.003072	0.002565	0.007028	0.001098	0.000897
Other Non-Asphalt Surfaces	0.543525	0.028472	0.201539	0.126188	0.021864	0.005301	0.018669	0.039782	0.003072	0.002565	0.007028	0.001098	0.000897

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0442	0.3773	0.1606	2.4100e-003		0.0305	0.0305		0.0305	0.0305		481.6817	481.6817	9.2300e-003	8.8300e-003	484.5440
NaturalGas Unmitigated	0.0558	0.4766	0.2028	3.0400e-003		0.0385	0.0385		0.0385	0.0385		608.4024	608.4024	0.0117	0.0112	612.0178

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Congregate Care (Assisted Living)	5171.42	0.0558	0.4766	0.2028	3.0400e-003		0.0385	0.0385		0.0385	0.0385		608.4024	608.4024	0.0117	0.0112	612.0178
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0558**	**0.4766**	**0.2028**	**3.0400e-003**		**0.0385**	**0.0385**		**0.0385**	**0.0385**		**608.4024**	**608.4024**	**0.0117**	**0.0112**	**612.0178**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					

Congregate Care (Assisted Living)	4.09429	0.0442	0.3773	0.1606	2.4100e-003		0.0305	0.0305		0.0305	0.0305		481.6817	481.6817	9.2300e-003	8.8300e-003	484.5440
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0442**	**0.3773**	**0.1606**	**2.4100e-003**		**0.0305**	**0.0305**		**0.0305**	**0.0305**		**481.6817**	**481.6817**	**9.2300e-003**	**8.8300e-003**	**484.5440**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.8007	0.1477	12.8075	6.8000e-004		0.0708	0.0708		0.0708	0.0708	0.0000	23.0386	23.0386	0.0223	0.0000	23.5948
Unmitigated	3.8007	0.1477	12.8075	6.8000e-004		0.0708	0.0708		0.0708	0.0708	0.0000	23.0386	23.0386	0.0223	0.0000	23.5948

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.4743					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.9392					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.3872	0.1477	12.8075	6.8000e-004		0.0708	0.0708		0.0708	0.0708		23.0386	23.0386	0.0223		23.5948
Total	**3.8007**	**0.1477**	**12.8075**	**6.8000e-004**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**23.0386**	**23.0386**	**0.0223**	**0.0000**	**23.5948**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

SubCategory	lb/day										lb/day					
Architectural Coating	0.4743					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.9392					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.3872	0.1477	12.8075	6.8000e-004		0.0708	0.0708		0.0708	0.0708		23.0386	23.0386	0.0223		23.5948
Total	**3.8007**	**0.1477**	**12.8075**	**6.8000e-004**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**23.0386**	**23.0386**	**0.0223**	**0.0000**	**23.5948**

Ridgemark Assisted Care Facility_Proposed

Monterey Bay Unified APCD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Congregate Care (Assisted Living)	155.00	Dwelling Unit	5.65	136,367.00	180
Other Asphalt Surfaces	49.84	1000sqft	1.14	49,835.00	0
Other Non-Asphalt Surfaces	9.28	1000sqft	0.21	9,277.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.8	**Precipitation Freq (Days)**	53
Climate Zone	3			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E CO2 Intensity Factor for 2020

Land Use - from site plans and applicant's engineer

Construction Phase -

Trips and VMT - Demo and grading spoils to John Smith Landfill 4 miles distant

Demolition - demolition of existing home and outbuildings

Grading - cut = 18,700 cubic yard, fill = 7,100 cubic yards

Vehicle Trips - Daily trips/bed for 180 beds = 2.60 from traffic report. Total trips = 468. Daily trips/room = 468/155 = 3.02

Energy Use -

Sequestration - trees removed = 17. trees planted = 141. Net new trees = 124

Area Mitigation -

Energy Mitigation - Ajustment to account for compliance with 2019 Title 24 Standards

Water Mitigation - compliance with MWELO

Land Use Change - existing grassland will be removed

Table Name	Column Name	Default Value	New Value
tblGrading	MaterialExported	0.00	11,600.00
tblLandUse	LandUseSquareFeet	155,000.00	136,367.00
tblLandUse	LotAcreage	9.69	5.65
tblLandUse	Population	443.00	180.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblSequestration	NumberOfNewTrees	0.00	124.00
tblTripsAndVMT	HaulingTripLength	20.00	8.00
tblTripsAndVMT	HaulingTripLength	20.00	8.00
tblVehicleTrips	WD_TR	2.74	3.02

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.1625	42.4958	22.7823	0.0593	18.2141	2.1986	20.4128	9.9699	2.0228	11.9927	0.0000	5,988.5816	5,988.5816	1.1980	0.0000	6,017.3685
2021	86.8995	20.9149	21.9365	0.0449	1.2932	0.9769	2.2701	0.3470	0.9184	1.2655	0.0000	4,383.0483	4,383.0483	0.7184	0.0000	4,400.5711
Maximum	**86.8995**	**42.4958**	**22.7823**	**0.0593**	**18.2141**	**2.1986**	**20.4128**	**9.9699**	**2.0228**	**11.9927**	**0.0000**	**5,988.5816**	**5,988.5816**	**1.1980**	**0.0000**	**6,017.3685**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.1625	42.4958	22.7823	0.0593	18.2141	2.1986	20.4128	9.9699	2.0228	11.9927	0.0000	5,988.5816	5,988.5816	1.1980	0.0000	6,017.3685
2021	86.8995	20.9149	21.9365	0.0449	1.2932	0.9769	2.2701	0.3470	0.9184	1.2655	0.0000	4,383.0483	4,383.0483	0.7184	0.0000	4,400.5710
Maximum	**86.8995**	**42.4958**	**22.7823**	**0.0593**	**18.2141**	**2.1986**	**20.4128**	**9.9699**	**2.0228**	**11.9927**	**0.0000**	**5,988.5816**	**5,988.5816**	**1.1980**	**0.0000**	**6,017.3685**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.8007	0.1477	12.8075	6.8000e-004		0.0708	0.0708		0.0708	0.0708	0.0000	23.0386	23.0386	0.0223	0.0000	23.5948
Energy	0.0558	0.4766	0.2028	3.0400e-003		0.0385	0.0385		0.0385	0.0385		608.4024	608.4024	0.0117	0.0112	612.0178
Mobile	1.0265	5.5830	12.7432	0.0364	2.8739	0.0369	2.9108	0.7698	0.0347	0.8044		3,682.4936	3,682.4936	0.1974		3,687.4273
Total	**4.8830**	**6.2072**	**25.7535**	**0.0401**	**2.8739**	**0.1462**	**3.0201**	**0.7698**	**0.1440**	**0.9137**	**0.0000**	**4,313.9345**	**4,313.9345**	**0.2313**	**0.0112**	**4,323.0398**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.8007	0.1477	12.8075	6.8000e-004		0.0708	0.0708		0.0708	0.0708	0.0000	23.0386	23.0386	0.0223	0.0000	23.5948
Energy	0.0442	0.3773	0.1606	2.4100e-003		0.0305	0.0305		0.0305	0.0305		481.6817	481.6817	9.2300e-003	8.8300e-003	484.5440

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mobile	1.0265	5.5830	12.7432	0.0364	2.8739	0.0369	2.9108	0.7698	0.0347	0.8044		3,682.4936	3,682.4936	0.1974		3,687.4273
Total	**4.8714**	**6.1080**	**25.7112**	**0.0395**	**2.8739**	**0.1382**	**3.0121**	**0.7698**	**0.1359**	**0.9057**	**0.0000**	**4,187.2138**	**4,187.2138**	**0.2288**	**8.8300e-003**	**4,195.5661**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.24**	**1.60**	**0.16**	**1.57**	**0.00**	**5.48**	**0.27**	**0.00**	**5.57**	**0.88**	**0.00**	**2.94**	**2.94**	**1.05**	**20.81**	**2.95**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0265	5.5830	12.7432	0.0364	2.8739	0.0369	2.9108	0.7698	0.0347	0.8044		3,682.4936	3,682.4936	0.1974		3,687.4273
Unmitigated	1.0265	5.5830	12.7432	0.0364	2.8739	0.0369	2.9108	0.7698	0.0347	0.8044		3,682.4936	3,682.4936	0.1974		3,687.4273

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Congregate Care (Assisted Living)	468.10	341.00	378.20	1,259,237	1,259,237
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	468.10	341.00	378.20	1,259,237	1,259,237

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Congregate Care (Assisted	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH

Congregate Care (Assisted Living)	0.543525	0.028472	0.201539	0.126188	0.021864	0.005301	0.018669	0.039782	0.003072	0.002565	0.007028	0.001098	0.000897
Other Asphalt Surfaces	0.543525	0.028472	0.201539	0.126188	0.021864	0.005301	0.018669	0.039782	0.003072	0.002565	0.007028	0.001098	0.000897
Other Non-Asphalt Surfaces	0.543525	0.028472	0.201539	0.126188	0.021864	0.005301	0.018669	0.039782	0.003072	0.002565	0.007028	0.001098	0.000897

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0442	0.3773	0.1606	2.4100e-003		0.0305	0.0305		0.0305	0.0305		481.6817	481.6817	9.2300e-003	8.8300e-003	484.5440
NaturalGas Unmitigated	0.0558	0.4766	0.2028	3.0400e-003		0.0385	0.0385		0.0385	0.0385		608.4024	608.4024	0.0117	0.0112	612.0178

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Congregate Care (Assisted Living)	5171.42	0.0558	0.4766	0.2028	3.0400e-003		0.0385	0.0385		0.0385	0.0385		608.4024	608.4024	0.0117	0.0112	612.0178
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0558**	**0.4766**	**0.2028**	**3.0400e-003**		**0.0385**	**0.0385**		**0.0385**	**0.0385**		**608.4024**	**608.4024**	**0.0117**	**0.0112**	**612.0178**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Land Use	kBTU/yr	lb/day										lb/day					
Congregate Care (Assisted Living)	4.09429	0.0442	0.3773	0.1606	2.4100e-003		0.0305	0.0305		0.0305	0.0305		481.6817	481.6817	9.2300e-003	8.8300e-003	484.5440
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0442**	**0.3773**	**0.1606**	**2.4100e-003**		**0.0305**	**0.0305**		**0.0305**	**0.0305**		**481.6817**	**481.6817**	**9.2300e-003**	**8.8300e-003**	**484.5440**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.8007	0.1477	12.8075	6.8000e-004		0.0708	0.0708		0.0708	0.0708	0.0000	23.0386	23.0386	0.0223	0.0000	23.5948
Unmitigated	3.8007	0.1477	12.8075	6.8000e-004		0.0708	0.0708		0.0708	0.0708	0.0000	23.0386	23.0386	0.0223	0.0000	23.5948

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.4743					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.9392					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.3872	0.1477	12.8075	6.8000e-004		0.0708	0.0708		0.0708	0.0708		23.0386	23.0386	0.0223		23.5948
Total	**3.8007**	**0.1477**	**12.8075**	**6.8000e-004**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**23.0386**	**23.0386**	**0.0223**	**0.0000**	**23.5948**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.4743					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.9392					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.3872	0.1477	12.8075	6.8000e-004		0.0708	0.0708		0.0708	0.0708		23.0386	23.0386	0.0223		23.5948
Total	**3.8007**	**0.1477**	**12.8075**	**6.8000e-004**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**23.0386**	**23.0386**	**0.0223**	**0.0000**	**23.5948**

Ridgemark Assisted Care Facility_Proposed

Monterey Bay Unified APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Congregate Care (Assisted Living)	155.00	Dwelling Unit	5.65	136,367.00	180
Other Asphalt Surfaces	49.84	1000sqft	1.14	49,835.00	0
Other Non-Asphalt Surfaces	9.28	1000sqft	0.21	9,277.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.8	**Precipitation Freq (Days)**	53
Climate Zone	3			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E CO2 Intensity Factor for 2020

Land Use - from site plans and applicant's engineer

Construction Phase -

Trips and VMT - Demo and grading spoils to John Smith Landfill 4 miles distant

Demolition - demolition of existing home and outbuildings

Grading - cut = 18,700 cubic yard, fill = 7,100 cubic yards

Vehicle Trips - Daily trips/bed for 180 beds = 2.60 from traffic report. Total trips = 468. Daily trips/room = 468/155 = 3.02

Energy Use -

Sequestration - trees removed = 17. trees planted = 141. Net new trees = 124

Area Mitigation -

Energy Mitigation - Ajustment to account for compliance with 2019 Title 24 Standards

Water Mitigation - compliance with MWELO

Land Use Change - existing grassland will be removed

Table Name	Column Name	Default Value	New Value
tblGrading	MaterialExported	0.00	11,600.00
tblLandUse	LandUseSquareFeet	155,000.00	136,367.00
tblLandUse	LotAcreage	9.69	5.65
tblLandUse	Population	443.00	180.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblSequestration	NumberOfNewTrees	0.00	124.00
tblTripsAndVMT	HaulingTripLength	20.00	8.00
tblTripsAndVMT	HaulingTripLength	20.00	8.00
tblVehicleTrips	WD_TR	2.74	3.02

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.3219	2.8846	2.4232	5.0500e-003	0.2738	0.1374	0.4113	0.1146	0.1286	0.2432	0.0000	448.6939	448.6939	0.0800	0.0000	450.6932
2021	0.9611	0.7828	0.8400	1.6700e-003	0.0416	0.0375	0.0791	0.0112	0.0352	0.0464	0.0000	147.3928	147.3928	0.0261	0.0000	148.0450
Maximum	**0.9611**	**2.8846**	**2.4232**	**5.0500e-003**	**0.2738**	**0.1374**	**0.4113**	**0.1146**	**0.1286**	**0.2432**	**0.0000**	**448.6939**	**448.6939**	**0.0800**	**0.0000**	**450.6932**
Total																598.74

Mitigated Construction

Year	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
2020	0.3219	2.8845	2.4232	5.0500e-003	0.2738	0.1374	0.4113	0.1146	0.1286	0.2432	0.0000	448.6936	448.6936	0.0800	0.0000	450.6929
2021	0.9611	0.7828	0.8400	1.6700e-003	0.0416	0.0375	0.0791	0.0112	0.0352	0.0464	0.0000	147.3927	147.3927	0.0261	0.0000	148.0449
Maximum	**0.9611**	**2.8845**	**2.4232**	**5.0500e-003**	**0.2738**	**0.1374**	**0.4113**	**0.1146**	**0.1286**	**0.2432**	**0.0000**	**448.6936**	**448.6936**	**0.0800**	**0.0000**	**450.6929**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**3-2-2020**	**6-1-2020**	1.2190	1.2190
2	**6-2-2020**	**9-1-2020**	0.8445	0.8445
3	**9-2-2020**	**12-1-2020**	0.8400	0.8400
4	**12-2-2020**	**3-1-2021**	0.7816	0.7816
5	**3-2-2021**	**6-1-2021**	1.2393	1.2393
		Highest	1.2393	1.2393

2.2 Overall Operational

Unmitigated Operational

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Area	0.6714	0.0185	1.6009	8.0000e-005		8.8400e-003	8.8400e-003		8.8400e-003	8.8400e-003	0.0000	2.6125	2.6125	2.5200e-003	0.0000	2.6756
Energy	0.0102	0.0870	0.0370	5.6000e-004		7.0300e-003	7.0300e-003		7.0300e-003	7.0300e-003	0.0000	192.4018	192.4018	0.0111	3.7400e-003	193.7948
Mobile	0.1740	0.9301	2.0497	6.2300e-003	0.4733	6.2200e-003	0.4795	0.1271	5.8300e-003	0.1329	0.0000	572.0030	572.0030	0.0295	0.0000	572.7414
Waste						0.0000	0.0000		0.0000	0.0000	28.7110	0.0000	28.7110	1.6968	0.0000	71.1304

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Water						0.0000	0.0000		0.0000	0.0000	3.2039	10.1193	13.3232	0.3301	7.9800e-003	23.9532
Total	**0.8555**	**1.0356**	**3.6876**	**6.8700e-003**	**0.4733**	**0.0221**	**0.4954**	**0.1271**	**0.0217**	**0.1488**	**31.9150**	**777.1366**	**809.0516**	**2.0700**	**0.0117**	**864.2953**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.6714	0.0185	1.6009	8.0000e-005		8.8400e-003	8.8400e-003		8.8400e-003	8.8400e-003	0.0000	2.6125	2.6125	2.5200e-003	0.0000	2.6756
Energy	8.0600e-003	0.0689	0.0293	4.4000e-004		5.5700e-003	5.5700e-003		5.5700e-003	5.5700e-003	0.0000	167.1357	167.1357	0.0103	3.2700e-003	168.3669
Mobile	0.1740	0.9301	2.0497	6.2300e-003	0.4733	6.2200e-003	0.4795	0.1271	5.8300e-003	0.1329	0.0000	572.0030	572.0030	0.0295	0.0000	572.7414
Waste						0.0000	0.0000		0.0000	0.0000	28.7110	0.0000	28.7110	1.6968	0.0000	71.1304
Water						0.0000	0.0000		0.0000	0.0000	3.2039	9.9405	13.1444	0.3301	7.9800e-003	23.7728
Total	**0.8534**	**1.0175**	**3.6799**	**6.7500e-003**	**0.4733**	**0.0206**	**0.4939**	**0.1271**	**0.0202**	**0.1474**	**31.9150**	**751.6918**	**783.6067**	**2.0692**	**0.0113**	**838.6871**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.25**	**1.75**	**0.21**	**1.75**	**0.00**	**6.61**	**0.29**	**0.00**	**6.73**	**0.98**	**0.00**	**3.27**	**3.15**	**0.04**	**4.01**	**2.96**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	87.7920
Vegetation Land Change	-23.7481
Total	**64.0439**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1740	0.9301	2.0497	6.2300e-003	0.4733	6.2200e-003	0.4795	0.1271	5.8300e-003	0.1329	0.0000	572.0030	572.0030	0.0295	0.0000	572.7414
Unmitigated	0.1740	0.9301	2.0497	6.2300e-003	0.4733	6.2200e-003	0.4795	0.1271	5.8300e-003	0.1329	0.0000	572.0030	572.0030	0.0295	0.0000	572.7414

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Congregate Care (Assisted Living)	468.10	341.00	378.20	1,259,237	1,259,237
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	468.10	341.00	378.20	1,259,237	1,259,237

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Congregate Care (Assisted Living)	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Congregate Care (Assisted Living)	0.543525	0.028472	0.201539	0.126188	0.021864	0.005301	0.018669	0.039782	0.003072	0.002565	0.007028	0.001098	0.000897
Other Asphalt Surfaces	0.543525	0.028472	0.201539	0.126188	0.021864	0.005301	0.018669	0.039782	0.003072	0.002565	0.007028	0.001098	0.000897
Other Non-Asphalt Surfaces	0.543525	0.028472	0.201539	0.126188	0.021864	0.005301	0.018669	0.039782	0.003072	0.002565	0.007028	0.001098	0.000897

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	87.3879	87.3879	8.7400e-003	1.8100e-003	88.1452
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	91.6739	91.6739	9.1700e-003	1.9000e-003	92.4683
NaturalGas Mitigated	8.0600e-003	0.0689	0.0293	4.4000e-004		5.5700e-003	5.5700e-003		5.5700e-003	5.5700e-003	0.0000	79.7478	79.7478	1.5300e-003	1.4600e-003	80.2217
NaturalGas Unmitigated	0.0102	0.0870	0.0370	5.6000e-004		7.0300e-003	7.0300e-003		7.0300e-003	7.0300e-003	0.0000	100.7278	100.7278	1.9300e-003	1.8500e-003	101.3264

5.2 Energy by Land Use - NaturalGas

Unmitigated

Land Use	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	kBTU/yr	tons/yr										MT/yr					
Congregate Care (Assisted Living)	1.88757e+006	0.0102	0.0870	0.0370	5.6000e-004		7.0300e-003	7.0300e-003		7.0300e-003	7.0300e-003	0.0000	100.7278	100.7278	1.9300e-003	1.8500e-003	101.3264
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0102**	**0.0870**	**0.0370**	**5.6000e-004**		**7.0300e-003**	**7.0300e-003**		**7.0300e-003**	**7.0300e-003**	**0.0000**	**100.7278**	**100.7278**	**1.9300e-003**	**1.8500e-003**	**101.3264**

Mitigated

Land Use	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	kBTU/yr	tons/yr										MT/yr					
Congregate Care (Assisted Living)	1.49442e+006	8.0600e-003	0.0689	0.0293	4.4000e-004		5.5700e-003	5.5700e-003		5.5700e-003	5.5700e-003	0.0000	79.7478	79.7478	1.5300e-003	1.4600e-003	80.2217
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total		**8.0600e-003**	**0.0689**	**0.0293**	**4.4000e-004**		**5.5700e-003**	**5.5700e-003**		**5.5700e-003**	**5.5700e-003**	**0.0000**	**79.7478**	**79.7478**	**1.5300e-003**	**1.4600e-003**	**80.2217**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Congregate Care (Assisted Living)	696919	91.6739	9.1700e-003	1.9000e-003	92.4683
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**91.6739**	**9.1700e-003**	**1.9000e-003**	**92.4683**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Congregate Care (Assisted Living)	664336	87.3879	8.7400e-003	1.8100e-003	88.1452
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**87.3879**	**8.7400e-003**	**1.8100e-003**	**88.1452**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.6714	0.0185	1.6009	8.0000e-005		8.8400e-003	8.8400e-003		8.8400e-003	8.8400e-003	0.0000	2.6125	2.6125	2.5200e-003	0.0000	2.6756

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Unmitigated	0.6714	0.0185	1.6009	8.0000e-005		8.8400e-003	8.8400e-003		8.8400e-003	8.8400e-003	0.0000	2.6125	2.6125	2.5200e-003	0.0000	2.6756

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0866					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5364					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0484	0.0185	1.6009	8.0000e-005		8.8400e-003	8.8400e-003		8.8400e-003	8.8400e-003	0.0000	2.6125	2.6125	2.5200e-003	0.0000	2.6756
Total	**0.6714**	**0.0185**	**1.6009**	**8.0000e-005**		**8.8400e-003**	**8.8400e-003**		**8.8400e-003**	**8.8400e-003**	**0.0000**	**2.6125**	**2.6125**	**2.5200e-003**	**0.0000**	**2.6756**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0866					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5364					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0484	0.0185	1.6009	8.0000e-005		8.8400e-003	8.8400e-003		8.8400e-003	8.8400e-003	0.0000	2.6125	2.6125	2.5200e-003	0.0000	2.6756
Total	**0.6714**	**0.0185**	**1.6009**	**8.0000e-005**		**8.8400e-003**	**8.8400e-003**		**8.8400e-003**	**8.8400e-003**	**0.0000**	**2.6125**	**2.6125**	**2.5200e-003**	**0.0000**	**2.6756**

7.0 Water Detail

7.1 Mitigation Measures Water

Use Water Efficient Irrigation System

Category	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	13.1444	0.3301	7.9800e-003	23.7728
Unmitigated	13.3232	0.3301	7.9800e-003	23.9532

7.2 Water by Land Use

Unmitigated

Land Use	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
	Mgal	MT/yr			
Congregate Care (Assisted Living)	10.0989 / 6.36668	13.3232	0.3301	7.9800e-003	23.9532
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**13.3232**	**0.3301**	**7.9800e-003**	**23.9532**

Mitigated

Land Use	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
	Mgal	MT/yr			
Congregate Care (Assisted Living)	10.0989 / 5.97831	13.1444	0.3301	7.9800e-003	23.7728
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**13.1444**	**0.3301**	**7.9800e-003**	**23.7728**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	28.7110	1.6968	0.0000	71.1304
Unmitigated	28.7110	1.6968	0.0000	71.1304

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Congregate Care (Assisted Living)	141.44	28.7110	1.6968	0.0000	71.1304
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**28.7110**	**1.6968**	**0.0000**	**71.1304**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Congregate Care (Assisted Living)	141.44	28.7110	1.6968	0.0000	71.1304
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**28.7110**	**1.6968**	**0.0000**	**71.1304**

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	64.0439	0.0000	0.0000	64.0439

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Grassland	5.51 / 0	-23.7481	0.0000	0.0000	-23.7481
Total		**-23.7481**	**0.0000**	**0.0000**	**-23.7481**

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	124	87.7920	0.0000	0.0000	87.7920
Total		**87.7920**	**0.0000**	**0.0000**	**87.7920**

APPENDIX F

PROTOCOL SURVEYS

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July 24, 2019

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RE: NADER SENIOR ASSISTED LIVING CALIFORNIA TIGER SALAMANDER ASSESSMENT PART ONE: 2018-19 WINTER UPLAND DRIFT FENCE SURVEY

Dear Nader:

This letter-report presents the results of the California tiger salamander (*Ambystoma californiense*) (CTS) winter 2018-19 pitfall trap study conducted for the proposed Senior Assisted Living project in San Benito County, CA (Figure 1). The study was performed, due to past records of CTS offsite on the adjacent Ridgemark Golf Course and Country Club (RGCCC) in 1993, 1995 and 2000 (Bryan Mori Biological Consulting 1993; B. Mori, pers. obs. 1995; Bryan Mori Biological Consulting 2000).

In summary, no CTS were observed during the winter upland study, despite above-average rainfall during the study period. These findings indicate that CTS likely are not present on the project site, especially when paired with the negative results from the spring 2019 aquatic surveys performed on the adjacent RGCCC (prepared as a separate report - Bryan Mori Biological Consulting 2019). Additionally, no other special-status species was observed, including California red-legged frog (*Rana draytoni*) and western spadefoot toad (*Speya hammondii*).

INTRODUCTION

The Senior Assisted Living project was first proposed in 2005, on another section of the property, immediately adjacent to the RGCCC (Figure 2). In response to that project proposal, the San Benito County Planning Department requested a CTS assessment be performed, due to the species' listing as a threatened species the previous year. Consequently, winter upland and spring aquatic surveys were performed in 2005-06. No CTS were recorded onsite during those studies (Bryan Mori Biological Consulting Services 2006). The project, however, was put on hold until 2018. In the interim, the project was re-designed and sited to its current location (Figure 2). Due to the 12-year time lapse and relocation of the project site, the results of original CTS study were no longer applicable. Therefore, the 2018-19 winter upland study was performed, at the request of the County.

Figure 1. Nader Senior Assisted Living Project Site

Bryan Mori Biological Consulting Services

Figure 2. The current and 2005 project site locations.

ENVIRONMENTAL SETTING

The project site encompasses 6.86 acres within a highly fragmented landscape, at the outer limits of Hollister, San Benito County. The principal habitats on the site are annual grassland/ruderal and coyote brush scrub, with scattered landscape trees. An ephemeral drainage swale, which conveys standing water only following heavy rainfall, runs east to west through the northern section of the property. Vegetation along the swale is dominated by coyote brush, with occasional willows. The property supports a single-family residence, ancillary structures and horse pastures.

The surrounding habitat mosaic is characterized by a dominance of high-density residential development and remnant patches of annual grasslands. Land uses surrounding the site include Sunnyslope Water District offices, Ridgemark Golf Course and Country Club, and livestock grazing lands.

METHODS

The pitfall trap study was performed under Federal Permit TE778668-9 and State Scientific Collection Permit No. 001912, with prior approval from the US Fish and Wildlife Service (FWS) and California Department of Fish and Wildlife (CDFW).

The drift fences were installed along the east and south perimeters of the project site, and on the adjoining property to the south, in the proximity of two off-site ponds (Figure 3). The installation was performed by contractors hired by the project applicant and monitored by Bryan Mori (Recovery Permit holder).

Figure 3. CTS upland fence line locations.

The fences were constructed from standard plastic-weave silt fence material with attached wooden stakes. The silt fences were buried a minimum of 6 inches into the ground and extended roughly 2.5 feet above grade. The total length of the drift fence line was approximately 1800 feet, with 1-foot gaps placed between each fence segment (Figures 4 and 5). At each gap, a removable board was installed to create a continuous fence line, when the traps were in use (i.e., open), and removed when the traps were closed, to facilitate the passage of wildlife. Paired, plastic 2-gallon buckets (traps) were buried approximately every 50 feet along the fence line, for a total of 68 traps. A plywood coverboard was used at each trap to provide cover from predators, while the traps were open. When traps were closed, the cover boards and bricks were used to securely close the trap lids. Each trap was numbered for identification. Bilingual "Do Not Disturb" placards, with a brief description of the study, permit numbers and contact information, were stapled to the fence near each trap location. The drift fence was completed on 9 October. On 26 February, screening was installed along a section of the southern fence line on the adjacent parcel, where overflow from the neighboring golf course compromised the fence (Figure 6).

Monitoring was performed from 22 November 2018 to 10 March 2019. Traps were opened during the late afternoon on rainy days or when rain was predicted for that night, then checked the following morning and closed, if no further rain was expected; the traps were left open if continuing rain was in the forecast. All wildlife species captured were identified and recorded on data sheets.

Figure 4. Eastern section of the CTS drift fence.

Figure 5. Southern section of the CTS fence.

Figure 6. Section of CTS fence modified with screening to allow for overflow from the golf course pond to pass through without damaging the fence line.

In addition to when the traps were opened, the fences were checked weekly during the dry period for vandalism or disturbance by predators. The fence lines and traps were maintained during the study by the permit holder and project applicant contractors. All traps were permanently closed on 10 March and soon, thereafter, removed by contractors. The drift-fence/trap removal was monitored by the permit holder for possible CTS presence and to ensure all materials were removed and trap holes and ditches were backfilled. No CTS were uncovered during fence and trap removal.

Precipitation Data

Rainfall data during the study period were obtained from the Weather Underground website (www.wunderground.com/dashboard/pws/KCAHOLLI38) for Ridgemark, as well as two plastic rain gauges installed on the fence lines. The rainfall totals are for a 24-hour period preceding the morning inspection of traps (i.e., 0700 – 0700).

Regional CTS Occurrences

Information regarding CTS winter observations from the region was obtained for general comparative purposes and included communications with Mark Allaback regarding the Santa Clara Valley, as well as personal observations from the Prunedale/Elkhorn Slough area.

RESULTS

Sixty-eight (68) traps were monitored for 46 nights between 22 November 2018 and 10 March 2019, for a level of effort at 3,128 trap-nights. No CTS or other special-status species were captured, including CRF and WST, which have been recorded in the project vicinity (Bryan Mori Biological Consulting 1993; B. Mori, pers. obs. 1995; Bryan Mori Biological Consulting 2000).

Five non-target wildlife species were captured during the pitfall trap study; these included Gabilan Mountains slender salamander (*Batrachoseps gavilanensis*), western toad (*Anaxyrus boreas halophilus*), Sierra chorus frog (*Pseudacris sierrae*) and Gilbert's skink (*Plestion gilberti*). The summary of captures are presented on Table 1.

Table 1. Daily amphibian captures and precipitation recorded from 22 November 2018 – 10 March 2019.

DATE	SCF	AWT	GMSS	RAINFALL
22-Nov	1	1	13	0.55
23-Nov	0	0	2	0.02
24-Nov	2	1	2	0.10
28-Nov	4	1	0	0.40
29-Nov	0	0	1	1.04
30-Nov	0	0	0	0.61
1-Dec	1	0	0	0.00
2-Dec	2	0	0	0.52
5-Dec	0	0	0	0.06
6-Dec	2	1	0	0.50
17-Dec	4	0	3	0.60
25-Dec	4	0	2	0.23
6-Jan	0	0	0	0.24
7-Jan	0	0	1	0.74
8-Jan	3	0	0	0.00
9-Jan	1	0	1	0.00
12-Jan	4	0	0	0.09
13-Jan	1	0	0	0.00
14-Jan	3	0	0	0.00
15-Jan	1	0	0	0.06
16-Jan	0	0	0	0.05
17-Jan	2	0	0	0.96

DATE	SCF	AWT	GMSS	RAINFALL
18-Jan	1	0	0	0.05
21-Jan	2	0	0	0.34
31-Jan	3	0	0	0.83
1-Feb	1	0	1	0.00
2-Feb	2	0	0	0.64
3-Feb	2	0	1	0.29
4-Feb	1	0	0	0.86
5-Feb	0	0	0	1.23
9-Feb	3	0	0	0.49
10-Feb	1	0	0	0.85
13-Feb	0	0	0	0.17
14-Feb	1	0	0	0.14
15-Feb	0	0	0	0.54
16-Feb	1	0	0	0.44
17-Feb	0	0	1	0.18
27-Feb	1	0	0	0.00
28-Feb	2	0	0	0.10
1-Mar	1	0	0	0.00
2-Mar	0	0	5	0.22
6-Mar	1	1	0	0.49
7-Mar	1	0	1	0.20
8-Mar	0	0	0	0.10
9-Mar	1	0	0	0.14
10-Mar	0	0	1	0.10
TOTALS	**60**	**5**	**35**	**15.17**

Key: SCF = Sierra chorus frog; AWT = American western toad; GMSS = Gabilan Mountains slender salamander.

Other Regional Winter CTS Studies

Regional CTS observations during the study period were obtained from personal observations during nocturnal visual encounter surveys from the Prunedale/Elkhorn Slough region and egg surveys performed in central Santa Clara Valley. CTS were observed moving on 28 November 2018 in the Prunedale/Elkhorn Slough region, and egg masses were observed on 10 January, at a Santa Clara Valley study site (M. Allaback, pers. comm.).

Regional Precipitation

In the study region, rainfall between October and March (the study period) averages 12.56 inches (https://www.usclimatedata.com/climate/hollister/california/united-states/usca0486). During the 2018-19 winter upland study, rainfall was measured at 15.17 inches from 22 November 2018 – 10 March, just over 2.5 inches above the regional the average.

DISCUSSION

A corresponding CTS 2019 spring sampling study was performed at off-site ponds on the Ridgemark Golf Course and Country Club, adjacent to the project site Club (Bryan Mori Biological Consulting 2019). The offsite ponds were studied to provide a more comprehensive picture of CTS in the project area and to aid the preparation of project mitigation measures. The spring study is referenced in the discussion, below.

CTS Project Site Status

The negative results of the 2018-19 winter upland study indicate that CTS are likely not utilizing the uplands of the project site as non-breeding habitat. Reasons to support this finding include:

1. The study was conducted during above-normal rainfall for the region, under conditions when CTS are most likely to be above-ground and moving across the landscape. Regional observations include migration in late November and eggs in January.
2. Two of the trap lines were located immediately adjacent to offsite potential CTS breeding ponds in question (please refer to Figure 3).
3. The negative results obtained from the corresponding offsite spring 2019 aquatic sampling performed on the adjacent RGCCC suggest the Ridgemark CTS population may have become extirpated, since CTS were last recorded in 2000, due to loss of upland habitat (Bryan Mori Biological Consulting 2019).
4. The lack of suitable CTS breeding habitat on Ridgemark, at the three offsite ponds nearest to the project site (Bryan Mori Biological Consulting 2019).
5. The project site is largely “shielded” from the CTS ponds on the adjacent golf course, due to golf course and subdivision developments (please refer to Figure 3).
6. The overall highly fragmented surrounding landscape.

Project Implications and Recommendations
Based on the negative results of this study, the proposed project likely would not result in the direct take of CTS or loss of CTS upland habitat during construction activities. However, as the proposed project lies within the general range of CTS, standard precautionary measures should be included, as part of project implementation, such as:

- Installation of exclusion fencing around the eastern and southern perimeters of the project site. Cover boards should be placed along the inside and outside lengths of the fence to provide shelter for wildlife.
- A worker's environmental training should be provided to the contractor and all personnel working on the site during the construction activities by a qualified biologist. The training will address legal status, identification, biology, protection measures, and penalties for violations resulting in take.
- A qualified biologist should be present to observe the initial clearing, stripping, and/or grading activities. If CTS are observed, all work shall immediately cease, and the CDFW and USFWS contacted for further guidance, before any additional work proceeds. Lengthy delays may result, if state and federal take permits have not been previously issued for the project.
- The entire work area should be delineated with orange construction fencing. No storage of materials, spoils and staging of heavy equipment should occur outside of the designated work area.
- All trenches with vertical side walls should have sloped ends and/or wood planks placed to allow for entrapped wildlife to escape.
- During the rainy season, or following unseasonable rains, a qualified wildlife biologist should inspect under vehicles, and all open holes and trenches at the beginning of each work day to check for entrapped wildlife, after rainfall of 0.10" or greater.

These measures are general in nature and are subject to modifications by the County, USFWS and CDFW.

Please contact me if you have any comments or questions regarding this report.

Respectfully,

Bryan Mori
Consulting Wildlife Biologist

cc: Chris Kofron, Permit Coordinator, USFWS, Ventura Field Office; Mark Ogonowski, USFWS, Ventura Field Office; Laura Patterson, CDFW, Sacramento; Craig Bailey, CDFW, Region 4 (Fresno); Renee Robison, CDFW, Region 4 (Fresno).

REFERENCES AND PERSONS CONTACTED

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Persons Contacted:
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July 24, 2019

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RE: NADER SENIOR ASSISTED LIVING CALIFORNIA TIGER SALAMANDER ASSESSMENT PART TWO: 2019 SPRING AQUATIC SAMPLING

Dear Nader:

This letter presents the results of aquatic sampling for California tiger salamander (*Ambystoma californiense*) (CTS) performed for the proposed Senior Assisted Living Project, Hollister, CA (Figure 1).

In summary, no CTS larvae were observed during aquatic sampling at any of the five study ponds. Four of the ponds did not support suitable breeding conditions during the sampling period, despite above-average rainfall the preceding winter. These findings suggest that CTS did not breed at any of the ponds this year and may be extirpated from the study area (Ridgemark Golf Course and Country Club), due to loss of upland habitat and habitat fragmentation, since CTS were last recorded on the golf course in 2000 (Bryan Mori Biological Consulting 2000). Additionally, no other aquatic special-status species was observed, including California red-legged frog (*Rana draytoni*), western spadefoot toad (*Speya hammondii*) and western pond turtle (*Actinemys marmorata*).

INTRODUCTION

No aquatic habitat is present on the proposed Senior Assisted Living project site (herein referred to as the project site). However, known and potential CTS breeding ponds are present on the adjacent Ridgemark Golf Course and Country Club (RGCCC) property, within CTS dispersal distance to the project site. Therefore, in order to provide more comprehensive results for determining the status of CTS in the project area, spring aquatic sampling was performed on RGCCC, in conjunction with a corresponding 2018-19 CTS winter upland pitfall trapping study performed on the project site (prepared as a separate report).

Together, the results of the aquatic surveys are intended to assist in developing appropriate mitigation measures to be implemented, as part of the project.

Figure 1. Ridgemark Golf Course and Country Club CTS Sampling Site

GARMIN

Bryan Mori Biological Consulting Services

BACKGROUND

CTS were first discovered at two ponds on RGCCC in 1993, during a special-status species habitat assessment prepared for an RGCCC subdivision project (Bryan Mori Biological Consulting 1993). CTS again were observed in 1995, during supplemental sampling to collect specimens for genetic analyses (B. Mori, pers. obs.), and again in 2000, when one of the breeding ponds was sampled as a control site, for an unrelated subdivision proposal adjacent to RGCCC (Bryan Mori Biological Consulting Services 2000). No other CTS surveys are known to have been conducted on RGCCC since 2000 and, as such, the status of CTS on RGCCC has been uncertain.

Based on the review of Google Earth historical aerial photographs of RGCCC, from 1998 onward, the most notable landscape alteration on the site was the development of a subdivision to the east of the known CTS breeding ponds (Figures 2 and 3). The subdivision site likely encompassed the remaining suitable CTS upland habitat on RGCCC. On Figure 2, it appears that, in 1998, upland habitat remained patchily distributed amongst the initial development of the subdivision units. By 2003, however, subdivision development was completed and suitable upland habitat was no longer present (Figure 3).

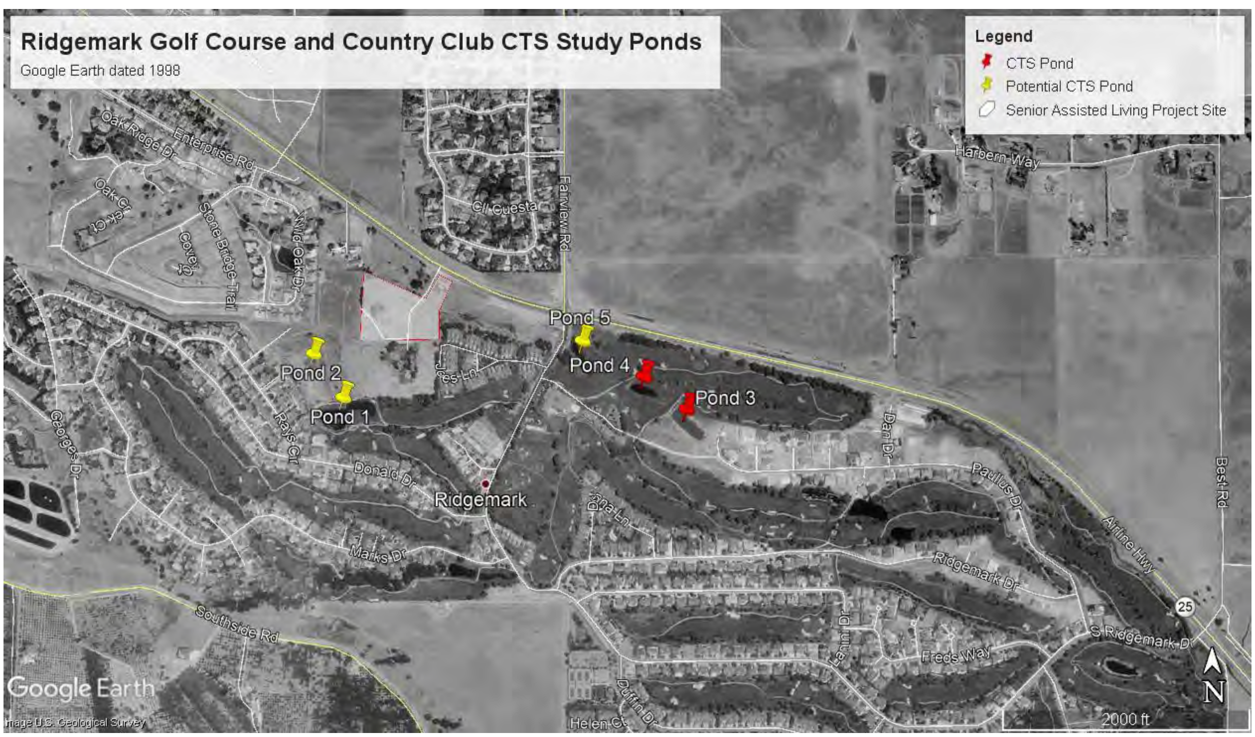

Figure 2. This aerial photograph of RGCCC from 1998 shows the early stage of subdivision development east of the known CTS ponds. Note the scarcity of residential units.

Figure 3. This aerial photograph taken in 2003 shows the completed subdivision east of the known CTS breeding ponds (Ponds 3 and 4). Note the absence of upland habitat.

METHODS

The spring larval sampling was performed following the protocol, Interim Guidance on Site Assessment for Determining the Presence or a Negative Finding of the California Tiger Salamander, October 2003 (USFWS and CDFG 2003). Prior approval to perform the surveys was obtained from the US Fish and Wildlife Service (FWS) and California Department of Fish and Wildlife (CDFW). Due to the abundance of rainfall the preceding winter, the first surveys were started on 4 April to allow for recently hatched larvae to attain a larger size.

Five ponds were studied and included 3 potential CTS breeding ponds and 2 previously known CTS ponds. These ponds are labeled Ponds 1 – 5 and are shown on Figure 3. Two biologists sampled the study ponds using dip nets and or seine, depending on water depth and density of aquatic vegetation. The dip nets were of standard length with 3/16" mesh, while the seine measured 12' l x 4' w, with 3/16" mesh. Amphibians and aquatic invertebrates captured were identified to the nearest taxon and recorded in a field notebook and photographed, when appropriate.

Regional CTS Occurrences

Information regarding regional CTS larval observations was obtained for general comparative purposes and included personal observations and communications with Mark

Allaback relative to the larval surveys performed at Sparling Ranch, San Benito County, and eastern Contra Costa County.

Precipitation Data

Rainfall data for the preceding winter during the study period were obtained from the Weather Underground website (www.wunderground.com/dashboard/pws/KCAHOLLI38) for Ridgemark, as well as two plastic rain gauges installed for the CTS upland drift fence study performed on the project site.

EXISTING CONDITIONS

Pond 1

Pond 1 is a detention basin on RGCCC, in a section that formerly supported fairways and greens, but is presently a large fallow field. Ruderal (i.e., invasive weeds) vegetation is prevalent around and within the basin, with a small patch of dried cattails at the east end. This pond is highly seasonal and was dry on 4 April (Figure 4), despite observations of near-capacity standing water, following periods of heavy rainfall this past winter (Figure 5). The basin appears to function mainly for groundwater recharge rather than detention, as standing water was not present for more than a couple of weeks at a time.

Figure 4. Pond 1 lacks standing water on 4 April, despite above-average rainfall the preceding winter. Photo taken from the east end of the pond.

Figure 5. Pond 1 on 5 February 2019, following heavy rainfall. The photograph is taken from the west end of the pond.

Pond 2

Pond 2 is a detention basin that appears to be on RGCCC property, but the ownership remains uncertain. The basin is located within a steep-sided, seemingly engineered swale. The margins of the basin support a moderate to dense, but narrow band of willows. The upland slopes of the swale are largely ruderal. Like Pond 1, this basin also seems to function as a groundwater recharge basin and is highly seasonal. For example, this basin was observed to support standing water beyond its banks during this past winter (Figure 6). But, on 4 April, standing water was only present as a small pond, roughly 25' w x 40' l and from 6 - 8" deep (Figure 7) and, by 19 April, the pond receded to small puddles (Figure 8).

Figure 6. Pond 2 on 5 February 2019. Note the extent of surface water. Photo taken from east bank.

Figure 7. By 4 April 2019, the surface water had contracted substantially. Photo taken from west bank.

Figure 8. On 19 April 2019, Pond 2 only supported a shallow puddle.

Pond 3

In past years, Pond 3 supported a breeding population of CTS, as well as western spadefoot toad (*Speya hammondii*) and California red-legged frog (*Rana draytoni*) (Bryan Mori Biological Consulting 1993; Bryan Mori, pers. obs. 1995; Bryan Mori Biological Consulting 2000).

Pond 3 is seasonal and lies within a swale adjacent to high-density residential development and the golf course, but is not a course feature (i.e., hazard). The inlet to the pond supports a dense willow thicket, but the pond margins are dominated by smartweed (Polygonum) and other plants characteristic of seasonal wetlands. Cattails form a discontinuous band around the shoreline, with a dense stand at the pond's tail end. The surrounding uplands of the basin slopes support a narrow band of ruderal vegetation, which does not appear to be routinely managed, and managed turf extends beyond the ruderal vegetation.

Although surface water was present on each survey day, the hydrological characteristics of the pond varied unnaturally during the course of the surveys. On 4 April, the pond was approximately 140' l x 50' w and about 6 – 8" deep. The pond dried down rapidly by the second survey on 19 April and was only 60' l x 20' and less than 4" inches deep. On 3 May, however, the pond was larger than on 4 April and estimated at 225' l x 65' w and up to 15" deep, despite the lack of rainfall in the region during the sampling period. In fact, water was being discharged into the basin on 3 May. Cracks observed along the pond bottom indicated that the pond dried sometime between 19 April and 3 May. On 4 April, the water was tea-colored, but on 3 May, the water was clear. Apparently, under current conditions, the presence of standing water is dependent on managed discharge into the pond. Figures 9 – 11 show the unnatural hydrological characteristics of the pond between 4 April and 3 May.

Figure 9. Pond 3 (historical CTS breeding pond) on 4 April 2019. Note the dense, unmanaged ruderal vegetation around the basin slopes.

Figure 10. Pond 3 on 19 April. Note that the pond dried rapidly during the two week interim between surveys. The pond depth was under 4 inches on this date and confined to the head of the pond.

Figure 11. On 3 May, Pond 3 is larger than during the initial survey on 4 April. Crystal clear water was being discharged into Pond 3 on this date.

Pond 4

Pond 4 supported a breeding population of CTS in the 1990s (Bryan Mori Biological Consulting 1993; B. Mori, personal observation 1995).

Pond 4 is seasonal and designed as a golf course feature (i.e., hazard). Water appears to collect in the basin from natural runoff and occasional overflow from Pond 3, during periods of heavy rainfall. The upland margins of the basin support turf and ruderal vegetation and is regularly mowed, as part of routine management; only a small patch of ruderal, near the pond outlet is left un-mowed. Spikerush forms a band around the shoreline, otherwise, the water is open.

Surface water was present on each survey day, gradually receding throughout the course of the study. The pond was approximately 190' l x 55' w and about 2.5 – 3.0' deep, on 4 April 2019, and was 75' l x 35' w and 10" deep by 3 May (Figures 12 and 13). On both occasions, the water was tea-colored and slightly turbid.

Figure 12. Pond 4 (historical CTS breeding pond) as seen on 4 April. Water depth was between 2.5' – 3.0'.

Figure 13. Pond 4 as seen on 3 May. Note the exposed spikerush around the receding pond. Water depth was roughly 10".

Pond 5

Pond 5 is a highly seasonal pond designed as a golf course hazard. Water appears to collect in the basin from natural runoff from the surrounding slopes. The upland margins of the basin support turf and ruderal vegetation and is regularly mowed, as part of routine management.

Like Ponds 1, 2 and 3, this basin also seems to function as a groundwater recharge basin and is highly seasonal. On 4 April, the pond was 120' l x 20' w and less than 6" deep. The water was highly turbid and the pond lacked emergent vegetation (Figure 14). By 14 April, the pond was dry (Figure 15).

Figure 14. Pond 5 on 4 April. On this date the pond was less than 6 inches deep. Note the absence of emergent vegetation.

Figure 15. Pond 5 is dry on 14 April.

RESULTS

No CTS eggs, larvae or adults were observed at any of the study ponds during the 2019 sampling period. In fact, of the five ponds sampled, only Pond 4 presently appears to support hydrological conditions suitable for CTS breeding. Table 1 summarizes the results of aquatic sampling at each pond.

Table 1. Summary of CTS aquatic sampling results.

Site	Method	Notes
Pond 1	NA	**No CTS were recorded.** Pond was dry by 4 April. *Site unsuitable as CTS breeding habitat, due to the absence of appropriate hydrologic conditions, despite above-average rainfall during the preceding winter*.
Pond 2	Dip nets	**No CTS were recorded.** Pond was sampled on 4 April, but on 19 April, only puddles remained. Sierra chorus frog (*Pseudacris sierrae*) tadpoles were uncommon and invertebrates were scarce and mainly represented by seed shrimp (Ostracods). *Site unsuitable as CTS breeding habitat, due to the absence of appropriate hydrologic conditions, despite above-average rainfall during the preceding winter*.
Pond 3	Dip nets/seine	**No CTS were recorded.** Historical CTS breeding pond. Sampled on 4 and 19 April and 3 May. Water was present each survey day, but the pond appeared to dry at one point, between the second and third surveys; water was being discharged into the pond on 3 May. Small western toad (*Anaxyrus boreas halophilus*) and chorus frog tadpoles were observed on 19 April, but absent during the preceding survey and on 3 May. Aquatic invertebrates included snails, damselfly nymphs, water boatmen and water beetles. *Site may no longer be suitable as CTS breeding habitat, due to changes in upland and hydrologic conditions, since 2000.*
Pond 4	Dip nets/seine	**No CTS were recorded.** Historical CTS breeding pond. Sampled on 4 and 19 April and 3 May. Western toad tadpoles common; chorus frog tadpoles abundant. One red-eared slider (*Trachemys scripta*) hatchling was captured and removed. Invertebrates were abundant and included snails, clam shrimp, water boatmen and water beetles. *Hydrologic conditions appear suitable for CTS, despite their absence.*
Pond 5	Seine	**No CTS were recorded.** Pond was sampled on 4 April, but was dry by 19 April. No amphibians were recorded. Invertebrates observed included daphnia, water boatmen and water beetles, but were scarce. *Site unsuitable as CTS breeding habitat, due to the absence of appropriate hydrologic conditions, despite above-average rainfall during the preceding winter.*

Regional CTS Observations

CTS aquatic surveys were performed at Sparling Ranch, San Benito County, concurrent to the surveys at RGCCC. CTS larvae were observed in differing size classes ranging from small legless individuals ~33mm TL to larger, four-legged larvae ~65mm TL, indicating staggered pulses of movement to breeding ponds through the winter period. CTS larvae transformed, as early as May (M. Allaback, pers. comm.).

Regional Precipitation

In the study region, rainfall between October and March (the winter CTS study period) averages 12.56 inches (https://www.usclimatedata.com/climate/hollister/california/united-states/usca0486). During the 2018-19 winter upland study, rainfall was measured at 15.17 inches from 22 November 2018 – 10 March, just over 2.5 inches above the regional the average for that period.

DISCUSSION

Senior Assisted Living Project Site

In order to better assess the presence/absence of CTS on the Senior Assisted Living project site, off-site aquatic sampling on RGCCC was performed in order to obtain more comprehensive data, when paired with the results of the CTS upland surveys performed on the project site the preceding 2018-19 winter (Bryan Mori Biological Consulting Services 2019). No CTS were recorded during the winter upland and spring aquatic surveys. Together, these negative results strongly suggest that CTS are not utilizing the uplands of the project site. Furthermore, the spring sampling results indicated that suitable CTS breeding habitat adjacent to the project site was absent, as four of the five ponds sampled lacked the appropriate hydrology for CTS larvae development, including Ponds 1, 2 and 5, which are nearest to the project site; these ponds were dry prior to or early in the sampling period, despite above-normal rainfall during the 2018-19 winter. CTS require 4 – 5 months for successful larval development, with metamorphosis beginning late spring and extending into August, depending on the duration of standing water (Shaffer and Trenham 2005). For the project region, transformations begin by early May (pers. obs.). Ponds 1, 2 and 5 appeared to function as groundwater recharge basins, rather than for detention, based on the rapid rate of drawdown observed.

The Status of CTS Population at RGCCC

The absence of CTS larvae at Ponds 3 and 4 (both formerly CTS breeding ponds) raises the question of whether a CTS population continues to persist on the golf course. The negative results of the spring sampling suggest that the population of CTS on RGCCC may have become extirpated, since CTS were last recorded in 2000. Reasons for this assumption include: 1) the absence of CTS larvae, despite sampling following above-normal rainfall the preceding winter; 2) CTS larvae were observed at other ponds in the project region (pers. obs.), indicating widespread suitable breeding conditions for CTS; 3) the unsuitable hydrology for CTS breeding conditions presently at Pond 3, due to the lack of prolonged inundation; and 4) the elimination of CTS upland habitat on RGCCC since 1993, due to subdivision development.

The latter two reasons point to specific onsite conditions that negatively affect CTS habitat suitability at RGCCC. However, of these factors, the loss of upland habitat at RGCCC since the late 1990s may be more of a significant factor, since breeding conditions appeared suitable at Pond 4 during this study, and CTS would have been expected, if still present on RGCCC. As the sampling protocol recommends two years of aquatic surveys to support negative findings, an additional aquatic survey may be necessary to determine the status of CTS at RGCCC.

RECOMMENDATIONS

Together, the negative findings of the winter and spring studies support a negative finding of CTS on the project site. Therefore, in the context of the Senior Assisted Living project site, a second year of off-site aquatic sampling doesn't appear necessary, as the spring study results have shown that the three nearest and most suitably situated ponds to the project site, as far as CTS migration and dispersal are concerned, do not support suitable CTS breeding habitat (Ponds 1, 2 and 5). Additionally, golf course and subdivision developments lie between Ponds 3 and 4 and the project site, obstructing potential movement of CTS (if still present) between the two areas.

Please contact me if you have any comments or questions regarding this report.

Sincerely,

Bryan Mori
Consulting Wildlife Biologist

cc: Chris Kofron, Permit Coordinator, USFWS, Ventura Field Office; Mark Ogonowski, USFWS, Ventura Field Office; Laura Patterson, CDFW, Sacramento; Craig Bailey, CDFW, Region 4 (Fresno); Renee Robison, CDFW, Region 4 (Fresno).

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APPENDIX G

Special-Status Species with Potential to Occur in the Project Vicinity

APPENDIX G

Special-Status Species with Potential to Occur in the Project Vicinity

Species	Status (Federal/State/ CNPS)	Suitable Habitat Description	Potential to Occur on Project Site
Plants			
Alkali milk-vetch *(Astragalus tener* var. *tener)*	--/--/1B.2	Alkaline sites in playas, valley and foothill grassland (on adobe clay), and vernal pools; elevation 1-60m. Blooming Period: March - June.	Unlikely. Suitable habitat not found on the project site.
Chaparral harebell *(Campanula exigua)*	--/--/1B.2	Chaparral (rocky, usually serpentine); elevation 275-1250m. Blooming Period: May - June.	Unlikely. Species typically found at elevations higher than the project site.
Gabilan Mountains manzanita *(Arctostaphylos gabrielensis)*	--/--/1B.2	Chaparral, cismontane woodland, granitic substrates; elevation 300-700m. Blooming Period: March.	Unlikely. Species typically found at elevations higher than the project site.
Hairless popcorn flower *(Plagiobothrys glaber)*	--/--/1A	Meadows and seeps (alkaline), marshes and swamps (coastal salt); elevation 15-180m. Blooming Period: March - May.	Unlikely. Suitable habitat not found on the project site.
Hoover's button-celery *(Eryngium aristulatum* var. *hooveri)*	--/--/1B.1	Vernal pools. Alkaline depressions, roadside ditches, and other wet places near the coast; elevation 5-45m. Blooming Period: July.	Unlikely. Suitable habitat not found on the project site.
Indian Valley bush-mallow *(Malacothamnus aboriginum)*	--/--/1B.2	Chaparral and cismontane woodland; rocky, often burned areas. Prefers granitic outcrops and sandy bare soil; elevation 150-1700m. Blooming Period: April - October.	Unlikely. Species typically found at elevations higher than the project site.
Marsh microseris *(Microseris paludosa)*	--/--/1B.2	Closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland; elevation 5-300m. Blooming Period: April - June.	Unlikely. Suitable habitat not found on the project site.
Pajaro manzanita *(Arctostaphylos pajaroensis)*	--/--/1B.1	Sandy soils in chaparral habitat; evergreen; elevation 30-760m. Blooming Period: December - March.	Unlikely. Suitable habitat not found on the project site.
Pinnacles buckwheat *(Eriogonum nortonii)*	--/--/1B.3	Sandy sites in chaparral and valley and foothill grassland, often on recent burns; elevation 300-975m. Blooming Period: May - June.	Unlikely. Species typically found at elevations higher than the project site.

Species	Status (Federal/State/ CNPS)	Suitable Habitat Description	Potential to Occur on Project Site
Prostrate vernal pool navarretia *(Navarretia prostrata)*	--/--/1B.1	Coastal scrub, valley and foothill grassland, and vernal pools. Alkaline soils in grassland, or in vernal pools; elevation 15-700m. Blooming Period: April - July.	Unlikely. Suitable habitat not found on the project site.
Saline clover *(Trifolium hydrophilum)*	--/--/1B.2	Marshes and swamps, valley and foothill grassland, and vernal pools. Prefers wet, alkaline sites; elevation 0-300m. Blooming Period: April - June.	Unlikely. Suitable habitat not found on the project site.
San Joaquin spearscale *(Atriplex joaquinana)*	--/--/1B.2	Alkaline sites in chenopod scrub, meadows and seeps, playas, and valley and foothill grassland; elevation 1-320m. Blooming Period: April - October.	Unlikely. Suitable habitat not found on the project site.
Shining navarretia *(Navarretia nigelliformis* ssp. *radians)*	--/--/1B.2	Cismontane woodland, valley and foothill grassland, and vernal pools; elevation 200-1000m. Blooming Period: May - July.	Unlikely. Species typically found at elevations higher than the project site.
Western Heermann's buckwheat *(Eriogonum heermannii* var. *occidentale)*	--/--/1B.2	Openings in cismontane woodland, often on serpentine alluvium or on roadsides; rarely on clay or shale slopes; elevation 410-805m. Blooming Period: July - October.	Unlikely. Species typically found at elevations higher than the project site.
Wildlife			
American badger *(Taxidea taxus)*	--/SSC	Most abundant in drier, open stages of most shrub, forest, and herbaceous habitats. Need sufficient food and open, uncultivated ground with friable soils to dig burrows. Prey on burrowing rodents.	Unlikely. Suitable undisturbed friable soils not found on the project site.
Bank swallow *(Riparia riparia)*	--/ST	Highly colonial species that nests in alluvial soils along rivers, streams, lakes, and ocean coasts. Nesting colonies only occur in vertical banks or bluffs of friable soils at least one meter tall, suitable for burrowing with some predator deterrence values. Breeding colony present in Salinas River.	Unlikely. Suitable bluffs or banks along aquatic habitat not found on the project site.
Big-eared kangaroo rat *(Dipodomys venustus elephantinus)*	--/SSC	Chaparral-covered slopes of the southern part of the Gabilan Range, in the vicinity of the Pinnacles. Forages under shrubs and in the open. Burrows for cover and for nesting.	Unlikely. Suitable chaparral habitat not found on the project site.

Species	Status (Federal/State/ CNPS)	Suitable Habitat Description	Potential to Occur on Project Site
Burrowing owl *(Athene cunicularia)*	--/SSC	Open, dry, annual or perennial grasslands, desert, or scrubland, with available small mammal burrows.	Low potential. Marginal quality grassland habitat with small mammal burrows present on the project site.
California horned lark *(Eremophila alpestris actia)*	--/SSC	Coastal regions, chiefly from Sonoma County to San Diego County, also within the main part of the San Joaquin Valley and east to the foothills. Prefers short-grass prairie, mountain meadows, open coastal plains, fallow grain fields, alkali flats.	Low potential. Marginal quality grassland habitat present on the project site.
California linderiella *(Linderiella occidentalis)*	FSC/--	Seasonal pools in unplowed grasslands with old alluvial soils underlain by hardpan or in sandstone depressions. Water in the pools typically has very low alkalinity, conductivity, and total dissolved solids.	Unlikely. Suitable seasonal pool habitat not found on project site.
California red-legged frog *(Rana draytonii)*	FT/SSC	Rivers, creeks, and stock ponds with pools and overhanging vegetation. Requires dense, shrubby or emergent riparian vegetation, and prefers short riffles and pools with slow-moving, well-oxygenated water. Needs upland habitat to aestivate (remain dormant during dry months) in small mammal burrows, cracks in the soil, or moist leaf litter.	Not found. Surveys conducted for California tiger salamander included aquatic sampling that would indicate the presence of this species.
California tiger salamander *(Ambystoma californiense)*	FT/ST	Grasslands and oak woodlands near seasonal pools and stock ponds in central and coastal California. Needs upland habitat to aestivate (remain dormant during dry months) in small mammal burrows, cracks in the soil, or moist leaf litter. Requires seasonal water sources that persist into late March for breeding habitat.	Not found. Aquatic and upland surveys conducted for this species were negative.
Coast Range newt *(Taricha torosa)*	--/SSC	Coastal drainages; lives in terrestrial habitats and can migrate over 1 km to breed in ponds, reservoirs, and slow-moving streams.	Not found. Surveys conducted for California tiger salamander included aquatic sampling that would indicate the presence of this species.
Foothill yellow-legged frog *(Rana boylii)*	--/SSC	Partly shaded, shallow streams and riffles with rocky substrate in a variety of habitats. Requires at least some cobble-sized substrate for egg-laying and 15 weeks of available water to attain metamorphosis.	Not found. Surveys conducted for California tiger salamander included aquatic sampling that would indicate the presence of this species.

Species	Status (Federal/State/ CNPS)	Suitable Habitat Description	Potential to Occur on Project Site
Hoary bat *(Lasiurus cinereus)*	--/SSC	Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	Low potential. Trees present on the project site could provide roosting habitat.
Northern california legless lizard *(Anniella pulchra)*	--/SSC	Sandy or loose loamy soils under sparse vegetation, moist soils. Anniella pulchra is traditionally split into two subspecies: *A. pulchra pulchra* (silvery legless lizard) and *A. pulchra nigra* (black legless lizard), but these subspecies are typically no longer recognized.	Unilkely. Suitable loose loamy soils not found on project site.
Prairie falcon *(Falco mexicanus)*	--/SSC	Nesting Habitats. Open terrain, either level or hilly breeding sites located on cliffs. Forages far distances, including to marshlands and ocean shores.	Unlikely. Suitable cliff habitat not found on project site.
San Joaquin coachwhip *(Masticophis flagellum ruddocki)*	--/SSC	Open, dry habitats with little or no tree cover. Found in valley grassland and saltbush scrub in the San Joaquin Valley. Requires mammal burrows for refuge and oviposition sites.	Unlikely. Suitable undisturbed grassland habitat not found on project site.
San Joaquin kit fox *(Vulpes macrotis mutica)*	FE/ST	Annual grasslands or grassy open stages with scattered shrubby vegetation. Needs loose-textured sandy soils for burrowing, and suitable prey base.	Low potential. Species known from project vicinity and home ranges vary from 1-12 miles.
Swainson's hawk *(Buteo swainsoni)*	--/ST	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas, such as grasslands or agricultural fields supporting rodent populations.	Unlikely. Project site outside of known range, typically the Central Valley.
Townsend's big-eared bat *(Corynorhinus townsendii)*	--/SSC	Inhabits a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	Low potential. Trees and/or buildings present on the project site could provide roosting habitat.
Tricolored blackbird *(Agelaius tricolor)*	--/SE	Areas adjacent to open water with protected nesting substrate, which typically consists of dense, emergent freshwater marsh vegetation.	Unlikely. Suitable emergent marsh and open water habitat not found at project site.

Species	Status (Federal/State/ CNPS)	Suitable Habitat Description	Potential to Occur on Project Site
Western mastiff bat *(Eumops perotis californicus)*	--/SSC	Many open, semi-arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, etc. Roosts in crevices in cliff faces, high buildings, trees and tunnels.	Low potential. Trees and/or buildings present on the project site could provide roosting habitat.
Western pond turtle *(Emys marmorata)*	--/SSC	Ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Needs basking sites (such as rocks or partially submerged logs) and suitable upland habitat for egg-laying (sandy banks or grassy open fields).	Not found. Surveys conducted for California tiger salamander included aquatic sampling that would indicate the presence of this species.
Western spadefoot *(Spea hammondii)*	--/SSC	Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands, breeds in winter and spring (January - May) in quiet streams and temporary pools.	Not found. Surveys conducted for California tiger salamander included aquatic sampling that would indicate the presence of this species.
Western yellow-billed cuckoo *(Coccyzus americanus)*	FC/SE	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	Unlikely. Suitable riparian habitat not found at project site.
Yellow-breasted chat *(Icteria virens)*	--/SSC	Summer resident. Inhabits riparian thickets of willow and other brushy tangles near watercourses. Nests in low, dense riparian vegetation consisting of willow, blackberry, and wild grape. Forages and nests within 10 feet off the ground.	Unlikely. Suitable riparian habitat not found at project site.

SOURCE: CDFW CNDDB 2019, CNPS 2019

NOTE: Status Codes:

Federal (USFWS)

FE: Listed as Endangered under the Federal Endangered Species Act.

FT: Listed as Threatened under the Federal Endangered Species Act.

FC: A Candidate for listing as Threatened or Endangered under the Federal Endangered Species Act.

FSC: Species of Special Concern.

FD: Delisted under the Federal Endangered Species Act.

State (CDFW)

SE: Listed as Endangered under the California Endangered Species Act.

ST: Listed as Threatened under the California Endangered Species Act.

SR: Listed as Rare under the California Endangered Species Act.
SC: A Candidate for listing as Threatened or Endangered under the California Endangered Species Act.
SSC: Species of Special Concern.
SFP: Fully Protected species under the California Fish and Game Code.
SD: Delisted under the California Endangered Species Act.

CNPS Rare Plant Ranks and Threat Code Extensions
1B: Plants that are considered Rare, Threatened, or Endangered in California and elsewhere.
2B: Plants that are considered Rare, Threatened, or Endangered in California, but more common elsewhere.
.1: Seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat).
.2: Fairly endangered in California (20-80% occurrences threatened).
.3: Not very endangered in California (<20% of occurrences threatened or no current threats known).

APPENDIX H

EMFAC 2017 RESULTS

Ridgemark Assisted Care Facility
San Benito County

calendar_year	season_month	sub_area	vehicle_class	fuel	process	pollutant	emission
2022	Annual	San Benito (	LDA	Dsl	RUNEX	Fuel	0.0003643
2022	Annual	San Benito (	MDV	Gas	STREX	Fuel	0.0006838
2022	Annual	San Benito (	MDV	Gas	RUNEX	Fuel	0.0224502
2022	Annual	San Benito (	LDT2	Gas	STREX	Fuel	0.0005639
2022	Annual	San Benito (	LDT2	Gas	RUNEX	Fuel	0.0195828
2022	Annual	San Benito (	LDT1	Gas	STREX	Fuel	0.0001419
2022	Annual	San Benito (	LDT1	Gas	RUNEX	Fuel	0.0050629
2022	Annual	San Benito (	LHD1	Gas	RUNEX	Fuel	0.0049429
2022	Annual	San Benito (	LHD1	Gas	IDLEX	Fuel	1.98E-05
2022	Annual	San Benito (	LHD1	Gas	STREX	Fuel	4.65E-05
2022	Annual	San Benito (	LHD2	Gas	RUNEX	Fuel	0.0006631
2022	Annual	San Benito (	LHD2	Gas	IDLEX	Fuel	2.58E-06
2022	Annual	San Benito (	LHD2	Gas	STREX	Fuel	5.98E-06
2022	Annual	San Benito (	T6TS	Gas	RUNEX	Fuel	0.0013228
2022	Annual	San Benito (	T6TS	Gas	IDLEX	Fuel	6.93E-06
2022	Annual	San Benito (	T6TS	Gas	STREX	Fuel	1.08E-05
2022	Annual	San Benito (	T7IS	Gas	RUNEX	Fuel	5.40E-06
2022	Annual	San Benito (	T7IS	Gas	STREX	Fuel	9.83E-09
2022	Annual	San Benito (	LDT1	Dsl	RUNEX	Fuel	1.05E-06
2022	Annual	San Benito (	LDT2	Dsl	RUNEX	Fuel	8.81E-05
2022	Annual	San Benito (	MDV	Dsl	RUNEX	Fuel	0.0005423
2022	Annual	San Benito (	LHD1	Dsl	RUNEX	Fuel	0.0034842
2022	Annual	San Benito (	LHD1	Dsl	IDLEX	Fuel	2.78E-05
2022	Annual	San Benito (	LHD2	Dsl	RUNEX	Fuel	0.0013091
2022	Annual	San Benito (	LHD2	Dsl	IDLEX	Fuel	1.42E-05
2022	Annual	San Benito (	LDA	Gas	STREX	Fuel	0.001213
2022	Annual	San Benito (	LDA	Gas	RUNEX	Fuel	0.0486929
2022	Annual	San Benito (	SBUS	Gas	RUNEX	Fuel	2.58E-05
2022	Annual	San Benito (	SBUS	Gas	IDLEX	Fuel	1.26E-06
2022	Annual	San Benito (	SBUS	Gas	STREX	Fuel	9.82E-08
2022	Annual	San Benito (	OBUS	Gas	RUNEX	Fuel	0.0003531
2022	Annual	San Benito (	OBUS	Gas	IDLEX	Fuel	1.23E-06
2022	Annual	San Benito (	OBUS	Gas	STREX	Fuel	1.73E-06
2022	Annual	San Benito (	MCY	Gas	RUNEX	Fuel	0.0006065
2022	Annual	San Benito (	MCY	Gas	STREX	Fuel	4.28E-05
2022	Annual	San Benito (	MH	Gas	RUNEX	Fuel	0.0005403
2022	Annual	San Benito (	MH	Gas	STREX	Fuel	1.04E-07
2022	Annual	San Benito (	MH	Dsl	RUNEX	Fuel	0.0001178
2022	Annual	San Benito (	UBUS	Dsl	RUNEX	Fuel	5.46E-05
2022	Annual	San Benito (	UBUS	Gas	STREX	Fuel	8.12E-07
2022	Annual	San Benito (	UBUS	Gas	RUNEX	Fuel	0.0004216
2022	Annual	San Benito (	T6 Ag	Dsl	RUNEX	Fuel	6.04E-06
2022	Annual	San Benito (	T6 Ag	Dsl	IDLEX	Fuel	3.81E-07
2022	Annual	San Benito (	T6 Public	Dsl	RUNEX	Fuel	6.27E-05
2022	Annual	San Benito (	T6 Public	Dsl	IDLEX	Fuel	1.24E-05
2022	Annual	San Benito (	T6 CAIRP Small	Dsl	RUNEX	Fuel	4.17E-06

2022	Annual	San Benito (	T6 CAIRP Small	Dsl	IDLEX	Fuel	6.28E-08
2022	Annual	San Benito (	T6 CAIRP Heavy	Dsl	RUNEX	Fuel	2.77E-05
2022	Annual	San Benito (	T6 CAIRP Heavy	Dsl	IDLEX	Fuel	1.20E-07
2022	Annual	San Benito (	T6 Instate Construc	Dsl	RUNEX	Fuel	0.0002995
2022	Annual	San Benito (	T6 Instate Construc	Dsl	IDLEX	Fuel	2.99E-06
2022	Annual	San Benito (	T6 Instate Construc	Dsl	RUNEX	Fuel	0.0008533
2022	Annual	San Benito (	T6 Instate Construc	Dsl	IDLEX	Fuel	6.70E-06
2022	Annual	San Benito (	T6 Instate Small	Dsl	RUNEX	Fuel	0.0016755
2022	Annual	San Benito (	T6 Instate Small	Dsl	IDLEX	Fuel	2.25E-05
2022	Annual	San Benito (	T6 Instate Heavy	Dsl	RUNEX	Fuel	0.0013875
2022	Annual	San Benito (	T6 Instate Heavy	Dsl	IDLEX	Fuel	7.91E-06
2022	Annual	San Benito (	T6 OOS Small	Dsl	RUNEX	Fuel	5.21E-06
2022	Annual	San Benito (	T6 OOS Small	Dsl	IDLEX	Fuel	6.75E-08
2022	Annual	San Benito (	T6 OOS Heavy	Dsl	RUNEX	Fuel	4.62E-05
2022	Annual	San Benito (	T6 OOS Heavy	Dsl	IDLEX	Fuel	1.57E-07
2022	Annual	San Benito (	T6 Utility	Dsl	RUNEX	Fuel	1.86E-05
2022	Annual	San Benito (	T6 Utility	Dsl	IDLEX	Fuel	1.82E-06
2022	Annual	San Benito (	T7 Ag	Dsl	RUNEX	Fuel	0.0001497
2022	Annual	San Benito (	T7 Ag	Dsl	IDLEX	Fuel	1.70E-05
2022	Annual	San Benito (	T7 Public	Dsl	RUNEX	Fuel	0.0001762
2022	Annual	San Benito (	T7 Public	Dsl	IDLEX	Fuel	1.60E-05
2022	Annual	San Benito (	PTO	Dsl	RUNEX	Fuel	0.0004229
2022	Annual	San Benito (	T7 CAIRP	Dsl	RUNEX	Fuel	0.0170976
2022	Annual	San Benito (	T7 CAIRP	Dsl	IDLEX	Fuel	0.0018703
2022	Annual	San Benito (	T7 CAIRP Construct	Dsl	RUNEX	Fuel	0.0008603
2022	Annual	San Benito (	T7 CAIRP Construct	Dsl	IDLEX	Fuel	1.11E-05
2022	Annual	San Benito (	T7 Utility	Dsl	RUNEX	Fuel	0.0001092
2022	Annual	San Benito (	T7 Utility	Dsl	IDLEX	Fuel	5.57E-06
2022	Annual	San Benito (	T7 NNOOS	Dsl	RUNEX	Fuel	0.0196021
2022	Annual	San Benito (	T7 NNOOS	Dsl	IDLEX	Fuel	0.0023993
2022	Annual	San Benito (	T7 NOOS	Dsl	RUNEX	Fuel	0.0067182
2022	Annual	San Benito (	T7 NOOS	Dsl	IDLEX	Fuel	0.0009207
2022	Annual	San Benito (	T7 Other Port	Dsl	RUNEX	Fuel	4.14E-11
2022	Annual	San Benito (	T7 Other Port	Dsl	IDLEX	Fuel	6.66E-13
2022	Annual	San Benito (	T7 POAK	Dsl	RUNEX	Fuel	0.0017002
2022	Annual	San Benito (	T7 POAK	Dsl	IDLEX	Fuel	5.73E-05
2022	Annual	San Benito (	T7 POLA	Dsl	RUNEX	Fuel	3.48E-11
2022	Annual	San Benito (	T7 POLA	Dsl	IDLEX	Fuel	1.33E-12
2022	Annual	San Benito (	T7 Single	Dsl	RUNEX	Fuel	0.0016217
2022	Annual	San Benito (	T7 Single	Dsl	IDLEX	Fuel	7.89E-05
2022	Annual	San Benito (	T7 Single Constructi	Dsl	RUNEX	Fuel	0.0022341
2022	Annual	San Benito (	T7 Single Constructi	Dsl	IDLEX	Fuel	7.28E-05
2022	Annual	San Benito (	T7 Tractor	Dsl	RUNEX	Fuel	0.0127775
2022	Annual	San Benito (	T7 Tractor	Dsl	IDLEX	Fuel	0.0003369
2022	Annual	San Benito (	T7 Tractor Construc	Dsl	RUNEX	Fuel	0.001875
2022	Annual	San Benito (	T7 Tractor Construc	Dsl	IDLEX	Fuel	6.23E-05
2022	Annual	San Benito (	SBUS	Dsl	RUNEX	Fuel	0.0002519

2022	Annual	San Benito (	SBUS	Dsl	IDLEX	Fuel	2.57E-05
2022	Annual	San Benito (	Motor Coach	Dsl	RUNEX	Fuel	0.0001183
2022	Annual	San Benito (	Motor Coach	Dsl	IDLEX	Fuel	6.26E-06
2022	Annual	San Benito (	All Other Buses	Dsl	RUNEX	Fuel	5.61E-05
2022	Annual	San Benito (	All Other Buses	Dsl	IDLEX	Fuel	5.35E-07
2022	Annual	San Benito (	T7 SWCV	Dsl	IDLEX	Fuel	2.95E-06
2022	Annual	San Benito (	T7 SWCV	Dsl	RUNEX	Fuel	0.00011

Thousands of gallons of fuel per day = 0.1896236

Gallons of fuel per year = (1000*365*0.189624) = 69,212.61

APPENDIX I

GEOTECHNICAL REPORT

GEOTECHNICAL ENGINEERING INVESTIGATION
PROPOSED RIDGEMARK ASSISTED CARE COMMUNITY
AIRLINE HIGHWAY
HOLLISTER, SAN BENITO COUNTY, CALIFORNIA

KA PROJECT NO. 012-17232
FEBRUARY 23, 2018

Prepared for:

MR. NADER JAVID
845 FOXHILL CIRCLE
HOLLISTER, CALIFORNIA 95023

Prepared by:

KRAZAN & ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING DIVISION
215 WEST DAKOTA AVENUE
CLOVIS, CALIFORNIA 93612
(559) 348-2200

Krazan & ASSOCIATES, INC.
SITE DEVELOPMENT ENGINEERS

Krazan & ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING • ENVIRONMENTAL ENGINEERING
CONSTRUCTION TESTING & INSPECTION

February 23, 2018

KA Project No. 012-17232

Mr. Nader Javid
845 Foxhill Circle
Hollister, California 95023

RE: Geotechnical Engineering Investigation
Proposed Ridgemark Assisted Care Community
Airline Highway
Hollister, San Benito County, California

Dear Mr. Javid:

In accordance with your request, we have completed a Geotechnical Engineering Investigation for the above-referenced site. The results of our investigation are presented in the attached report.

If you have any questions, or if we may be of further assistance, please do not hesitate to contact our office at (559) 348-2200.

REGISTERED PROFESSIONAL ENGINEER
DAVID R. JAROSZ II
No. 2698
EXP JUNE 30 2018
GEOTECHNICAL
STATE OF CALIFORNIA

Respectfully submitted,
KRAZAN & ASSOCIATES, INC.

David R. Jarosz, II
Managing Engineer
RGE No. 2698/RCE No. 60185

DRJ:ht

Krazan & ASSOCIATES, INC.

GEOTECHNICAL ENGINEERING • ENVIRONMENTAL ENGINEERING
CONSTRUCTION TESTING & INSPECTION

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February 23, 2018 KA Project No. 012-17232

GEOTECHNICAL ENGINEERING INVESTIGATION
PROPOSED RIDGEMARK ASSISTED CARE COMMUNITY
AIRLINE HIGHWAY
HOLLISTER, SAN BENITO COUNTY, CALIFORNIA

INTRODUCTION

This report presents the results of our Geotechnical Engineering Investigation for the proposed Ridgemark Assisted Care Community to be located at 3586 Airline Highway in Hollister, San Benito County, California. Discussions regarding site conditions are presented herein, together with conclusions and recommendations pertaining to site preparation, Engineered Fill, utility trench backfill, drainage and landscaping, foundations, concrete floor slabs and exterior flatwork, retaining walls, soil cement reactivity, and pavement design.

A site plan showing the approximate boring locations is presented following the text of this report. A description of the field investigation, boring logs, and the boring log legend are presented in Appendix A. Appendix A also contains a description of the laboratory testing phase of this study, along with the laboratory test results. Appendices B and C contain guides to earthwork and pavement specifications. When conflicts in the text of the report occur with the general specifications in the appendices, the recommendations in the text of the report have precedence.

PURPOSE AND SCOPE

This investigation was conducted to evaluate the soil and groundwater conditions at the site, to make geotechnical engineering recommendations for use in design of specific construction elements, and to provide criteria for site preparation and Engineered Fill construction.

Our scope of services was outlined in our proposal dated December 12, 2017 (KA Proposal No P729-17) and included the following:

- A site reconnaissance by a member of our engineering staff to evaluate the surface conditions at the project site.
- A field investigation consisting of drilling 10 borings to depths ranging from approximately 10 to 50 feet for evaluation of the subsurface conditions at the project site.
- Performing laboratory tests on representative soil samples obtained from the borings to evaluate the physical and index properties of the subsurface soils.

- Evaluation of the data obtained from the investigation and an engineering analysis to provide recommendations for use in the project design and preparation of construction specifications.
- Preparation of this report summarizing the results, conclusions, recommendations, and findings of our investigation.

PROPOSED CONSTRUCTION

We understand that design of the proposed development is currently underway; structural load information and other final details pertaining to the structures are unavailable. On a preliminary basis, it is understood the planned development will consist of a 180 bed assisted care community. It is anticipated the buildings will be single-story structures utilizing concrete slab-on-grade construction. Footing loads are anticipated to be light to moderate. On-site and off-site parking and landscaping are also planned for the development of the project.

In the event, these structural or grading details are inconsistent with the final design criteria, the Soils Engineer should be notified so that we may update this writing as applicable.

SITE LOCATION, SITE HISTORY AND SITE DESCRIPTION

The site is irregular in shape and encompasses approximately 7 acres. The site is located approximately 200 feet southwest of Airline Highway and 1,000 feet west of Fairview Road in Hollister, California. The site has a street address of 3586 Airline Highway. A county building and a creek are located north of the site. A rural residence and vacant land are located to the south. A residential development is located west of the site. A residential development and creek are located east of the site.

Site history was obtained by reviewing historical aerial photographs dated 1998, 2003 and 2013. Review of the 1998 aerial photograph indicates that the subject site was predominately vacant. Scattered trees were located in the southern and western portions of the site.

Review of the 2003 aerial photograph indicates a rural residence was constructed in the southwest portion of the site. In addition, small out structures were located along the central portion of the western boundary and in the northern portion of the site. Trees and landscaping were associated with the rural residence. In addition, a few trees were still present along the southern and western edges of the site.

Review of the 2013 aerial photograph indicates the conditions on the subject site relatively similar to those noted in the 2003 aerial photograph.

Presently, a rural residence is located in the southwest portion of the site. Landscaping including trees, shrubs and lawn are located around the residence. Wood fencing is located along the southern and western edges of the site. Wire fencing is located along the southern edge in the eastern portion. Multiple sheds, coops and pens are located in the western portion of the site. Overhead electric lines trend north-south in the western portion of the site. Wire fencing is also located in the northern and eastern portions of the site. Underground utilities and possibly a septic system are located within the site. A gravel covered access way extends from the on-site asphalt drive to the existing residence. The site topography consists of rolling hills with up to 30 feet of relief.

GEOLOGIC SETTING

The project area is located on the margin of San Francisco Bay in the Northern Coast Ranges Physiographic Region. The town of Hollister is located at the southern end of the greater Santa Clara Valley that extends northwestward to southern San Francisco Bay, between the Santa Cruz Mountains to the northwest and the Diablo Range to the east. The Quien Sabe Range to the east is a portion of the greater Diablo Range that encompasses a rugged mountainous area—remnants of an ancient volcanic field, along the eastern side of Hollister Valley. The low hills to the south and west of Hollister are called the Hollister Hills, which are foothills to the higher Gavilan Range to the southeast.

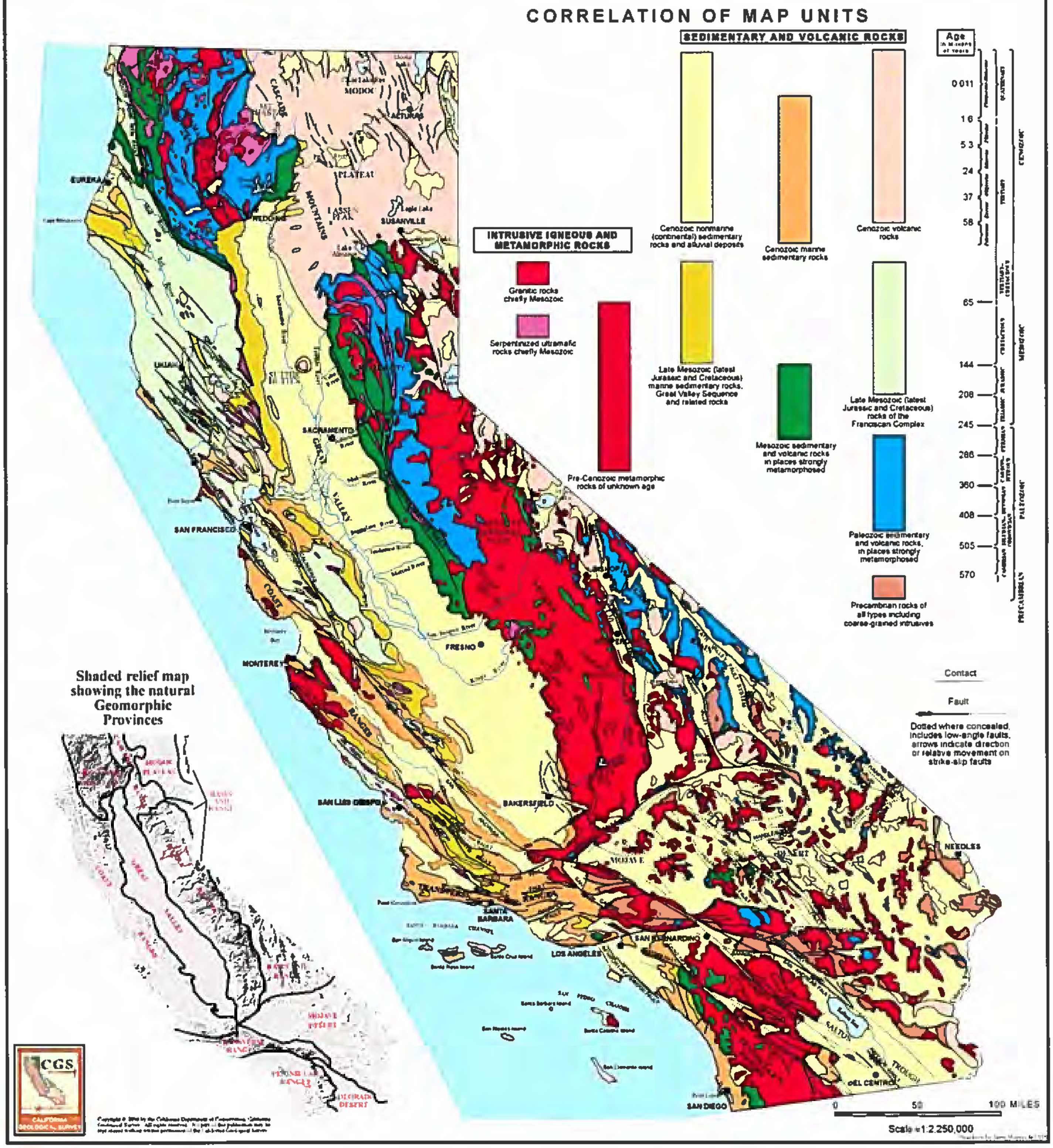
The city of Hollister was built across the fault line traces of the Calaveras Fault zone. The San Andreas Fault trends along the southern side of the San Juan Valley and crosses through the Hollister Hills along the northeastern flank of the Gavilan Range. The Sargent Fault zone trends through the Lomerias Muertas (Spanish for "*barren hills*"—these were also named the Flint Hills). The Sargent, Calaveras, and San Andreas faults converge southward into the San Benito River Valley in the region south of Hollister and Pinnacles National Monument. Other faults in the region include the Quien Sabe and Tres Pinos fault zones in the hills south and east of Hollister. The Quien Sabe Fault trends along the eastern mountain front of the Quien Sabe Range. Movement along these faults is largely responsible for the shape of the landscape, with movement pushing up the hills and mountains while the Hollister and San Juan valleys are sinking and filling with alluvial sediments.

Both the Hollister and San Juan Valleys have been filled with shallow lakes during cooler and wetter periods in the recent geologic past (during and shortly after the last ice age that ended about 15,000 years ago). Ancient Lake San Benito proceeded the small Ancient Lake San Juan. Step-like terraces along flanks of the Lomerias Muertas and along the river valley record the progress of changing stages of valley filling and erosional downcutting though the major wet to dry periods during the Quaternary Period. These terraces also reveal aspects of the gradual uplift and warping of the hills and mountain ranges along the regional fault system.

San Benito County is a region of high seismic activity. Major faults showing evidence of earthquake activity within historic time (past 200 years) in relation to the sites include the Calaveras fault (1.6 miles west), San Andreas fault (4.4 miles west), Quien Sab fault (4.6 miles east), Zayante - Vergeles fault (5.6 miles west), and Ortigalita fault (20 miles north east). These faults are considered active, as they have demonstrated geologic displacement within the past 10,000 years. Although the site is in close proximity to several faults, the site is not within a State of California Earthquake Fault Zone or Special Study Zone for faulting.

The Alquist-Priolo Geologic Hazards Zones Act went into effect in March, 1973. Since that time, the act has been amended 11 times (Hart, 2007). "The purpose of the Act, as provided in CGS Special Publication 42 (SP 42), is to prohibit the location of most structures for human occupancy across the

SIMPLIFIED GEOLOGIC MAP OF CALIFORNIA



traces of active faults and to mitigate thereby the hazard of fault-rupture." The act was renamed the Alquist-Priolo Earthquake Fault Zoning Act in 1994, and at that time, the originally designated "Special Studies Zones" was renamed the "Earthquake Fault Zones."

The area of the subject site is included on the Earthquake Fault Zones Map entitled "Tres Pinos Quadrangle, Revised Official Map, Effective: July 1, 1986." However, the site is not within a Fault-Rupture Hazard Zone. The nearest zoned faults are a portion of the Calaveras fault located more than 0.5 miles west of the subject site, and a portion of the Tres Pinos fault located more than 0.6 miles east of the subject site.

In 1990, the California State Legislature passed the Seismic Hazard Mapping Act to protect public safety from the effects of strong shaking, liquefaction, landslides, or other ground failure, and other hazards caused by earthquakes. The Act requires that the State Geologist delineate various seismic hazards zones on Seismic Hazards Zones Maps. Specifically, the maps identify areas where soil liquefaction and earthquake-induced landslides are most likely to occur. A site-specific geotechnical evaluation is required prior to permitting most urban developments within the mapped zones. The Act also requires sellers of real property within the zones to disclose this fact to potential buyers. The area of the subject site is not included on the State designated Seismic Hazard Zone Maps as of this report date. However, the site is located within areas identified as susceptible to liquefaction hazards. The site is included on the map titled "Relative Liquefaction Susceptibility." City of Hollister 2005 General Plan, Map 18. The site is located within an area identified as a "very low susceptibility to liquefaction – Sediments in this zone are highly unlikely to liquefy, even in a nearby major earthquake."

FIELD AND LABORATORY INVESTIGATIONS

Subsurface soil conditions were explored by drilling 10 borings to depths ranging from approximately 10 to 50 feet below existing site grade, using a truck-mounted drill rig. In addition, 2 bulk subgrade samples were obtained from the site for laboratory R-value testing. The approximate boring and bulk sample locations are shown on the site plan. During drilling operations, penetration tests were performed at regular intervals to evaluate the soil consistency and to obtain information regarding the engineering properties of the subsoils. Soil samples were retained for laboratory testing. The soils encountered were continuously examined and visually classified in accordance with the Unified Soil Classification System. A more detailed description of the field investigation is presented in Appendix A.

Laboratory tests were performed on selected soil samples to evaluate their physical characteristics and engineering properties. The laboratory testing program was formulated with emphasis on the evaluation of natural moisture, density, gradation, shear strength, consolidation potential, expansion potential, atterberg limits, stability (R-value), and moisture-density relationships of the materials encountered. In addition, chemical tests were performed to evaluate the corrosivity of the soil cement reactivity. Details of the laboratory test program and results of the laboratory tests are summarized in Appendix A. This information, along with the field observations, was used to prepare the final boring logs in Appendix A.

SOIL PROFILE AND SUBSURFACE CONDITIONS

Based on our findings, the subsurface conditions encountered appear typical of those found in the geologic region of the site. In general, the upper soils consisted of approximately 6 to 12 inches of very loose/soft silty clayey sand and silty clay. These soils are disturbed, have low strength characteristics, and are highly compressible when saturated.

Within the northern portion of the site (Boring Nos. B1, B2 and B4), the upper soils consisted of approximately 1½ to 7½ feet of fill material. The fill material predominately consisted of silty clay, silty clayey sand and silty sand with gravel. The deeper fill was encountered in the vicinity of Boring No. B1. The thickness and extent of fill material was determined based on limited test borings and visual observation. Thicker fill may be present at the site. Limited testing was performed on the fill soil during the time of our field and laboratory investigations. The limited testing indicates that the fill material had varying strength characteristics ranging from loosely placed to compacted.

Below the loose surface soils and fill material, approximately 1½ to 3½ feet of medium dense to very dense clayey sand, clayey sandy silt and gravelly silty sand or stiff to very stiff silty clay were encountered. Field and laboratory tests suggest that these soils are moderately strong, slightly compressible and have a moderate to high expansion potential. Penetration resistance ranged from 17 blows per foot to greater than 50 blows per 6 inches. Dry densities ranged from 105 to 128 pcf. A representative soil sample consolidated less than 1 percent under a 2 ksf load when saturated. A representative soil sample had an angle of internal friction of 18 degrees. Representative samples of the clayey soils had expansion indices between 26 and 93

Below 3 to 10 feet, layers of predominately medium dense to very dense clayey sand, gravelly silty sand, silty sand/sand, silty gravelly sand, gravelly clayey sand and silty sand with clay or very stiff to hard silty clay were encountered. Field and laboratory tests suggest that these soils are moderately strong and slightly compressible. Penetration resistance ranged from 24 blows per foot to over 50 blows per 6 inches. Dry densities ranged from 109 to 137 pcf. These soils had slightly stronger strength characteristics than the upper soils and extended to the termination depth of our borings.

For additional information about the soils encountered, please refer to the boring logs in Appendix A.

GROUNDWATER

Test boring locations were checked for the presence of groundwater during and immediately following the drilling operations. Groundwater was not encountered within a depth of 43 feet below existing site grade. However, information obtained from the San Benito Water District indicates that historic groundwater has been as shallow as 8 feet within the project site vicinity.

It should be recognized that water table elevations may fluctuate with time, being dependent upon seasonal precipitation, irrigation, land use, and climatic conditions as well as other factors. Therefore, water level observations at the time of the field investigation may vary from those encountered during the construction phase of the project. The evaluation of such factors is beyond the scope of this report.

SOIL LIQUEFACTION

Soil liquefaction is a state of soil particles suspension caused by a complete loss of strength when the effective stress drops to zero. Liquefaction normally occurs under saturated conditions in soils such as sand in which the strength is purely frictional. However, liquefaction has occurred in soils other than clean sand. Liquefaction usually occurs under vibratory conditions such as those induced by seismic event.

To evaluate the liquefaction potential of the site, the following items were evaluated:

1) Soil type

2) Groundwater depth

3) Relative density

4) Initial confining pressure

5) Intensity and duration of groundshaking

The predominant soils within the project site consist of alternating layers of clayey sand, gravelly silty sand, silty sand/sand, silty gravelly sand, gravelly clayey sand, silty sand with clay and silty clay. Groundwater was not encountered within a depth of 43 feet during our field investigation. However, historically groundwater has been encountered as shallow as 8 feet within the project site vicinity.

The potential for soil liquefaction during a seismic event was evaluated using the LIQUEFYPRO computer program (Version 5.8h) developed by CivilTech Software. For the analysis, a maximum earthquake magnitude of 7.09 was used. A peak horizontal ground surface acceleration of 0.783g was considered conservative and appropriate for the liquefaction analysis. An estimated high groundwater depth of 8 feet was used for our analysis. The computer analysis indicates that soils above a depth of 8 feet are non-liquefiable due to the absence of groundwater. The soils below depths of 8 feet are considered non-liquefiable due to the moderate cohesiveness of the clayey soils and the dense to very dense sandy soils encountered.

The analysis also indicates that the estimated total seismic induced settlement is less than ¼ inch. The differential seismic settlement is estimated to be less than ¼ inch.

CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of our field and laboratory investigations, along with previous geotechnical experience in the project area, the following is a summary of our evaluations, conclusions, and recommendations.

Administrative Summary

In brief, the subject site and soil conditions, with the exception of the fill material, moderate to high shrink/swell potential of the upper on-site clayey soils, moderate slopes and the existing development, appear to be conducive to the development of the project. Approximately 1½ to 7½ feet of fill material was encountered within the northern portion of project site (Boring Nos. B1, B2 and B4). The fill material predominately consisted of silty clay, silty clayey sand and silty sand with gravel. The thickness and extent of fill material was determined based on limited test borings and visual observations. Thicker fill may be present at the site. Limited testing was performed on the fill soil during the time of our field and laboratory investigations. The limited testing indicates that the fill material was predominately loosely placed and not properly compacted. Therefore, it is recommended that the fill soil be excavated and stockpiled so that the native soils can be properly prepared. The clayey fill soils will not be suitable for reuse as non-expansive Engineered Fill. However, the clayey fill material will be suitable for reuse as General Engineered Fill, provided it is cleansed of excessive organics and debris, and moisture-conditioned to a minimum of 2 percent above optimum moisture-content. The fill material should be compacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557. The soils that do not contain clay will be suitable for re-use as non-expansive Engineered Fill provided they are cleansed of excessive organics and debris. However, it may be difficult for the grading contractor to separate these during mass grading operations. Prior to fill placement Krazan & Associates, Inc. should inspect the bottom of the excavation to verify no additional removal will be required. Prior to backfilling, Krazan & Associates, Inc. should inspect the bottom of the excavation to verify no additional excavation will be required.

The on-site clayey soils appear to have a moderate to high shrink/swell potential. To reduce the potential soil movement related to shrink/swell potential of the clayey soils, it is recommended that slab-on-grade and exterior flatwork areas be supported by at least 24 inches of non-expansive Engineered Fill. The fill material should be a well-graded silty sand or sandy silt soil. A clean sand or very sandy soil is not acceptable for this purpose. A sandy soil will allow the surface water to drain into the expansive soils below, which may result in soil swelling. The replacement soils and/or upper 24 inches of Imported Fill soils should meet the specifications as described under the subheading Engineered Fill. The replacement soils should extend 5 feet beyond the perimeter of slab-on-grade areas. The non-expansive replacement soils should be compacted to at least 90 percent of relative compaction based on ASTM Test Method D1557. The exposed native soils in the excavation should not be allowed to dry out and should be kept continually moist, prior to backfilling. In addition, it is recommended that slab-on-grade, continuous footings and slabs be nominally reinforced to reduce cracking and vertical off-set.

As an alternative to the use of non-expansive soils, the upper 24 inches of soil supporting the slab areas can consist of lime-treated clayey soils. The lime-treated soils should be recompacted to a minimum of 90 percent of maximum density. Preliminary application rate of lime should be 5 percent by dry weight. The lime material should be calcium oxide, commonly known as quick-lime. The clayey soils should be at or near optimum moisture during the mixing operations.

Based on the soil liquefaction analysis performed within the site, the estimated total seismic-induced settlement is not anticipated to exceed ¼ inch. Differential settlement caused by a seismic event is estimated to be less than ¼ inch. The anticipated differential settlement is estimated over a width of 100 feet. The seismic settlements would develop if liquefaction of the underlying saturated subsurface soils were to occur during a seismic event. If these potential movements are not tolerable then mitigation measures are recommended to reduce structural damage due to soil liquefaction. The project's structural engineer should evaluate the structures ability to withstand these potential movements associated with soil liquefaction and seismic settlement.

A rural residential development is located within the site. In addition, commercial and residential developments are located within the project site vicinity. Associated with these developments are buried structures, such as utility lines that may extend into the project site. Demolition activities should include proper removal of any buried structures. Any buried structures including utilities, septic systems, or loosely backfilled excavations, encountered during construction should be properly removed and the resulting excavations backfilled. After demolition activities, it is recommended that these disturbed soils be removed and/or recompacted. This compaction effort should stabilize the upper soils and locate any unsuitable or pliant areas not found during our field investigation.

The site is located within gentle rolling hills with moderately sloping terrain. It is recommended that cut and fill slopes within the site be constructed at 2:1 (horizontal to vertical) or flatter. In lieu of these slopes, retaining walls may be used. In addition, it is recommended the proposed structures should be located a minimum horizontal distance of 10 feet or ⅓ the slope height away from the edge of the slopes, whichever is greater. Permanent cut and fill slopes inclined at 2:1 (horizontal to vertical) should be grossly stable. Cut and fill slopes may be revised as recommended by the Soils Engineer upon review of a more definitive site plan.

Sandy and gravelly soil conditions were encountered at the site. These cohesionless soils have a tendency to cave in trench wall excavations. Shoring or sloping back trench sidewalls may be required within these sandy and gravelly soils.

After completion of the recommended site preparation and over-excavation, the site should be suitable for shallow footing support. The proposed structure footings may be designed utilizing an allowable bearing pressure of 2,500 psf for dead-plus-live loads. Footings should have a minimum embedment of 18 inches.

Groundwater Influence on Structures/Construction

Based on our findings and historical records, it is not anticipated that groundwater will rise within the zone of structural influence or affect the construction of foundations and pavements for the project. However, if earthwork is performed during or soon after periods of precipitation, the subgrade soils may become saturated, pump, or not respond to densification techniques. Typical remedial measures include: discing and aerating the soil during dry weather; mixing the soil with dryer materials;

removing and replacing the soil with an approved fill material; or mixing the soil with an approved lime or cement product. Our firm should be consulted prior to implementing remedial measures to observe the unstable subgrade conditions and provide appropriate recommendations.

Site Preparation

General site clearing should include removal of vegetation; existing utilities; structures including foundations; basement walls and floors; existing stockpiled soil; trees and associated root systems; rubble; rubbish; and any loose and/or saturated materials. Site stripping should extend to a minimum depth of 2 to 4 inches, or until all organics in excess of 3 percent by volume are removed. Deeper stripping may be required in localized areas. These materials will not be suitable for reuse as Engineered Fill. However, stripped topsoil may be stockpiled and reused in landscape or non-structural areas.

Approximately 1½ to 7½ feet of fill material was encountered within the northern portion of project site (Boring Nos. B1, B2 and B4). The fill material predominately consisted of silty clay, silty clayey sand and silty sand with gravel. The thickness and extent of fill material was determined based on limited test borings and visual observations. Thicker fill may be present at the site. Limited testing was performed on the fill soil during the time of our field and laboratory investigations. The limited testing indicates that the fill material was predominately loosely placed and not properly compacted. Therefore, it is recommended that the fill soil be excavated and stockpiled so that the native soils can be properly prepared. The clayey fill soils will not be suitable for reuse as non-expansive Engineered Fill. However, the clayey fill material will be suitable for reuse as General Engineered Fill, provided it is cleansed of excessive organics and debris, and moisture-conditioned to a minimum of 2 percent above optimum moisture-content. The fill material should be compacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557. The soils that do not contain clay will be suitable for re-use as non-expansive Engineered Fill provided they are cleansed of excessive organics and debris. However, it may be difficult for the grading contractor to separate these during mass grading operations. Prior to fill placement Krazan & Associates, Inc. should inspect the bottom of the excavation to verify no additional removal will be required. Prior to backfilling, Krazan & Associates, Inc. should inspect the bottom of the excavation to verify no additional excavation will be required.

A rural residential development is located within the site. Furthermore, several structures are located along the edges of the site. Demolition activities should include proper removal of any surface and buried structures. Any buried structures, such as utilities or loosely backfilled excavations, encountered during construction should be properly removed and the resulting excavations backfilled. After demolition activities, it is recommended that these disturbed soils be removed and/or recompacted. Excavations, depressions, or soft and pliant areas extending below planned, finished subgrade levels should be cleaned to firm, undisturbed soil and backfilled with Engineered Fill. In general, any septic tanks, debris pits, cesspools, or similar structures should be entirely removed. Concrete footings should be removed to an equivalent depth of at least 3 feet below proposed footing elevations or as recommended by the Soils Engineer. Any other buried structures should be removed in accordance with the recommendations of the Soils Engineer. The resulting excavations should be backfilled with Engineered Fill.

Following stripping, fill removal operations, demolition activities and prior to fill placement, the exposed subgrade in building, pavement, and exterior flatwork areas should be excavated to a depth of at least 12 inches, worked until uniform and free from large clods, moisture-conditioned to a minimum of 2 percent above optimum moisture content, and recompacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557. Prior to backfilling, the exposed subgrade should be proofrolled and observed by Krazan to verify stability. This compaction effort should stabilize the surface soils and locate any unsuitable or pliant areas not found during our field investigation.

It is recommended that the upper 24 inches of soil within proposed slab-on-grade and exterior flatwork areas consist of non-expansive Engineered Fill or lime-treated Engineered Fill. The fill placement serves two functions: 1) it provides a uniform amount of soil which will more evenly distribute the soil pressures and 2) it reduces moisture content fluctuation in the clayey material beneath the building area. The non-expansive fill material should be a well-graded silty sand or sandy silt soil. A clean sand or very sandy soil is not acceptable for this purpose. A sandy soil will allow the surface water to drain into the expansive clayey soil below, which may result in soil swelling. Imported Fill should be approved by the Soils Engineer prior to placement. The fill should be placed as specified as Engineered Fill.

As indicated previously, fill material is located across the site. It is recommended that any uncertified fill material encountered within pavement areas, be removed and/or recompacted. The fill material should be moisture-conditioned to a minimum of 2 percent above optimum moisture and recompacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557. As an alternative, the Owner may elect not to recompact the existing fill within paved areas. However, the Owner should be aware that the paved areas may settle which may require annual maintenance. At a minimum, it is recommended that the upper 12 inches of subgrade soil be moisture-conditioned to a minimum of 2 percent above optimum moisture-content, and recompacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557.

Sandy and gravelly soil conditions were encountered at the site. These cohesionless soils have a tendency to cave in trench wall excavations. Shoring or sloping back trench sidewalls may be required within these sandy and gravelly soils.

The upper soils, during wet winter months, become very moist due to the absorptive characteristics of the soil. Earthwork operations performed during winter months may encounter very moist unstable soils, which may require removal to grade a stable building foundation. Project site winterization consisting of placement of aggregate base and protecting exposed soils during the construction phase should be performed.

A representative of our firm should be present during all site clearing and grading operations to test and observe earthwork construction. This testing and observation is an integral part of our service, as acceptance of earthwork construction is dependent upon compaction and stability of the material. The Soils Engineer may reject any material that does not meet compaction and stability requirements. Further recommendations of this report are predicated upon the assumption that earthwork construction will conform to recommendations set forth in this section and the Engineered Fill section.

Slope Construction/Reconstruction

Slopes can be constructed/reconstructed by placement of Engineered Fill utilizing a keying and benching procedure as described below. Reconstructed slopes should be constructed at an inclination not exceeding 2:1 (horizontal to vertical) slopes or flatter. Krazan and Associates, Inc. should be retained to review all slope reconstruction plans and specifications prior to initiating the repair work.

Temporary construction slopes, in the natural soil, should be constructed in accordance with Occupational Safety and Health Administration (OSHA) standards. However, in all cases, appropriate safety precautions should be provided. Construction dewatering is not expected to present problems during late summer or early fall. During these months, subsurface flow will be minimal. Although unlikely, if water is encountered it may be handled either singularly or with a combination of discing, diverting, and pumping. This office will be in a position to assist the Contractor in designing dewatering systems if the conditions at the time of construction warrant it.

General site clearing should include removal of vegetation, any loose and/or saturated materials. Excavations or depressions extending below subgrade levels should be cleaned to firm, undisturbed soil and backfilled with Engineered Fill, placed and recompacted in accordance with the recommendations stated herein.

Where fills greater than 8 feet are to be constructed on original ground that slopes at inclinations steeper than 6:1 (horizontal to vertical), benches should be cut into the existing slope as the filling operations proceed. Each bench should consist of a level terrace a minimum of 10 feet wide, with the rise to the next bench held to 4 feet or less. Where fills of comparable height will be constructed on ground that slopes at an inclination steeper than 4:1 (horizontal to vertical), a keyway should be provided in addition to the benches. Each keyway should consist of a level trench at least 10 feet wide and at least 2 feet deep, with side slopes not exceeding 1:1 (horizontal to vertical), cut into the existing slope. Where fills of comparable height will be constructed on ground that slopes at an inclination steeper than 2:1 (horizontal to vertical), geotextile fabric and retaining structures should be utilized in slope construction where subsequent specific building site investigations warrant.

Permanent cut-and-fill slopes inclined at 2:1 (horizontal to vertical) should be grossly stable. If static surcharge loading is located within a horizontal distance from the brow of the slope, equal to ⅓ the slope height (H/3) or 30 feet, whichever is less, a stability analysis should be performed. Fill slopes should be constructed by over-tilling and trimming back to provide a firm, well-compacted slope face.

Engineered Fill

The upper, on-site native soils and fill material are predominately clayey sand, clayey sandy silt, gravelly silty sand, gravelly clayey sand and silty clay. The clayey soils will not be suitable for reuse as non-expansive Engineered Fill. The clayey soils will be suitable for reuse as Engineered Fill within the upper 24 inches of slab-on-grade and exterior flatwork areas provided they are lime-treated. The preliminary application rate of lime should be 5 percent by dry weight. The lime material should be calcium oxide, commonly known as quick-lime. The clayey soils should be at or above optimum moisture-condition during mixing operations. Additional testing is recommended to determine the appropriate application rate of lime prior to placement. These clayey soils will be suitable for reuse as General Engineered Fill, within pavement areas and below 24 inches from finished grade in slab-on-grade areas, provided they are cleansed of excessive organics, debris, fragments larger than 4 inches in maximum dimension and moisture-conditioned to at least 2 percent above optimum moisture. It is recommended that additional testing be performed on the on-site soils and fill material to evaluate the physical and index properties prior to reuse as Engineered Fill. The on-site soils that do not contain clay will be suitable for re-use as non-expansive Engineered Fill provided they are cleansed of excessive organics and debris. Asphaltic concrete will not be suitable for reuse as Engineered Fill within the proposed building areas.

The preferred materials specified for Engineered Fill are suitable for most applications with the exception of exposure to erosion. Project site winterization and protection of exposed soils during the construction phase should be the sole responsibility of the Contractor, since he has complete control of the project site at that time.

Imported Fill should consist of a well-graded, slightly cohesive, fine silty sand or sandy silt soil, with relatively impervious characteristics when compacted. This material should be approved by the Soils Engineer prior to use and should typically possess the following characteristics:

Percent Passing No. 200 Sieve	20 to 50
Plasticity Index	10 maximum
UBC Standard 29-2 Expansion Index	15 maximum

Fill soils should be placed in lifts approximately 6 inches thick, moisture-conditioned to a minimum of 2 percent above optimum moisture content, and compacted to achieve at least 90 percent of maximum density as determined by ASTM D1557. Additional lifts should not be placed if the previous lift did not meet the required dry density or if soil conditions are not stable.

Drainage and Landscaping

The ground surface should slope away from building pad and pavement areas toward appropriate drop inlets or other surface drainage devices. In accordance with Section 1804 of the 2016 California Building Code, it is recommended that the ground surface adjacent to foundations be sloped a minimum of 5 percent for a minimum distance of 10 feet away from structures, or to an approved alternative means of drainage conveyance. Swales used for conveyance of drainage and located within 10 feet of foundations should be sloped a minimum of 2 percent. Impervious surfaces, such as pavement and exterior concrete flatwork, within 10 feet of building foundations should be sloped a minimum of 1 percent away from the structure. Drainage gradients should be maintained to carry all surface water to collection facilities and off-site. These grades should be maintained for the life of the project.

Slots or weep holes should be placed in drop inlets or other surface drainage devices in pavement areas to allow free drainage of adjoining base course materials. Cutoff walls should be installed at pavement edges adjacent to vehicular traffic areas these walls should extend to a minimum depth of 12 inches below pavement subgrades to limit the amount of seepage water that can infiltrate the pavements. Where cutoff walls are undesirable subgrade drains can be constructed to transport excess water away from planters to drainage interceptors. If cutoff walls can be successfully used at the site, construction of subgrade drains is considered unnecessary.

Utility Trench Backfill

Utility trenches should be excavated according to accepted engineering practice following OSHA (Occupational Safety and Health Administration) standards by a Contractor experienced in such work. The responsibility for the safety of open trenches should be borne by the Contractor. Traffic and vibration adjacent to trench walls should be reduced; cyclic wetting and drying of excavation side slopes should be avoided. Depending upon the location and depth of some utility trenches, groundwater flow into open excavations could be experienced; especially during or following periods of precipitation.

Utility trench backfill placed in or adjacent to buildings and exterior slabs should be compacted to at least 90 percent of maximum density based on ASTM Test Method D1557. The utility trench backfill placed in pavement areas should be compacted to at least 90 percent of maximum density based on ASTM Test Method D1557. Pipe bedding should be in accordance with pipe manufacturer's recommendations.

Sandy and gravelly soil conditions were encountered at the site. These cohesionless soils have a tendency to cave in trench wall excavations. Shoring or sloping back trench sidewalls may be required within these sandy and gravelly soils.

The Contractor is responsible for removing all water-sensitive soils from the trench regardless of the backfill location and compaction requirements. The Contractor should use appropriate equipment and methods to avoid damage to the utilities and/or structures during fill placement and compaction.

Foundations - Conventional

After completion of the recommended site preparation, the site should be suitable for shallow footing support. The proposed structures may be supported on a shallow foundation system bearing on undisturbed native soils or Engineered Fill. Spread and continuous footings can be designed for the following maximum allowable soil bearing pressures:

Load	Allowable Loading
Dead Load Only	1,875 psf
Dead-Plus-Live Load	2,500 psf
Total Load, Including Wind or Seismic Loads	3,325 psf

The footings should have a minimum embedment depth of 18 inches below pad subgrade (soil grade) or adjacent exterior grade, whichever is lower. Footings should have a minimum width of 12 inches, regardless of load.

The footing excavations should not be allowed to dry out any time prior to pouring concrete. It is recommended that footings be reinforced by at least one No. 4 reinforcing bar in both top and bottom.

Resistance to lateral footing displacement can be computed using an allowable friction factor of 0.3 acting between the base of foundations and the supporting subgrade. Lateral resistance for footings can alternatively be developed using an allowable equivalent fluid passive pressure of 250 pounds per cubic foot acting against the appropriate vertical footing faces. The frictional and passive resistance of the soil may be combined without reduction in determining the total lateral resistance. A ⅓ increase in the value above may be used for short duration, wind, or seismic loads. All of the above earth pressures are unfactored and are, therefore, not inclusive of factors of safety.

The total static movement is not expected to exceed 1 inch. Differential static movement should be less than ½ inch. Most of the static settlement is expected to occur during construction, as the loads are applied. However, additional post-construction movement may occur if the foundation soils are flooded or saturated. The total and differential seismic-induced settlement is estimated to be less than ¼ inch and ¼ inch, respectively. The anticipated seismic differential settlement is estimated over a distance of 100 feet.

Floor Slabs and Exterior Flatwork

To reduce post-construction soil movement beneath floor slabs and exterior flatwork, it is recommended that mitigation measures be performed. For conventional slab-on-grade, it is recommended that the upper 24 inches of soil consist of non-expansive or lime-treated Engineered Fill.

Concrete slab-on-grade floors should be underlain by a water vapor retarder. The water vapor retarder should be installed in accordance with accepted engineering practice. The water vapor retarder should consist of a vapor retarder sheeting underlain by a minimum of 3 inches of compacted, clean, gravel of ¾-inch maximum size. To aid in concrete curing an optional 2 to 4 inches of granular fill may be placed on top of the vapor retarder. The granular fill should consist of damp clean sand with at least 10 to 30 percent of the sand passing the 100 sieve. The sand should be free of clay, silt, or organic material. Rock dust which is manufactured sand from rock crushing operations is typically suitable for the granular fill. This granular fill material should be compacted.

It is recommended that the concrete slabs be reinforced at a minimum with No. 3 reinforcing bars, placed at 18 inches on center in each direction within the slabs middle third, to reduce crack separation and possible vertical offset at the cracks. Thicker floor slabs with increased concrete strength and reinforcement should be designed wherever heavy concentrated loads, heavy equipment, or machinery is anticipated.

The exterior floors should be poured separately in order to act independently of the walls and foundation system. Exterior finish grades should be sloped a minimum of 2 percent away from all interior slab areas to preclude ponding of water adjacent to the structures. All fills required to bring the building pads to grade should be Engineered Fills.

Moisture within the structure may be derived from water vapors, which were transformed from the moisture within the soils. This moisture vapor can travel through the vapor membrane and penetrate the slab-on-grade. This moisture vapor penetration can affect floor coverings and produce mold and mildew in the structure. To reduce moisture vapor intrusion, it is recommended that a vapor retarder be installed. It is recommended that the utility trenches within the structure be compacted, as specified in our report, to reduce the transmission of moisture through the utility trench backfill. Special attention to the immediate drainage and irrigation around the building is recommended. Positive drainage should be established away from the structure and should be maintained throughout the life of the structure. Ponding of water should not be allowed adjacent to the structure. Over-irrigation within landscaped areas adjacent to the structure should not be performed. In addition, ventilation of the structure (i.e. ventilation fans) is recommended to reduce the accumulation of interior moisture.

Lateral Earth Pressures and Retaining Walls

Walls retaining horizontal backfill and capable of deflecting a minimum of 0.1 percent of its height at the top may be designed using an equivalent fluid active pressure of 50 pounds per square foot per foot of depth. Walls that are incapable of this deflection or walls that are fully constrained against deflection may be designed for an equivalent fluid at-rest pressure of 70 pounds per square foot per foot per depth. Expansive soils should not be used for backfill against walls. The wedge of non-expansive backfill material should extend from the bottom of each retaining wall outward and upward at a slope of 2:1 (horizontal to vertical) or flatter. The stated lateral earth pressures do not include the effects of hydrostatic water pressures generated by infiltrating surface water that may accumulate behind the retaining walls; or loads imposed by construction equipment, foundations, or roadways. All of the above earth pressures are unfactored and are, therefore, not inclusive of factors of safety.

During grading and backfilling operations adjacent to any walls, heavy equipment should not be allowed to operate within a lateral distance of 5 feet from the wall, or within a lateral distance equal to the wall height, whichever is greater, to avoid developing excessive lateral pressures. Within this zone, only hand operated equipment ("whackers," vibratory plates, or pneumatic compactors) should be used to compact the backfill soils.

Retaining and/or below grade walls should be drained with either perforated pipe encased in free-draining gravel or a prefabricated drainage system. The gravel zone should have a minimum width of 12 inches wide and should extend upward to within 12 inches of the top of the wall. The upper 12 inches of backfill should consist of native soils, concrete, asphaltic concrete or other suitable backfill to reduce surface drainage into the wall drain system. The aggregate should conform to Class 2 permeable materials graded in accordance with the CalTrans Standard Specifications (2010). Prefabricated drainage systems, such as Miradrain®, Enkadrain®, or an equivalent substitute, are acceptable alternatives in lieu of gravel provided they are installed in accordance with the manufacturer's recommendations. If a prefabricated drainage system is proposed, our firm should review the system for final acceptance prior to installation.

Drainage pipes should be placed with perforations down and should discharge in a non-erosive manner away from foundations and other improvements. The pipes should be placed no higher than 6 inches above the heel of the wall in the center line of the drainage blanket and should have a minimum diameter of 4 inches. Collector pipes may be either slotted or perforated. Slots should be no wider than ⅛ inch in diameter, while perforations should be no more than ¼ inch in diameter. If retaining walls are less than 6 feet in height, the perforated pipe may be omitted in lieu of weep holes on 4 feet maximum spacing. The weep holes should consist of 4-inch diameter holes (concrete walls) or unmortared head joints (masonry walls) and not be higher than 18 inches above the lowest adjacent grade. Two 8-inch square overlapping patches of geotextile fabric (conforming to the CalTrans Standard Specifications for "edge drains") should be affixed to the rear wall opening of each weep hole to retard soil piping.

R-Value Test Results and Pavement Design

Two subgrade soil samples were obtained from the project site for laboratory R-Value testing at the locations shown on the attached site plan. The samples were tested in accordance with the State of California Materials Manual Test Designation 301. Results of the tests are as follows:

Sample	Depth	Description	R-Value at Equilibrium
1	12-24"	Silty Clay (CL)	Less than 5
2	12-24"	Sandy Clay (CL)	Less than 5

These test results are low and indicate poor subgrade support characteristics under dynamic traffic loads. The following table shows the recommended pavement sections for various traffic indices.

Traffic Index	Asphaltic Concrete	Class II Aggregate Base*	Class III Aggregate Subbase*	Compacted Subgrade**
4.0	2.0"	8.5"	--	12.0"
4.0	2.0"	4.5"	4.5"	12.0"
4.5	2.5"	9.0"	--	12.0"
4.5	2.5"	4.0"	5.5"	12.0"
5.0	2.5"	11.0"	--	12.0"
5.0	2.5"	5.0"	6.5"	12.0"
5.5	3.0"	11.5"	--	12.0"
5.5	3.0"	5.0"	7.0"	12.0"
6.0	3.0"	13.5"	--	12.0"
6.0	3.0"	6.5"	8.0"	12.0"

6.5	3.5"	14.0"	--	12.0"
6.5	3.5"	6.0"	9.0"	12.0"
7.0	4.0"	15.5"	--	12.0"
7.0	4.0"	6.5"	10.0"	12.0"
7.5	4.0"	17.0"	--	12.0"
7.5	4.0"	7.5"	10.5"	12.0"

**** 95% compaction based on ASTM Test Method D1557 or CAL 216***
***** 90% compaction based on ASTM Test Method D1557 or CAL 216***

If traffic indices are not available, an estimated index of 4.5 may be used for light automobile traffic, and an index of 7.0 for light truck traffic are typical values.

The following recommendations are for light duty and heavy duty Portland Cement Concrete pavement sections.

PORTLAND CEMENT PAVEMENT
LIGHT DUTY

Traffic Index	Portland Cement Concrete***	Class II Aggregate Base*	Compacted Subgrade**
4.5	6.0"	5.0"	12.0"

HEAVY DUTY

Traffic Index	Portland Cement Concrete***	Class II Aggregate Base*	Compacted Subgrade**
7.0	7.0"	6.0"	12.0"

**** 95% compaction based on ASTM Test Method D1557 or CAL 216***
***** 90% compaction based on ASTM Test Method D1557 or CAL 216***
******Minimum compressive strength of 3000 psi***

As indicated previously, fill material is located on the site. It is recommended that any uncertified fill material encountered within pavement areas, be removed and/or recompacted. The fill materials should be moisture-conditioned to near optimum moisture and recompacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557. As an alternative, the Owner may elect not to recompact the existing fill within paved areas. However, the Owner should be aware that the paved areas may settle, which may require annual maintenance. At a minimum, it is recommended that the upper 12 inches of subgrade soil be moisture-conditioned as necessary and recompacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557.

<u>Seismic Parameters – 2016 California Building Code</u>

The Site Class per Section 1613 of the 2016 California Building Code (2016 CBC) and Table 20.3-1 of ASCE 7-10 is based upon the site soil conditions. It is our opinion that a Site Class D is most consistent with the subject site soil conditions. For seismic design of the structures based on the seismic provisions of the 2016 CBC, we recommend the following parameters:

Seismic Item	Value	CBC Reference
Site Class	D	Section 1613.3.2
Site Coefficient F_a	1.000	Table 1613.3.3 (1)
S_s	2.048	Section 1613.3.1
S_{MS}	2.048	Section 1613.3.3
S_{DS}	1.366	Section 1613.3.4
Site Coefficient F_v	1.500	Table 1613.3.3 (2)
S_1	0.779	Section 1613.3.1
S_{M1}	1.168	Section 1613.3.3
S_{D1}	0.779	Section 1613.3.4

Soil Cement Reactivity

Excessive sulfate in either the soil or native water may result in an adverse reaction between the cement in concrete (or stucco) and the soil. HUD/FHA and CBC have developed criteria for evaluation of sulfate levels and how they relate to cement reactivity with soil and/or water.

Soil samples were obtained from the site and tested in accordance with State of California Materials Manual Test Designation 417. The sulfate concentrations detected in these soil samples were less than 150 ppm and are below the maximum allowable values established by HUD/FHA and CBC. Therefore, no special mitigation measures are required to compensate for sulfate reactivity with the cement.

Compacted Material Acceptance

Compaction specifications are not the only criteria for acceptance of the site grading or other such activities. However, the compaction test is the most universally recognized test method for assessing the performance of the Grading Contractor. The numerical test results from the compaction test cannot be used to predict the engineering performance of the compacted material. Therefore, the acceptance of compacted materials will also be dependent on the stability of that material. The Soils Engineer has the option of rejecting any compacted material regardless of the degree of compaction if that material is considered to be unstable or if future instability is suspected. A specific example of rejection of fill material passing the required percent compaction is a fill which has been compacted with an in situ moisture content significantly less than optimum moisture. This type of dry fill (brittle fill) is susceptible to future settlement if it becomes saturated or flooded.

Testing and Inspection

A representative of Krazan & Associates, Inc. should be present at the site during the earthwork activities to confirm that actual subsurface conditions are consistent with the exploratory fieldwork. This activity is an integral part of our service, as acceptance of earthwork construction is dependent upon compaction testing and stability of the material. This representative can also verify that the intent of these recommendations is incorporated into the project design and construction. Krazan & Associates, Inc. will not be responsible for grades or staking, since this is the responsibility of the Prime Contractor.

LIMITATIONS

Soils Engineering is one of the newest divisions of Civil Engineering. This branch of Civil Engineering is constantly improving as new technologies and understanding of earth sciences advance. Although your site was analyzed using the most appropriate and most current techniques and methods, undoubtedly there will be substantial future improvements in this branch of engineering. In addition to advancements in the field of Soils Engineering, physical changes in the site, either due to excavation or fill placement, new agency regulations, or possible changes in the proposed structure after the soils report is completed may require the soils report to be professionally reviewed. In light of this, the Owner should be aware that there is a practical limit to the usefulness of this report without critical review. Although the time limit for this review is strictly arbitrary, it is suggested that 2 years be considered a reasonable time for the usefulness of this report.

Foundation and earthwork construction is characterized by the presence of a calculated risk that soil and groundwater conditions have been fully revealed by the original foundation investigation. This risk is derived from the practical necessity of basing interpretations and design conclusions on limited sampling of the earth. The recommendations made in this report are based on the assumption that soil conditions do not vary significantly from those disclosed during our field investigation. If any variations or undesirable conditions are encountered during construction, the Soils Engineer should be notified so that supplemental recommendations may be made.

The conclusions of this report are based on the information provided regarding the proposed construction. If the proposed construction is relocated or redesigned, the conclusions in this report may not be valid. The Soils Engineer should be notified of any changes so the recommendations may be reviewed and re-evaluated.

This report is a Geotechnical Engineering Investigation with the purpose of evaluating the soil conditions in terms of foundation design. The scope of our services did not include any Environmental Site Assessment for the presence or absence of hazardous and/or toxic materials in the soil, groundwater, or atmosphere; or the presence of wetlands. Any statements, or absence of statements, in this report or on any boring log regarding odors, unusual or suspicious items, or conditions observed, are strictly for descriptive purposes and are not intended to convey engineering judgment regarding potential hazardous and/or toxic assessment.

The geotechnical engineering information presented herein is based upon professional interpretation utilizing standard engineering practices and a degree of conservatism deemed proper for this project. It is not warranted that such information and interpretation cannot be superseded by future geotechnical engineering developments. We emphasize that this report is valid for the project outlined above and should not be used for any other sites.

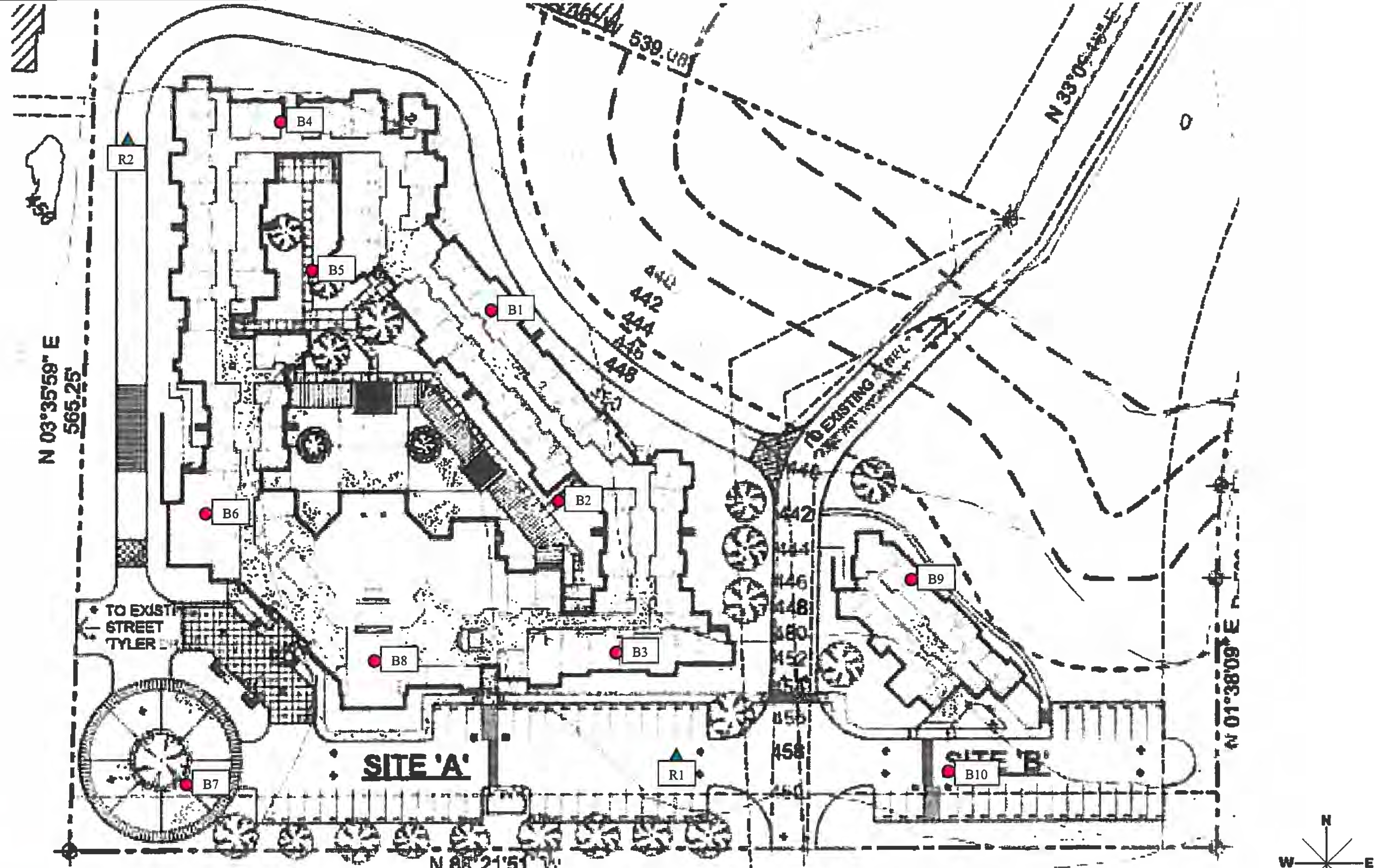
If you have any questions, or if we may be of further assistance, please do not hesitate to contact our office at (559) 348-2200.

Respectfully submitted,
KRAZAN & ASSOCIATES, INC.

REGISTERED PROFESSIONAL ENGINEER
DAVID R. JAROSZ II
No. 2698
EXP JUNE 30 2018
GEOTECHNICAL
STATE OF CALIFORNIA

David R. Jarosz, II
Managing Engineer
RGE No. 2698/RCE No. 60185

DRJ:ht



APPROXIMATE BORING LOCATION

APPROXIMATE R-VALUE LOCATION

SITE MAP	Scale: NTS	Date: February 2018	Krazan GEOTECHNICAL ENGINEERING
Ridgemark Assisted Care Community Airline Highway Hollister, California	Drawn by: HT	Approved by: DJ	
	Project No. 012-17232	Figure No. 1	

APPENDIX A

FIELD AND LABORATORY INVESTIGATIONS

Field Investigation

The field investigation consisted of a surface reconnaissance and a subsurface exploratory program. Ten 4½-inch diameter exploratory borings were advanced. The boring locations are shown on the attached site plan.

The soils encountered were logged in the field during the exploration and with supplementary laboratory test data are described in accordance with the Unified Soil Classification System.

Modified standard penetration tests and standard penetration tests were performed at selected depths. These tests represent the resistance to driving a 2½-inch and 1½-inch diameter split barrel sampler, respectively. The driving energy was provided by a hammer weighing 140 pounds falling 30 inches. Relatively undisturbed soil samples were obtained while performing this test. Bag samples of the disturbed soil were obtained from the auger cuttings. The modified standard penetration tests are identified in the sample type on the boring logs with a full shaded in block. The standard penetration tests are identified in the sample type on the boring logs with one-half of the block shaded. All samples were returned to our Clovis laboratory for evaluation.

Laboratory Investigation

The laboratory investigation was programmed to determine the physical and mechanical properties of the foundation soil underlying the site. Test results were used as criteria for determining the engineering suitability of the surface and subsurface materials encountered.

In-situ moisture content, dry density, consolidation, direct shear, and sieve analysis tests were completed for the undisturbed samples representative of the subsurface material. Atterberg limits, expansion index and R-value tests were completed for select bag samples obtained from the auger cuttings. These tests, supplemented by visual observation, comprised the basis for our evaluation of the site material.

The logs of the exploratory borings and laboratory determinations are presented in this Appendix.

UNIFIED SOIL CLASSIFICATION SYSTEM

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART

COARSE-GRAINED SOILS (more than 50% of material is larger than No. 200 sieve size.)		
	Clean Gravels (Less than 5% fines)	
GRAVELS More than 50% of coarse fraction larger than No. 4 sieve size	GW	Well-graded gravels, gravel-sand mixtures, little or no fines
	GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines
	Gravels with fines (More than 12% fines)	
	GM	Silty gravels, gravel-sand-silt mixtures
	GC	Clayey gravels, gravel-sand-clay mixtures
	Clean Sands (Less than 5% fines)	
SANDS 50% or more of coarse fraction smaller than No. 4 sieve size	SW	Well-graded sands, gravelly sands, little or no fines
	SP	Poorly graded sands, gravelly sands, little or no fines
	Sands with fines (More than 12% fines)	
	SM	Silty sands, sand-silt mixtures
	SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS (50% or more of material is smaller than No. 200 sieve size.)		
SILTS AND CLAYS Liquid limit less than 50%	ML	Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts with slight plasticity
	CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
	OL	Organic silts and organic silty clays of low plasticity
SILTS AND CLAYS Liquid limit 50% or greater	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
	CH	Inorganic clays of high plasticity, fat clays
	OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS	PT	Peat and other highly organic soils

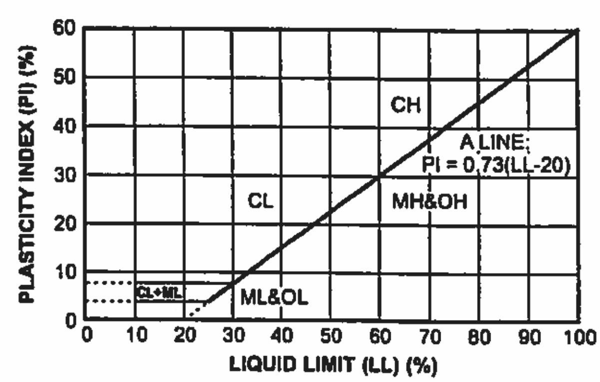
CONSISTENCY CLASSIFICATION

Description	Blows per Foot
Granular Soils	
Very Loose	< 5
Loose	5 – 15
Medium Dense	16 – 40
Dense	41 – 65
Very Dense	> 65
Cohesive Soils	
Very Soft	< 3
Soft	3 – 5
Firm	6 – 10
Stiff	11 – 20
Very Stiff	21 – 40
Hard	> 40

GRAIN SIZE CLASSIFICATION

Grain Type	*Standard Sieve Size*	*Grain Size in Millimeters*
Boulders	Above 12 inches	Above 305
Cobbles	12 to 13 inches	305 to 76.2
Gravel	3 inches to No. 4	76.2 to 4.76
Coarse-grained	3 to ¾ inches	76.2 to 19.1
Fine-grained	¾ inches to No. 4	19.1 to 4.76
Sand	No. 4 to No. 200	4.76 to 0.074
Coarse-grained	No. 4 to No. 10	4.76 to 2.00
Medium-grained	No. 10 to No. 40	2.00 to 0.042
Fine-grained	No. 40 to No. 200	0.042 to 0.074
Silt and Clay	Below No. 200	Below 0.074

PLASTICITY CHART



Log of Boring B1

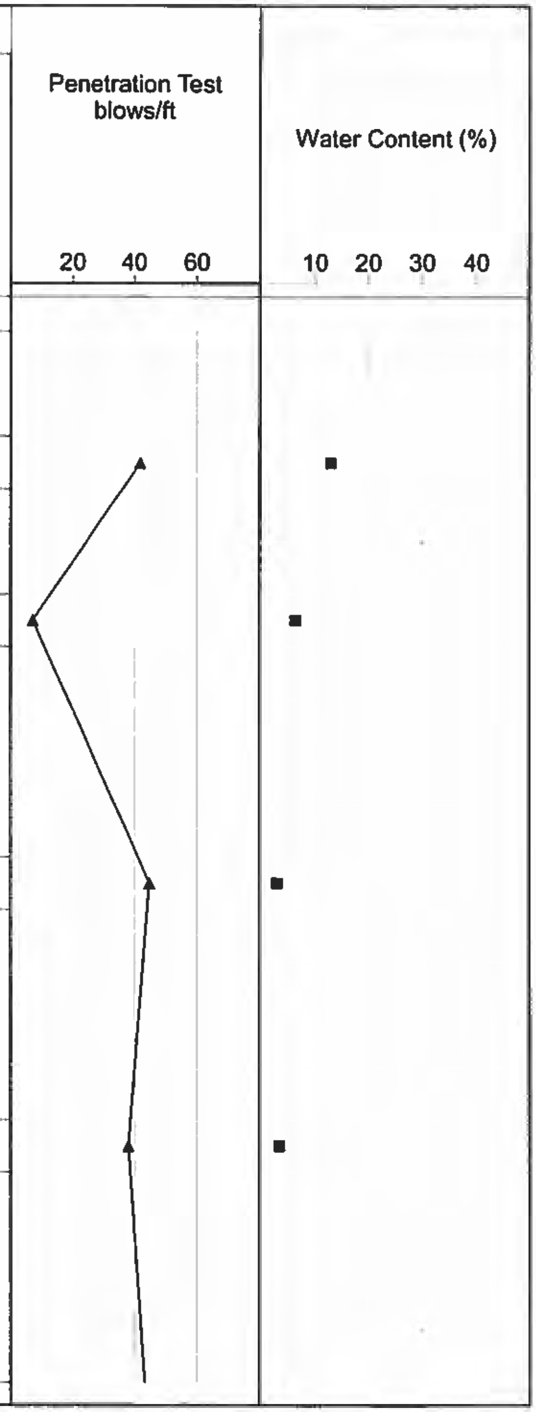
Project: Ridgemark Assisted Care Community | **Project No:** 012-17232

Client: Mr. Nader Javid | **Figure No.:** A-1

Location: Airline Highway, Hollister, CA | **Logged By:** Wayne Andrade

Depth to Water> **Initial:** None | **At Completion:** None

Depth (ft)	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
0	Ground Surface				
0–4	***SILTY CLAYEY SAND (SC)*** FILL, fine- to medium-grained; dark brown, damp, drills easily				
2.5		122.5	13.1		42
4–7.5	***SILTY SAND (SM)*** FILL, fine- to coarse-grained with trace GRAVEL; brown, moist, drills easily				
5.5		110.3	6.6		7
7.5–13	***SILTY SAND (SM)*** Very dense, fine- to coarse-grained with GRAVEL; light gray, damp, drills firmly				
10.5			3.3		45
13–18	***SILTY SAND/SAND (SM/SP)*** Dense, fine- to coarse-grained with GRAVEL; gray, damp, drills firmly				
15.5		119.3	3.8		38
18–20	***SILTY SAND (SM)*** Dense, fine- to coarse-grained with GRAVEL; gray, damp, drills firmly				



Drill Method: Hollow Stem | **Drill Date:** 1-30-18

Drill Rig: CME 45C-1 | **Krazan and Associates** | **Hole Size:** 6½ Inches

Driller: Chris Wyneken | **Elevation:** 43 Feet

Sheet: 1 of 3

Log of Boring B1

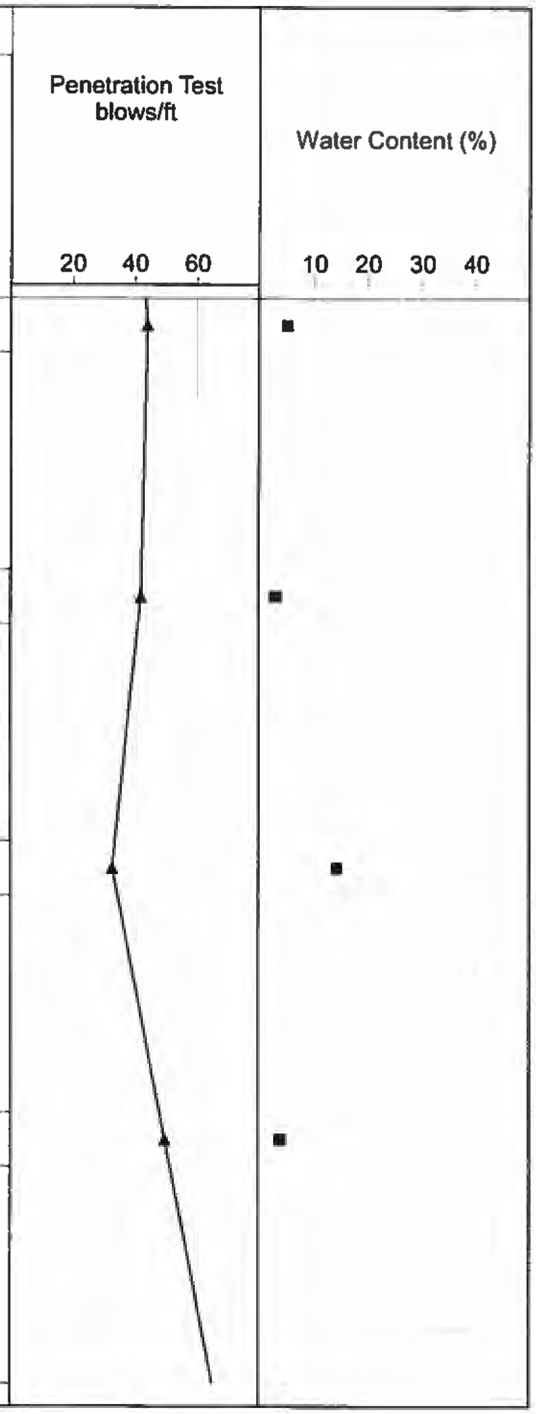
Project: Ridgemark Assisted Care Community
Project No: 012-17232

Client: Mr. Nader Javid
Figure No.: A-1

Location: Airline Highway, Hollister, CA
Logged By: Wayne Andrade

Depth to Water> **Initial:** None **At Completion:** None

Depth (ft)	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
20–21		121.1	5.0		44
25	Brown and moist below 25 feet	119.3	3.0		42
28	***SANDY SILTY CLAY (CL)*** Very stiff; olive-brown, moist, drills firmly				
30–31		118.4	14.5		33
33	***SILTY SAND (SM)*** Very dense, fine- to coarse-grained with GRAVEL; brown, damp, drills hard				
35–36		122.8	4.0		50+
38	***SILTY SAND/SAND (SM/SP)*** Very dense, fine- to coarse-grained with GRAVEL; light brown, damp, drills hard				



Drill Method: Hollow Stem
Drill Date: 1-30-18

Drill Rig: CME 45C-1
Krazan and Associates
Hole Size: 6½ Inches

Driller: Chris Wyneken
Elevation: 43 Feet

Log of Boring B1

Project: Ridgemark Assisted Care Community
Project No: 012-17232

Client: Mr. Nader Javid
Figure No.: A-1

Location: Airline Highway, Hollister, CA
Logged By: Wayne Andrade

Depth to Water> **Initial:** None **At Completion:** None

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	Penetration Test blows/ft (20 40 60)	Water Content (%) (10 20 30 40)
			126.3	3.6		67		
42		Auger refusal at 43 feet						
		End of Borehole						
44								
46								
48								
50								
52								
54								
56								
58								
60								

Drill Method: Hollow Stem
Drill Date: 1-30-18

Drill Rig: CME 45C-1
Krazan and Associates
Hole Size: 6½ Inches

Driller: Chris Wyneken
Elevation: 43 Feet

Log of Boring B2

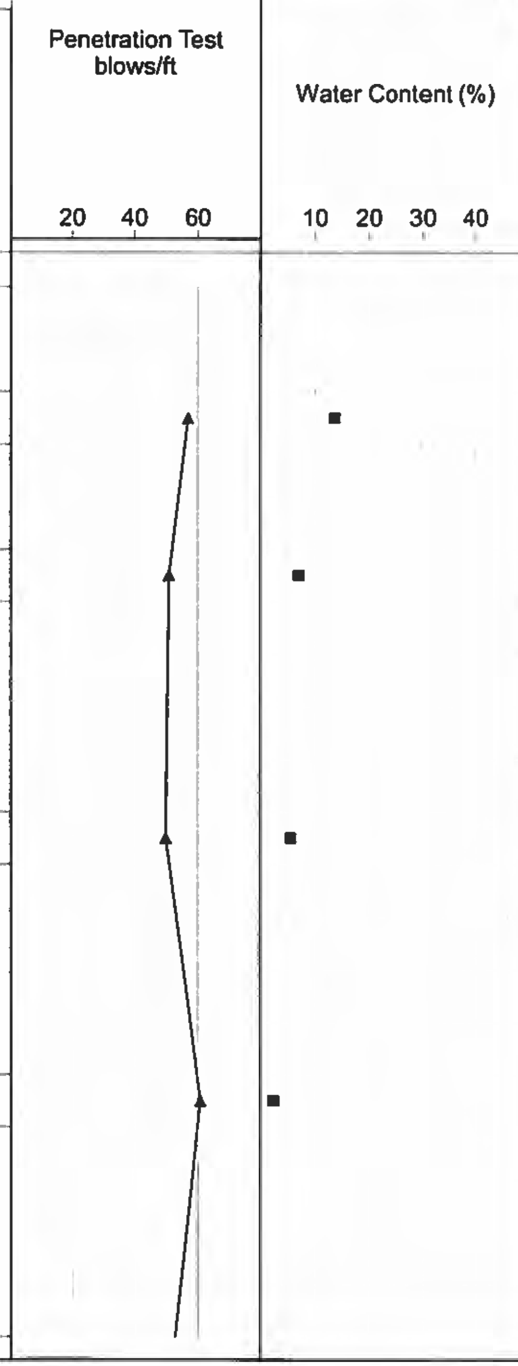
Project: Ridgemark Assisted Care Community
Project No: 012-17232

Client: Mr. Nader Javid
Figure No.: A-2

Location: Airline Highway, Hollister, CA
Logged By: Wayne Andrade

Depth to Water> **Initial:** None **At Completion:** None

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
0		Ground Surface				
0–1.25		***SILTY CLAY (CL)*** FILL; dark brown, damp, drills easily				
1.25–3.5		***CLAYEY SAND (SC)*** Dense, fine-grained; olive-brown, damp, drills firmly	118.3	13.8		57
3.5–5.5		***SILTY SAND (SM)*** Medium dense, fine- to medium-grained with trace CLAY; light brown, damp, drills easily	112.2	7.1		51
5.5–8.5		***GRAVELLY CLAYEY SAND (SC)*** Very dense, fine- to coarse-grained; light brown, damp, drills hard				
8.5–10.5		***SILTY SAND (SM)*** Dense, fine- to medium-grained with trace CLAY; light brown, damp, drills firmly	122.0	5.7		50+
10.5–20		***GRAVELLY SILTY SAND (SM)*** Very dense, fine- to coarse-grained with trace CLAY; light brown, damp, drills firmly				
14		Dense and drills hard below 14 feet				
15.5				2.5		61



Drill Method: Hollow Stem
Drill Date: 1-30-18

Drill Rig: CME 45C-1
Krazan and Associates
Hole Size: 6½ Inches

Driller: Chris Wyneken
Elevation: 30 Feet

Log of Boring B2

Project: Ridgemark Assisted Care Community | **Project No:** 012-17232

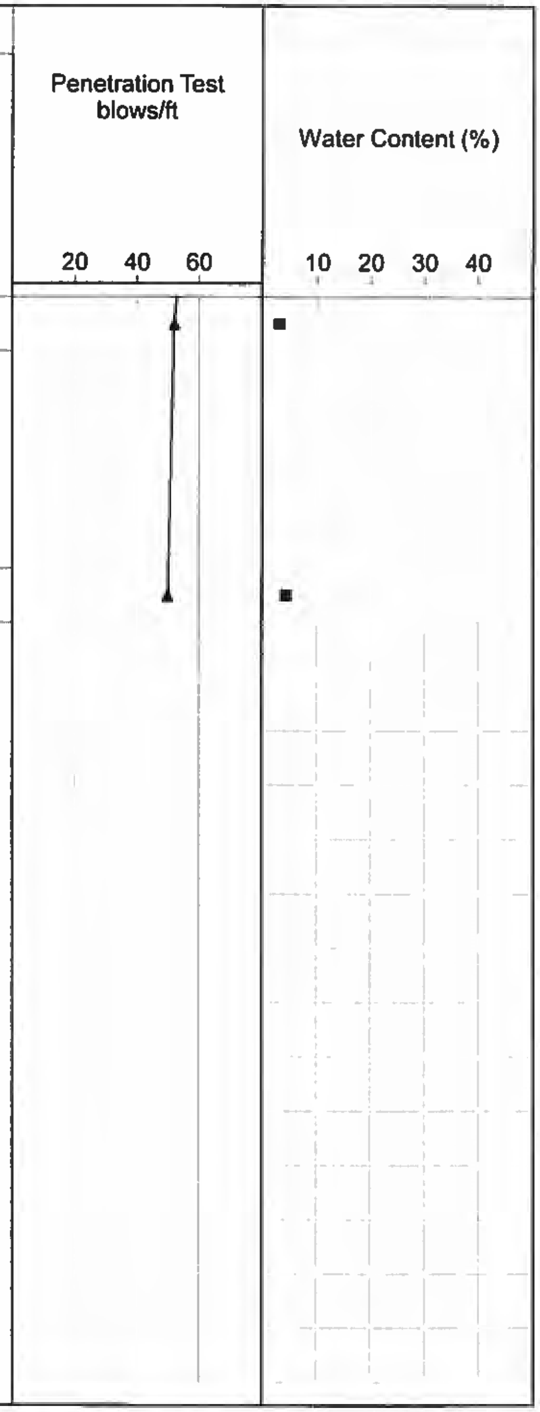
Client: Mr. Nader Javid | **Figure No.:** A-2

Location: Airline Highway, Hollister, CA | **Logged By:** Wayne Andrade

Depth to Water> | **Initial:** None | **At Completion:** None

SUBSURFACE PROFILE			SAMPLE			
Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
20–25				3.1		52
25–26		Very dense below 25 feet	114.8	4.4		50+
30		End of Borehole				

Depth scale (ft): 22, 24, 26, 28, 30, 32, 34, 36, 38, 40



Drill Method: Hollow Stem | **Drill Date:** 1-30-18

Drill Rig: CME 45C-1 | **Krazan and Associates** | **Hole Size:** 6½ Inches

Driller: Chris Wyneken | **Elevation:** 30 Feet

Log of Boring B3

Project: Ridgemark Assisted Care Community
Project No: 012-17232

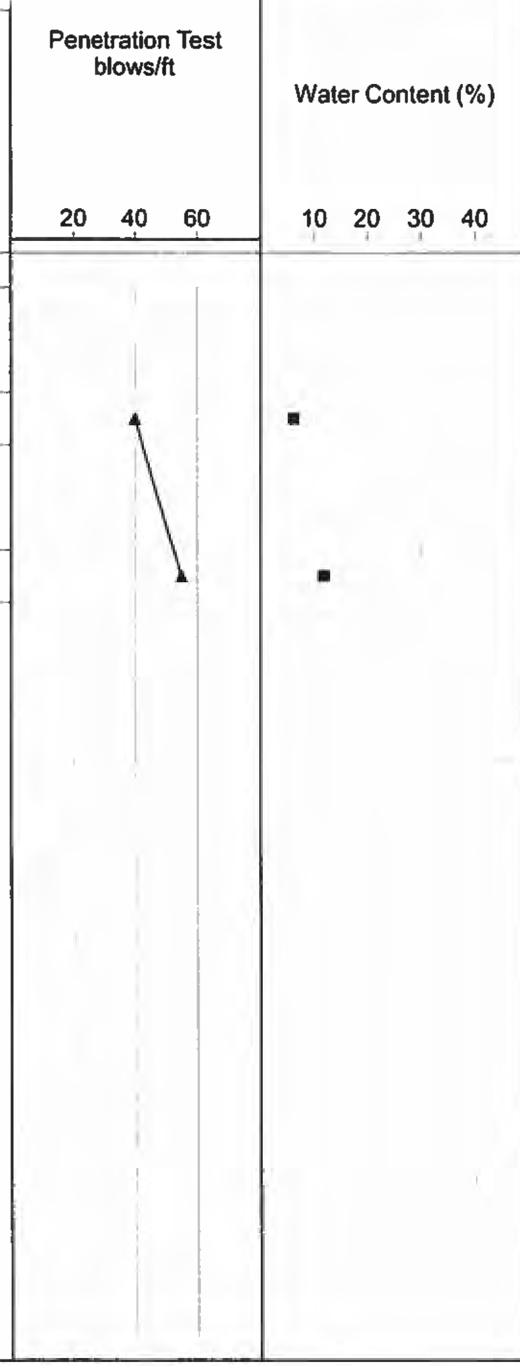
Client: Mr. Nader Javid
Figure No.: A-3

Location: Airline Highway, Hollister, CA
Logged By: Wayne Andrade

Depth to Water> **Initial:** None **At Completion:** None

Depth (ft)	Symbol	Description (Subsurface Profile)	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
		Ground Surface				
0		***SILTY CLAY (CL)*** Very loose; dark brown, damp, drills easily. Stiff below 12 inches				
2		***CLAYEY SANDY SILT (ML)*** Dense, fine-grained; light brown, damp, drills firmly	105.1	6.3		40
4		***SILTY CLAY (CL)*** Hard; light brown, damp, drills firmly	128.0	11.9		55
7		***GRAVELLY CLAYEY SAND (SC)*** Dense, fine- to coarse-grained; light brown, damp, drills firmly				
10		End of Borehole				

Depth scale (ft): 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20



Drill Method: Solid Flight
Drill Date: 1-30-18

Drill Rig: CME 45C-1
Krazan and Associates
Hole Size: 4½ Inches

Driller: Chris Wyneken
Elevation: 10 Feet

Sheet: 1 of 1

Log of Boring B4

Project: Ridgemark Assisted Care Community

Project No: 012-17232

Client: Mr. Nader Javid

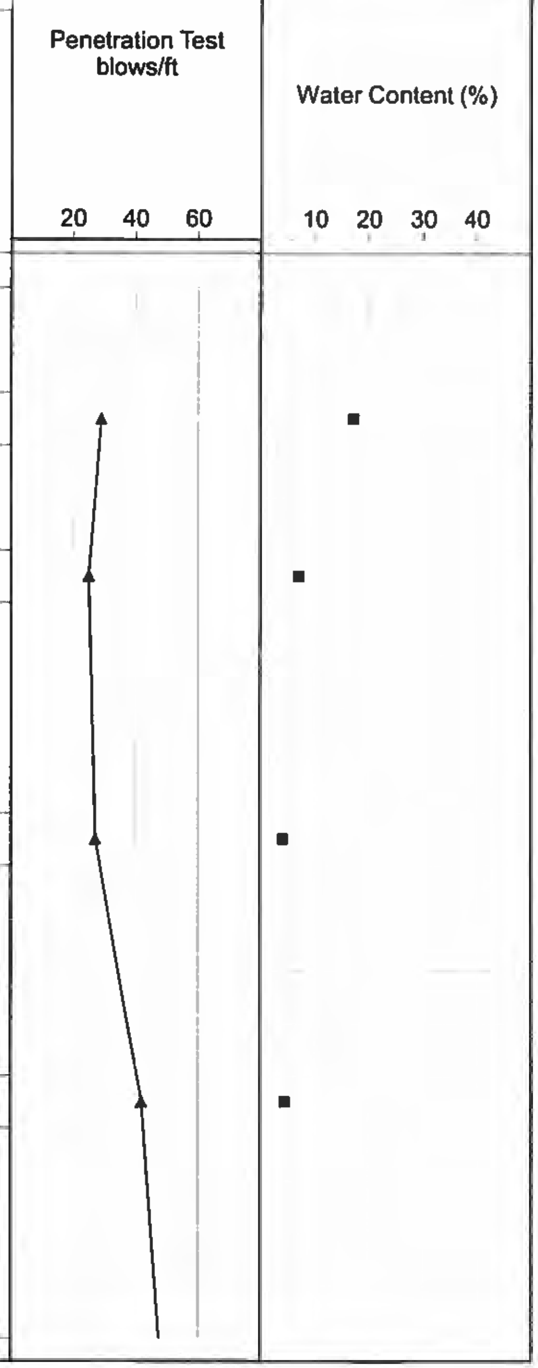
Figure No.: A-4

Location: Airline Highway, Hollister, CA

Logged By: Wayne Andrade

Depth to Water> **Initial:** None **At Completion:** None

Depth (ft)	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
0	Ground Surface				
0	***SILTY CLAY (CL)*** FILL, with trace fine-grained SAND; dark brown, damp, drills easily				
2	***SILTY CLAY (CL)*** Stiff; olive-brown, moist, drills easily	113.5	17.2		29
4	***CLAYEY SAND (SC)*** Medium dense, fine- to medium-grained; light brown, damp, drills easily	119.8	7.1		25
6	***GRAVELLY SILTY SAND (SM)*** Medium dense, fine- to coarse-grained with trace CLAY; brown, damp, drills easily. With increased GRAVEL below 7 feet				
9	***SILTY SAND/SAND (SM/SP)*** Medium dense, fine- to medium-grained; light brown, damp, drills easily	109.6	4.2		27
12.5	***GRAVELLY SILTY SAND (SM)*** Dense, fine- to coarse-grained; light brown, damp, drills firmly	111.6	4.6		42



Drill Method: Hollow Stem

Drill Date: 1-30-18

Drill Rig: CME 45C-1

Krazan and Associates

Hole Size: 6½ Inches

Driller: Chris Wyneken

Elevation: 25 Feet

Log of Boring B4

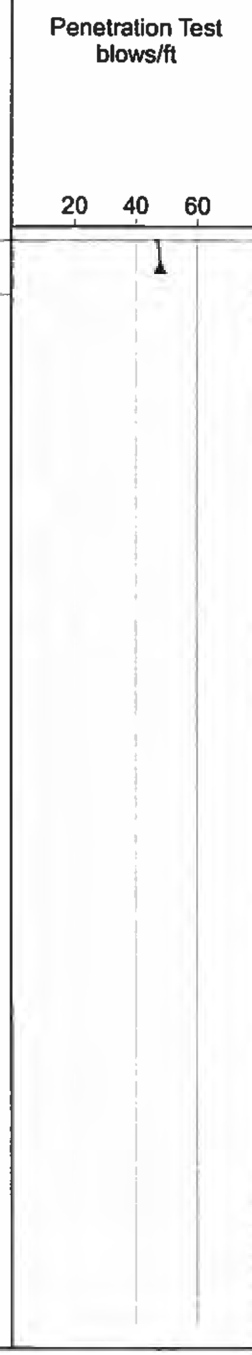
Project: Ridgemark Assisted Care Community | **Project No:** 012-17232

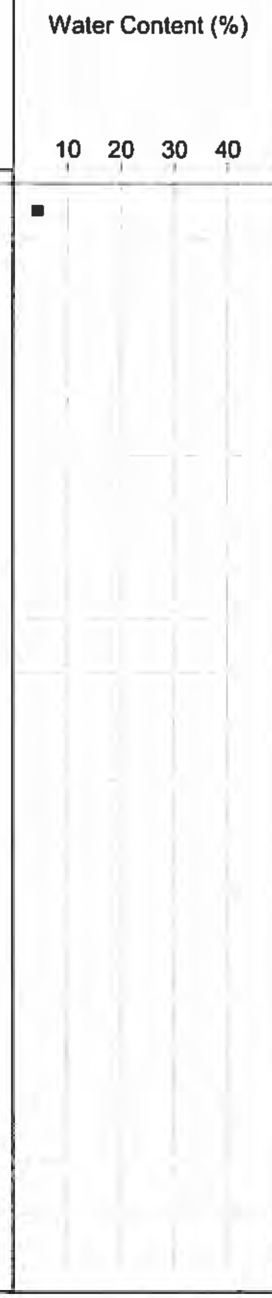
Client: Mr. Nader Javid | **Figure No.:** A-4

Location: Airline Highway, Hollister, CA | **Logged By:** Wayne Andrade

Depth to Water> | **Initial:** None | **At Completion:** None

SUBSURFACE PROFILE			SAMPLE			
Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
			111.6	4.5		48
22						
24						
26		End of Borehole				
28						
30						
32						
34						
36						
38						
40						





Drill Method: Hollow Stem | **Drill Date:** 1-30-18

Drill Rig: CME 45C-1 | **Krazan and Associates** | **Hole Size:** 6½ Inches

Driller: Chris Wyneken | **Elevation:** 25 Feet

Log of Boring B5

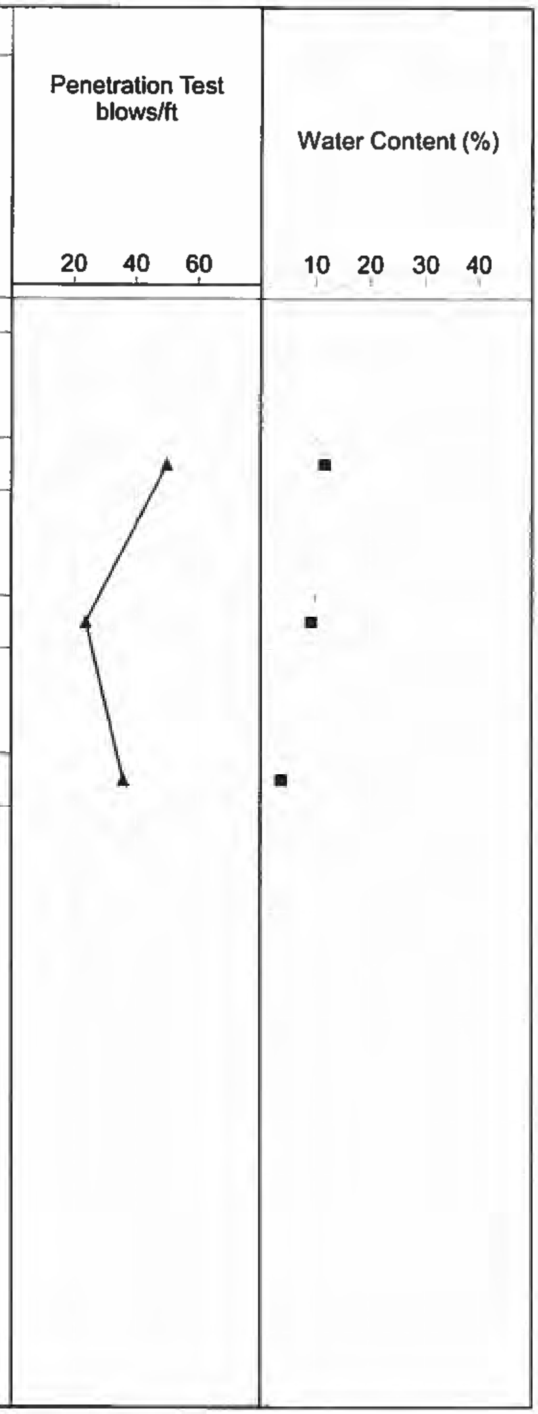
Project: Ridgemark Assisted Care Community
Project No: 012-17232

Client: Mr. Nader Javid
Figure No.: A-5

Location: Airline Highway, Hollister, CA
Logged By: Wayne Andrade

Depth to Water> **Initial:** None **At Completion:** None

SUBSURFACE PROFILE			SAMPLE			
Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
		Ground Surface				
0–1.5		***SILTY CLAY (CL)*** Very loose; dark brown, damp, drills easily Stiff below 12 inches				
2–4		***CLAYEY SAND (SC)*** Very dense, fine- to medium-grained; light brown, damp, drills hard	122.9	11.7		50+
4–7		***GRAVELLY CLAYEY SAND (SC)*** Medium dense, fine- to medium-grained; light brown, damp, drills easily	131.6	9.3		24
7–15		***GRAVELLY SILTY SAND (SM)*** Medium dense, fine- to coarse-grained; light brown, damp, drills easily With increased GRAVEL below 7 feet	127.9	3.8		36
15		End of Borehole				



Drill Method: Solid Flight
Drill Date: 1-30-18

Drill Rig: CME 45C-1
Krazan and Associates
Hole Size: 4½ Inches

Driller: Chris Wyneken
Elevation: 15 Feet

Sheet: 1 of 1

Log of Boring B6

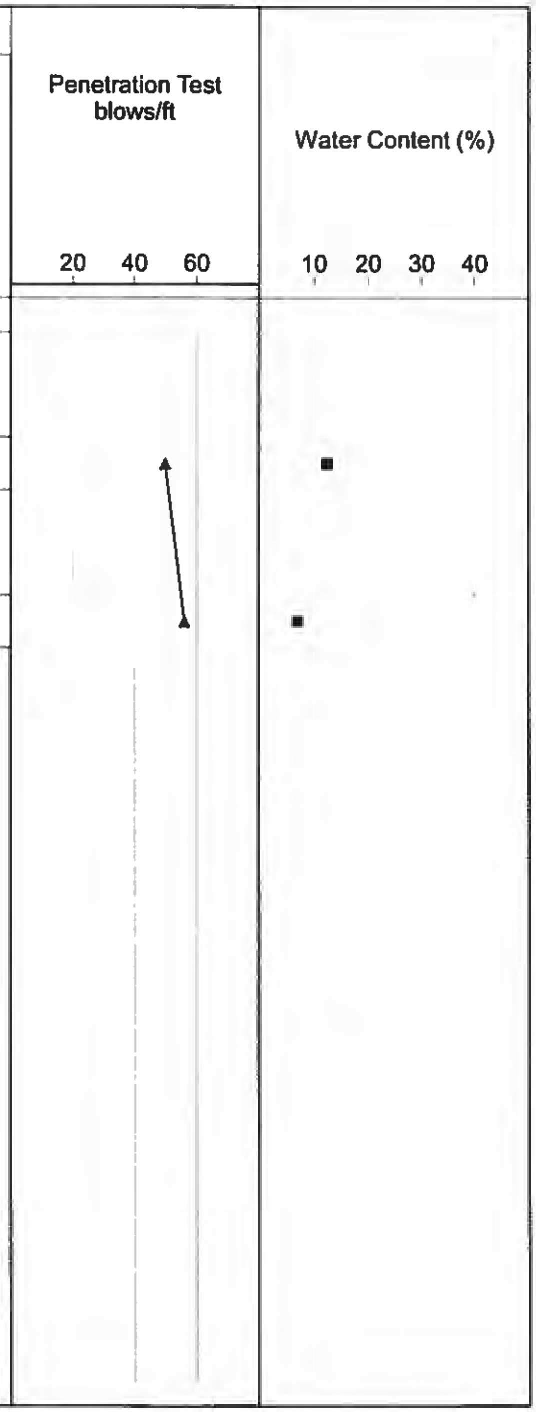
Project: Ridgemark Assisted Care Community — **Project No:** 012-17232

Client: Mr. Nader Javid — **Figure No.:** A-6

Location: Airline Highway, Hollister, CA — **Logged By:** Wayne Andrade

Depth to Water> — **Initial:** None — **At Completion:** None

Depth (ft)	Symbol	Description (SUBSURFACE PROFILE)	Dry Density (pcf) (SAMPLE)	Moisture (%)	Type	Blows/ft.
		Ground Surface				
0		***SILTY CLAY (CL)*** Very loose; dark brown, damp, drills easily. Stiff below 12 inches				
2		***CLAYEY SAND (SC)*** Very dense, fine-grained; light brown, damp, drills hard	129.0	12.6	■	50+
4						
		GRAVELLY CLAYEY SAND (SC) Dense, fine- to coarse-grained; light brown, damp, drills firmly	124.8	7.0	■	56
6						
8		***GRAVELLY SILTY SAND (SM)*** Dense, fine- to coarse-grained; light brown, damp, drills firmly				
10		End of Borehole				
12						
14						
16						
18						
20						



Drill Method: Solid Flight — **Drill Date:** 1-30-18

Drill Rig: CME 45C-1 — **Krazan and Associates** — **Hole Size:** 4½ Inches

Driller: Chris Wyneken — **Elevation:** 10 Feet

Sheet: 1 of 1

Log of Boring B7

Project: Ridgemark Assisted Care Community

Project No: 012-17232

Client: Mr. Nader Javid

Figure No.: A-7

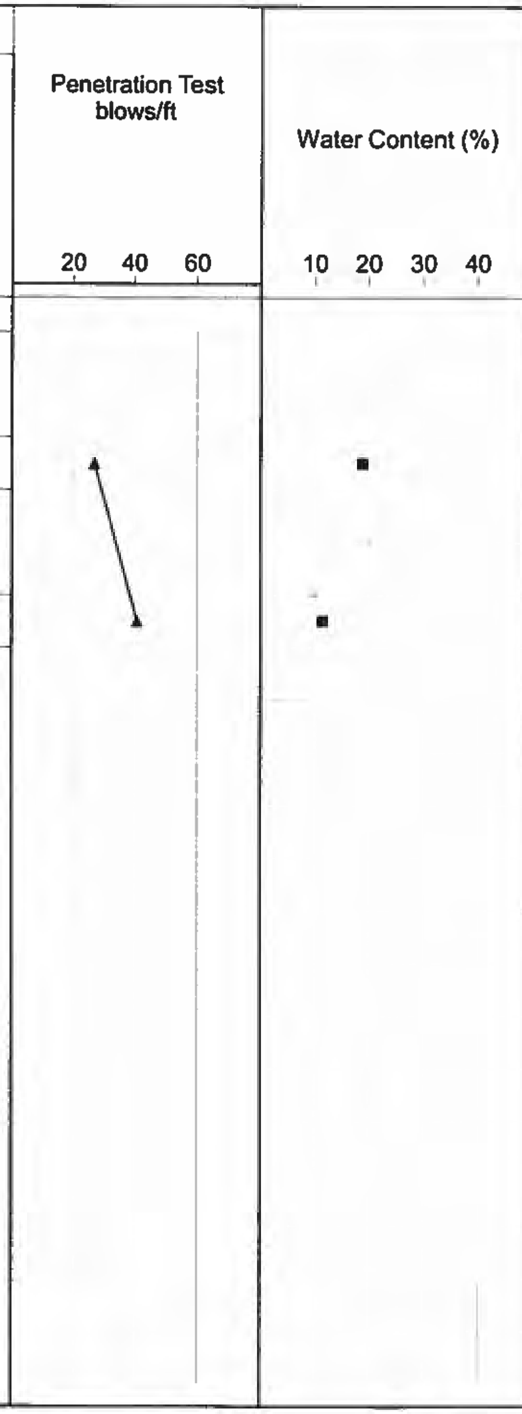
Location: Airline Highway, Hollister, CA

Logged By: Wayne Andrade

Depth to Water> **Initial:** None **At Completion:** None

SUBSURFACE PROFILE			SAMPLE			
Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
		Ground Surface				
0–5	▨	***SILTY CLAY (CL)*** Very loose; dark brown, damp, drills easily. Stiff below 12 inches. Very stiff below 2 feet	112.6	19.0	■	27
5–10	▨	***GRAVELLY CLAYEY SAND (SC)*** Dense, fine- to coarse-grained; light brown, damp, drills firmly. With decreased CLAY and increased SAND below 8 feet	121.5	11.6	■	41
10		End of Borehole				

Depth scale: 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20



Drill Method: Solid Flight

Drill Date: 1-30-18

Drill Rig: CME 45C-1

Krazan and Associates

Hole Size: 4½ Inches

Driller: Chris Wyneken

Elevation: 10 Feet

Sheet: 1 of 1

Log of Boring B8

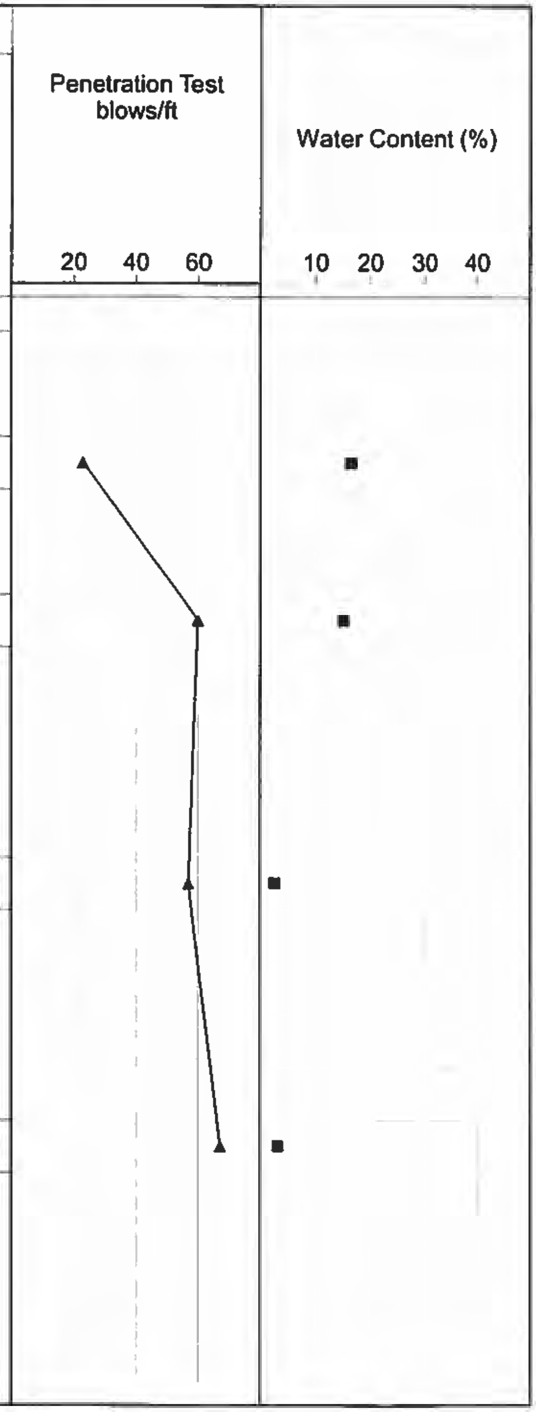
Project: Ridgemark Assisted Care Community **Project No:** 012-17232

Client: Mr. Nader Javid **Figure No.:** A-8

Location: Airline Highway, Hollister, CA **Logged By:** Wayne Andrade

Depth to Water> **Initial:** None **At Completion:** None

SUBSURFACE PROFILE			SAMPLE			
Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
		Ground Surface				
0		***SILTY CLAY (CL)*** Very loose; brown, damp, drills easily. Stiff below 12 inches				
2			113.5	16.6		23
4		Hard and drills hard below 5 feet				
6			118.7	15.2		60
8		***GRAVELLY SILTY SAND (SM)*** Dense, fine- to coarse-grained; light brown, damp, drills firmly				
10			122.8	2.7		57
12						
14						
16		Very dense below 15 feet		3.3		67
18						
20						



Drill Method: Solid Flight **Drill Date:** 1-30-18

Drill Rig: CME 45C-1 **Krazan and Associates** **Hole Size:** 4½ Inches

Driller: Chris Wyneken **Elevation:** 20 Feet

Sheet: 1 of 1

Log of Boring B9

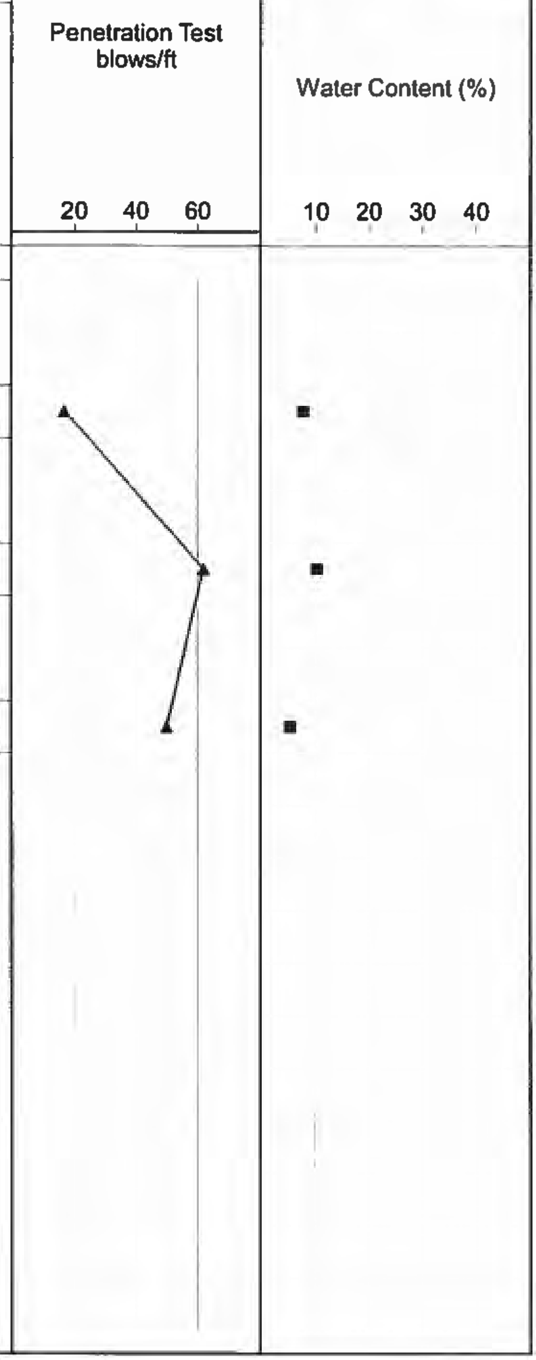
Project: Ridgemark Assisted Care Community
Project No: 012-17232

Client: Mr. Nader Javid
Figure No.: A-9

Location: Airline Highway, Hollister, CA
Logged By: Wayne Andrade

Depth to Water>
Initial: None
At Completion: None

Depth (ft)	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
0	Ground Surface				
0–3.5	***SILTY CLAY (CL)*** Very loose; dark brown, damp, drills easily. Stiff below 12 inches				
~2.5		122.5	7.8		17
3.5–7	***CLAYEY GRAVELLY SAND (SC)*** Dense, fine- to coarse-grained; light brown, damp, drills firmly				
~5.5		133.4	10.4		62
7–15	***GRAVELLY SILTY SAND (SM)*** Very dense, fine- to coarse-grained; light brown, damp, drills hard				
~8.5		137.1	5.5		50+
15	End of Borehole				



Drill Method: Solid Flight
Drill Date: 1-30-18

Drill Rig: CME 45C-1
Hole Size: 4½ Inches

Krazan and Associates

Driller: Chris Wyneken
Elevation: 15 Feet

Sheet: 1 of 1

Log of Boring B10

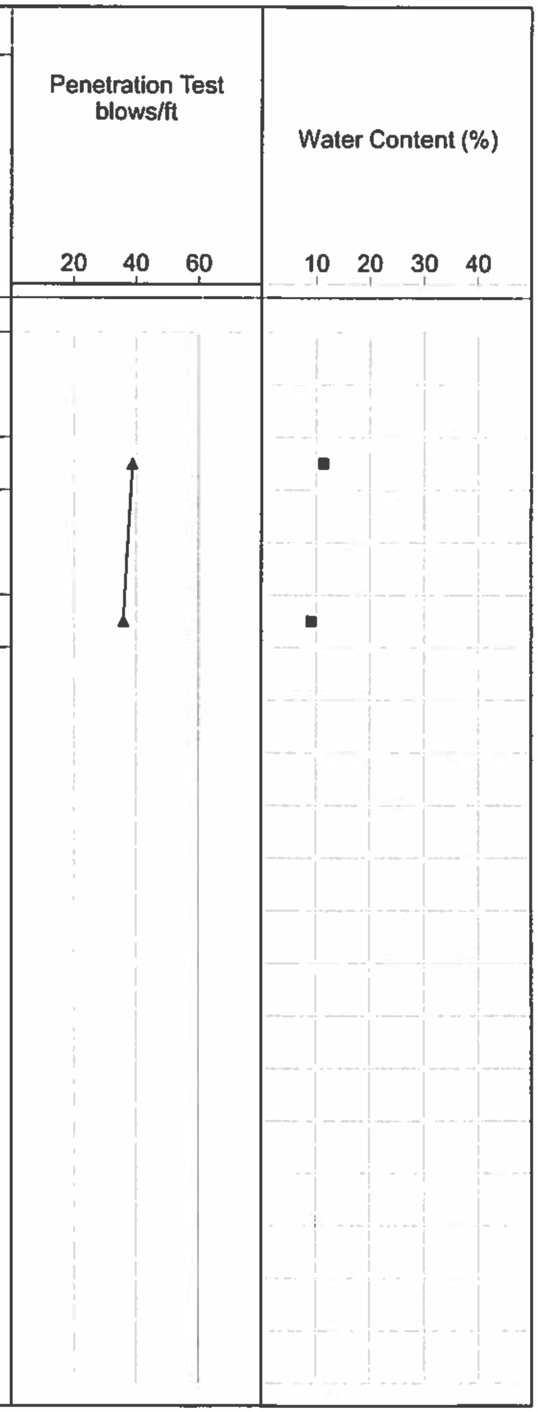
Project: Ridgemark Assisted Care Community
Project No: 012-17232

Client: Mr. Nader Javid
Figure No.: A-10

Location: Airline Highway, Hollister, CA
Logged By: Wayne Andrade

Depth to Water> **Initial:** None **At Completion:** None

Depth (ft)	Symbol	Description (SUBSURFACE PROFILE)	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
		Ground Surface				
0		***SILTY CLAY (CL)*** Very loose; dark brown, damp, drills easily. Stiff below 12 inches				
2		***CLAYEY SAND (SC)*** Medium dense, fine- to medium-grained; brown, damp, drills easily	127.9	11.5		39
4		***GRAVELLY CLAYEY SAND (SC)*** Medium dense, fine- to coarse-grained; light brown, damp, drills easily. With increased GRAVEL below 7 feet	123.7	9.2		36
10		End of Borehole				



Drill Method: Solid Flight
Drill Date: 1-30-18

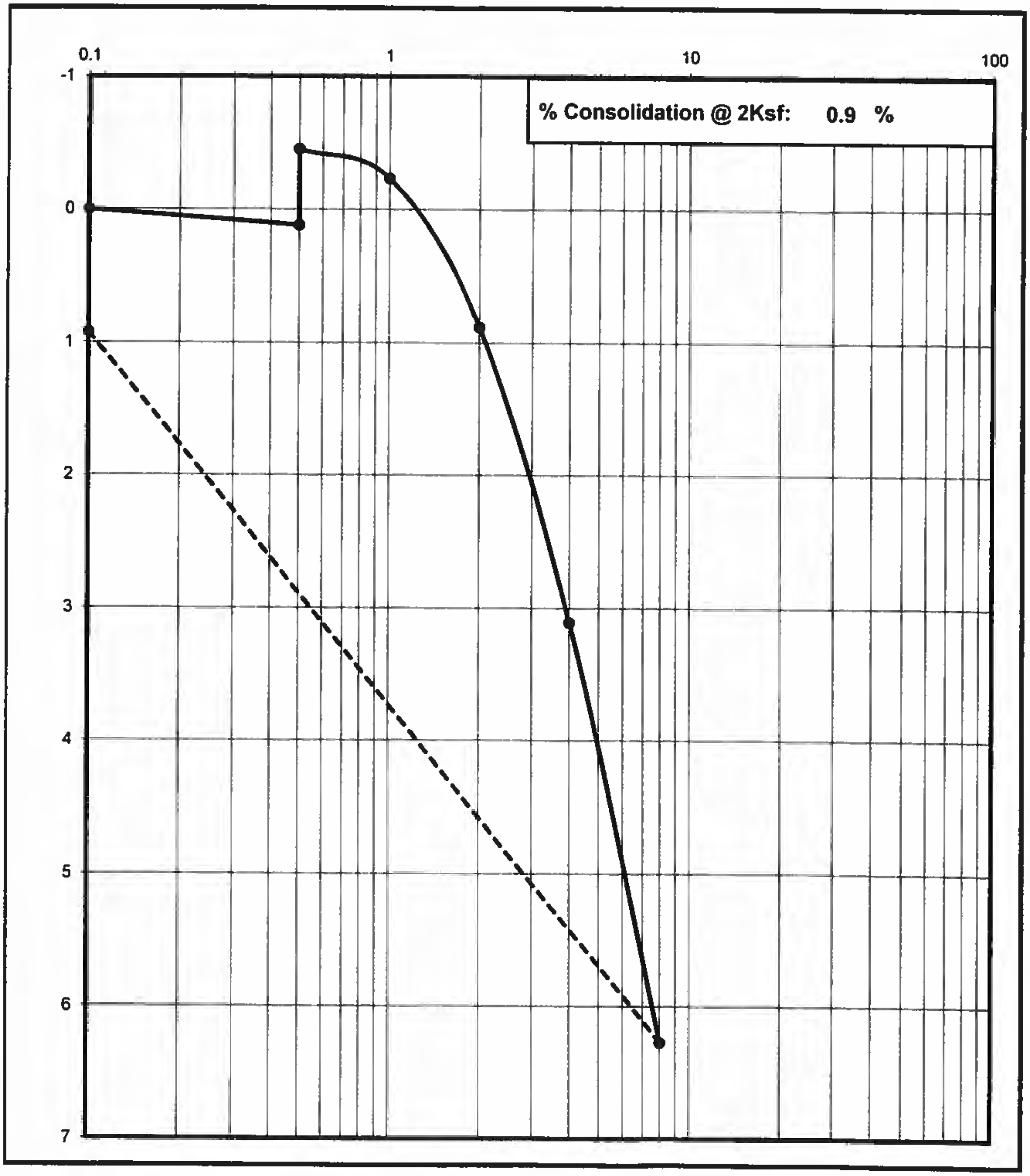
Drill Rig: CME 45C-1
Krazan and Associates
Hole Size: 4½ Inches

Driller: Chris Wyneken
Elevation: 10 Feet

Sheet: 1 of 1

Consolidation Test

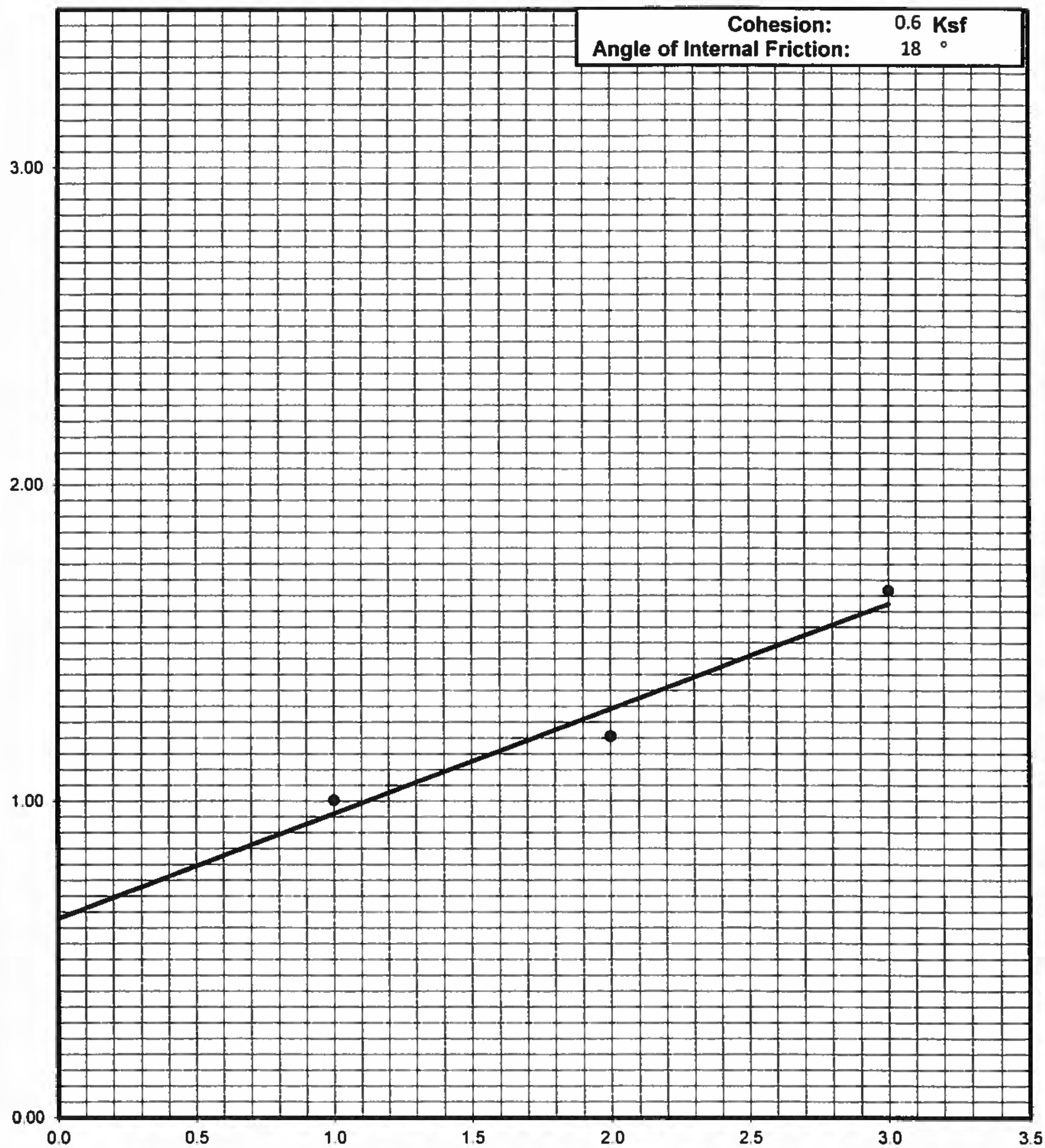
Project No	Boring No. & Depth	Date	Soil Classification
012-17232	B8 @ 2-3'	2/20/2018	CL



Krazan Testing Laboratory

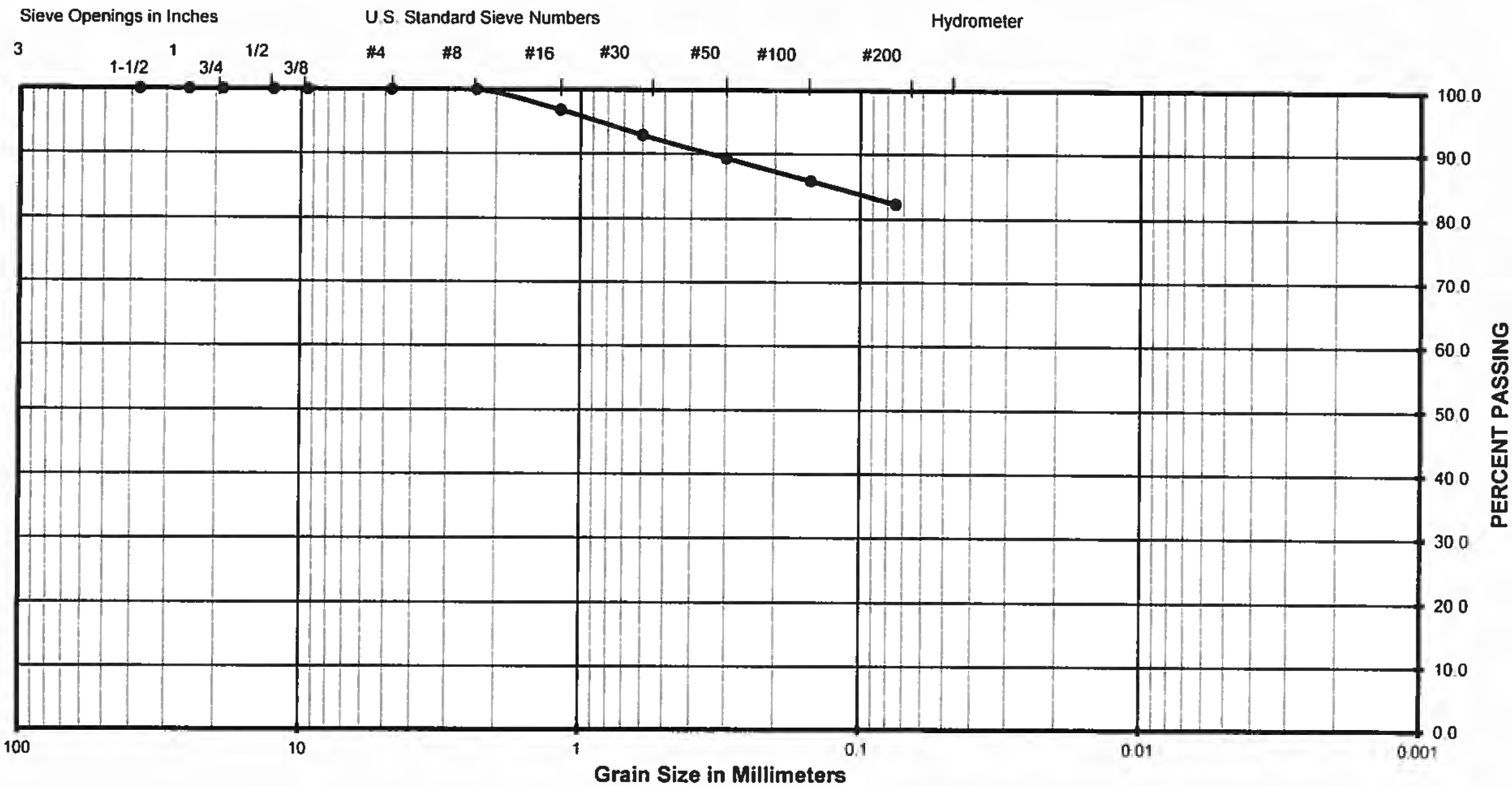
Shear Strength Diagram (Direct Shear)
ASTM D - 3080 / AASHTO T - 236

Project Number	Boring No. & Depth	Soil Type	Date
012-17232	B7 @ 2-3'	CL	2/20/2018



Krazan Testing Laboratory

Grain Size Analysis



Gravel		Sand			Silt or Clay
Coarse	Fine	Coarse	Medium	Fine	

(Unified Soils Classification)

Project Name	Ridgemark Assisted Care Community
Project Number	012-17232
Soil Classification	CL
Sample Number	B8 @ 2-3'

Krazan Testing Laboratory

Expansion Index Test

ASTM D - 4829/ UBC Std. 18-2

Project Number	: 012-17232
Project Name	: Ridgemark Assisted Care Community
Date	: 2/20/2018
Sample location/ Depth	: 0-4'
Sample Number	: C1/X1
Soil Classification	: SC

Trial #	1	2	3
Weight of Soil & Mold, gms	751.8		
Weight of Mold, gms	368.7		
Weight of Soil, gms	383.1		
Wet Density, Lbs/cu.ft.	115.5		
Weight of Moisture Sample (Wet), gms	300.0		
Weight of Moisture Sample (Dry), gms	269.3		
Moisture Content, %	11.4		
Dry Density, Lbs/cu.ft.	103.7		
Specific Gravity of Soil	2.7		
Degree of Saturation, %	49.3		

Time	Inital	30 min	1 hr	6hrs	12 hrs	24 hrs
Dial Reading	0	--	--	--	--	0.0404

Expansion Index $_{measured}$ = 40.4

Expansion Index = 40

Expansion Potential Table	
Exp. Index	Potential Exp.
0 - 20	Very Low
21 - 50	Low
51 - 90	Medium
91 - 130	High
>130	Very High

Krazan Testing Laboratory

Expansion Index Test

ASTM D - 4829/ UBC Std. 18-2

Project Number	: 012-17232
Project Name	: Ridgemark Assisted Care Community
Date	: 2/20/2018
Sample location/ Depth	: 2-5'
Sample Number	: X4
Soil Classification	: CL

Trial #	**1**	**2**	**3**
Weight of Soil & Mold, gms	584.7		
Weight of Mold, gms	204.7		
Weight of Soil, gms	380.0		
Wet Density, Lbs/cu.ft.	114.6		
Weight of Moisture Sample (Wet), gms	300.0		
Weight of Moisture Sample (Dry), gms	269.5		
Moisture Content, %	11.3		
Dry Density, Lbs/cu.ft.	103.0		
Specific Gravity of Soil	2.7		
Degree of Saturation, %	48.0		

Time	Inital	30 min	1 hr	6hrs	12 hrs	24 hrs
Dial Reading	0	--	--	--	--	0.0933

Expansion Index $_{measured}$ = 93.3

Expansion Index = 93

Expansion Potential Table	
Exp. Index	Potential Exp.
0 - 20	Very Low
21 - 50	Low
51 - 90	Medium
91 - 130	High
>130	Very High

Krazan Testing Laboratory

Expansion Index Test

ASTM D - 4829/ UBC Std. 18-2

Project Number	: 012-17232
Project Name	: Ridgemark Assisted Care Community
Date	: 2/20/2018
Sample location/ Depth	: 0-3.5'
Sample Number	: X5
Soil Classification	: SC

Trial #	1	2	3
Weight of Soil & Mold, gms	761.1		
Weight of Mold, gms	368.4		
Weight of Soil, gms	392.7		
Wet Density, Lbs/cu.ft.	118.4		
Weight of Moisture Sample (Wet), gms	300.0		
Weight of Moisture Sample (Dry), gms	271.3		
Moisture Content, %	10.6		
Dry Density, Lbs/cu.ft.	107.1		
Specific Gravity of Soil	2.7		
Degree of Saturation, %	49.8		

Time	Inital	30 min	1 hr	6hrs	12 hrs	24 hrs
Dial Reading	0	--	--	--	--	0.0263

Expansion Index $_{measured}$ = 26.3

Expansion Index = 26

Expansion Potential Table	
Exp. Index	Potential Exp.
0 - 20	Very Low
21 - 50	Low
51 - 90	Medium
91 - 130	High
>130	Very High

Krazan Testing Laboratory

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

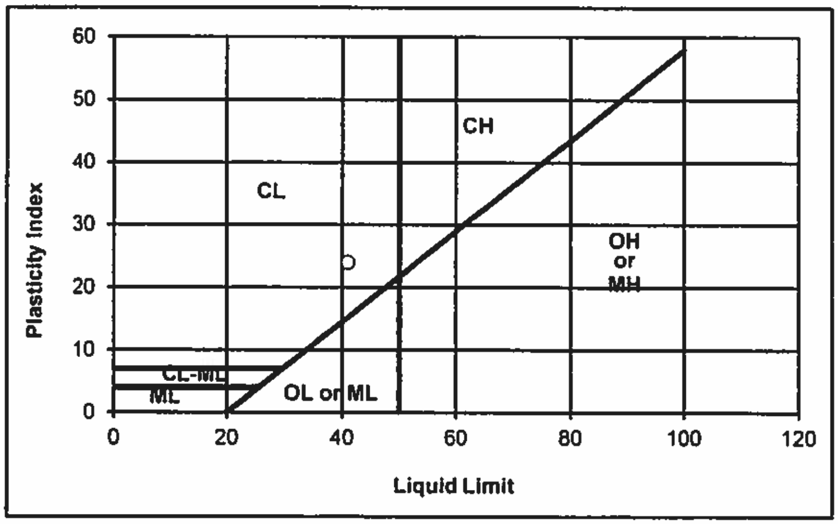
Project: **Ridgemark Assisted Care Community**
Project Number: **012-17232**
Date Sampled: 1/30/2018
Sampled By: WA
Sample Number: -
Sample Location: B1 @ 30-31'
Sample Description: CL

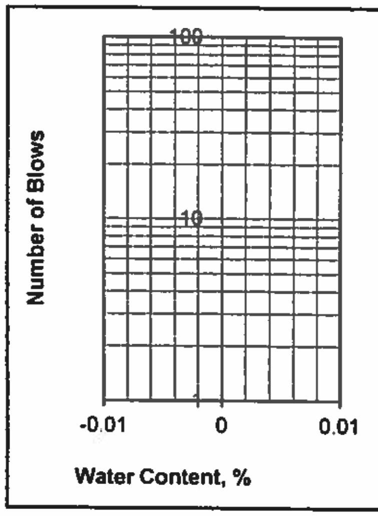
Date Tested: 2/19/2018
Tested By: J Mitchell
Verified By: J Gruszczynski

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	19.47	25.09		28.46		
Weight of Dry Soil & Tare (g)	18.76	23.95		24.34		
Weight of Tare (g)	14.41	17.07		14.28		
Weight of water (g)	0.72	1.14		4.12		
Weight of Dry Soil (g)	4.35	6.88		10.06		
Water Content (% of dry wt.)	16.5%	16.6%		41.0%		
Number of Blows				25		

Plastic Limit : 17 **Liquid Limit : 41**

Plasticity Index : 24
Unified Soil Classification : CL
Requirement:
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

APPENDIX B

EARTHWORK SPECIFICATIONS

GENERAL

When the text of the report conflicts with the general specifications in this appendix, the recommendations in the report have precedence.

SCOPE OF WORK: These specifications and applicable plans pertain to and include all earthwork associated with the site rough grading, including but not limited to the furnishing of all labor, tools, and equipment necessary for site clearing and grubbing, stripping, preparation of foundation materials for receiving fill, excavation, processing, placement and compaction of fill and backfill materials to the lines and grades shown on the project grading plans, and disposal of excess materials.

PERFORMANCE: The Contractor shall be responsible for the satisfactory completion of all earthwork in accordance with the project plans and specifications. This work shall be inspected and tested by a representative of Krazan and Associates, Inc., hereinafter known as the Soils Engineer and/or Testing Agency. Attainment of design grades when achieved shall be certified by the project Civil Engineer. Both the Soils Engineer and the Civil Engineer are the Owner's representatives. If the Contractor should fail to meet the technical or design requirements embodied in this document and on the applicable plans, he shall make the necessary readjustments until all work is deemed satisfactory as determined by both the Soils Engineer and the Civil Engineer. No deviation from these specifications shall be made except upon written approval of the Soils Engineer, Civil Engineer or project Architect.

No earthwork shall be performed without the physical presence or approval of the Soils Engineer. The Contractor shall notify the Soils Engineer at least 2 working days prior to the commencement of any aspect of the site earthwork.

The Contractor agrees that he shall assume sole and complete responsibility for job site conditions during the course of construction of this project, including safety of all persons and property; that this requirement shall apply continuously and not be limited to normal working hours; and that the Contractor shall defend, indemnify and hold the Owner and the Engineers harmless from any and all liability, real or alleged, in connection with the performance of work on this project, except for liability arising from the sole negligence of the Owner or the Engineers.

TECHNICAL REQUIREMENTS: All compacted materials shall be densified to a density not less than 90 percent relative compaction based on ASTM Test Method D1557 or CAL-216, as specified in the technical portion of the Soil Engineer's report. The location and frequency of field density tests shall be as determined by the Soils Engineer. The results of these tests and compliance with these specifications shall be the basis upon which satisfactory completion of work will be judged by the Soils Engineer.

SOILS AND FOUNDATION CONDITIONS: The Contractor is presumed to have visited the site and to have familiarized himself with existing site conditions and the contents of the data presented in the soil report.

The Contractor shall make his own interpretation of the data contained in said report, and the Contractor shall not be relieved of liability under the Contract documents for any loss sustained as a result of any variance between conditions indicated by or deduced from said report and the actual conditions encountered during the progress of the work.

DUST CONTROL: The work includes dust control as required for the alleviation or prevention of any dust nuisance on or about the site or the borrow area, or off-site if caused by the Contractor's operation either during the performance of the earthwork or resulting from the conditions in which the Contractor leaves the site. The Contractor shall assume all liability, including court costs of codefendants, for all claims related to dust or windblown materials attributable to his work.

SITE PREPARATION

Site preparation shall consist of site clearing and grubbing and the preparations of foundation materials for receiving fill.

CLEARING AND GRUBBING: The Contractor shall accept the site in this present condition and shall demolish and/or remove from the area of designated project earthwork all structures, both surface and subsurface, trees, brush, roots, debris, organic matter, and all other matter determined by the Soils Engineer to be deleterious or otherwise unsuitable. Such materials shall become the property of the Contractor and shall be removed from the site.

Tree root systems in proposed building areas should be removed to a minimum depth of 3 feet and to such an extent which would permit removal of all roots larger than 1 inch. Tree roots removed in parking areas may be limited to the upper 1½ feet of the ground surface. Backfill of tree root excavations should not be permitted until all exposed surfaces have been inspected and the Soils Engineer is present for the proper control of backfill placement and compaction. Burning in areas which are to receive fill materials shall not be permitted.

SUBGRADE PREPARATION: Surfaces to receive Engineered Fill, building or slab loads shall be prepared as outlined above, excavated/scarified to a depth of 12 inches, moisture-conditioned as necessary, and compacted to 90 percent relative compaction.

Loose soil areas, areas of uncertified fill, and/or areas of disturbed soils shall be moisture-conditioned as necessary and recompacted to 90 percent relative compaction. All ruts, hummocks, or other uneven surface features shall be removed by surface grading prior to placement of any fill materials. All areas which are to receive fill materials shall be approved by the Soils Engineer prior to the placement of any of the fill material.

EXCAVATION: All excavation shall be accomplished to the tolerance normally defined by the Civil Engineer as shown on the project grading plans. All over-excavation below the grades specified shall be backfilled at the Contractor's expense and shall be compacted in accordance with the applicable technical requirements.

FILL AND BACKFILL MATERIAL: No material shall be moved or compacted without the presence of the Soils Engineer. Material from the required site excavation may be utilized for construction site fills provided prior approval is given by the Soils Engineer. All materials utilized for constructing site fills shall be free from vegetation or other deleterious matter as determined by the Soils Engineer.

PLACEMENT, SPREADING AND COMPACTION: The placement and spreading of approved fill materials and the processing and compaction of approved fill and native materials shall be the responsibility of the Contractor. However, compaction of fill materials by flooding, ponding, or jetting shall not be permitted unless specifically approved by local code, as well as the Soils Engineer.

Both cut and fill areas shall be surface-compacted to the satisfaction of the Soils Engineer prior to final acceptance.

SEASONAL LIMITS: No fill material shall be placed, spread, or rolled while it is frozen or thawing or during unfavorable wet weather conditions. When the work is interrupted by heavy rains, fill operations shall not be resumed until the Soils Engineer indicates that the moisture content and density of previously placed fill are as specified.

APPENDIX C

PAVEMENT SPECIFICATIONS

1. **DEFINITIONS** - The term "pavement" shall include asphaltic concrete surfacing, untreated aggregate base, and aggregate subbase. The term "subgrade" is that portion of the area on which surfacing, base, or subbase is to be placed.

The term "Standard Specifications": hereinafter referred to is the 2010 Standard Specifications of the State of California, Department of Transportation, and the "Materials Manual" is the Materials Manual of Testing and Control Procedures, State of California, Department of Public Works, Division of Highways. The term "relative compaction" refers to the field density expressed as a percentage of the maximum laboratory density as defined in the applicable tests outlined in the Materials Manual.

2. **SCOPE OF WORK** - This portion of the work shall include all labor, materials, tools, and equipment necessary for, and reasonably incidental to the completion of the pavement shown on the plans and as herein specified, except work specifically noted as "Work Not Included."

3. **PREPARATION OF THE SUBGRADE** - The Contractor shall prepare the surface of the various subgrades receiving subsequent pavement courses to the lines, grades, and dimensions given on the plans. The upper 12 inches of the soil subgrade beneath the pavement section shall be compacted to a minimum relative compaction of 90 percent. The finished subgrades shall be tested and approved by the Soils Engineer prior to the placement of additional pavement courses.

4. **UNTREATED AGGREGATE BASE** - The aggregate base material shall be spread and compacted on the prepared subgrade in conformity with the lines, grades, and dimensions shown on the plans. The aggregate base material shall conform to the requirements of Section 26 of the Standard Specifications for Class 2 material, 1½ inches maximum size. The aggregate base material shall be spread and compacted in accordance with Section 26 of the Standard Specifications. The aggregate base material shall be spread in layers not exceeding 6 inches and each layer of aggregate material course shall be tested and approved by the Soils Engineer prior to the placement of successive layers. The aggregate base material shall be compacted to a minimum relative compaction of 95 percent.

5. **AGGREGATE SUBBASE** - The aggregate subbase shall be spread and compacted on the prepared subgrade in conformity with the lines, grades, and dimensions shown on the plans. The aggregate subbase material shall conform to the requirements of Section 25 of the Standard Specifications for Class 2 material. The aggregate subbase material shall be compacted to a minimum relative compaction of 95 percent, and it shall be spread and compacted in accordance with Section 25 of the Standard Specifications. Each layer of aggregate subbase shall be tested and approved by the Soils Engineer prior to the placement of successive layers.

6. ASPHALTIC CONCRETE SURFACING - Asphaltic concrete surfacing shall consist of a mixture of mineral aggregate and paving grade asphalt, mixed at a central mixing plant and spread and compacted on a prepared base in conformity with the lines, grades and dimensions shown on the plans. The viscosity grade of the asphalt shall be PG 64-10. The mineral aggregate shall be Type B, ½ inch maximum size, medium grading and shall conform to the requirements set forth in Section 39 of the Standard Specifications. The drying, proportioning and mixing of the materials shall conform to Section 39.

The prime coat, spreading and compacting equipment and spreading and compacting mixture shall conform to the applicable chapters of Section 39, with the exception that no surface course shall be placed when the atmospheric temperature is below 50° F. The surfacing shall be rolled with a combination of steel wheel and pneumatic rollers, as described in Section 39-6. The surface course shall be placed with an approved self-propelled mechanical spreading and finishing machine.

7. FOG SEAL COAT - The fog seal (mixing type asphaltic emulsion) shall conform to and be applied in accordance with the requirements of Section 37.

APPENDIX J

GENERAL PLAN POLICIES CONSISTENCY ANALYSIS

APPENDIX J

Project Consistency with Relevant San Benito County 2035 General Plan Policies

Policy	Consistency Determination
Land Use Element	
LU-1.6 Hillside Development Restrictions The County shall prohibit residential and urban development on hillsides with 30 percent or greater slopes.	Consistent. A review of the civil plans included as Appendix B indicates that the steepest slope on the project site is about 22 percent.
LU-1.8 Site Plan Environmental Content Requirements The County shall require all submitted site plans, tentative maps, and parcel maps to depict all environmentally sensitive and hazardous areas, including: 100-year floodplains, fault zones, 30 percent or greater slopes, severe erosion hazards, fire hazards, wetlands, and riparian habitats.	Consistent. The project site is not within environmentally sensitive and hazardous areas including, 100-year floodplains, fault zones, 30 percent or greater slopes, severe erosion hazard areas, fire hazards, wetlands, and riparian habitats.
LU-4.2 Urban Residential Development The County shall ensure new urban residential development (e.g., greater than two units per acre) occurs in areas that have, or can provide, adequate public facilities and services to support such uses, and are near existing and future major transportation networks, transit and/or bicycle corridors, pedestrian paths and trails, and employment centers.	Consistent. The proposed assisted care facility is not a typical urban residential development. Nevertheless, the analysis included in this initial study concludes that there would be adequate public facilities and services to support the proposed project, either through existing service providers or through implementation of identified mitigation measures (refer to Section 17, Transportation/Traffic). The project site is located near a major transportation corridor (Airline Highway) and only 0.3 miles from the City of Hollister. Although the project vicinity is not served by any sidewalks or bicycle facilities, the project will accommodate seniors that are not expected to walk or bicycle off of the property.
LU-4.3 Residential Density Reductions The County shall consider reducing the base density of a proposed residential development project if a combination of environmental hazards (e.g., fire, seismic, flooding, greater than 30 percent slope) and/or natural resources (e.g., sensitive habitat, wetlands) existing on the site, after consideration of the mitigations to be implemented to address those hazards, make higher densities less appropriate.	Consistent. As described in the initial study, any potential hazards and natural resources have been appropriately considered in the project's design and/or otherwise mitigated, and therefore the project would not require a reduction in base density.
LU-7.6 Minimizing Parking Impacts The County shall minimize the visual impact of public and private parking by requiring it to be located at the rear and/or side of buildings and screened with landscape, where feasible, in order to preserve character and promote human-scale development.	Consistent. The proposed project includes two surface parking lots, located along the southern boundary of the project site. Public views of the parking lots from Airline Highway would be obscured by the proposed buildings and associated landscaping.

Policy	Consistency Determination
LU-7.7 Screening The County shall require screening of storage, trash receptacles, loading docks, and other building or site features to reduce visual impacts from public areas.	Consistent. The project site is visible from Airline Highway. The project plans indicate that the trash enclosure would be located on the parking lot for Site A, along the southern boundary of the project site. The proposed buildings would be located approximately 430 feet from the Airline Highway centerline. Public views of storage, trash receptacles, and buildings from Airline Highway would be obscured by the proposed landscaping.
Housing Element	
HOU-2C The County shall assure that new housing efficiently uses land and causes minimum environmental impact.	Consistent. The proposed project includes 155 rooms and 180 beds in three levels on a seven-acre project site. The environmental impacts of the proposed project are addressed in this initial study and mitigated to a less-than-significant level.
HOU-2R The County shall use land efficiently to encourage a diversity of housing types and to implement "smart" and sustainable development principles.	Consistent. The proposed assisted care facility provides a needed housing option for seniors in San Benito County. Regarding smart and sustainable development principles, the proposed project would consume less water by complying with state requirements for Model Water Efficient Landscape Ordinance. Compliance with the 2019 Title 24 Building Energy Efficiency Standards would ensure that the proposed project incorporates energy efficient lighting, heating, cooling and ventilation techniques. If the proposed project is approved, building plans and detailed landscape plans would be prepared by the developer and reviewed by the county for compliance with energy and water conservation requirements prior to issuance of building permits.
HOU-5A The County shall require energy-conserving construction, as required by State law.	Consistent. The proposed project would be built to the 2019 Title 24 Building Energy Efficiency Standards. These standards would ensure the project uses energy-conserving construction practices.
HOU-5G The County shall require solar access to be considered in environmental review and/or decision-making for all subdivisions.	Consistent. Greenhouse gas emissions and energy impacts are addressed in this initial study. The modeling and analysis concluded that the proposed project would not result in a significant greenhouse gas emissions or energy impacts land therefore, no mitigation measures are required.
Circulation Element	
C-1.3 Roadway Improvement Aesthetics The County shall require roadway improvements, such as roadway alignment and grading, landscaping, and/or other treatments, to reflect a context sensitive approach and be based on the intended character, whether urban or rural, of a particular location to be designed to conform to existing landforms and to include landscaping and/or other treatments to ensure that aesthetics are preserved, including the County's rural character.	Consistent. The proposed project includes realignment of the existing driveway, which would be designed to conform to the existing landform. The proposed project includes landscaping along the driveway.

Policy	Consistency Determination
C-1.5 Mitigation Transportation Impacts The County shall assess fees on all new development to ensure new development pays its fair share of the costs for new and expanded transportation facilities, as applicable, to County, City, regional and/or State facilities.	Consistent. The proposed project would be required to pay the applicable Regional Transportation Impact Mitigation Fee (TIMF) to San Benito County as presented in Mitigation Measure T-1.
C-1.12 Level of Service (LOS) Standard The County shall endeavor to maintain a General Plan target goal of LOS D at all locations. If a transportation facility is already operating at an LOS D or E, the existing LOS should be maintained. Exceptions should be considered where achievement of these levels of service would cause unacceptable impacts to other modes of transportation, the environment, or private property.	Consistent. The traffic impact analysis prepared for the proposed project, as summarized in Section 17, Transportation/Traffic, includes an analysis of the proposed project's impacts on the roadway system. Future cumulative traffic conditions would result in LOS E-F operations at Airline Highway intersections with Union Road and Fairview Road. Improvements would be required at these intersections in order for them to continue to operate at an acceptable level of service under cumulative project conditions. Implementation of Mitigation Measure T-1, which requires the developer to pay the applicable TIMF as fair-share contribution, would mitigate the proposed project's fair share of the impacts to these intersections.
C-1.13 Upgrade Private Roads The County shall require existing private roads to be upgraded to County standards as a condition of approval for any project that will be served by such roads.	Consistent. The existing driveway will be upgraded to comply with relevant San Benito County Fire Department standards and other County requirements.
C-1.16 Roads on Hillsides The County shall require that new public and private roads on hillsides minimize visual impact by blending with natural landforms and by following the natural contours of the land as much as possible and that driveway access in hillside areas be consolidated where possible and limited to areas where adequate sight distance is available for all approaches.	Consistent. The proposed project includes realignment of the existing driveway, with a looped design for emergency access. The proposed driveway will be designed to follow the contour of the sloped portion of the project site. Additionally, the traffic impact analysis found that there is adequate stopping sight distance on Airline Highway for vehicles approaching the Project Access Road intersection and for vehicles exiting the Project Access Road and entering Airline Highway.
C-1.18 Minimize Hillside Scarring The County shall require new roads on hillsides and ridges that are visually prominent from County or State roadways to minimize scarring.	Consistent. Public views of the existing driveway on the project site from Airline Highway are already obscured by the Sunnyslope County Water District office and intervening vegetation. The proposed project includes realignment of the existing driveway, with a looped design for emergency access. Landscaping associated with the proposed project would obscure public views of the proposed driveway from Airline Highway.
C-1.19 Avoid Hazardous Areas The County shall ensure that road development is minimized in hazardous areas (e.g. faults, flood plains, landslide areas, fire hazard areas) and that, if a hazard is present within a planned road alignment, the planned alignment is modified to the extent feasible to avoid the hazard.	Consistent. As discussed in the initial study, the project site is not within an active seismic fault, not located within a flood hazard area, not located within a fire hazard severity zone, and not located within a landslide area. Therefore, realignment of the project access driveway would avoid hazardous areas.

Policy	Consistency Determination
Public Facilities and Services Element	
PFS-1.12 New Development Requirements The County shall require new development, in compliance with local, State, and Federal law, to mitigate project impacts associated with public facilities and services, including, but not limited to, fire, law enforcement, water, wastewater, schools, infrastructure, roads, and pedestrian and bicycle facilities through the use of annexation fees, connection fees, facility construction/expansion requirements, or other appropriate methods.	Consistent. As described in Section 19, Utilities and Service Systems, sufficient water and wastewater capacity is available to serve the proposed project. As discussed in Section 15, Public Services, the proposed project would be subject to development impact fees with respect to fire services, police services, parks, and other public services/facilities. These fees, in combination with fees collected from other projects, would be used to improve or expand public facilities as may be necessary to accommodate cumulative development throughout San Benito County and Hollister.
PFS-3.9 Sufficient Water Supply for New Development The County shall require new developments to prepare a source water sufficiency study and water supply analysis for use in preparing, where required, a Water Supply Assessment per SB 610 and a Source Water Assessment per Title 22. This shall include studying the effect of new development on the water supply of existing users. The County encourages the development of integrated regional water management plans or similar plans.	Consistent. A Water Supply Assessment per SB 610 and a Source Water Assessment per Title 22 are not required for this project.
PFS-4.1 Adequate Water Treatment and Delivery Facilities The County shall ensure, through the development review process, that adequate water supply, treatment and delivery facilities are sufficient to serve new development, and are able to be expanded to meet capacity demands when needed. Such needs shall include capacities necessary to comply with water quality and public safety requirements.	Consistent. As discussed in Section 19, Utilities and Service Systems, the Sunnyslope County Water District has sufficient water production, distribution capacity, and infrastructure to effectively serve the proposed project.
PFS-5.3 Adequate Water Treatment Disposal The County shall ensure through the development review process that wastewater collection, treatment, and disposal facilities are sufficient to serve existing and new development, and are able to be expanded to meet capacity demands when needed.	Consistent. As discussed in Section 19, Utilities and Service Systems, the Sunnyslope County Water District has sufficient wastewater treatment capacity to serve the proposed project
PFS-6.1 Adequate Stormwater Facilities The County shall require that stormwater drainage facilities are properly designed, sited, constructed, and maintained to efficiently capture and dispose of runoff and minimize impacts to water quality.	Consistent. The preliminary utility plan (sheet 5 in Appendix B) indicates that storm water from the proposed project will drain into three underground detention systems and ultimately into the unnamed intermittent stream that traverses the project site. Mitigation Measure HYD-1 would ensure that the proposed project does not result in polluted runoff.
PFS-6.2 Best Management Practices The County shall require best management practices in the development, upgrading, and maintenance of stormwater facilities and services to reduce pollutants from entering natural water bodies while allowing stormwater reuse and groundwater recharge.	Consistent. Refer to Public Facilities and Services Element Policy PFS-6.1 for consistency discussion.

Policy	Consistency Determination
PFS-6.4 Development Requirements The County shall require project designs that minimize stormwater drainage concentrations and impervious surfaces, complement groundwater recharge, avoid floodplain areas, and use natural watercourses in ways that maintain natural watershed functions and provide wildlife habitat.	**Consistent.** Refer to Public Facilities and Services Element Policy PFS-6.1 for consistency discussion.
PFS-6.5 Stormwater Detention Facilities Where necessary, the County shall require on-site detention/retention facilities and/or velocity reducers to maintain pre-development runoff flows and velocities in natural drainage systems.	**Consistent.** Refer to Public Facilities and Services Element Policy PFS-6.1 for consistency discussion.
PFS-6.6 Stormwater Detention Basin Design The County shall require stormwater detention basins be designed to ensure public safety, be visually unobtrusive, provide temporary or permanent wildlife habitat, and where feasible, provide recreation opportunities.	**Consistent.** The preliminary utility plan (sheet 5 in Appendix B) indicates that storm water from the proposed project will drain into three underground detention systems. The underground detention basins would ensure public safety, be visually unobtrusive, and provide habitat.
PFS-6.7 Runoff Water Quality The County shall require all drainage systems in new development and redevelopment to comply with applicable State and Federal non-point source pollutant discharge requirements.	**Consistent.** As discussed in Section 10, Hydrology and Water Quality, implementation of Mitigation Measure HYD-1 would ensure the proposed project complies with applicable non-point storm water discharge requirements.
PFS-6.8 Reduce Erosion and Sedimentation The County shall ensure that drainage systems are designed and maintained to minimize soil erosion and sedimentation and maintain natural watershed functions.	**Consistent.** Development of the proposed project may lead to significant siltation and/or erosion on- or off-site. Implementation of Mitigation Measure GEO-1 presented in Section 7, Geology and Soils would reduce this impact to less than significant.
PFS-7.1 Adequate Capacity The County shall ensure that there is adequate capacity within the solid waste system for the collection, transportation, processing, recycling, and disposal of solid waste to meet the needs of existing and projected development.	**Consistent.** Solid waste from the project site would be disposed of at the John Smith Landfill, which has a maximum permitted throughput of 1,000 tons per day. As discussed in Section 19, Utilities and Service Systems, the proposed project would not generate solid waste that would exceed the landfill capacity.
PFS-12.4 Fair Share The County shall require new development to pay its fair share of the costs for providing law enforcement service facilities and equipment to new residents.	**Consistent.** As discussed in Section 15, Public Services, the proposed project would be subject to police impact fees as calculated by the county. The developer would be required to pay the applicable police impact fees, which would ultimately be programmed by the county, in combination with fees collected from other projects, to improve or expand police facilities to serve cumulative development throughout San Benito County and Hollister. Payment of the applicable police impact fees would reduce the proposed project's impact on police facilities to less than significant.

Policy	Consistency Determination
PFS-13.5 Water Service Standards The County shall require all development within unincorporated communities to have adequate water supply, pressure, and capacity for fire protection.	**Consistent.** Refer to Public Facilities and Services Element Policy PFS-4.7 for consistency discussion.
PFS-13.7 Fire Facility Fees The County shall require new development to pay its fair share of fees for new fire station facilities, equipment, and staffing necessary to maintain the County's service standards in that area. New development may also be required to create or join a special assessment district or other funding mechanism, to pay the costs associated with the operation of a fire station.	**Consistent.** As discussed in Section 15, Public Services, the proposed project would be subject to fire impact fees as calculated by the county. The developer would be required to pay the applicable fire impact fees, which would ultimately be programmed by the county, in combination with fees collected from other projects, to improve or expand fire facilities as may be necessary to accommodate cumulative development throughout San Benito County and Hollister. Payment of the applicable fire impact fees would reduce the proposed project's impact on fire facilities to less than significant.
Natural and Cultural Resources Element	
NCR-2.2 Habitat Protection The County shall require major subdivisions within potential habitat of Federal- or State-listed rare, threatened, or endangered plant or animal species to mitigate the effects of development. Mitigation for impacts to species may be accomplished on land preserved for open space, agricultural, or natural resources protection purposes.	**Consistent.** Special-status plants are not expected to occur on the site due to lack of suitable habitat. Mitigation Measure BIO-1 though BIO-5 presented in Section 4, Biological Resources, would mitigate the potential impacts to special-status wildlife species (San Joaquin kit fox, burrowing owl, bats, and nesting birds) to a less-than-significant level.
NCR-2.4 Maintain Corridors for Habitat The County shall protect and enhance wildlife migration and movement corridors to ensure the health and long-term survival of local animal and plant populations, in particular contiguous habitat areas, in order to increase habitat value and lower land management costs. As part of this effort, the County shall require road and development sites in rural areas to: a. Be designed to maintain habitat connectivity with a system of corridors for wildlife or plant species and avoiding fragmentation of open space areas; and b. Incorporate measures to maintain the long-term health of the plant and animal communities in the area, such as buffers, consolidation of/or rerouting access, transitional landscaping, linking nearby open space areas, and habitat corridors.	**Consistent.** The project site is not likely to facilitate major wildlife movement due to current active disturbance. As discussed in Section 4, Biological Resources, the proposed project would have a less-than-significant impact on wildlife movement.
NCR-2.8 Pre-Development Biological Resource Development The County shall require the preparation of biological resource assessments for new development proposals as appropriate. The assessment shall include the following: a biological resource inventory based on a reconnaissance-level site survey, and an analysis of anticipated project impacts to: potentially occurring special-status species (which may require focused special-status plant and/or animal surveys); an analysis of sensitive natural communities; wildlife movement corridors and nursery sites on or	**Consistent.** Section 4, Biological Resources, includes the biological resource assessment prepared for the proposed project, including mitigation measures for reducing potentially significant impacts to biological resources.

Policy	Consistency Determination
adjacent to the project site; potentially jurisdictional wetlands/waterways; and locally protected biological resources such as trees. The assessment shall contain suggested avoidance, minimization, and/or mitigation measures for significant impacts to biological resources.	
NCR-2.9 Mitigation Funding and Site Protection The County shall require that project applicants demonstrate that adequate funding can be provided to implement all required biological mitigation and monitoring activities. Habitat preserved as part of any mitigation and monitoring plan shall be preserved through a conservation easement, deed restriction, or other method to ensure that the habitat remains protected.	Consistent. All of the biological resources mitigation measures presented in the initial study are required to be implemented by the applicant/developer prior to issuance of grading permits and/or during construction. Permits should not be issued without evidence of mitigation implementation and compliance.
NCR-2.10 Invasive Species The County shall require that new developments avoids the introduction or spread of invasive plant species during construction by minimizing surface disturbance, seeding and mulching disturbed areas with certified weed-free native mixes, and using native or noninvasive species in erosion control plantings.	Consistent. Mitigation Measure BIO-7 presented in Section 4, Biological Resources, would ensure the proposed project does not include invasive plant species.
NCR-4.6 Groundwater Studies for New Development To ensure an adequate water supply, large-scale development projects that meet the criteria in California Water Code section 10912 shall prepare an analysis of the sufficiency of the groundwater from the basin or basins from which the proposed project will be supplied to meet the projected water demand associated with the proposed project in accordance with SB 610.	Consistent. A water supply assessment is not required for the proposed project because of its size. As discussed in Section 19, Utilities and Service Systems, sufficient water is available to serve the proposed project.
NCR-4.11 Reclaimed Water The County shall require, where feasible, the use of reclaimed water irrigation systems in new development wherever possible.	Consistent. No timeline has been established by the Sunnyslope County Water District for providing recycled water.
NCR-7.9 Tribal Consultation The County shall consult with Native American tribes regarding proposed development projects and land use policy changes consistent with the State's Local and Tribal Intergovernmental Consultation requirements.	Waiting to hear from County regarding outcome of consultation process.
NCR-8.1 Protect Scenic Corridors The County shall endeavor to protect the visual characteristics of certain transportation corridors that are officially designated as having unique or outstanding scenic qualities.	Consistent. The project site is visible from Airline Highway, which is not a State-designated scenic highway or County-designated scenic corridor.

Policy	Consistency Determination
NCR-8.4 Review Architectural Massing The County shall review development proposals to ensure that the obstruction of views is minimized through architectural building massing and location that is compatible with scenic areas.	**Consistent**. The project site is visible from Airline Highway, which is not a County-designated scenic corridor. The proposed buildings would be located approximately 430 feet from the Airline Highway centerline. Landscaping associated with the proposed project would provide partial screening of the proposed buildings from Airline Highway. Additional screening of the proposed buildings would be provided by the retaining wall along the looped driveway.
NCR-8.5 Review Site Planning The County shall review development proposals to ensure a reasonable and attractive appearance from the highway concurrent with a harmonious relationship with the existing landscape and shall require development that determined not to be in harmonious relationship with the existing landscape to be screened from view through planting or other forms of visual buffers.	**Consistent**. Refer to Natural Conservation and Resources Element Policy NCR-8.4 for consistency discussion.
NCR-8.6 Regulate Building Height and Setback The County shall regulate building height and setbacks to protect the field of vision within an officially designated Scenic Corridor. The County shall not approve building heights that exceed, nor setback requirements that are less, than those of the basic zoning district unless such variance has had the appropriate review and public comment.	**Consistent**. The project site is visible from Airline Highway, which is not a State-designated scenic highway or County-designated scenic corridor.
NCR-8.9 Hillside and Ridgeline Protection The County shall use design review for development on hillsides and within Scenic Corridors to protect the hillsides and ridgelines that are a unique scenic resource in the County. The County shall prohibit development within 100 vertical feet of any ridgeline unless there are no site development alternatives.	**Consistent**. Refer to Natural Conservation and Resources Element Policy NCR-8.4 for consistency discussion.
NCR-9.1 Light Pollution Reduction The County shall continue to enforce the development lighting ordinance (SBC Code Chapter 19.13) and restrict outdoor lighting and glare from development projects in order to ensure good lighting practices, minimize nighttime light impacts, and preserve quality views of the night sky. The ordinance shall continue to recognize lighting zones and contain standards to avoid light trespass, particularly from developed uses, to sensitive uses, such as the areas surrounding Fremont Peak State Park and Pinnacles National Park.	**Consistent**. Mitigation Measure AES-1 presented in Section 1, Aesthetics would ensure the proposed project's light and glare impacts are reduced to a less-than-significant level.
Health and Safety Element	
HS-2.1 Minimum Flood Protection The County shall require a minimum 100-year flood protection for all new development in accordance with local, State, and Federal requirements to avoid or minimize the risk of flood damage.	**Consistent**. As described in Section 10, Hydrology and Water Quality, the project site is not located within a 100-year flood zone.

Policy	Consistency Determination
HS-2.3 Floodwater Diversion The County shall require new flood control projects or developments within areas subject to 100- year floods to be constructed in a manner that will not cause floodwaters to be diverted onto adjacent property or increase flood hazards to property downstream.	**Consistent**. Refer to Health and Safety Element Policy HS-2.1 for consistency discussion.
HS-3.2 Subsidence or Liquefaction The County shall require that all proposed structures, utilities, or public facilities within recognized near-surface subsidence or liquefaction areas be located and constructed in a manner that minimizes or eliminates potential damage.	**Consistent**. A geotechnical report, included as Appendix I, was prepared for the proposed project. The geotechnical report evaluated the potential for soil liquefaction at the project site during a seismic event and found that the soils at the project site are non-liquefiable.
HS-3.6 Unstable Soils The County shall require and enforce all standards contained in the current California Building Code related to construction on unstable soils, and shall make a determination as to site suitability of all development projects during the building permit review process. The County shall not approve proposed development sited within areas of known or suspected instability until detailed area studies are completed that evaluate the extent and degree of instability and its impact on the overall development of the area.	**Consistent**. The project would be required to comply with the current California Building Code requirements. As discussed in Section 7, Geology and Soils, the project site consists of 6 to 12 inches of very loose/soft silty clayey sand silty clay. These soils have low strength characteristics are highly compressible when saturated. Implementation of Mitigation Measure GEO-1 would reduce impacts due to unstable soils to a less-than-significant level.
HS-3.7 Setback from Fault Traces The County shall require setback distances from fault traces to be determined by individual site specific surface rupture investigations.	**Consistent**. As discussed in Section 7, Geology and Soils, the project site is not located in an Alquist-Priolo Fault Zone. The Calaveras fault is located more than 0.5 miles west of the project site and the Tres Pinos fault is located more than 0.6 miles east of the project site. Therefore, the proposed project would not be located on or immediately near a fault trace.
HS-3.8 Liquefaction Studies The County shall require proposals for development in areas with high liquefaction potential to include detailed site specific liquefaction studies.	**Consistent**. Refer to Health and Safety Element Policy HS-3.2 for consistency discussion
HS-3.9 Seismic Safety Evaluations The County shall require buildings three stories or higher, and locations zoned for multifamily housing, to include in development proposals measures to determine ground shaking characteristics, evaluate potential for ground failure, identify any other geologic hazards that might exist on the site, and mitigate for these hazards.	**Consistent**. The proposed assisted care facility will include 155 rooms and 180 beds in two, three-story buildings in an area zoned for multi-family housing. The Calaveras fault is located more than 0.5 miles west of the project site and the Tres Pinos fault is located more than 0.6 miles east of the project site. During an earthquake, the project area is expected to be subject to intense ground shaking. Implementation of Mitigation Measure GEO-1 presented in Section 7, Geology and Soils, would mitigate seismic hazards.
HS-4.2 Fire Protection Water Standard The County shall develop, maintain, and implement an appropriate fire protection water standard to be applied to all urban and rural development.	**Consistent**. Refer to Public Facilities and Services Element Policy PFS-4.7 for consistency discussion.

Policy	Consistency Determination
HS-4.4 Development in Fire Hazard Zones The County shall require development in high-fire hazard areas to be designed and constructed in a manner that minimizes the risk from fire hazards and meets all applicable State and County fire standards.	**Consistent.** The project site is not located with a high-fire hazard area.
HS-4.5 Fire-Resistant Vegetation The County shall require development in high-fire hazard areas to have fire-resistant vegetation, cleared fire breaks separating communities or clusters of structures from native vegetation, or a long-term comprehensive vegetation and fuel management program consistent with State codes 4290 and 4291 for wildland fire interface and vegetation management.	**Consistent.** The project site is not located with a high-fire hazard area.
HS-5.1 New Development The County shall use the CEQA process to ensure development projects incorporate feasible mitigation measures to reduce construction and operational air quality emissions, and consult with the Monterey Bay Unified Air Pollution Control District early in the development review process.	**Consistent**. Air Quality impacts are addressed in Section 3, Air Quality. Operation of the proposed project would not generate criteria air pollutant emissions that exceed the Monterey Bay Air Resources District thresholds. Air quality impacts during project construction would be reduced to a less-than-significant level with Mitigation Measure AQ-1, which requires dust control measures to be implemented.
HS-5.2 Sensitive Land Use Locations The County shall ensure adequate distances between sensitive land uses and facilities or operations that may produce toxic or hazardous air pollutants or substantial odors.	**Consistent**. The project site is located within close proximity to residential neighborhoods. Operation of the proposed project would not expose sensitive receptors to hazardous air pollutants or odors. Diesel equipment used during construction could expose sensitive receptors to toxic air contaminants from heavy equipment diesel exhaust and may temporarily generate objectionable odors. Mitigation Measures AQ-2 and AQ-3 would reduce impacts from toxic air contaminants on sensitive receptors to less than significant. Since construction activities are short-term, odor from construction activities would be less than significant.
HS-5.4 PM_{10} Emissions from Construction The County shall require developers to reduce particulate matter emissions from construction (e.g., grading, excavation, and demolition) consistent with standards established by the Monterey Bay Unified Air Pollution Control District.	**Consistent**. Mitigation measure AQ-1 presented in Section 3, Air Quality, would reduce PM_{10} emissions during construction to less-than-significant levels.
HS-7.1 Land Use Compatibility The County shall prohibit land uses within unincorporated areas that interfere with the safe operation of aircraft or that would be exposed to hazards from the operation of aircraft.	**Consistent.** The nearest public airport to the project site is the Hollister Municipal Airport, located approximately 5.2 miles northwest of the project site. Therefore, the proposed project would not interfere with the safe operation of aircraft and would not be exposed to hazards from operation of aircraft.
HS-8.1 Project Design The County shall require new development to comply with the noise standards shown in Tables 9-1 and 9-2 through proper site and building design, such as building orientation, setbacks, barriers (e.g., earthen berms), and building construction practices. The County	**Consistent**. As discussed in Section 13, Noise, future noise from project generated traffic would be below the county's exterior noise level standard of 60 dB L_{dn} for residential uses. Current building codes and requiring windows and doors to remain closed for sound insulation would ensure the proposed project's interior noise level complies with the county's 45 dB L_{dn}

Policy	Consistency Determination
shall only consider the use of soundwalls after all design-related noise mitigation measures have been evaluated or integrated into the project or found infeasible.	interior noise standard.
HS-8.2 Acoustical Analysis The County shall require an acoustical analysis to be performed prior to development approval where proposed land uses may produce or be exposed to noise levels exceeding the "normally acceptable" criteria (e.g. "conditionally acceptable", "normally unacceptable") shown in Table 9-2. Land uses should be prohibited from locating, or required to mitigate, in areas with a noise environment within the "unacceptable" range.	Consistent. The general plan defines an outdoor level of 60 dB L_{dn} as being "normally acceptable" for residential uses. The acoustical analysis prepared to assess the potential noise impacts associated with the proposed project is included as Appendix K. The acoustical analysis found that future noise from project generated traffic would be below the county's exterior noise level standard of 60 dB L_{dn} for residential uses. The acoustical analysis also found that construction noise impacts would be reduced to less-than-significant levels with Mitigation Measure N-1.
HS-8.3 Construction Noise The County shall control the operation of construction equipment at specific sound intensities and frequencies during day time hours between 7:00 a.m. and 6:00 p.m. on weekdays and 8:00 a.m. and 5:00 p.m. on Saturdays. No construction shall be allowed on Sundays or federal holidays.	Consistent. Mitigation Measure N-1 presented in Section 13, Noise, would ensure operation of construction equipment would be limited to weekday and weekend allowable work hours, consistent with this policy.
HS-8.7 Acceptable Vibration Levels The County shall require construction projects anticipated to generate a significant amount of vibration to ensure acceptable interior vibration levels at nearby noise-sensitive uses based FTA criteria.	Consistent. The acoustical analysis included as Appendix K determined that the vibration levels during construction are not expected to cause damage to any of the buildings and would be "barely noticeable" at the closest residence. Further, operational activities are not expected to result in any vibration impacts at nearby sensitive uses.
HS-8.9 Interior Noise Standards Adopt the State of California Code of Regulations' (Title 24) minimum noise insulation interior performance standard of 45 dBA Ldn for all new residential construction including hotels, motels, dormitories, apartment houses, and single-family dwellings.	Consistent. As discussed in Section 13, Noise, the proposed project's interior noise level would comply with the county's 45 dB L_{dn} interior noise standard.
HS-8.10 Reduction in Noise Levels at Existing Land Uses Reduce traffic noise levels where expected to significantly impact sensitive receptors through the installation of noise control measures such as quiet pavement surfaces, noise barriers, traffic calming measures, and interior sound insulation treatments.	Consistent As discussed in Section 13, Noise, traffic noise exposure along roadways in the project vicinity would increase by approximately 0.0 to 0.2 dB L_{dn} as a result of the project. These increases do not result in an exceedance of the county's exterior noise level standard at existing noise-sensitive land uses in the project vicinity, and are not considered to be a significant impact.
HS-8.11 New Project Noise Mitigation Requirements Require new projects to include appropriate noise mitigation measures to reduce noise levels in compliance with the Table 9-1 and 9-2 standards within sensitive areas. If a project includes the creation of new non-transportation noise sources, require the noise generation of those sources to be mitigated so they do not exceed the interior and exterior noise level standards of Table 9-2 at existing noise-sensitive areas in the project vicinity, unless an exception is made by the County on a case-by-case basis. However, if	Consistent. As described in Section 13, Noise, future project residents and existing off-site residents would not experience noise level increases exceeding applicable thresholds as a result of project-generated traffic. Therefore, no mitigation is required.

Policy	Consistency Determination
a noise-generating use is proposed adjacent to lands zoned for residential uses, then the noise generating use shall be responsible for mitigating its noise generation to a state of compliance with the standards shown in Table 9-2 at the property line of the generating use in anticipation of the future residential development, unless an exception is made by the County on a case-by-case basis.	
HS-8.12 Construction Noise Control Plans Require all construction projects to be constructed within 500 feet of sensitive receptors to develop and implement construction noise control plans that consider the following available controls in order to reduce construction noise levels as low as practical: ▪ Utilize 'quiet' models of air compressors and other stationary noise sources where technology exists; ▪ Equip all internal combustion engine-driven equipment with mufflers, which are in good condition and appropriate for the equipment; ▪ Locate all stationary noise-generating equipment, such as air compressors and portable power generators, as far away as possible from adjacent land uses; ▪ Locate staging areas and construction material areas as far away as possible from adjacent land uses; ▪ Prohibit all unnecessary idling of internal combustion engines; ▪ Notify all abutting land uses of the construction schedule in writing; and ▪ Designate a 'disturbance coordinator' (e.g. contractor foreman or authorized representative) who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and will require that reasonable measures warranted to correct the problem be implemented. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include it in the notice sent to neighbors regarding the construction schedule.	Consistent. The nearest sensitive receptors are located at distances of greater than 200 to 300 feet from the project site. Implementation of Mitigation Measure N-1 presented in Section 13, Noise, would reduce construction noise impacts on nearby sensitive receptors to a less-than-significant level.

SOURCE: San Benito County 2015, EMC Planning Group 2019

APPENDIX K

ACOUSTICAL ANALYSIS

ACOUSTICAL ANALYSIS

RIDGEMARK ASSISTED CARE FACILITY
SAN BENITO COUNTY, CALIFORNIA

WJVA Report No. 19-017

PREPARED FOR

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JULY 11, 2019

1. INTRODUCTION

Project Description:

The project is a proposed assisted living facility (Ridgemark Assisted Care), to be located near the southwest corner of Ridgemark Avenue and Airline Highway in San Benito County, near the City of Hollister. The 7-acre parcel includes Site A and Site B.

Access to the project is served by a roadway from Airline Highway that overlays onto existing easements. This roadway bifurcates Site A and B and allows access to the existing residence to the south. The project will be developed into 2 buildings for a total of 155 rooms with 180 beds.

The Main Lodge building is located on Site A. It contains 121,981 square feet of area, has 136 rooms, 159 beds and is a two and three-story building surrounding a terraced garden area. The main entrance road leads to a covered Porte-Co-Chere and round-a-bout for easy access to the facility. The Main Lodge consists of: a grand lobby /reception area, staff offices, nurses' room, staff lounge area, restrooms, grand dining room, private dining room, kitchen, exercise room, arts and crafts room and a theater. Laundry facilities and lounge areas are placed throughout the building on each level. Elevators are provided throughout the facility for easy access to all floors.

Site B contains the smaller building consisting of 19 rooms, 21 beds and is three stories in height. The total building area is 14,386 square feet of area. The access road approaches the main entrance at the south side of the building. The main entrance leads to a hallway and direct access to resident rooms, stairs, and an elevator. The elevator and stairs access all three levels of the building. A laundry room and lounge are situated on the lower level of the building. The project site plan is provided as Figure 1.

Environmental Noise Assessment:

This environmental noise assessment has been prepared to determine if significant noise impacts will be produced by the project and to describe mitigation measures for noise if significant impacts are determined. The environmental noise assessment, prepared by WJV Acoustics, Inc. (WJVA), is based upon the project Preliminary Civil Plans dated August, 2018, a Traffic Impact Analysis prepared for the project by Pinnacle Traffic Engineering, dated August 3, 2018 and a project site visit on May 29, 2019. Revisions to the site plan, traffic impact analysis or other project-related information available to WJVA at the time the analysis was prepared may require a reevaluation of the findings and/or recommendations of the report.

Appendix A provides definitions of the acoustical terminology used in this report. Unless otherwise stated, all sound levels reported in this analysis are A-weighted sound pressure levels in decibels (dB). A-weighting de-emphasizes the very low and very high frequencies of sound in a manner similar to the human ear. Most community noise standards utilize A-weighted sound levels, as they correlate well with public reaction to noise. Appendix B provides examples of sound levels for reference.

2. THRESHOLDS OF SIGNIFICANCE

The CEQA Guidelines indicate that significant noise impacts occur when the project exposes people to noise levels in excess of standards established in local noise ordinances or general plan noise elements, or causes a substantial permanent or temporary increase in noise levels above levels existing without the project.

a. Noise Level Standards

SAN BENITO COUNTY

The Noise Element of the San Benito County General Plan (adopted 2015) establishes land use compatibility criteria for transportation noise sources in terms of the Day-Night Average Level (L_{dn}) to describe noise exposure for noise compatibility planning purposes. The L_{dn} represents the time-weighted energy average noise level for a 24-hour day, with a 10 dB penalty added to noise levels occurring during the nighttime hours (10:00 p.m.-7:00 a.m.). The L_{dn} represents cumulative exposure to noise over an extended period of time and are therefore calculated based upon *annual average* conditions. Table I provides the land use compatibility guidelines for various land uses affected by transportation noise sources.

The Noise Element also requires that interior noise levels attributable to exterior sources not exceed 45 dB L_{dn}. This standard is consistent with interior noise level criteria applied by the State of California (Title 24) and the U.S. Department of Housing and Urban Development (HUD). The intent of the interior noise level standard is to provide an acceptable noise environment for indoor communication and sleep.

Table II Land Use Compatibility Guidelines for Community Noise							
Land Use Category	Community Noise Exposure Ldn/CNEL, dB						
	55	60	65	70	75	80	
Residential – Low Density Single Family, Duplex, Mobile Homes	Clearly Acceptable	Clearly Acceptable	Normally Acceptable	Normally Unacceptable	Normally Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Residential – Multi. Family	Clearly Acceptable	Clearly Acceptable	Normally Acceptable	Normally Unacceptable	Normally Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Transient Lodging – Motels, Hotels	Clearly Acceptable	Clearly Acceptable	Clearly Acceptable	Normally Acceptable	Normally Unacceptable	Normally Unacceptable	Clearly Unacceptable
Schools, Libraries, Churches, Hospitals, Nursing Homes	Clearly Acceptable	Clearly Acceptable	Normally Acceptable	Normally Unacceptable	Normally Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Auditoriums, Concert Halls, Amphitheaters	Normally Acceptable	Normally Acceptable	Normally Unacceptable	Normally Unacceptable	Clearly Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Sports Arenas, Outdoor Spectator Sports	Clearly Acceptable	Clearly Acceptable	Normally Acceptable	Normally Unacceptable	Normally Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Playgrounds, Neighborhood Parks	Clearly Acceptable	Normally Acceptable	Normally Acceptable	Normally Unacceptable	Normally Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Golf Course, Riding Stables, Water Recreation, Cemeteries	Clearly Acceptable	Clearly Acceptable	Normally Acceptable	Normally Acceptable	Normally Unacceptable	Normally Unacceptable	Clearly Unacceptable
Office Buildings, Business Commercial and Professional	Clearly Acceptable	Clearly Acceptable	Clearly Acceptable	Normally Acceptable	Normally Acceptable	Normally Unacceptable	Clearly Unacceptable
Industrial, Manufacturing Utilities, Agriculture	Clearly Acceptable	Clearly Acceptable	Clearly Acceptable	Clearly Acceptable	Normally Acceptable	Normally Acceptable	Normally Unacceptable

CLEARLY ACCEPTABLE
The noise exposure is such that the activities associated with the land use may be carried out with essentially no interference from aircraft noise. (Residential areas: both indoor and outdoor noise environments are pleasant.)

NORMALLY ACCEPTABLE
The noise exposure is great enough to be of some concern, but common building construction will make the indoor environment acceptable, even for sleeping quarters.

NORMALLY UNACCEPTABLE
The noise exposure is significantly more severe so that unusual and costly building construction is necessary to insure adequate performance of activities. (Residential areas: barriers must be created between the site and prominent noise sources to make the outdoor environment tolerable.)

CLEARLY UNACCEPTABLE
The noise exposure is so severe that construction costs to make the indoor environment acceptable for performance of activities would be prohibitive. (Residential areas: the outdoor environment would be intolerable for normal residential use.)

Additionally, Table II provides applicable non-transportation noise level standards of noise-sensitive land uses. Non-transportation noise level standards are provided in terms of the energy average (L_{eq}) and maximum (L_{max}) noise level metrics. The noise level standards for non-transportation noise sources become 10 dB more restrictive between the nighttime hours of 10:00 p.m. to 7:00 a.m.

Table II Non-Transportation Noise Level Performance Standards for Noise-Sensitive Uses		
Noise Level Descriptor	Daytime (7:00 am – 10:00 pm)	Nighttime (10:00 pm – 7:00 am)
Hourly L_{eq} dB	55	45
Maximum Level, dB	70	65

Notes: These standards apply to new or existing residential areas affected by new or existing non-transportation sources.

State of California

There are no state noise standards that are applicable to the project.

Federal Noise Standards

There are no federal noise standards that are applicable to the project.

b. Construction Noise and Vibration

Section HS-8.3 of the General Plan Noise Element states "*The County shall control the operation of construction equipment at specific sound intensities and frequencies during day time hours between 7:00 a.m. and 6:00 p.m. on weekdays and 8:00 a.m. and 5:00 p.m. on Saturdays. No construction shall be allowed on Sundays or federal holidays."*

Section HS-8.12 of the General Plan Noise Element states "*Require all construction projects to be constructed within 500 feet of sensitive receptors to develop and implement construction noise control plans that consider the following available controls in order to reduce construction noise levels as low as practical:*

- *Utilize 'quiet' models of air compressors and other stationary noise sources where technology exists;*
- *Equip all internal combustion engine-driven equipment with mufflers, which are in good condition and appropriate for the equipment;*
- *Locate all stationary noise-generating equipment, such as air compressors and portable power generators, as far away as possible from adjacent land uses;*
- *Locate staging areas and construction material areas as far away as possible from adjacent land uses;*
- *Prohibit all unnecessary idling of internal combustion engines;*
- *Notify all abutting land uses of the construction schedule in writing; and*

Designate a "disturbance coordinator" (e.g. contractor foreman or authorized representative) who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and will require that reasonable measures warranted to correct the problem be implemented. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include it in the notice sent to neighbors regarding the construction schedule."

Section HS-8.7 (Acceptable Vibration Levels) of the General Plan Noise Element states "*The County shall require construction projects anticipated to generate a significant amount of vibration to ensure acceptable interior vibration levels at nearby noise-sensitive uses based on FTA criteria.*"

Federal Transit Authority (FTA) criteria are consistent with those provided by the Caltrans Transportation and Construction Vibration Guidance Manual. The Manual provides guidance for determining annoyance potential criteria and damage potential threshold criteria. These criteria are provided below in Table III and Table IV, and are presented in terms of peak particle velocity (PPV) in inches per second (in/sec).

TABLE III

GUIDELINE VIBRATION ANNOYANCE POTENTIAL CRITERIA

Human Response	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Barely Perceptible	0.04	0.01
Distinctly Perceptible	0.25	0.04
Strongly Perceptible	0.9	0.1
Severe	2.0	0.4

Source: Caltrans

TABLE IV

GUIDELINE VIBRATION DAMAGE POTENTIAL THRESHOLD CRITERIA

Structure and Condition	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile, historic buildings, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: Caltrans

3. SETTING

The project site is an 7-acre parcel, located near the southwest corner of Ridgemark Avenue and Airline Highway in San Benito County, near the City of Hollister. There is an access road that bifurcates the project site, and provides residential access to an existing single-family residence located southwest of the project site. The project site itself is currently undeveloped land and is used as a horse pasture area. The project site plan is provided as Figure 1. The project site area and vicinity are provided as Figure 2.

Existing noise levels in the project vicinity are dominated by traffic noise along Airline Highway (State Route 25). Additional sources of noise in the project area include traffic on other local roadways, occasional aircraft overflights, birds and barking dogs.

a. Project Site Traffic Noise Exposure

Project site noise exposure from traffic on Airline Highway was calculated for existing and cumulative (2035) conditions using the FHWA Traffic Noise Model and traffic data obtained from the above-reference Traffic Impact Analysis and the findings of on-site noise level measurements.

WJVA utilized the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA-RD-77-108). The FHWA Model is a standard analytical method used for roadway traffic noise calculations. The model is based upon reference energy emission levels for automobiles, medium trucks (2 axles) and heavy trucks (3 or more axles), with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA Model was developed to predict hourly L_{eq} values for free-flowing traffic conditions, and is generally considered to be accurate within ±1.5 dB. To predict L_{dn} values, it is necessary to determine the hourly distribution of traffic for a typical day and adjust the traffic volume input data to yield an equivalent hourly traffic volume.

Noise level measurements and concurrent traffic counts were conducted by WJVA staff within the project site on May 29, 2019. The purpose of the measurements was to evaluate the accuracy of the FHWA Model in describing traffic noise exposure within the project site. The measurement site was located within the project site at a distance of approximately 450 feet from the centerline of Airline Highway. The posted speed limit in the project vicinity was 55 mph (miles per hour). The project vicinity and noise monitoring site location are provided as Figure 2. A photo of the noise monitoring site is provided as Figure 3.

Noise monitoring equipment consisted of Larson-Davis Laboratories Model LDL-820 sound level analyzer equipped with a B&K Type 4176 1/2" microphone. The equipment complies with the specifications of the American National Standards Institute (ANSI) for Type I (Precision) sound level meters. The meter was calibrated in the field prior to use with a B&K Type 4230 acoustic calibrator to ensure the accuracy of the measurements. The microphone was located on a tripod at 5 feet above the ground. The project site presently consists of existing horse pastures.

Noise measurements were conducted in terms of the equivalent energy sound level (L_{eq}). Measured L_{eq} values were compared to L_{eq} values calculated (predicted) by the FHWA Model using as inputs the traffic volumes, truck mix and vehicle speed observed during the noise measurements. The results of that comparison are shown in Table V.

From Table V it may be determined that the traffic noise level predicted by the FHWA Model were 0.2 dB higher than those measured for the traffic conditions observed at the time of the noise measurements. This is considered excellent agreement with the model and therefore no adjustments to the model are necessary.

TABLE V

COMPARISON OF MEASURED AND PREDICTED (FHWA MODEL) NOISE LEVELS RIDGEMARK ASSISTED CARE FACILITY, SAN BENITO COUNTY

	@450' Airline Highway
Measurement Date	May 29, 2019
Measurement Start Time	3:30 p.m.
Observed # Autos/Hr.	588
Observed # Medium Trucks/Hr.	24
Observed # Heavy Trucks/Hr.	0
Posted Speed (MPH)	55
Distance, ft. (from center of roadway)	450
L_{eq}, dBA (Measured)	52.7
L_{eq}, dBA (Predicted)	52.9
Difference between Measured and Predicted L_{eq}, dBA	**-0.2**

Note: FHWA "soft" site assumed for calculations.
Source: WJV Acoustics, Inc.

Annual Average Daily Traffic (AADT) data for Airline Highway in the project vicinity was obtained from above-referenced project Traffic Impact Analysis. Truck percentages and the day/night distribution of traffic were estimated by WJVA, based upon previous studies conducted in the project vicinity since project-specific data were not available from government sources. Table VI summarizes annual average traffic data used to model noise exposure within the project site.

TABLE VI

**TRAFFIC NOISE MODELING ASSUMPTIONS
RIDGEMARK ASSISTED CARE FACILITY
SAN BENITO COUNTY, CALIFORNIA**

	Airline Highway	
	Existing + Project	2035 Cumulative + Project
Annual Avenue Daily Traffic (AADT)	9,270	12,830
Day/Night Split (%)	90/10	
Assumed Vehicle Speed (mph)	55	
% Medium Trucks (% AADT)	2	
% Heavy Trucks (% AADT)	1	

Sources: Pinnacle Traffic Engineering
WJV Acoustics, Inc.

Using data from Table VI, the FHWA Model, annual average traffic noise exposure was calculated for a setback of approximately 300 feet from Airline Highway (closest portion of project site to Airline Highway). The calculated noise exposures for existing and cumulative traffic conditions (plus project traffic) at 300 feet from Airline Highway were 56.5 dB L_{dn} and 57.9 dB L_{dn}, respectively. Such levels are below the County's applicable exterior noise level standard of 60 dB L_{dn}, for Nursing Home land uses. Additional mitigation is therefore not required.

The San Benito County interior noise level standard is 45 dB L_{dn}. The worst-case future noise exposure within the proposed care facility buildings would be approximately 58 dB L_{dn}. This means that the proposed construction must be capable of providing a minimum outdoor-to-indoor noise level reduction (NLR) of approximately 13 dB (58-45=13).

A specific analysis of interior noise levels was not performed. However, it may be assumed that construction methods complying with current building code requirements will reduce exterior noise levels by approximately 25 dB if windows and doors are closed. This will be sufficient for compliance with the County's 45 dB L_{dn} interior standard at all proposed buildings for the assisted care facility. Requiring that it be possible for windows and doors to remain closed for sound insulation means that air conditioning or mechanical ventilation will be required.

4. PROJECT IMPACTS AND MITIGATION MEASURES

a. Project Traffic Noise Impacts on Existing Noise-Sensitive Land Uses Outside Project Site (Less Than Significant)

WJVA utilized the FHWA Traffic Noise Model to quantify expected project-related increases in traffic noise exposure along roadways in the project vicinity. The FHWA Model is a standard analytical method used by state and local agencies for roadway traffic noise prediction. The model is based upon reference energy emission levels for automobiles, medium trucks (2 axles) and heavy trucks (3 or more axles), with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA Model was developed to predict hourly L_{eq} values for free-flowing traffic conditions, and is generally considered to be accurate within ±1.5 dB. To predict L_{dn} values, it is necessary to determine the hourly distribution of traffic for a typical day and adjust the traffic volume input data to yield an equivalent hourly traffic volume.

Traffic noise exposure for Existing and Cumulative 2035 traffic conditions were calculated for both “no project” and “plus project” scenarios, based upon the FHWA Model and traffic volumes provided in the above-described traffic study. Table VII summarizes calculated traffic noise exposure for Existing conditions, with and without the project. Table VIII summarizes calculated traffic noise exposure for cumulative 2035 conditions, with and without the project. Shown are the calculated L_{dn} values at a reference setback distance of 100 feet from each analyzed roadway. The traffic noise modeling assumptions used to calculate traffic noise exposure are provided as Appendix C.

TABLE VII

COMPARISON OF “NO PROJECT” AND “PLUS PROJECT” SCENARIOS
TRAFFIC NOISE EXPOSURE-EXISTING CONDITIONS
RIDGEMARK ASSISTED CARE FACILITY, SAN BENITO COUNTY

Roadway Name	L_{dn}, dB[1]		Change	Significant Impact?
	No Project	Plus Project		
Airline Highway (north of Union Road)	64.8	64.8	0.0	No
Airline Highway (south of Union Road)	63.9	64.1	+0.2	No
Union Road (west of Airline Highway)	63.3	63.4	+0.1	No
Union Road (east of Airline Highway)	57.5	57.5	0.0	No
Airline Highway (north of project driveway)	63.5	63.7	+0.2	No
Airline Highway (south of project driveway)	63.4	63.5	+0.1	No
Airline Highway (west of Ridgemark Drive)	63.4	63.5	+0.1	No
Airline Highway (east of Ridgemark Drive)	61.9	61.9	0.0	No
Fairview Avenue (north of Airline Highway)	59.2	59.2	0.0	No
Ridgemark Drive (south of Airline Highway)	55.3	55.4	+0.1	No

[1]At a reference setback distance of 100 feet from roadway
Source: WJV Acoustics, Inc.

TABLE VIII

COMPARISON OF "NO PROJECT" AND "PLUS PROJECT" SCENARIOS
TRAFFIC NOISE EXPOSURE-CUMULATIVE CONDITIONS
RIDGEMARK ASSISTED CARE FACILITY, SAN BENITO COUNTY

Roadway Name	L_{dn}, dB[1]		Change	Significant Impact?
	No Project	Plus Project		
Airline Highway (north of Union Road)	66.1	66.1	0.0	No
Airline Highway (south of Union Road)	65.4	65.5	+0.1	No
Union Road (west of Airline Highway)	64.7	64.8	+0.1	No
Union Road (east of Airline Highway)	58.6	58.7	+0.1	No
Airline Highway (north of project driveway)	64.9	65.1	+0.2	No
Airline Highway (south of project driveway)	64.9	64.9	0.0	No
Airline Highway (west of Ridgemark Drive)	64.9	64.9	0.0	No
Airline Highway (east of Ridgemark Drive)	63.8	63.9	+0.1	No
Fairview Avenue (north of Airline Highway)	62.8	62.8	0.0	No
Ridgemark Drive (south of Airline Highway)	58.3	58.3	0.0	No

[1]At a reference setback distance of 100 feet from roadway
Source: WJV Acoustics, Inc.

From Table VII and Table VIII, it can be determined that traffic noise exposure along roadways in the project vicinity would increase by approximately 0.0 to 0.2 db L_{dn} as a result of the project. These increases do not result in an exceedance of the County's exterior noise level standard at existing noise-sensitive land uses in the project vicinity, and are not considered to be a significant impact.

It should be noted, although some traffic noise levels described in Table VII and VIII exceed the County's applicable exterior noise level standard along several of the analyzed roadway segments, the exceedance is not a result of the project, and therefore does not indicate a project-related impact. Additionally, noise levels described in Table VII and Table VIII do not take into consideration any site-specific shielding that may occur, and are considered to be a generalized worst-case assessment of traffic noise levels in the project area.

b. Project Noise Impacts from Operational On-Site Sources (Less Than Significant)

Sources of operational noise from the proposed project would typically be limited to parking lot vehicle movements, outdoor human activity and Mechanical/HVAC systems. Noise levels associated with such activities are discussed below.

Vehicle Movements:
Vehicles accessing the project site would enter and exit both sides of the project site via an existing driveway alignment currently used to access the Sunnyslope County Water District Office, the project site and two existing single-family residences. Parking for the project would occur along the southern portion of the project site.

Noise due to traffic in parking lots is typically limited by low speeds and is not usually considered to be significant. Human activity in parking lots that can produce noise includes voices, stereo systems and the opening and closing of car doors and trunk lids. Such activities can occur at any time. The noise levels associated with these activities cannot be precisely defined due to variables such as the number of parking movements, time of day and other factors. It is typical for a passing car in a parking lot to produce a maximum noise level of 60 to 65 dBA at a distance of 50 feet, which is comparable to the level of a raised voice. Noise levels associated with vehicle movements would not exceed any applicable noise level standards or result in an increase over existing ambient noise levels at nearby off-site sensitive receiver locations. Parking lot vehicle movement and human activity noise would not be considered a significant impact.

Additional On-Site Sources:
Other potential sources of project-related operational noise could typically include delivery truck movements and mechanical/HVAC systems. The location and frequency of such sources was not specifically known at the time of this analysis. However, such sources would generally occur at distances of 200 feet or greater from the closest existing noise-sensitive land uses. Noise levels associated with such activities, at a reference distance of 200 feet from the noise source, can be generalized as follows:

- HVAC equipment: 45-55 dB
- Truck movements: 55-65 dB
- Idling refrigerated truck trailers: 45-50 dB

Noise levels associated with such sources would not be expected to exceed any applicable maximum noise levels standards or result in a substantial increase of current (without project) ambient noise levels, at existing off-site noise-sensitive land uses.

c. Noise from Construction

Construction noise could occur at various locations within the project site through the build-out period. The majority of construction activities would generally occur at distances of greater than 200 to 300 feet from nearby noise-sensitive land uses (residences). Table IX provides typical construction-related noise levels at reference distances of 200 feet, 300 feet, and 500 feet.

TABLE IX

TYPICAL CONSTRUCTION EQUIPMENT MAXIMUM NOISE LEVELS, dBA

Type of Equipment	200 Ft.	300 Ft.	500 Ft.
Backhoe	66	62	58
Concrete Saw	78	74	70
Crane	69	65	61
Excavator	69	65	61
Front End Loader	67	63	59
Jackhammer	77	73	69
Paver	65	61	57
Pneumatic Tools	73	69	65
Dozer	70	66	62
Rollers	68	64	60
Trucks	74	70	66
Pumps	68	64	60
Scrapers	75	71	67
Portable Generators	68	64	60
Front Loader	74	70	66
Backhoe	74	70	66
Excavator	74	70	66
Grader	74	70	66

Source: FHWA
Noise Control for Buildings and Manufacturing Plants, Bolt, Beranek & Newman, 1987

Construction noise could result in a short-term increase in ambient noise levels at nearby noise-sensitive land uses. However, construction noise is not usually considered to be a significant impact if construction is limited to the daytime hours and construction equipment is adequately maintained and muffled. Extraordinary noise-producing activities (e.g., pile driving) are not anticipated.

Construction activities should comply with the restrictions provided in the San Benito County General Plan, and described above in Section 2.b of this report. If construction activities comply with these applicable restrictions, construction noise would not be considered a significant impact.

d. Vibration Impacts (Less Than Significant)

The dominant sources of man-made vibration are sonic booms, blasting, pile driving, pavement breaking, demolition, diesel locomotives, and rail-car coupling. Vibration from construction activities could be detected at the closest sensitive land uses, especially during movements by heavy equipment or loaded trucks and during some paving activities. The closest existing residences to construction activities within project site are generally located at distance of 300 or greater. Typical vibration levels at distance of 300 feet are summarized by Table X.

TABLE X

TYPICAL VIBRATION LEVELS DURING CONSTRUCTION

Equipment	PPV (in/sec) @ 300´
Bulldozer (Large)	0.006
Bulldozer (Small)	0.00019
Loaded Truck	0.005
Jackhammer	0.002
Vibratory Roller	0.013
Caisson Drilling	0.006

Source: *Caltrans*

Table X indicates that the equipment with the highest potential vibration levels would be a vibratory roller. While in use, a roller could produce vibration levels of approximately 0.013 PPV (in/sec) at the closest residence. As described in Table III and Table IV, such levels would not be expected to cause damage to any of the described building types and would be "barely noticeable" at the closest residence if the equipment was used continuously or frequently. Such levels are not considered to be a significant impact.

After full project build out, it is not expected that ongoing operational activities will result in any vibration impacts at nearby sensitive uses. Activities involved in trash bin collection could result in minor on-site vibrations as the bin is placed back onto the ground. Such vibrations would not be expected to be felt at the closest off-site sensitive uses.

5. IMPACT SUMMARY

Project-related noise levels (including project-related increase in traffic noise exposure) resulting from the proposed project, Ridgemark Assisted Care Facility, are not expected to exceed any applicable County of San Benito noise level standards or result in any significant long-term increases in ambient noise levels in the project vicinity. Project construction could result in-short term increases in localized ambient noise levels. However, construction-related noise levels are not considered to be a significant impact if local construction noise time limits are observed and equipment is properly maintained and muffled. Additionally, project site noise exposure would not exceed any applicable compatibility criteria noise level standards for the proposed land use. Additional mitigation is not required.

FIGURE 1: PROJECT SITE PLAN

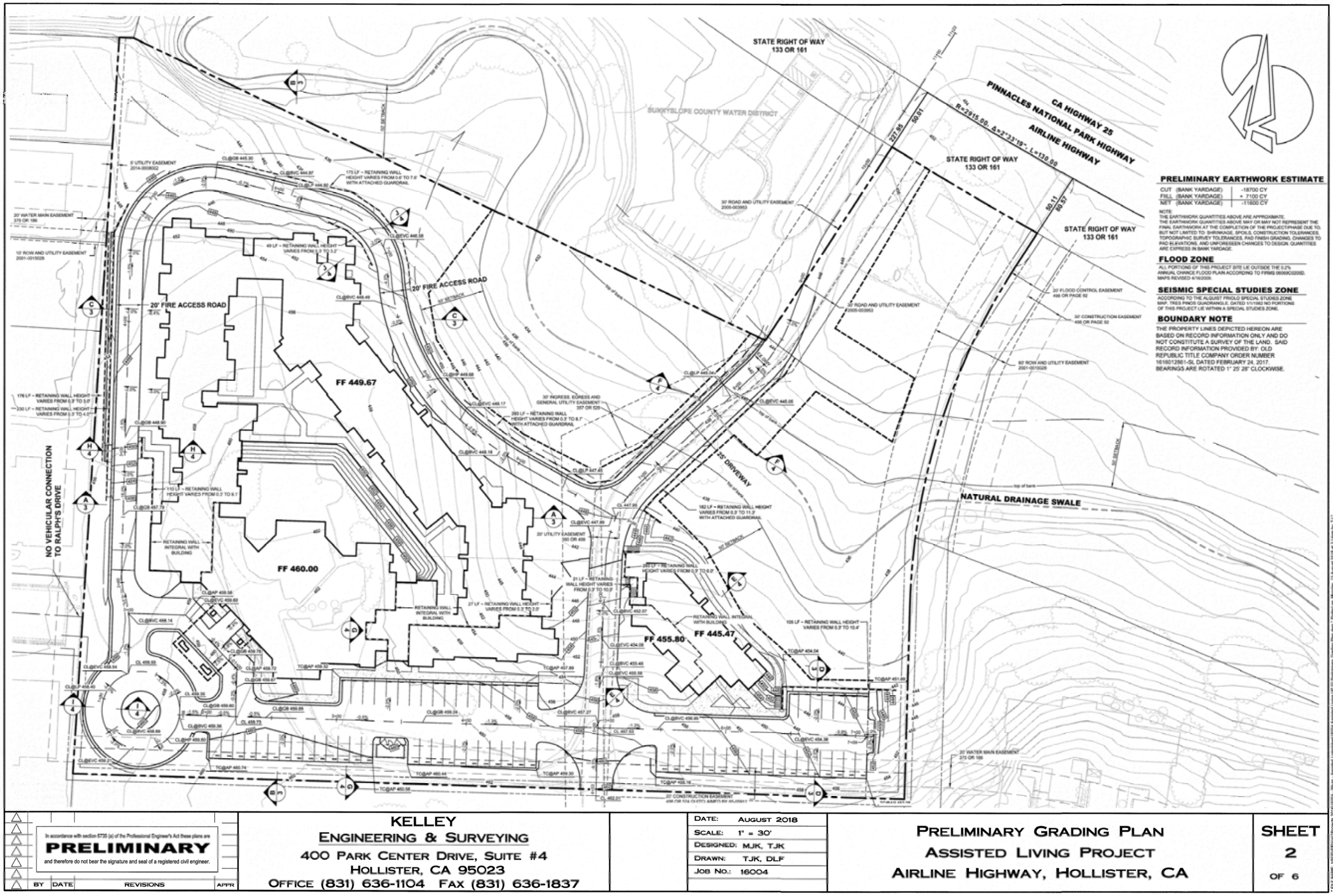


FIGURE 2: PROJECT VICINITY AND AMBIENT NOISE MONITORING SITE

FIGURE 3: NOISE MONITORING SITE

APPENDIX A

ACOUSTICAL TERMINOLOGY

AMBIENT NOISE LEVEL: The composite of noise from all sources near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.

CNEL: Community Noise Equivalent Level. The average equivalent sound level during a 24-hour day, obtained after addition of approximately five decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and ten decibels to sound levels in the night before 7:00 a.m. and after 10:00 p.m.

DECIBEL, dB: A unit for describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).

DNL/L_{dn}: Day/Night Average Sound Level. The average equivalent sound level during a 24-hour day, obtained after addition of ten decibels to sound levels in the night after 10:00 p.m. and before 7:00 a.m.

L_{eq}: Equivalent Sound Level. The sound level containing the same total energy as a time varying signal over a given sample period. L_{eq} is typically computed over 1, 8 and 24-hour sample periods.

NOTE: The CNEL and DNL represent daily levels of noise exposure averaged on an annual basis, while L_{eq} represents the average noise exposure for a shorter time period, typically one hour.

L_{max}: The maximum noise level recorded during a noise event.

L_n: The sound level exceeded "n" percent of the time during a sample interval (L_{90}, L_{50}, L_{10}, etc.). For example, L_{10} equals the level exceeded 10 percent of the time.

ACOUSTICAL TERMINOLOGY

NOISE EXPOSURE CONTOURS: Lines drawn about a noise source indicating constant levels of noise exposure. CNEL and DNL contours are frequently utilized to describe community exposure to noise.

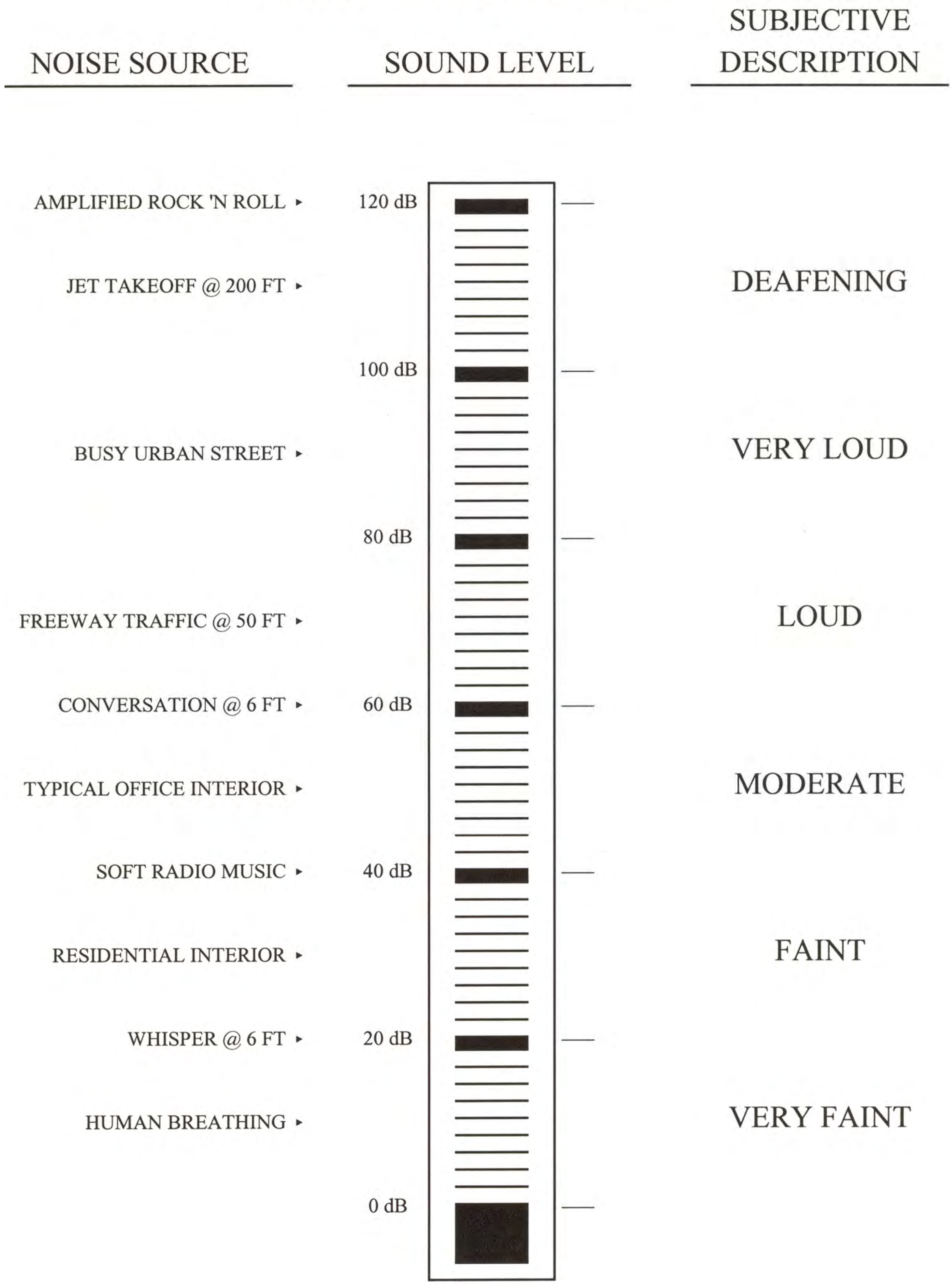
NOISE LEVEL REDUCTION (NLR): The noise reduction between indoor and outdoor environments or between two rooms that is the numerical difference, in decibels, of the average sound pressure levels in those areas or rooms. A measurement of Anoise level reduction" combines the effect of the transmission loss performance of the structure plus the effect of acoustic absorption present in the receiving room.

SEL or SENEL: Sound Exposure Level or Single Event Noise Exposure Level. The level of noise accumulated during a single noise event, such as an aircraft overflight, with reference to a duration of one second. More specifically, it is the time-integrated A-weighted squared sound pressure for a stated time interval or event, based on a reference pressure of 20 micropascals and a reference duration of one second.

SOUND LEVEL: The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the response of the human ear and gives good correlation with subjective reactions to noise.

SOUND TRANSMISSION CLASS (STC): The single-number rating of sound transmission loss for a construction element (window, door, etc.) over a frequency range where speech intelligibility largely occurs.

APPENDIX B
EXAMPLES OF SOUND LEVELS



APPENDIX C

TRAFFIC NOISE MODELING ASSUMPTIONS

WJV Acoustics, Inc
FHWA-RD-77-108
Calculation Sheets
June 6, 2019

Project #: 19-017 Ridgemark Assisted Li
Description: Existing
Ldn/Cnel: Ldn
Site Type: Soft

Contour Levels (dB)	60	65	70	75					

Segment	Roadway Name	Segment Description	ADT	%Day	%Evening	%Night	%Med	%Heavy	Speed	Distance	Offset
1	Airline Highway	north of Union Road	11970	90		10	2	1	55	100	
2	Airline Highway	south of Union Road	9800	90		10	2	1	55	100	
3	Union Road	west of Airline Highway	8520	90		10	2	1	55	100	
4	Union Road	east of Airline Highway	6690	90		10	2	1	35	100	
5	Airline Highway	north of project driveway	8870	90		10	2	1	55	100	
6	Airline Highway	south of project driveway	8700	90		10	2	1	55	100	
7	Airline Highway	west of Ridgemark Drive	8720	90		10	2	1	55	100	
8	Airline Highway	east of Ridgemark Drive	6130	90		10	2	1	55	100	
9	Fairview Avenue	north of Airline Highway	3290	90		10	2	1	55	100	
10	Ridgemark Drive	south of Airline Highway	4100	90		10	2	1	35	100	

WJV Acoustics, Inc
FHWA-RD-77-108
Calculation Sheets
June 6, 2019

Project #: 19-017 Ridgemark Assisted Li
Description: Existing + project
Ldn/Cnel: Ldn
Site Type: Soft

Contour Levels (dB)	60	65	70	75					

Segment	Roadway Name	Segment Description	ADT	%Day	%Evening	%Night	%Med	%Heavy	Speed	Distance	Offset
1	Airline Highway	north of Union Road	12180	90		10	2	1	55	100	
2	Airline Highway	south of Union Road	10160	90		10	2	1	55	100	
3	Union Road	west of Airline Highway	8650	90		10	2	1	55	100	
4	Union Road	east of Airline Highway	6710	90		10	2	1	35	100	
5	Airline Highway	north of project driveway	9270	90		10	2	1	55	100	
6	Airline Highway	south of project driveway	8910	90		10	2	1	55	100	
7	Airline Highway	west of Ridgemark Drive	8910	90		10	2	1	55	100	
8	Airline Highway	east of Ridgemark Drive	6250	90		10	2	1	55	100	
9	Fairview Avenue	north of Airline Highway	3350	90		10	2	1	55	100	
10	Ridgemark Drive	south of Airline Highway	4130	90		10	2	1	35	100	

WJV Acoustics, Inc
FHWA-RD-77-108
Calculation Sheets
June 6, 2019

Project #: 19-017 Ridgemark Assisted Li
Description: Cumulative
Ldn/Cnel: Ldn
Site Type: Soft

Contour Levels (dB): 60 | 65 | 70 | 75

Segment	Roadway Name	Segment Description	ADT	%Day	%Evening	%Night	%Med	%Heavy	Speed	Distance	Offset
1	Airline Highway	north of Union Road	16170	90		10	2	1	55	100	
2	Airline Highway	south of Union Road	13900	90		10	2	1	55	100	
3	Union Road	west of Airline Highway	11810	90		10	2	1	55	100	
4	Union Road	east of Airline Highway	8800	90		10	2	1	35	100	
5	Airline Highway	north of project driveway	12430	90		10	2	1	55	100	
6	Airline Highway	south of project driveway	12260	90		10	2	1	55	100	
7	Airline Highway	west of Ridgemark Drive	12260	90		10	2	1	55	100	
8	Airline Highway	east of Ridgemark Drive	9680	90		10	2	1	55	100	
9	Fairview Avenue	north of Airline Highway	7580	90		10	2	1	55	100	
10	Ridgemark Drive	south of Airline Highway	8080	90		10	2	1	35	100	

WJV Acoustics, Inc
FHWA-RD-77-108
Calculation Sheets
June 6, 2019

Project #: 19-017 Ridgemark Assisted Li
Description: Cumulative + Project
Ldn/Cnel: Ldn
Site Type: Soft

Contour Levels (dB)	60	65	70	75					

Segment	Roadway Name	Segment Description	ADT	%Day	%Evening	%Night	%Med	%Heavy	Speed	Distance	Offset
1	Airline Highway	north of Union Road	16380	90		10	2	1	55	100	
2	Airline Highway	south of Union Road	14260	90		10	2	1	55	100	
3	Union Road	west of Airline Highway	11940	90		10	2	1	55	100	
4	Union Road	east of Airline Highway	8820	90		10	2	1	35	100	
5	Airline Highway	north of project driveway	12830	90		10	2	1	55	100	
6	Airline Highway	south of project driveway	12470	90		10	2	1	55	100	
7	Airline Highway	west of Ridgemark Drive	12470	90		10	2	1	55	100	
8	Airline Highway	east of Ridgemark Drive	9800	90		10	2	1	55	100	
9	Fairview Avenue	north of Airline Highway	7640	90		10	2	1	55	100	
10	Ridgemark Drive	south of Airline Highway	8110	90		10	2	1	35	100	

APPENDIX L

TRAFFIC IMPACT ANALYSIS

RIDGEMARK ASSISTED CARE COMMUNITY
- San Benito County, California -

"TRAFFIC IMPACT ANALYSIS"

Prepared for:
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August 3, 2018

EXECUTIVE SUMMARY

The Traffic Impact Analysis (TIA) presents an evaluation of the potential impacts associated with the Ridgemark Assisted Care Community project in the unincorporated area of San Benito County. The project site is located on the west side of Airline Highway (SR 25) between Enterprise Road and Fairview Road. The project site is currently vacant. The project will include the construction of an "assisted living" facility, with a total of 155 units (180 beds). Project access will be provided via the existing access road for the Sunnyslope County Water District and connection to Airline Highway (SR 25). The emergency vehicle access will also be provided via a connection to Tyler Drive. On-site parking will be provided for 65 vehicles. The project trip generation estimates were derived using data in the ITE Trip Generation Manual. As requested by Caltrans staff, the estimates reflect the "peak hour of the generator." The project will generate approximately 468 daily trips (two-way trip ends), with 32 vehicle trips during the AM peak hour and 61 trips during the PM peak hour.

The project TIA scope was defined in consultation with County and Caltrans staff. The evaluation of potential project impacts focuses on the analysis of traffic operations during the morning (AM) and afternoon (PM) commuter peak hours at the following study intersections:

- Airline Highway (SR 25) and Union Road
- Airline Highway (SR 25) and Project Access Road
- Airline Highway (SR 25) and Fairview Road

The project TIA was conducted according to the Caltrans guidelines, "Guide for the Preparation of Traffic Impact Studies" (December 2002). An evaluation the potential project impacts is based on the applicable "level of service" (LOS) and "level of significance" criterion defined in the County's 2035 General Plan EIR (19.0 Transportation and Circulation).

<u>Existing Traffic Conditions</u>

New traffic count data was collected to document existing conditions during the morning (7:00-9:00 AM) and afternoon (4:00-6:00 PM) commuter peak periods. Actual vehicle delay and queuing data was also collected at the Airline Highway / Project Access Road. Daily and peak hour traffic volume data for Airline Highway (SR 25) and Fairview Road were referenced from the County's 2035 General Plan EIR and Caltrans website. Information in the 2035 General Plan EIR indicates that daily volumes and the "average travel speeds" along Airline Highway (SR 25) near the study intersections are within acceptable limits (LOS D or better). The evaluation of "peak hour" operations at study intersections indicates that average vehicle delays are also within acceptable limits as defined by San Benito County.

The data collected at the Airline Highway (SR 25) / Project Access Road intersection verified that actual delays on the stop sign controlled approach were slightly higher during the AM peak hour and lower (25%) during the PM peak hour than the intersection analysis software (Synchro 9). The maximum queues in the northbound left turn lane on the Airline Highway (SR 25) were recorded as 1-2 vehicles. A signal warrant analysis concluded that the existing AM and PM peak hour traffic volumes at the Airline Highway (SR 25) / Fairview Road intersection exceed the minimum 70% "peak hour volume" warrant criteria, but not the 100% warrant criteria. The installation of traffic signal control is not recommended for existing conditions. Peak hour volumes on the stop sign controlled approach at the Airline Highway (SR 25) / Project Access Road intersection are well below the minimum "peak hour volume" signal warrant criteria.

Existing Plus Project Traffic Conditions

An evaluation of the existing plus project conditions indicates that the study intersections will continue to operate within acceptable limits during the AM and PM peak hours (LOS D or better). Delays at the Airline Highway (SR 25) / Project Access Road intersection will also remain within acceptable limits. The analysis did not identify any significant queuing on stop sign controlled approach or Airline Highway (SR 25). The traffic volumes at the Airline Highway (SR 25) / Fairview Road intersection will exceed the minimum 70% "peak hour volume" warrant criteria, but not the 100% criteria. The installation of traffic signal control is not recommended for this study scenario. Peak hour volumes on the stop sign controlled approach at the Airline Highway (SR 25) / Project Access Road intersection will be below the minimum "peak hour volume" signal warrant criteria. Based on the County's "level of significance" criteria, the project traffic will not significantly impact peak hour operations. The evaluation of project access indicates that there is adequate stopping sight distance on Airline Highway (SR 25) for vehicles approaching the Project Access Road intersection. There is also sufficient corner sight distance looking north and south for vehicles exiting the Project Access Road and entering Airline Highway (SR 25).

Background Traffic Conditions

Background conditions are comprised of existing traffic plus traffic generated by other approved projects (developments with entitlements). This scenario assumes that the approved projects could be constructed and generate traffic prior to the project being constructed. Development information was obtained from the County and City of Hollister. There are many large development projects in both the County and City (Santana Ranch, Fairview Corners, Sunnyside Estates, Bluffs at Ridgemark, Ridgemark Retail Shopping, Robert's Ranch, Silver Oaks, Walnut Park 14, Award Homes). Traffic volumes for some of the larger projects were obtained from the traffic studies prepared for those projects. To evaluate the potential impacts associated with the proposed project the background analysis was also conducted for the background plus project conditions.

An evaluation of the background and background plus project conditions indicates delays at the Airline Highway (SR 25) / Union Road intersection will be in the LOS E range during the AM and PM peak hours, without or with the project traffic. Delays at the other study intersections will remain within acceptable limits during both peak hours. The analysis did not identify any significant queuing at the Airline Highway (SR 25) / Project Access Road intersection. The traffic volumes at the Airline Highway (SR 25) / Fairview Road intersection will exceed the minimum 70% "peak hour volume" warrant criteria, but not the 100% criteria. The installation of signal control is not recommended for this study scenario. Peak hour volumes on the stop sign controlled approach at the Airline Highway (SR 25) / Project Access Road intersection will remain below the minimum "peak hour volume" signal warrant criteria. Based on the County's "level of significance" criteria, the project traffic will not significantly impact peak hour operations.

Cumulative Traffic Conditions

Cumulative traffic conditions are comprised of existing traffic plus traffic generated by other known approved and pending projects. To evaluate the potential project impacts the cumulative analysis was also conducted for the cumulative plus project conditions. The evaluation indicates that delays at the Airline Highway (SR 25) / Union Road and Airline Highway (SR 25) / Fairview Road intersections will be in LOS E-F range during one or both peak hour periods (without or with the project trips). Vehicle delays at the Airline Highway (SR 25) / Project Access Road intersection will remain within acceptable limits. The analysis did not identify any significant queuing at the Airline Highway (SR 25) / Project Access Road intersection. Cumulative traffic demands at the Airline Highway (SR 25) / Fairview Road intersection will exceed the minimum 70% and 100% "peak hour volume" warrant criteria. The buildout of the approved and pending projects in the County and City of Hollister will eventually require signal control at the Airline Highway (SR 25) / Fairview Road intersection. Based on the County's "level of significance" criteria, the project traffic will not significantly impact cumulative peak hour operations. The Synchro and SimTraffic files are available for review upon receipt of a request from County and/or Caltrans staff.

The County's 2035 General Plan buildout conditions analyses identified improvements on the regional and local roadway networks necessary to maintain and/or provide acceptable operations. Segments of Airline Highway (SR 25), Union Road and Fairview Road (McCloskey Road to SR 25) are planned to be widened from 2 to 4 lanes. The future roadway widening projects will include improvements at the Airline Highway (SR 25) / Union Road intersection. Future improvements will also include the installation of traffic signal control at the Airline Highway (SR 25) / Fairview Road intersection. The identified improvements will provide acceptable operations on the study street system.

Future development projects are responsible for paying a fair-share contribution towards the costs associated with the construction of the future improvements. Therefore, each project shall pay the applicable Transportation Impact Mitigation Fee (TIMF) as required by the Council of San Benito County Governments (SBCOG). The project applicant shall negotiate and pay the applicable TIMF as required by SBCOG. The project traffic will comprise approximately 4-5% of the total peak hour volumes at the Airline Highway (SR 25) / Union Road intersection and about 2-3% of the total peak hour volumes at the Airline Highway (SR 25) / Fairview Road intersection.

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- Level of Service (LOS) LOS Descriptions
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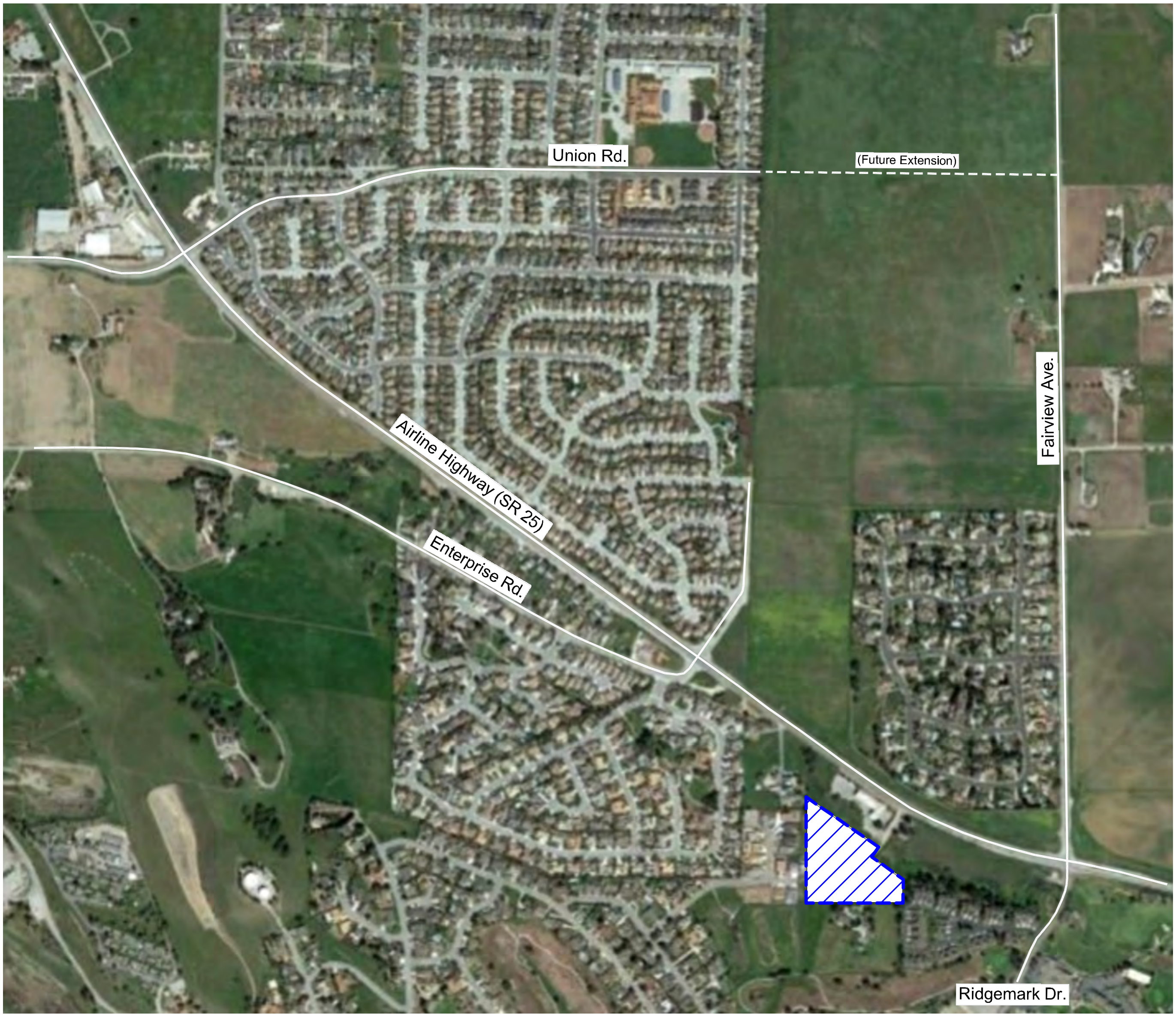
1.0 INTRODUCTION

The Traffic Impact Analysis (TIA) presents an evaluation of the potential impacts associated with the Ridgemark Assisted Care Community project in the unincorporated area of San Benito County south of the City of Hollister. The project site is located on the west side of Airline Highway-State Route (SR) 25 between Enterprise Road and Fairview Road. The project site is currently vacant. The project will include the construction of an "assisted living" facility, with a total of 155 units (180 beds). Project access will be provided via the existing access road for the Sunnyslope County Water District and connection to Airline Highway (SR 25). On-site parking will be provided for 65 vehicles. The general location of the project site is illustrated on Figure 1 (Project Location Map).

The project TIA scope was defined in consultation with County and Caltrans staff. The evaluation of potential project impacts focuses on the analysis of traffic operations during the morning (AM) and afternoon (PM) commuter peak hours at the following study intersections:

- Airline Highway (SR 25) and Union Road
- Airline Highway (SR 25) and Project Access Road
- Airline Highway (SR 25) and Fairview Road

The project TIA also provides an evaluation of project site access on Airline Highway (SR 25). New data was collected for the project TIA (peak period traffic counts, vehicle speeds, sight distance, etc). Existing traffic operations were observed during the AM and PM commuter peak periods. Lists of future development projects were provided by the County and City of Hollister. The project TIA was conducted according to the Caltrans guidelines, "Guide for the Preparation of Traffic Impact Studies" (December 2002). Data contained in the traffic studies prepared for other local developments was also referenced (The Bluffs at Ridgemark Residential Subdivision, Sunnyside Estates Residential Subdivision, etc). It is noted that traffic data collected for the original project TIA in 2006 is referenced where appropriate.



LEGEND

= Project Site

NORTH

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FIGURE 1
PROJECT LOCATION MAP

2.0 EXISTING CONDITIONS

The local roadway network serving the project site includes Airline Highway (SR 25), Union Road, Enterprise Road, Fairview Road, and the project access road. The following is a brief description of the local network and an evaluation of existing traffic operations.

Network Description

Airline Highway (SR 25) is a north-south State highway facility that extends north of SR 198 in Monterey County to US 101 in Santa Clara County (south of Gilroy). Airline Highway (SR 25) passes through the City of Hollister. Airline Highway (SR 25) south of Union Road has a single travel lane in each direction, with a posted speed limit of 55 miles per hour (mph). Left turn lane channelization is provided at major intersections (Union Road, Enterprise Road and Fairview Road).

Union Road is an east-west County arterial that extends between SR 156 (opposite Mitchell Road) and Airline Highway (SR 25). Union Road continues east of Airline Highway as a local collector street. Union Road between SR 156 and Airline Highway (SR 25) has a single travel lane in each direction, with a 55 mph speed limit. East of Airline Highway (SR 25) Union Road has a posted 35 mph speed limit. Left turn lane channelization is provided at major intersections (San Juan Oaks Road, Riverside Road, Cienega Road, San Benito Street, Southside Road, and Airline Highway-SR 25). Traffic at the Airline Highway (SR 25) / Union Road intersection is currently controlled with a 6 phase traffic signal (north-south left-turn phasing and east-west split phasing). The northbound approach is striped for a left turn only lane, 1 through lane and a right turn only lane. The south, east, and westbound approaches are striped for a left turn only lane and a shared through-right turn lane. The shoulder areas on the south and eastbound approaches serve as short right turn lanes. There is Class II bike lane striping on Union Road east of Airline Highway (SR 25).

Enterprise Road is an east-west collector road that extends between Airline Highway (SR 25) and Southside Road. Enterprise Road has a posted 35 mph speed limit west of Airline Highway (SR 25), with a single travel lane in each direction. Enterprise Road provides access to Airline Highway (SR 25) for local residences east and west of Airline Highway (SR 25). The east and westbound approaches on Enterprise Road are stop sign controlled at Airline Highway (SR 25).

Fairview Road is a north-south County arterial that extends between Airline Highway-SR 25 (opposite Ridgemark Drive) and San Felipe Road (opposite Shore Road). The majority of Fairview Road has a single travel lane in each direction with a 55 mph speed limit. Left turn channelization is provided at major intersections (Airline Highway-SR 25, Cielo Vista Drive, Maranatha Drive, Sunnyslope Road, Hillcrest Road, Santa Ana Road, Santa Ana Valley Road, McCloskey Road, Fallon Road, Spring Gove Road and SR 156). Traffic at the Airline Highway (SR 25) / Fairview Road intersection is "all-way" stop controlled (4-way stop). The south, east and westbound approaches are striped for a left turn only lane, 1 through lane and a right turn only lane. The northbound approach is striped for a left turn only lane and a shared through-right turn lane.

Project Access Road - The project access road extends west of Airline Highway (SR 25) with a single travel lane in each direction (26’ width). The road currently serves the Sunnyslope County Water District office and 2 residences. The project access road intersection is located approximately 1,100’ north of the Airline Highway (SR 25) / Fairview Road intersection. The project access road is stop sign controlled at Airline highway (SR 25). There is a southbound right turn lane on Airline Highway (SR 25) at the project access road (+/-320’). The northbound approach on Airline Highway at the project access road has an exclusive left turn only lane (+/-310’) and 1 through lane. There is also an acceleration lane on Airline Highway (SR 25) provided for the eastbound left turn movement from the project access road to northbound Airline Highway-SR 25 (+/-360’ plus a +/-500’ transition taper).

The existing traffic control and approach lane geometrics at the study intersections are graphically illustrated on Figure 2A.

Traffic Volumes

New traffic count data was collected at the study intersections to document existing conditions during the morning (7:00-9:00 AM) and afternoon (4:00-6:00 PM) commuter peak periods. The data collected at the Airline Highway / Project Access Road included recording the actual vehicle delays on the stop sign controlled approach and left turn lane on Airline Highway (SR 25). The delay data also provides the vehicle queue data (recorded every 15 seconds). Daily and peak hour traffic volume data for Airline Highway (SR 25) and Fairview Road were referenced from the County’s 2035 General Plan EIR and Caltrans website. The existing peak hour traffic volumes at the study intersections are illustrated on Figure 2B. Copies of the study intersection traffic count and delay data are included with the Appendix Material.

Intersection Level of Service Analysis

Various “level of service” (LOS) methodologies are used to evaluate traffic operations. Operating conditions range from LOS “A” (free-flowing) to LOS “F” (forced-flow). San Benito County has adopted the LOS D standard as the lower limit for acceptable operations. Caltrans endeavors to maintain a target LOS at the transition between LOS C and D on State highway facilities. Based on the traffic analysis presented in the County’s 2035 General Plan EIR, the LOS D threshold standard is used to evaluate operating conditions at the study intersections. A brief description of the LOS values is included in the Appendix Material.

The evaluation of “roadway segment” operations for two-lane and multi-lane highways are based on the “percent time spent following (PTSF) and/or average travel speeds (ATS). Information in the County’s 2035 General Plan EIR (19.0 Transportation and Circulation) indicates that daily volumes and the ATS along Airline Highway (SR 25) near the study intersections are within acceptable limits (LOS D or better). It is noted that highway segment LOS in more urbanized areas typically defers to the intersection operations for the primary determining factor of the overall segment operations. This is the case for Airline Highway (SR 25) north of Fairview Road to the City of Hollister.

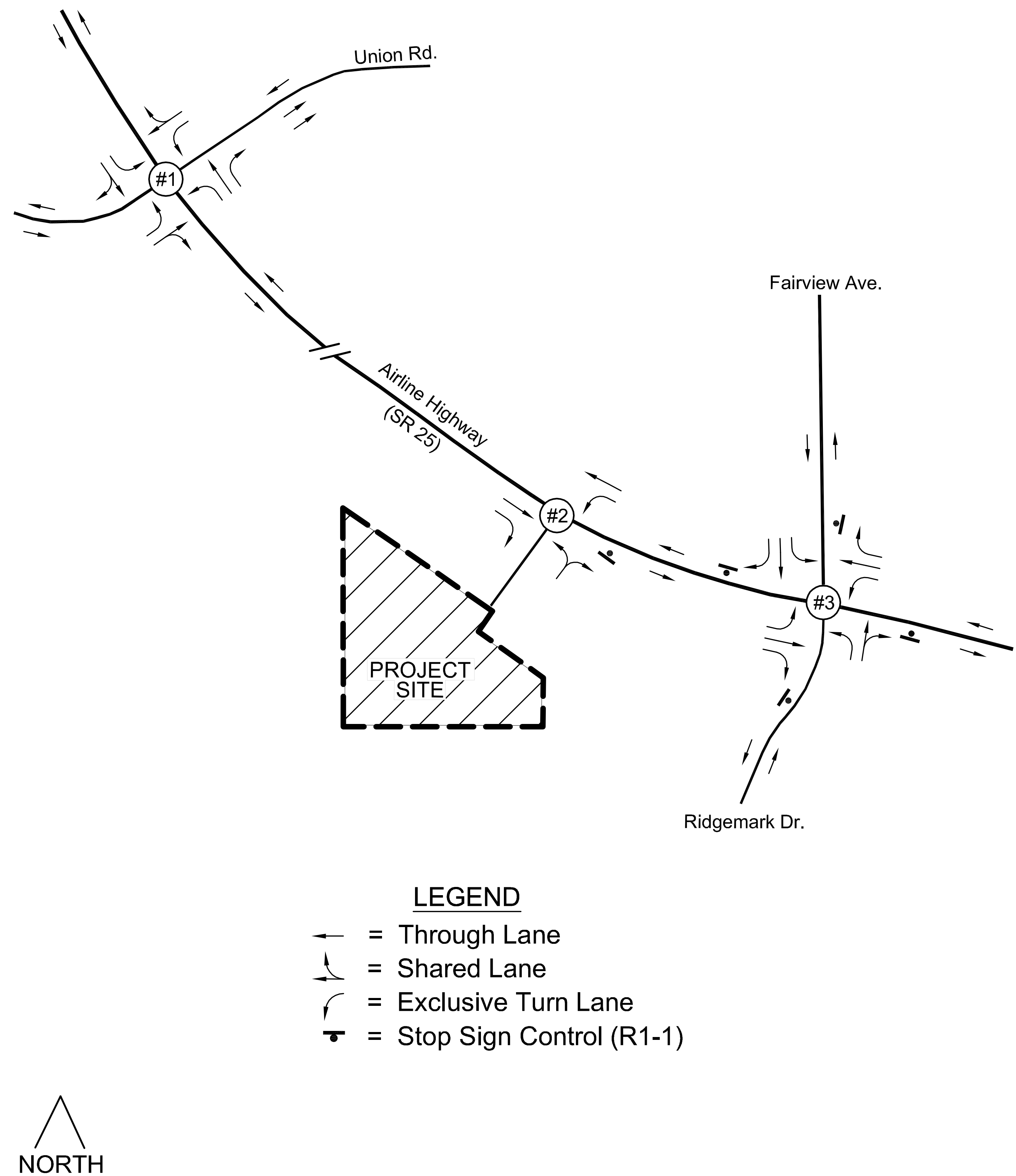

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FIGURE 2A
EXISTING GEOMETRICS

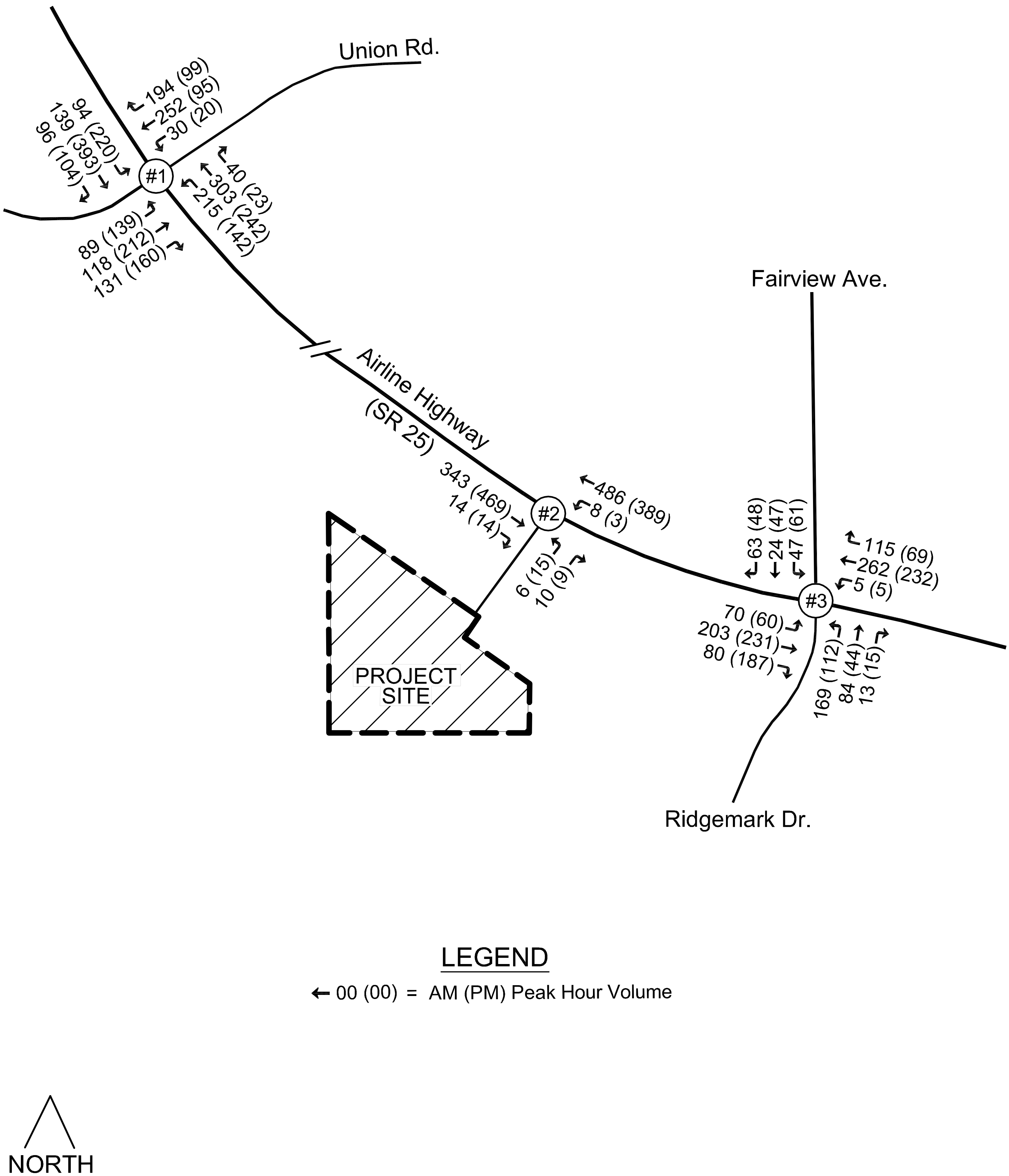

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FIGURE 2B
EXISTING
TRAFFIC VOLUMES

The evaluation of "peak hour" operations at intersections is based on various methodologies in the 2010 Highway Capacity Manual (HCM2010). The methodologies analyze operations based on vehicle "control" delay. Control delay is the principal service measure for evaluating LOS at study intersections. Control delay includes the delay associated with vehicles slowing in advance of an intersection, time spent stopped on an intersection, time spent as vehicles move up in the queue, and time needed for vehicles to accelerate to their desired speed. Control delay at signalized intersections is evaluated for the overall peak hour as an "average." The analysis for un-signalized intersections also evaluates delay for the each "critical" movement (e.g. stop sign controlled approaches and main line left turn). Table 1 presents the LOS and control delay criterion for signalized and un-signalized intersections.

Table 1 - LOS and Control Delay Criterion

LOS Value	Intersection Control Type	
	Signalized Control	Two-Way & All-Way Stop Sign Control
	Control Delay per Vehicle (seconds / vehicle)	
A	< or = 10.0	< or = 10.0
B	10.1 – 20.0	10.1 – 15.0
C	20.1 – 35.0	15.1 – 25.0
D	35.1 – 55.0	25.1 – 35.0
E	55.1 – 80.0	35.1 – 50.0
F	> 80.0	> 50.0

Again, it is noted that for signalized intersections the overall operations are typically evaluated using the "average" delay. Average delays are also reported when evaluating unsignalized intersections, but most agencies also prefer to review delays on the stop sign controlled approaches for analysis purposes (use highest delay on stop sign controlled approach). When side street delays approach the LOS E-F range many agencies also evaluate traffic signal warrants to determine if traffic control improvements may be needed. The installation of signal control at a two-way stop sign controlled intersection will typically reduce delays on the side street approaches and increase delays on the main street approach. However, the benefits associated with traffic signal control may also address safety issues. The installation of traffic signal control at an all-way stop intersection is intended to reduce delays on all approaches. A description of the County's Level of Significance Criteria is provided in Section 3.0 (Project Conditions).

The Synchro 9 software (HCM2010) was used to perform the LOS analysis at the study intersections. The existing peak hour factors (PHF) were used to accurately model existing operations and represent "peak" 15-minutes flow conditions. As previously stated, the shoulder areas on the south and eastbound approaches at the Airline Highway (SR 25) / Union Road intersection serve as short right turn lanes. The striped bike lane on the westbound Union Road approach also facilitates the "right turn on red" movement. It was assumed that 20-25% of the right turn volumes on these approaches were make after stopping at the red light. The traffic signal operations at the Airline Highway (SR 25) / Union Road intersection include north-south left turn phasing and east-west split phasing (Union Road). It is anticipated that Caltrans uses split phasing on the east and westbound approaches of Union Road due to the horizontal and vertical curves west of Airline Highway (SR 25) since it's not necessary based on the approach lane geometry. Observations indicated that the signal cycle length varies throughout the peak periods, with a minimum of about 70-75 seconds and a maximum of about 115-120 seconds (longer cycles associated with higher demands). The average cycle length observed during the peak hour periods was about 95-100 seconds. The results of the existing intersection peak hour LOS analysis are presented in Table 2, with copies of the Synchro LOS worksheets included with the Appendix Material.

Table 2 - Existing Intersection LOS Analysis

Study Intersection	Average Delay - LOS Value	
	AM Peak Hour	PM Peak Hour
Airline Hwy. (SR 25) / Union Rd. (a)	48.9 – D	42.9 – D
Airline Hwy. (SR 25) / Project Access Rd. Stop Controlled Approach (b) -	0.3 – A (14.0 – B)	0.5 – A (15.9 – C)
Airline Hwy. (SR 25) / Fairview Rd. (c)	18.0 – C	13.4 – B

(a) Signalized control
(b) Highest stop-sign controlled approach delay reported in parenthesis
(c) All-way stop control

The data in Table 2 indicates that the study intersections currently operate within acceptable limits during the AM and PM peak hours as defined by San Benito County (LOS D or better). Observations of actual operations did not notice any significant operational issues during either peak period. The majority of vehicle queues at the Airline Highway (SR 25) / Union Road intersection cleared ever signal cycle. The study intersections PHF during the AM peak hour varied between 0.82 and 0.88, which indicates the peak 15-30 minute volumes were about 20-25% higher than the other 30-minutes within the peak hour. This if reflective in the LOS analysis results (LOS D operations at the Union Road intersection). The study intersection PHF during the PM peak hour varied between 0.92 and 0.97, which demonstrates that volumes were more evenly distributed throughout the peak hour.

The vehicle delay data collected at the Airline Highway (SR 25) / Project Access Road intersection was compared to the delays estimated by the Synchro 9 software. The overall average delays were essentially identical during both peak hours. The actual delays on the stop sign controlled approach were slightly higher during the AM peak hour (14.1 vs. 14.0) and lower (25%) during the PM peak hour (11.9 vs. 15.9). The lower delays during the PM peak hour are primarily attributable to the acceleration lane provided on Airline Highway (SR 25) for the left turn movement from the Project

Access Road (stop sign controlled). The maximum vehicle queue in the northbound left turn lane on the Airline Highway (SR 25) during the AM commuter peak (7:00 – 9:00 AM) was recorded as 1 vehicle and two (2) vehicles during the PM commuter peak (4:00 – 6:00 PM).

A signal warrant analysis was conducted using criteria in the 2014 California Manual on Uniform Traffic Control Devices (MUTCD). The existing AM and PM peak hour traffic volumes at the Airline Highway (SR 25) / Fairview Road intersection exceed the minimum 70% "peak hour volume" warrant criteria (Warrant #3), but not the 100% warrant criteria. Since average delays are within the LOS B-C range (Table 2), it is concluded that existing peak hour volumes at the Airline Highway (SR 25) / Fairview Road intersection do not warrant the installation of traffic signal control. It is noted that the peak hour volumes on the stop sign controlled approach at the Airline Highway (SR 25) / Project Access Road intersection are well below the minimum "peak hour volume" MUTCD criteria (>75 vehicles per hour, vph). Copies of the traffic signal warrant data and MUTCD graphs are included with the Appendix Material.

3.0 PROJECT CONDITIONS

The following is a brief description of the proposed project, an estimate of the project trip generation quantities, an assignment of trips to the local street system, an evaluation of the potential impacts on existing operations, and an evaluation of project site access on Airline Highway (SR 25).

Description

As previously stated, the project will include the construction of an "assisted living" facility, with a total of 155 units with 180 beds. Project access will be provided via the existing access road for the Sunnyslope County Water District and connection to Airline Highway (SR 25). The project site plan indicates that emergency vehicle access will also be provided via a connection to Tyler Drive. On-site parking will be provided for 65 vehicles. The Project Site Plan is provided on Figure 3.

Project Trip Generation Estimates

The project trip generation estimates were derived using trip rate data in the ITE Trip Generation Manual (10^{th} Edition). As requested by Caltrans staff, the project trip generation estimates reflect the "peak hour of the generator." It is noted that the assisted living land use description in the ITE Trip Generation Manual indicates that the "AM peak hour of generator" data was counted between 11:30 AM and 12:30 PM, and the "PM peak hour of generator" data was counted between 12:30 and 1:30 PM. The ITE trip generation rates and project trip generation estimates are presented in Table 3.

Table 3 - ITE Trip Rates and Project Trip Generation Estimates

ITE Trip Rates and Proposed Use	Number of Weekday Vehicle Trips				
	AM Peak Hour		PM Peak Hour		Daily
	In	Out	In	Out	
ITE Trip Rates (Vehicle Trips / Bed)	0.12	0.06	0.15	0.19	2.60
Assisted Living (180 Beds)	21	11	27	34	468

The data in Table 3 indicates the proposed project will generate a total of approximately 468 daily trips (two-way trip ends), with 32 vehicle trips during the AM peak hour (21 inbound & 11 outbound) and 61 trips during the PM peak hour (27 inbound & 34 outbound).

Project Traffic Volumes

The assignment of project trips to the study street system was based on a review of local travel patterns and data in the reference documents. It was estimated that 65% of the trips will be oriented to and from the north on Airline Highway (35% north of Union Road, 25% on Union Road, and 5% on Enterprise Road), and 35% to and from the south (20% south of Fairview Road, 10% on Fairview Road, and 5% on Ridgemark Drive). The project traffic volumes are illustrated on Figure 4A.

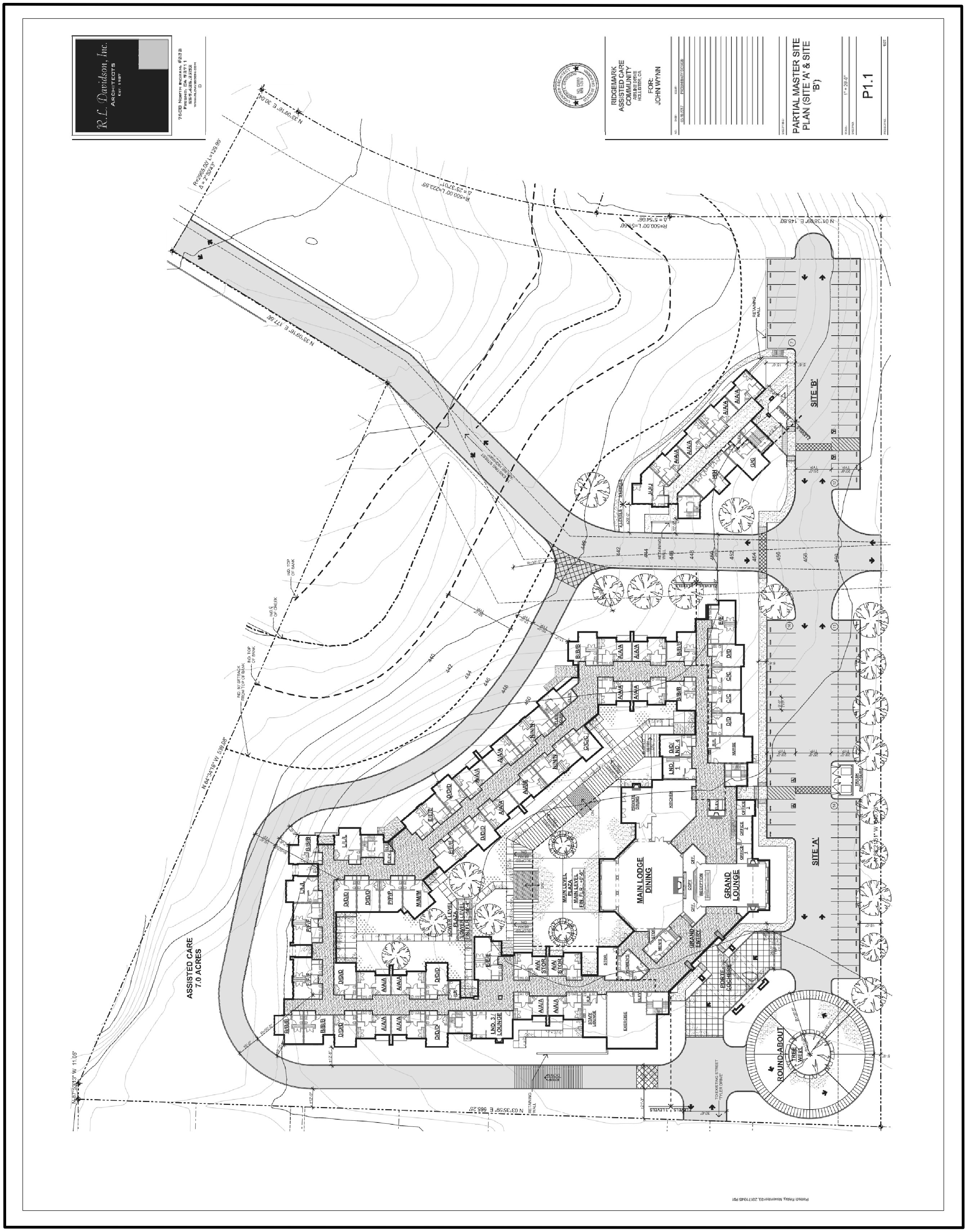

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FIGURE 3
PROJECT SITE PLAN

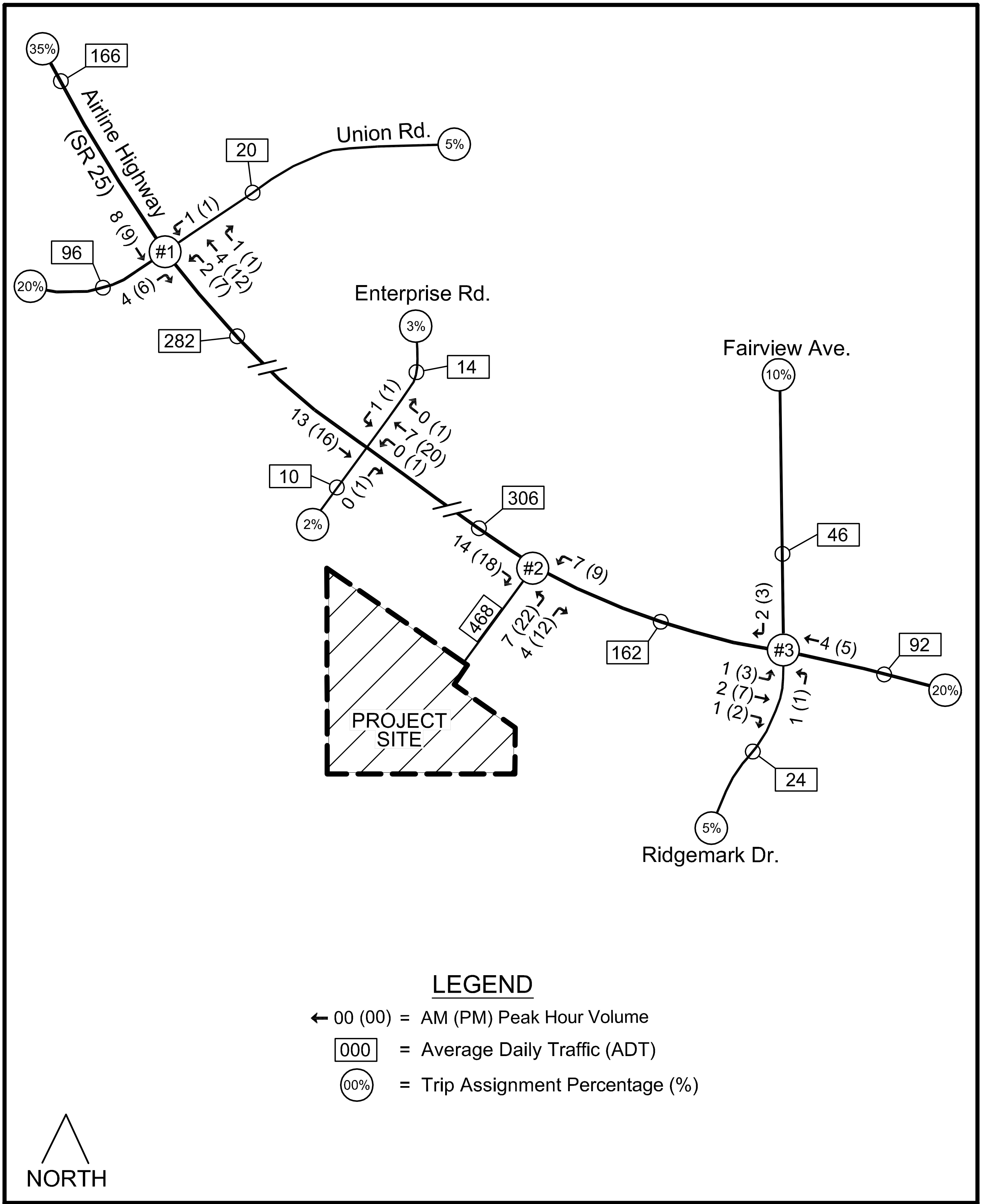

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FIGURE 4A
PROEJCT
TRAFFIC VOLUMES

Existing Plus Project Traffic Volumes

The existing traffic volumes on Figures 2B were combined with the project traffic volumes on Figure 4A to derive the existing plus project traffic volumes. The existing plus project traffic volumes are illustrated on Figure 4B.

San Benito County Level of Significance Criterion

The evaluation of potential project impacts is based on applicable "level of significance" criterion defined in the County's 2035 General Plan EIR (19.0 Transportation and Circulation). The following criteria was used to identify potentially significant impacts at the study intersections associated with the project traffic:

<u>Signalized Intersections</u>

- The LOS at the intersection degrades from an acceptable LOS D or better under baseline conditions to an unacceptable LOS E or F under project conditions; or
- The intersection is already operating at an unacceptable LOS E or F under baseline conditions and the addition of project traffic causes the average intersection delay at the intersection to increase by more than four (4) seconds beyond what it was without the project. Increase delay of less than four (4) seconds is considered minimis.

<u>Unsignalized Intersections</u>

- ***All-Way Stop Control*** - The average overall LOS degrades from an acceptable LOS D or better under baseline conditions to an unacceptable LOS E or F under project conditions; or
- ***All-Way Stop Control*** - The average overall LOS is already at an unacceptable LOS E or F under baseline conditions and the addition of project traffic causes the average overall delay to increase by more than four (4) seconds beyond what it was without the project.
- ***One- or Two-Way Stop Control*** - The delay on the worst approach degrades from an acceptable LOS D or better under baseline conditions to an unacceptable LOS E or F under project conditions <u>and</u> the traffic volumes under project conditions are high enough to satisfy the peak hour volume traffic signal warrant adopted by Caltrans (CA MUTCD); or
- ***One- or Two-Way Stop Control*** - The delay on the worst approach is already at an unacceptable LOS E or F under baseline conditions <u>and</u> the traffic volumes under project conditions are high enough to satisfy the peak hour volume signal warrant adopted by Caltrans (CA MUTCD), <u>and</u> the addition of project traffic causes the delay on the worst stop-controlled approach to increase by more than hour (4) seconds beyond what it was without the project.

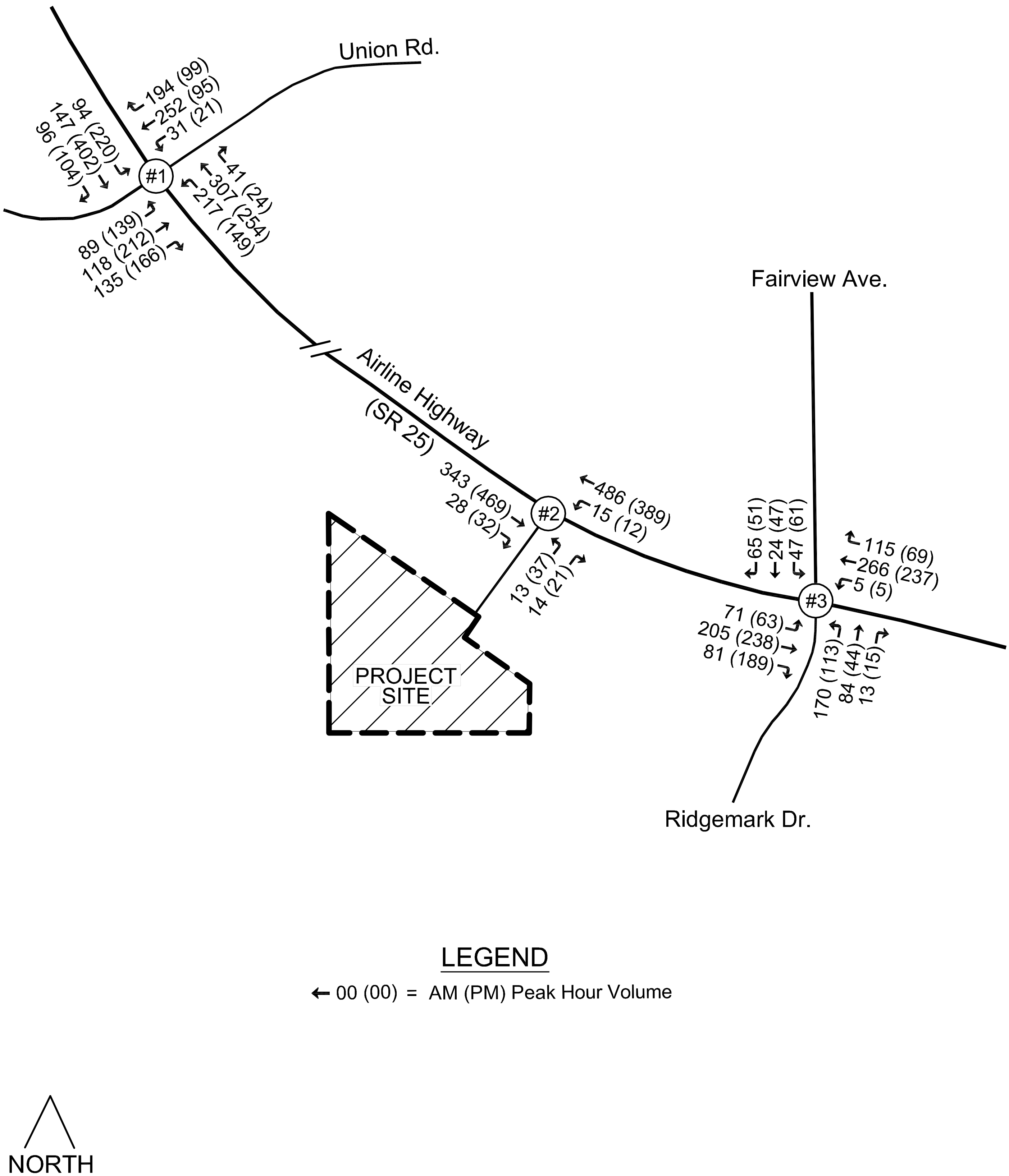

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FIGURE 4B
EXIST. + PROEJCT
TRAFFIC VOLUMES

Intersection Level of Service Analysis

Similar to the existing conditions LOS analysis, the existing plus project traffic volumes at the study intersections (Figure 4B) were evaluated using the Synchro software. The results of the existing plus project intersection LOS analysis are presented in Table 4. The existing LOS data is also provided for comparison purposes. The changes in delay (seconds) attributable to the project added trips are reported to evaluate the potential significance of the project impacts. Copies of the LOS worksheets are included with the Appendix Material.

Table 4 - Existing Plus Project Intersection LOS Analysis

Study Intersection	Peak Hour	Ave. Delay - LOS Value		Project Change (Sec.)	Project Impact
		Existing	Existing Plus Project		
Airline Hwy. (SR 25) / Union Rd. (a)	AM PM	48.9 – D 42.9 – D	49.7 – D 44.2 – D	+0.8 +1.3	No No
Airline Hwy. (SR 25) / Project Access Rd. EB Approach (b) -	AM	0.3 – A (14.0 – B)	0.6 – A (15.6 – C)	+0.3 (+1.6)	No
	PM	0.5 – A (15.9 – C)	1.2 – A (17.8 – C)	+0.7 (+1.9)	No
Airline Hwy. (SR 25) / Fairview Rd. (c)	AM PM	18.0 – C 13.4 – B	18.3 – C 13.6 – B	+0.3 +0.2	No No

(a) Signalized control
(b) Highest stop-sign controlled approach delay reported in parenthesis
(c) All-way stop control

The data in Table 4 indicates that the study intersections will continue to operate within acceptable limits during the AM and PM peak hours (LOS D or better). As noted under the existing conditions, actual delays on the stop sign controlled approach (eastbound) at the Airline Highway (SR 25) / Project Access Road intersection were slightly higher during the AM peak hour as compared to the delays estimated by the Synchro software. However, actual delays during the PM peak hour were lower (25%) than estimated by the Synchro software. Again, it is noted that the lower delays during the PM peak hour are primarily attributable to the acceleration lane provided on Airline Highway (SR 25) for the left turn movement from the Project Access Road (stop sign controlled). The 95% percentile queues reported by the Synchro software do not exceed the queue data collected in the field.

A signal warrant analysis was again conducted for the Airline Highway (SR 25) / Fairview Road intersection. Similar to the existing conditions analysis, the existing plus project volumes will exceed the minimum 70% "peak hour volume" warrant criteria, but not the 100% warrant criteria. Therefore, since average delays will remain within the LOS B-C range the addition of project traffic would not warrant the installation of signal control. The peak hour traffic volumes on the stop sign controlled approach (eastbound) at the Airline Highway (SR 25) / Project Access Road intersection will be below the minimum "peak hour volume" warrant criteria (>75 vph). Based on the County's "level of significance" criteria, the project traffic will not significantly impact existing peak hour operations.

Project Site Access

As stated in the Introduction, the project TIA analysis provides an evaluation of project site access on Airline Highway (SR 25). The new traffic data collected for the project TIA also included a sampling of vehicle speeds and measurement of sight distance parameters on Airline Highway (SR 25). Data collected for the 2006 original project TIA is also referenced.

A sample of vehicle speeds on Airline Highway (SR 25) was collected adjacent to the Project Site Access Road intersection under "free-flowing" conditions (mid-afternoon period). The data indicated that the average speed in the southbound direction was about 56 mph, while the average speed in the northbound direction was about 53 mph. The new data also demonstrates that the 85th percentile southbound speed was 62 mph and the 85th percentile northbound speed was 55 mph. In 2006, the southbound average speed was recorded at 51 mph and northbound average speed was 47 mph. The average vehicle speeds have increased by about 5 mph in both directions since 2006. It is noted that the northbound vehicles were coming from stop conditions at the Airline Highway (SR 25) / Fairview Road intersection (all-way stop control). Therefore, it is anticipated that northbound vehicle speeds will increase when traffic signal control is installed at the Airline Highway (SR 25) / Fairview Road intersection (under green light). Copies of the 2018 and 2006 vehicle speed data is included with the Appendix Material.

The evaluation of sight distance is based on the Caltrans criterion. The Caltrans criterion are described in the Highway Design Manual (HDM, Chapter 200 - stopping sight distance and Chapter 400 - corner sight distance). Stopping sight distance is the minimum distance required by a driver to bring a vehicle to a complete stop after an object on the roadway has become visible. Corner sight distance is the minimum time required for a waiting vehicle (e.g. on a side street) to either cross all lanes of through traffic, or cross the near lanes and turn left or right, without requiring through traffic to radically alter their speed. Caltrans uses a 7.5 second minimum to evaluate the adequacy of corner sight distance for highway and public road intersections (Table 405.1A). This method considers actual vehicle speeds and does not rely solely on physical measured distances.

The section of Airline Highway (SR 25) within the study area has a relatively level vertical alignment. There is a horizontal curve near the Airline Highway (SR 25) / Union Road intersection (R=5,200' & L=1,100') and north of the Airline Highway (SR 25) / Fairview Road intersection (R=3,000 & L=1,300'). The line of sights looking both north and south from the Project Access Road are relatively unobstructed. Looking north there is visibility beyond Enterprise Road and looking south there is visibility beyond Fairview Road. Stopping sight distance on Airline Highway (SR 25) was measured by a placing portable delineator on the west side of Airline Highway (SR 25) near the shoulder stripe at the Project Access Road. Stopping sight distance for northbound vehicles on Airline Highway (SR

25) was measured at about 1,300' and southbound vehicles was measured at about 1,800'. The data demonstrates that there is adequate stopping sight distance for vehicles traveling on Airline Highway (SR 25) at the posted speed limit (55 mph) and 85th percentile speeds (SB - 62 mph & NB - 55 mph). Corner sight distance for north-south traffic on Airline Highway (SR 25) was measured by a placing portable delineator at a 10' setback from the projected "edge of pavement" (EP) line (near stop limit line) for the southbound right turn lane at the Project Access Road (Caltrans criteria). The corner sight distance looking north at southbound vehicles on Airline Highway (SR 25) was recorded at around 25 seconds and looking south at northbound vehicles was recorded at about 16 seconds. The recorded times are consistent with the data collected for the 2006 original project TIA. The actual corner sight distance measurements are at least twice that required by Caltrans minimum (7.5 seconds). A copy of the corner sight distance measurements is included with the Appendix Material.

4.0 BACKGROUND CONDITIONS

The scope defined for the TIA included an evaluation of background conditions. Background traffic conditions are typically comprised of existing traffic plus traffic generated by other known approved projects (developments with entitlements). Development information was obtained from the County and City of Hollister. There are many large developments with entitlements in both the County and City (e.g. Santana Ranch, Fairview Corners, Sunnyside Estates, Bluffs at Ridgemark, Ridgemark Retail Shopping, Robert's Ranch, Silver Oaks, Walnut Park 14, Award Homes, etc). This scenario assumes that the approved projects could be constructed and generate traffic prior to the project being constructed. Many of the approved projects also include various infrastructure improvements. The background scenario assumes the completion of the Union Road extension to Fairview Road.

Background Traffic Volumes

The background traffic volumes were derived using the lists of approved projects provided by the County and City of Hollister. The necessary research was conducted to determine the status of the approved projects (constructed and occupied, under construction, or not constructed). Additional information was provided by the County and City regarding the projects under construction (percent complete). Traffic volumes for some of the larger projects were obtained from the traffic studies prepared for those projects. The peak hour trips generated by the other projects were derived using data in the ITE Trip Generation Manual (10^{th} Edition). The new trips were assigned to the study street system based on existing travel patterns and distribution information in the other traffic studies. The trips generated by the approved projects were then added to the existing traffic volumes (Figure 2B). The background traffic volumes at the study intersections are illustrated on Figure 5A.

Background Plus Project Traffic Volumes

To evaluate the potential impacts associated with the proposed project the background traffic volumes (Figure 5A) were combined with the project trips (Figure 4A). The background plus project traffic volumes are illustrated on Figure 5B.

Intersection Level of Service Analysis

Similar to the analysis conducted for the existing and project conditions, the peak hour operations were evaluated at the study intersections for the background conditions using the Synchro software. To evaluate the potential impacts associated with the proposed project the analysis was also conducted for the background plus project conditions. The results of the intersection LOS analysis are presented in Table 5. The changes in delay (seconds) attributable to the project added trips are reported to evaluate the potential significance of the project impacts. Copies of the LOS worksheets are included with the Appendix Material.

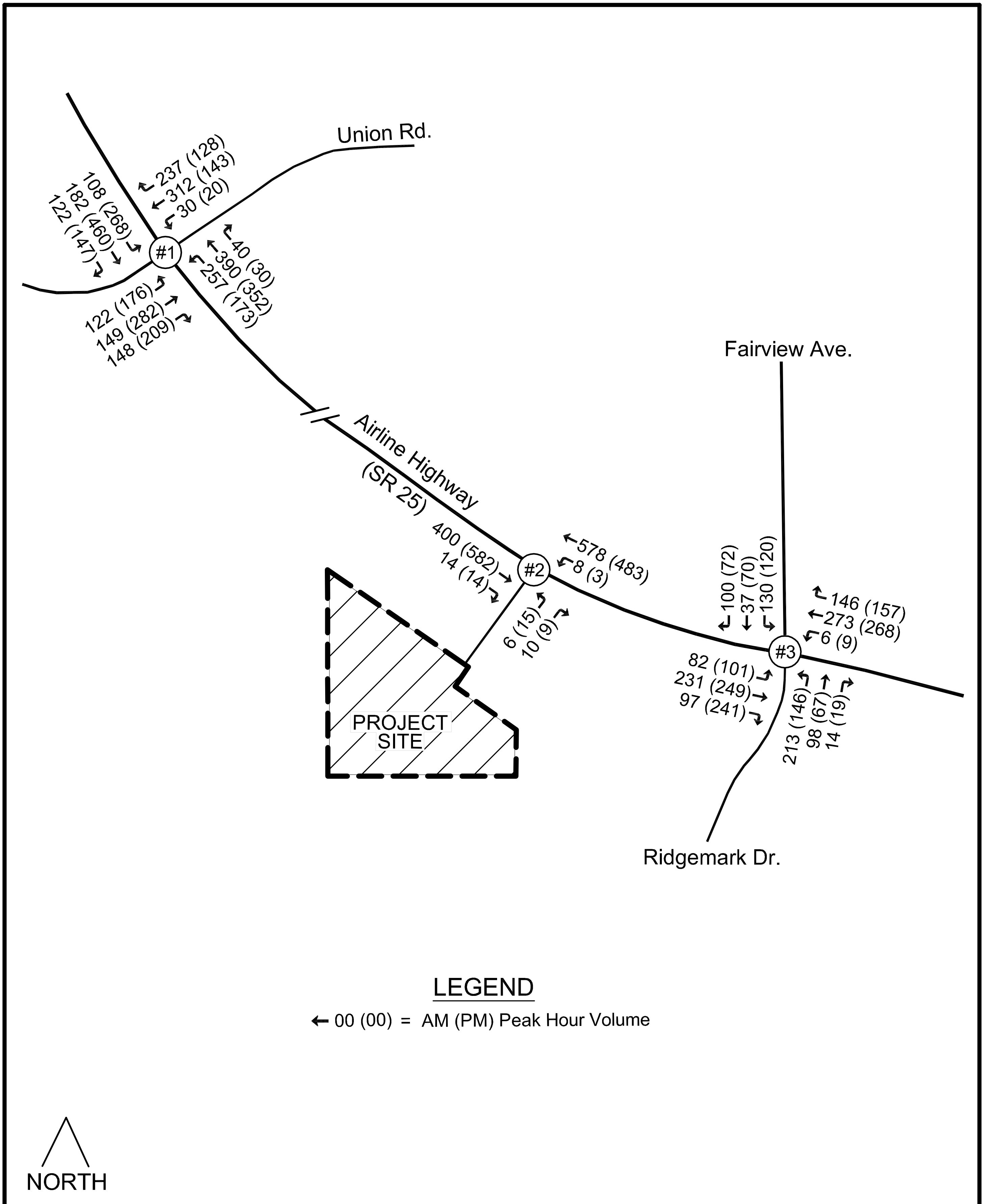

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FIGURE 5A
BACKGROUND TRAFFIC VOLUMES

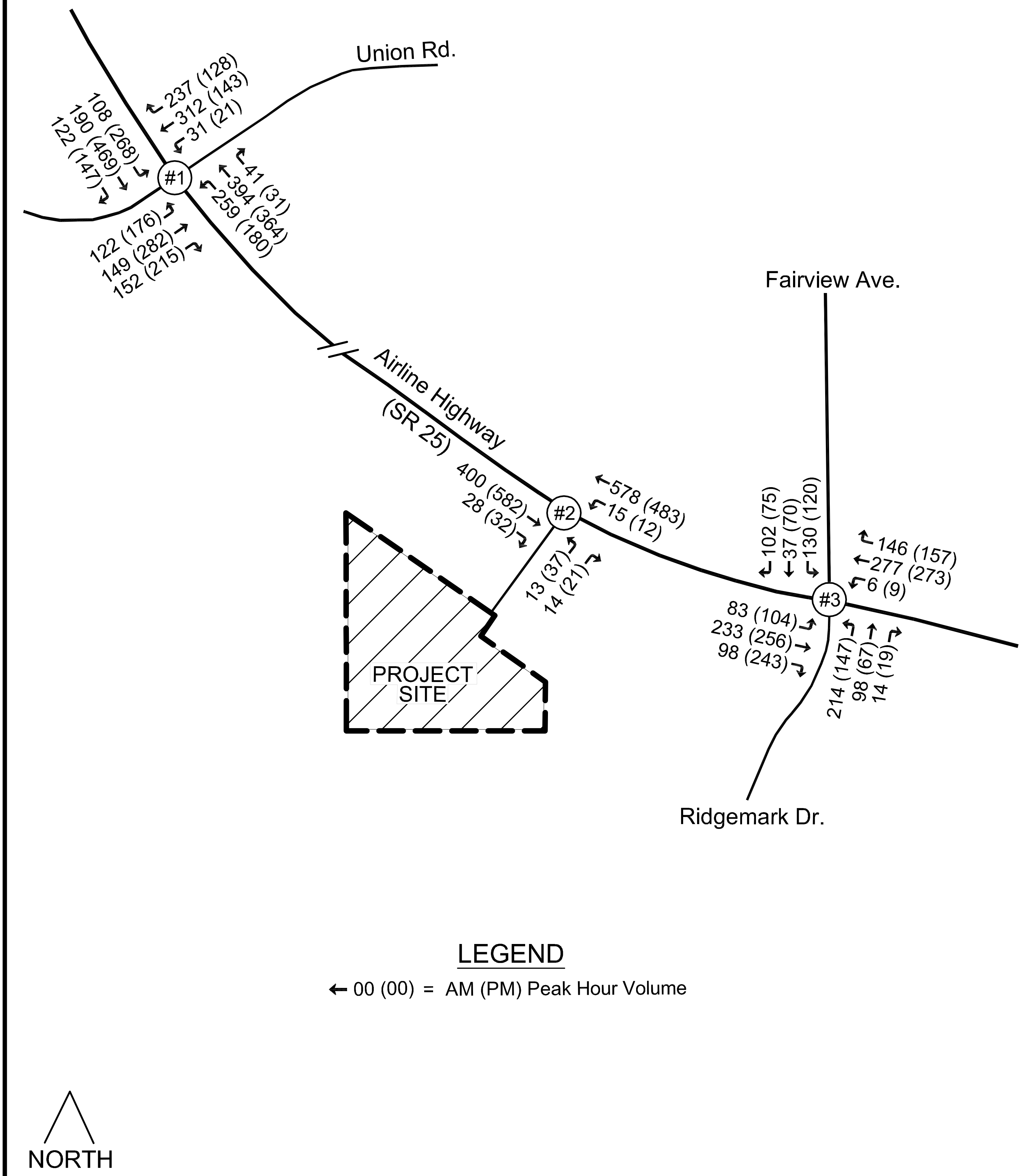

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FIGURE 5B
BACKGROUND + PROEJCT TRAFFIC VOLUMES

Table 5 - Background and Background Plus Project Intersection LOS Analysis

Study Intersection	Peak Hour	Ave. Delay - LOS Value		Project Change (Sec.)	Project Impact
		Background	Background Plus Project		
Airline Hwy. (SR 25) / Union Rd. (a)	AM PM	70.7 – E 73.0 – E	71.8 – E 76.2 – E	+1.1 +3.2	No No
Airline Hwy. (SR 25) / Project Access Rd. Stop Controlled Approach (b) -	AM PM	0.3 – A (14.7 – B) 0.5 – A (19.8 – C)	0.5 – A (16.4 – C) 1.2 – A (23.2 – C)	+0.2 (+1.7) +0.7 (+3.4)	No No
Airline Hwy. (SR 25) / Fairview Rd. (c)	AM PM	21.3 – C 19.4 – C	21.8 – C 20.1 – C	+0.5 +0.7	No No

(a) Signalized control
(b) Highest stop-sign controlled approach delay reported in parenthesis
(c) All-way stop control

The data in Table 5 indicates that future background traffic volumes at the Airline Highway (SR 25) / Union Road intersection will result in LOS E operations during the AM and PM peak hours, without or with the addition of the project trips. Average delays at the other study intersections will remain within acceptable limits during the AM and PM peak hours (LOS D or better). As noted under existing conditions, actual delays on the stop sign controlled approach at the Airline Highway (SR 25) / Project Access Road intersection were slightly higher during the AM peak hour as compared to the delays estimated by the Synchro software. However, actual delays during the PM peak hour were lower (25%) than estimated by the Synchro software. Again, it is noted that the lower delays during the PM peak hour are primarily attributable to the acceleration lane provided on Airline Highway (SR 25) for the left turn movement from the Project Access Road (stop sign controlled).

The 95% percentile queue data reported by the Synchro software does not exceed 1-2 vehicles for the northbound left turn movement from Airline Highway (SR 25) to the Project Access Road. The Synchro software did not report any significant delays at the Airline Highway (SR 25) / Project Access Road intersection. In addition, delays for the northbound left turn movement will remain in the LOS A range with the addition of the project trips.

Similar to the existing and project conditions analysis, the background traffic volumes will exceed the minimum 70% "peak hour volume" warrant criteria, but not the 100% warrant criteria. Since average delays will remain within the LOS C range the addition of the project traffic would not warrant the installation of signal control. It is noted that as the County area south of the City of Hollister develops conditions will become more "urban" in nature especially with the completion of many large approved projects (e.g. Santana Ranch, Fairview Corners, Sunnyside Estates, Bluffs at Ridgemark, Robert's Ranch, Silver Oaks, Walnut Park 14, Award Homes, etc). The peak hour volumes on the stop sign controlled approach at the Airline Highway (SR 25) / Project Access Road intersection will be below the minimum "peak hour volume" warrant criteria (>75 vph). Based on the County's "level of significance" criteria, the project traffic will not significantly impact background peak hour operations.

The intersection analysis demonstrates that improvements will be required at the Airline Highway (SR 25) / Union Road intersection to accommodate background peak hour traffic demands. As previously stated, development of the approved projects will include various infrastructure improvements. The approved projects are required to construct the improvements necessary to offset any project-specific impacts. In addition, future projects are also required to provide a fair-share contribution towards the costs associated with the future infrastructure improvements. Each project shall pay the applicable Transportation Impact Mitigation Fee (TIMF) as required by the Council of San Benito County Governments (SBCOG). The future infrastructure improvements on Airline Highway (SR 25) and at the Airline Highway (SR 25) / Union Road intersection are discussed and analyzed under Cumulative Conditions (Section 5.0).

Project Site Access

As previously discussed, the intersection analysis did not detect any significant delays or queuing at the Airline Highway (SR 25) / Project Access Road intersection. In addition, peak hour demands on the stop sign controlled approach will be below the minimum "peak hour volume" traffic signal warrant criteria (>75 vph). The evaluation of project access presented under the Project Conditions (Section 3.0) concluded that there is adequate stopping sight distance for vehicles traveling on Airline Highway (SR 25) as they approach the Project Access Road intersection. There is also sufficient corner sight distance looking north and south for vehicles exiting the Project Access Road and entering Airline Highway (SR 25).

5.0 CUMULATIVE CONDITIONS

The scope defined for the TIA included an evaluation of cumulative conditions. Cumulative traffic conditions are comprised of existing traffic plus traffic generated by other known approved and pending projects. Pending project information was obtained from the County and City of Hollister. The most significant pending project(s) in this portion of the County is future development within the existing Ridgemark Golf Club and Resort. Information provided by County staff and a local firm indicates that future development in the Ridgemark Golf Club and Resort includes 190 new residential lots and 20 (+/-) acres of commercial development. The residential component consists of six (6) separate phases with new traffic using both the existing west and east entrances. It is anticipated that a portion of the commercial development could include removing the existing lodging cottages (32) and constructing a new hotel (80-100 rooms). Information provided by the City of Hollister did not include any significant pending projects that would add traffic to the study intersections.

Cumulative Traffic Volumes

The cumulative traffic volumes were derived using the lists of pending projects. The peak hour trips generated by the pending projects were derived using data in the ITE Trip Generation Manual (10th Edition). The new trips were assigned to the study street system based on existing travel patterns and distribution information in the other traffic studies. The trips generated by the pending projects were then added to the background traffic volumes shown on Figure 5A (existing plus approved projects traffic volumes). The cumulative traffic volumes are illustrated on Figure 6A.

Cumulative Plus Project Traffic Volumes

To evaluate the potential impacts associated with the proposed project the cumulative traffic volumes (Figure 6A) were combined with the project trips (Figure 4A). The cumulative plus project traffic volumes are illustrated on Figure 6B.

Intersection Level of Service Analysis

Similar to the analysis conducted for the existing, project and background conditions, the peak hour operations were evaluated at the study intersections for the cumulative conditions using the Synchro software. To evaluate the potential impacts associated with the proposed project the analysis was also conducted for the cumulative plus project conditions. The results of the intersection LOS analysis are presented in Table 6. The changes in delay (seconds) attributable to the project added trips are reported to evaluate the potential significance of the project impacts. Copies of the LOS worksheets are included with the Appendix Material.

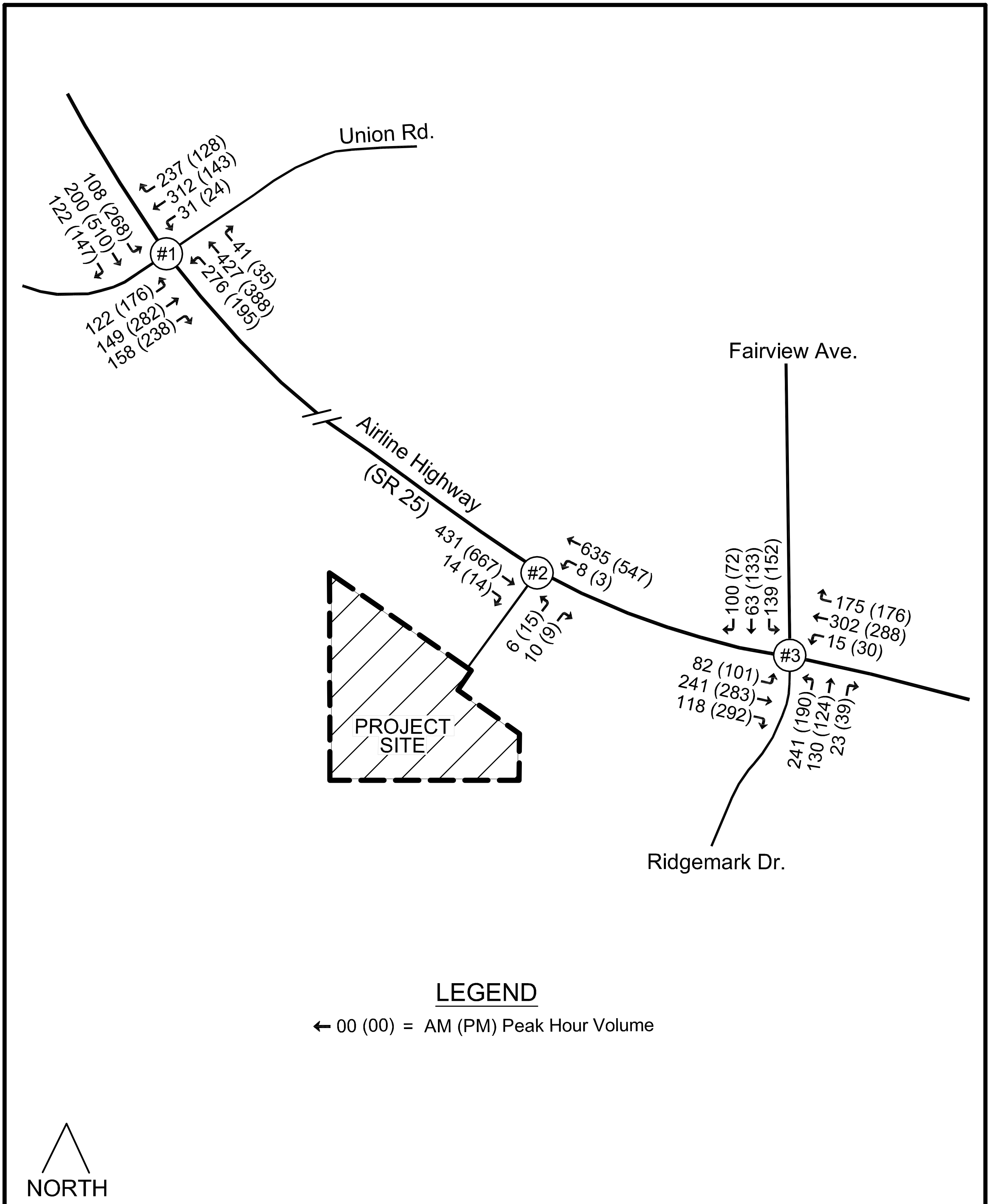

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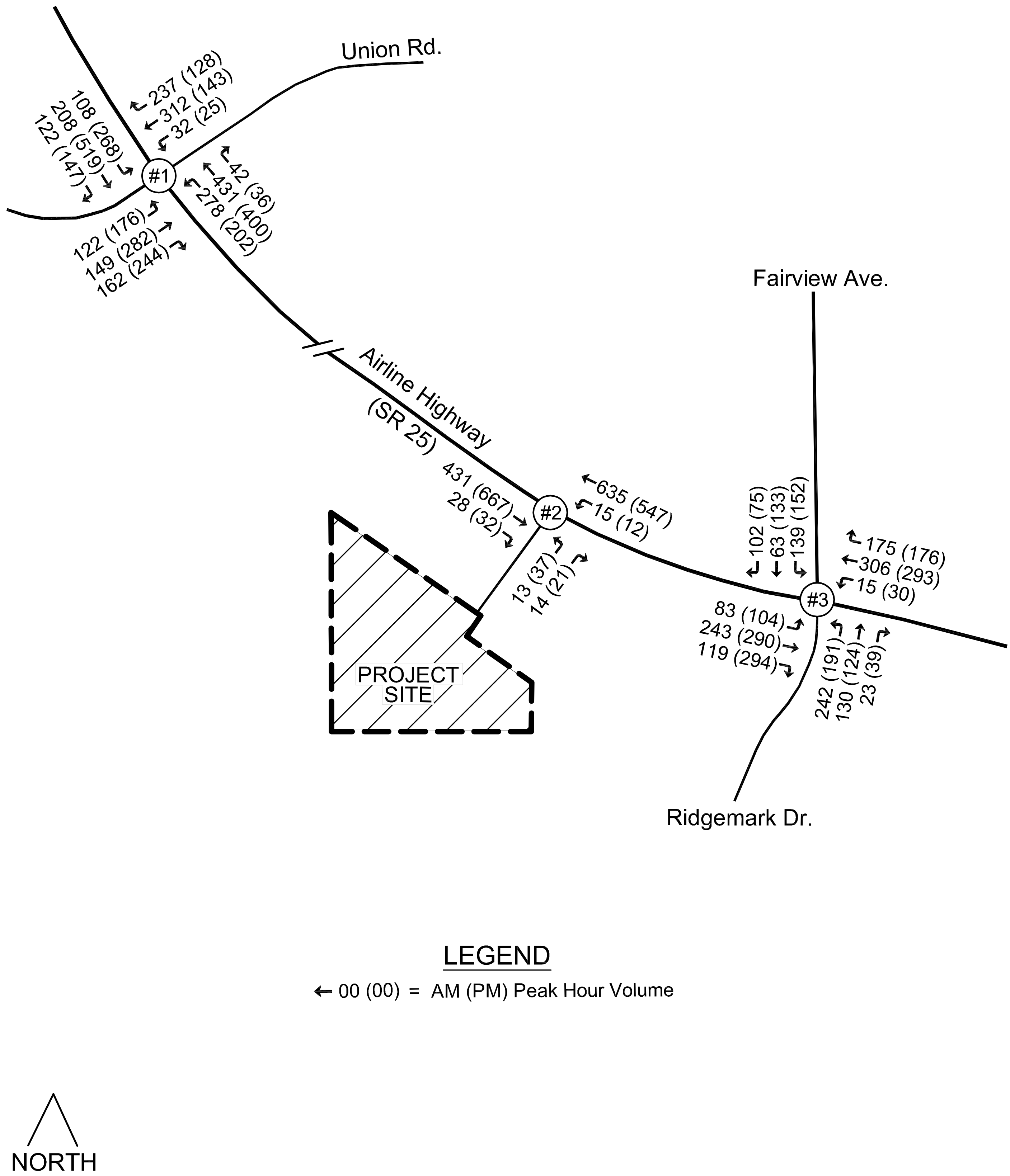
FIGURE 6A
CUMULATIVE TRAFFIC VOLUMES



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- Traffic Impact Analysis -

FIGURE 6B
CUMULATIVE + PROEJCT TRAFFIC VOLUMES

Table 6 - Cumulative and Cumulative Plus Project Intersection LOS Analysis

Study Intersection	Peak Hour	Ave. Delay - LOS Value		Project Change (Sec.)	Project Impact
		Cumulative	Cumulative Plus Project		
Airline Hwy. (SR 25) / Union Rd. (a)	AM	75.5 – E	77.3 – E	+1.8	No
	PM	83.4 – F	86.0 – F	+2.6	No
Airline Hwy. (SR 25) / Project Access Rd. EB Approach (b) -	AM	0.3 – A (15.8 – C)	0.5 – A (17.9 – C)	+0.2 (+2.1)	No
	PM	0.5 – A (23.6 – C)	1.4 – A (29.0 – D)	+0.9 (+5.4)	No
Airline Hwy. (SR 25) / Fairview Rd. (c)	AM	30.5 – D	31.6 – D	+1.1	No
	PM	36.0 – E	38.0 – E	+2.0	No

(a) Signalized control
(b) Highest stop-sign controlled approach delay reported in parenthesis
(c) All-way stop control

The data in Table 6 indicates that future cumulative traffic demands at the Airline Highway (SR 25) / Union Road and Airline Highway (SR 25) / Fairview Road intersections will result in LOS E-F operations during one or both peak hour periods (without or with the project trips). Vehicle delays at the Airline Highway (SR 25) / Project Access Road intersection will remain within acceptable limits during both the AM and PM peak hours (LOS D or better). It again is noted that actual existing delays on the stop sign controlled approach at the Airline Highway (SR 25) / Project Access Road intersection were lower (25%) during the PM peak hour than estimated by the Synchro software. This is primarily attributable to the acceleration lane provided on Airline Highway (SR 25) for the left turn movement from the Project Access Road (stop sign controlled).

The 95% percentile queue data reported by the Synchro software does not exceed 1-2 vehicles for the northbound left turn movement from Airline Highway (SR 25) to the Project Access Road. The Synchro software did not report any significant delays at the Airline Highway (SR 25) / Project Access Road intersection. Vehicle delays for the northbound left turn movement from Airline Highway (SR 25) to the Project Access Road will remain in the LOS A range with the addition of the project trips.

The signal warrant analysis indicates that future cumulative traffic demands at the Airline Highway (SR 25) / Fairview Road intersection will exceed both the minimum 70% and 100% “peak hour volume” warrant criteria. As indicated in Table 6, cumulative traffic demands will result in LOS E-F operations during one or both peak hour periods. Therefore, buildout of the approved and pending projects will eventually require traffic signal control at the Airline Highway (SR 25) / Fairview Road intersection. As previously noted, the benefits associated with traffic signal control also address safety issues. Future traffic demands at the Airline Highway (SR 25) / Fairview Road intersection shall be monitored to determine when traffic signal control should be installed. The peak hour volumes on the stop sign controlled approach at the Airline Highway (SR 25) / Project Access Road intersection will be below the minimum "peak hour volume" warrant criteria (>75 vph). Based on the County's "level of significance" criteria, the project traffic will not significantly impact cumulative peak hour operations.

Future Infrastructure Improvements

The operational analysis demonstrates that improvements will be required at the Airline Highway (SR 25) / Union Road and Airline Highway (SR 25) / Fairview Road intersections to accommodate future cumulative peak hour traffic demands. The County's 2035 General Plan EIR includes an evaluation of buildout traffic conditions. The 2035 buildout conditions analyses have identified improvements on freeway and highway segments, local roadway segments, and at key intersections necessary to maintain and/or provide acceptable operations (LOS D or better). The 2035 General Plan EIR includes the appropriate planned regional and local roadway network improvements. Airline Highway (SR 25) is planned to be widened from 2 to 4 lanes between Sunset Drive and Fairview Road, which will also include improvements at the Airline Highway (SR 25) / Union Road intersection. Union Road (SR 156 to SR 25) and Fairview Road (McCloskey Road to SR 25) are also planned to be widened from 2 to 4 lanes. Data in the County's 2035 General Plan EIR indicates that daily volumes and the ATS along these segments of Airline Highway (SR 25), Union Road and Fairview Road will be within acceptable limits (LOS D or better).

The County's 2035 General Plan EIR also identifies the installation of traffic signal control at the Airline Highway (SR 25) intersections with Fairview Road and Enterprise Road. The widening of Airline Highway (SR 25) between Sunset Drive and Fairview Road would ultimately provide double left turn lanes on the north and southbound approaches at Union Road. The east and westbound approaches on Union Road would have a left turn only lane, one through lane and a shared through-right lane. The installation of traffic signal control at the Airline Highway (SR 25) / Fairview Road intersection would not include any additional improvements on the approaches (same as existing). The intersection LOS analysis was re-evaluated assuming the 2035 General Plan Improvements, with the results presented in Table 7.

Table 7 - Cumulative and Cumulative Plus Project Intersection LOS Analysis
(With 2035 General Plan Improvements)

Study Intersection	Peak Hour	Ave. Delay - LOS Value		Project Change (Sec.)	Project Impact
		Cumulative	Cumulative Plus Project		
Airline Hwy. (SR 25) / Union Rd. (a)	AM	27.2 – C	27.3 – C	+0.1	No
	PM	25.7 – C	25.9 – C	+0.2	No
Airline Hwy. (SR 25) / Fairview Rd. (a)	AM	33.5 – C	33.7 – C	+0.2	No
	PM	32.0 – C	32.0 – C	+0.0	No

(a) Signalized control

The data in Table 7 indicates that the identified future improvements at the study intersections will provide acceptable operations during the AM and PM peak hours (LOS D or better). The analysis also demonstrates that the project added trips will have a negligible impact on the study intersections.

As previously discussed, development projects are required to provide a fair-share contribution towards the costs associated with the future infrastructure improvements. Therefore, the project applicant shall negotiate and pay the applicable TIMF as required by SBCOG. The percent increase in the total intersection peak hour traffic volumes attributable to the proposed project is provided in Table 8.

Table 8 - Project's Increase in Total Intersection Peak Hour Traffic Volumes

Study Intersection	Peak Hour	Total Intersection Vol.		Project Volume	Project Percent
		Existing	Cumulative Plus Project		
Airline Hwy. (SR 25) / Union Rd.	AM	1,701	2,184	20	4.14%
	PM	1,849	2,534	36	5.26%
Airline Hwy. (SR 25) / Fairview Rd.	AM	1,135	1,630	11	2.22%
	PM	1,111	1,879	21	2.73%

The data in Table 8 shows that the project traffic will comprise approximately 4-5% of the total peak hour volumes at the Airline Highway (SR 25) / Union Road intersection and about 2-3% of the total peak hour volumes at the Airline Highway (SR 25) / Fairview Road intersection.

Project Site Access

As previously discussed, the intersection analysis did not detect any significant delays or queuing at the Airline Highway (SR 25) / Project Access Road intersection. In addition, peak hour demands on the stop sign controlled approach will be below the minimum "peak hour volume" traffic signal warrant criteria (>75 vph). The evaluation of project access presented under the Project Conditions (Section 3.0) concluded that there is adequate stopping sight distance for vehicles traveling on Airline Highway (SR 25) as they approach the Project Access Road intersection. There is also sufficient corner sight distance looking north and south for vehicles exiting the Project Access Road and entering Airline Highway (SR 25).

As previously described, there is an acceleration lane provided on Airline Highway (SR 25) for the left turn movement from the Project Access Road (stop sign controlled). The Synchro software was coded to simulate vehicles entering the acceleration lane in lieu of the No. 1 northbound lane on Airline Highway (SR 25). The SimTraffic micro-simulation model was used to review the operations and identify any potential issues with access on Airline Highway (SR 25). No significant delays or queuing were observed. The Synchro and SimTraffic files are available for review upon receipt of a request from County and/or Caltrans staff.

6.0 CONCLUSIONS

The following is a summary of the TIA and evaluation of potential project impacts.

Project Conditions (Existing Plus Project)

The study intersections will continue to operate within acceptable limits during the AM and PM peak hours (LOS D or better). Delays at the Airline Highway (SR 25) / Project Access Road intersection will remain within acceptable limits. The intersection analysis did not identify any significant queuing on stop sign controlled approach or Airline Highway (SR 25). The traffic volumes at the Airline Highway (SR 25) / Fairview Road intersection will exceed the minimum 70% "peak hour volume" warrant criteria, but not the 100% criteria. The installation of traffic signal control is not recommended for this study scenario. Based on the County's "level of significance" criteria, the project traffic will not significantly impact peak hour operations. The evaluation of project access concluded that there is adequate stopping sight distance on Airline Highway (SR 25) for vehicles approaching the Project Access Road intersection. There is also sufficient corner sight distance looking north and south for vehicles exiting the Project Access Road and entering Airline Highway (SR 25).

Background Plus Project Conditions

Delays at the Airline Highway (SR 25) / Union Road intersection will be in the LOS E range during the AM and PM peak hours, without or with the project traffic. Future improvements will be required to accommodate background peak hour traffic demands. Delays at the other study intersections will remain within acceptable limits during the AM and PM peak hours. The analysis did not identify any significant queuing at the Airline Highway (SR 25) / Project Access Road intersection. The traffic volumes at the Airline Highway (SR 25) / Fairview Road intersection will exceed the minimum 70% "peak hour volume" warrant criteria, but not the 100% criteria. The installation of signal control is not recommended for this study scenario. Based on the County's "level of significance" criteria, the project traffic will not significantly impact peak hour operations.

Cumulative Plus Project Conditions

Delays at the Airline Highway (SR 25) / Union Road and Airline Highway (SR 25) / Fairview Road intersections will be in LOS E-F range during one or both peak hour periods (without or with the project trips). Future improvements at these study intersections will be required to accommodate cumulative peak hour traffic demands. Delays at the Airline Highway (SR 25) / Project Access Road intersection will remain within acceptable limits during both the AM and PM peak hours. The analysis did not identify any significant queuing at the Airline Highway (SR 25) / Project Access Road intersection. Cumulative traffic demands at the Airline Highway (SR 25) / Fairview Road intersection will exceed the minimum 70% and 100% "peak hour volume" warrant criteria. The buildout of the approved and pending projects in the County and City of Hollister will more than likely require traffic signal control at the Airline Highway (SR 25) / Fairview Road intersection. Future traffic demands at the shall be monitored to determine if, and when traffic signal control should be installed. Based on the County's "level of significance" criteria, the project traffic will not significantly impact cumulative peak hour operations.

The County's 2035 General Plan buildout conditions analyses identified improvements on the regional and local roadway networks necessary to maintain and/or provide acceptable operations. Airline Highway (Sunset Drive to Fairview Road), Union Road (SR 156 to SR 25) and Fairview Road (McCloskey Road to SR 25) are planned to be widened from 2 to 4 lanes. The County's 2035 General Plan EIR analysis indicates that daily traffic volumes and the ATS along these segments will be within acceptable limits. The future roadway widening projects will include improvements at the Airline Highway (SR 25) / Union Road intersection. Future improvements also include the installation of traffic signal control at the Airline Highway (SR 25) / Fairview Road intersection. He identified future improvements at the study intersections will provide acceptable operations during the AM and PM peak hours (LOS D or better). The project applicant shall negotiate and pay the applicable TIMF as required by SBCOG.

END

APPENDIX MATERIAL CONTENTS

- Study Intersection Traffic Count and Delay Data (May 2018)
- Airline Highway (SR 25) Vehicle Speed Data (May 2018)
- Airline Highway (SR 25) Corner Sight Distance Data (May 2018)
- Level of Service (LOS) LOS Descriptions
- Synchro 9 "Level of Service" (LOS) Worksheets
- Traffic Signal Warrant Data and California MUTCD Signal Warrant Graphs

National Data & Surveying Services

Intersection Turning Movement Count

Location: Union Rd & Airline Hwy (SR 25)
City: Hollister
Control:

Project ID: 18-08305-001
Date: 5/30/2018

Total

NS/EW Streets:	Union Rd				Union Rd				Airline Hwy (SR 25) - SB				Airline Hwy (SR 25) - NB				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	13	19	22	0	2	69	30	0	12	15	21	0	53	64	3	0	323
7:15 AM	19	26	22	0	3	69	34	0	18	34	18	0	85	57	5	0	390
7:30 AM	22	49	46	0	17	66	44	0	28	24	27	0	33	77	14	0	447
7:45 AM	34	28	39	0	6	71	62	0	28	48	26	0	43	87	14	0	486
8:00 AM	14	15	24	0	4	46	54	0	20	33	25	0	54	82	7	0	378
8:15 AM	27	23	22	0	6	51	61	0	25	35	19	0	44	71	3	0	387
8:30 AM	33	32	24	0	3	48	30	0	28	39	28	0	55	66	4	0	390
8:45 AM	25	27	45	0	4	23	27	0	17	45	25	0	20	61	4	0	323
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	187	219	244	0	45	443	342	0	176	273	189	0	387	565	54	0	3124
APPROACH %'s :	28.77%	33.69%	37.54%	0.00%	5.42%	53.37%	41.20%	0.00%	27.59%	42.79%	29.62%	0.00%	38.47%	56.16%	5.37%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	89	118	131	0	30	252	194	0	94	139	96	0	215	303	40	0	1701
PEAK HR FACTOR :	0.654	0.602	0.712	0.000	0.441	0.887	0.782	0.000	0.839	0.724	0.889	0.000	0.632	0.871	0.714	0.000	0.875
	0.722				0.856				0.806				0.949				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	29	47	49	0	2	18	30	0	53	90	48	0	17	74	9	0	466
4:15 PM	22	47	36	0	3	21	34	0	43	95	34	0	28	69	5	0	437
4:30 PM	30	52	38	0	1	17	22	0	40	93	29	0	47	70	7	0	446
4:45 PM	43	54	37	0	11	30	20	0	59	98	24	0	36	57	7	0	476
5:00 PM	29	50	47	0	6	23	35	0	55	108	27	0	29	58	4	0	471
5:15 PM	37	56	38	0	2	25	22	0	66	94	24	0	30	57	5	0	456
5:30 PM	35	61	43	0	3	16	15	0	49	91	24	0	28	48	2	0	415
5:45 PM	28	56	58	0	2	22	27	0	54	86	35	0	20	47	4	0	439
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	253	423	346	0	30	172	205	0	419	755	245	0	235	480	43	0	3606
APPROACH %'s :	24.76%	41.39%	33.86%	0.00%	7.37%	42.26%	50.37%	0.00%	29.53%	53.21%	17.27%	0.00%	31.00%	63.32%	5.67%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	139	212	160	0	20	95	99	0	220	393	104	0	142	242	23	0	1849
PEAK HR FACTOR :	0.808	0.946	0.851	0.000	0.455	0.792	0.707	0.000	0.833	0.910	0.897	0.000	0.755	0.864	0.821	0.000	0.971
	0.953				0.836				0.943				0.821				

Prepared by National Data & Surveying Services

Union Rd & Airline Hwy (SR 25)

Peak Hour Turning Movement Count

ID: 18-08305-001
City: Hollister

Day: Wednesday
Date: 05/30/2018

PEAK HOURS		COUNT PERIODS
AM	07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

Union Rd — SOUTHBOUND

	Right	Through	Left	U-Turn	Exiting (⇧)
AM	194	252	30	0	252
NOON	0	0	0	0	0
PM	99	95	20	0	455
	0	0	0	0	

Airline Hwy (SR 25) - SB — EASTBOUND

	AM	NOON	PM	
Exiting (⇦)	586	0	480	
U-Turn	0	0	0	0
Left	94	0	220	0
Through	139	0	393	0
Right	96	0	104	0

Airline Hwy (SR 25) - NB — WESTBOUND

		PM	NOON	AM
Right	0	23	0	40
Through	0	242	0	303
Left	0	142	0	215
U-Turn	0	0	0	0
Exiting (⇨)		573	0	300

CONTROL

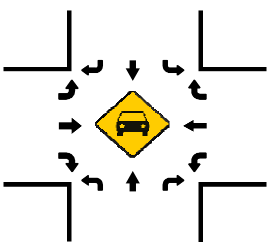
0

	AM	NOON	PM
TEV	1701	0	1849
PHF	0.88		0.97

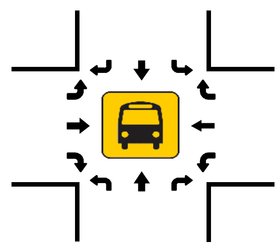
Union Rd — NORTHBOUND

	Exiting (⇩)	U-Turn	Left	Through	Right
		0	0	0	0
PM	341	0	139	212	160
NOON	0	0	0	0	0
AM	563	0	89	118	131

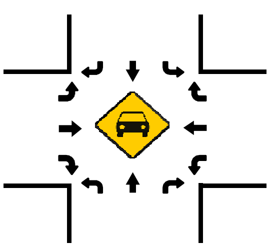
Total Vehicles (AM)



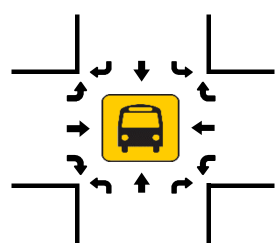
Total Vehicles (AM)



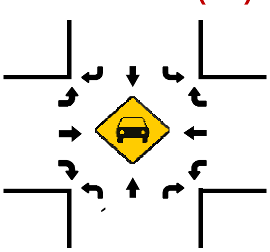
Total Vehicles (NOON)



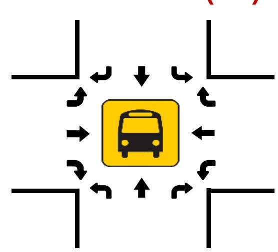
Total Vehicles (NOON)



Total Vehicles (PM)



Total Vehicles (PM)



Pedestrians (Crosswalks)

Crosswalk	AM	NOON	PM
North (west side)	0	0	0
North (east side)	0	0	0
West (north side)	0	0	0
West (south side)	0	0	0
East (north side)	0	0	0
East (south side)	0	0	0
South (west side)	0	0	0
South (east side)	0	0	0
NW diagonal	0	0	0
NE diagonal	0	0	0
SW diagonal	0	0	0
SE diagonal	0	0	0

National Data & Surveying Services

Intersection Turning Movement Count

Location: Project Access Rd & Airline Hwy (SR 25)
City: Hollister
Control:

Project ID: 18-08305-002
Date: 5/30/2018

Total

NS/EW Streets:	Project Access Rd				Project Access Rd				Airline Hwy (SR 25)				Airline Hwy (SR 25)				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	1	0	0	0	0	0	0	0	0	29	3	0	2	93	0	0	128
7:15 AM	0	0	1	0	0	0	0	0	0	66	4	0	6	120	0	0	197
7:30 AM	0	0	0	0	0	0	0	0	0	98	1	0	0	108	0	0	207
7:45 AM	3	0	8	0	0	0	0	0	0	119	6	0	1	123	0	0	260
8:00 AM	3	0	1	0	0	0	0	0	0	62	3	0	1	137	0	0	207
8:15 AM	2	0	1	0	0	0	0	0	0	53	2	0	0	112	0	0	170
8:30 AM	2	0	0	0	0	0	0	0	0	68	0	0	1	109	0	0	180
8:45 AM	1	0	0	0	0	0	0	0	0	84	4	1	0	69	0	0	159
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	12	0	11	0	0	0	0	0	0	579	23	1	11	871	0	0	1508
APPROACH %'s :	52.17%	0.00%	47.83%	0.00%					0.00%	96.02%	3.81%	0.17%	1.25%	98.75%	0.00%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	6	0	10	0	0	0	0	0	0	345	14	0	8	488	0	0	871
PEAK HR FACTOR :	0.500	0.000	0.313	0.000	0.000	0.000	0.000	0.000	0.000	0.725	0.583	0.000	0.333	0.891	0.000	0.000	0.838
	0.364								0.718				0.899				

	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	5	0	1	0	0	0	0	0	0	122	8	0	3	105	0	0	244
4:15 PM	2	0	1	0	0	0	0	0	0	123	4	0	0	100	0	0	230
4:30 PM	6	0	6	0	0	0	0	0	0	114	1	0	0	103	0	0	230
4:45 PM	2	0	1	0	0	0	0	0	0	111	1	0	0	83	0	0	198
5:00 PM	7	0	0	0	0	0	0	0	0	139	1	1	0	68	0	0	216
5:15 PM	0	0	1	0	0	0	0	0	0	131	1	0	0	88	0	0	221
5:30 PM	0	0	0	0	0	0	0	0	0	115	0	0	0	78	0	0	193
5:45 PM	0	0	0	0	0	0	0	0	0	118	1	0	0	65	0	0	184
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	22	0	10	0	0	0	0	0	0	973	17	1	3	690	0	0	1716
APPROACH %'s :	68.75%	0.00%	31.25%	0.00%					0.00%	98.18%	1.72%	0.10%	0.43%	99.57%	0.00%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	15	0	9	0	0	0	0	0	0	470	14	0	3	391	0	0	902
PEAK HR FACTOR :	0.625	0.000	0.375	0.000	0.000	0.000	0.000	0.000	0.000	0.955	0.438	0.000	0.250	0.931	0.000	0.000	0.924
	0.500								0.931				0.912				

Prepared by National Data & Surveying Services

Project Access Rd & Airline Hwy (SR 25)

Peak Hour Turning Movement Count

ID: 18-08305-002
City: Hollister

Day: Wednesday
Date: 05/30/2018

	PEAK HOURS	COUNT PERIODS
AM	07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:00 PM - 05:00 PM	04:00 PM - 06:00 PM

Project Access Rd – SOUTHBOUND

	Right	Thru	Left	U-Turn	Departing
AM	0	0	0	0	0
NOON	0	0	0	0	0
PM	0	0	0	0	0
(red)	0	0	0	0	

Airline Hwy (SR 25) – EASTBOUND

	AM	NOON	PM	(red)
Departing	494	0	406	
U-Turn	0	0	0	0
Left	0	0	0	0
Thru	345	0	470	0
Right	14	0	14	0

Airline Hwy (SR 25) – WESTBOUND

	(red)	PM	NOON	AM
Right	0	0	0	0
Thru	0	391	0	488
Left	0	3	0	8
U-Turn	0	0	0	0
Departing		479	0	355

Project Access Rd – NORTHBOUND

	Departing	U-Turn	Left	Thru	Right
(red)		0	0	0	0
PM	17	0	15	0	9
NOON	0	0	0	0	0
AM	22	0	6	0	10

CONTROL

0

	AM	NOON	PM
TEV	871	0	902
PHF	0.84		0.92

Total Vehicles (AM)

Total Vehicles (NOON)

Total Vehicles (PM)

Pedestrians (Crosswalks)

Crosswalk	AM	NOON	PM
North leg (west side)	0	0	0
North leg (east side)	0	0	0
West leg (north side)	0	0	0
West leg (south side)	0	0	0
East leg (north side)	0	0	0
East leg (south side)	0	0	0
South leg (west side)	0	0	0
South leg (east side)	0	0	0
Northwest diagonal	0	0	0
Northeast diagonal	0	0	0
Southwest diagonal	0	0	0
Southeast diagonal	0	0	0

National Data & Surveying Services

Intersection Turning Movement Count

Location: Fairview Rd & Airline Hwy (SR 25)
City: Hollister
Control:

Project ID: 18-08305-003
Date: 5/30/2018

Total

NS/EW Streets:	Fairview Rd				Fairview Rd				Airline Hwy (SR 25)				Airline Hwy (SR 25)				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	39	11	0	0	6	6	5	0	4	21	6	0	0	51	12	0	161
7:15 AM	52	19	1	0	11	1	21	0	11	40	14	0	0	54	23	0	247
7:30 AM	32	23	3	0	8	5	15	0	20	56	14	0	1	60	21	0	258
7:45 AM	45	27	2	0	19	8	14	0	31	70	25	0	1	65	40	0	347
8:00 AM	40	15	7	0	9	10	13	0	8	37	27	0	3	83	31	0	283
8:15 AM	46	17	0	0	14	6	13	0	7	28	17	0	3	54	18	0	223
8:30 AM	39	20	2	0	15	12	16	0	10	29	26	0	2	51	13	0	235
8:45 AM	25	10	2	0	7	8	10	0	11	45	30	0	3	33	12	0	196
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	318	142	17	0	89	56	107	0	102	326	159	0	13	451	170	0	1950
APPROACH %'s :	66.67%	29.77%	3.56%	0.00%	35.32%	22.22%	42.46%	0.00%	17.38%	55.54%	27.09%	0.00%	2.05%	71.14%	26.81%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	169	84	13	0	47	24	63	0	70	203	80	0	5	262	115	0	1135
PEAK HR FACTOR :	0.813	0.778	0.464	0.000	0.618	0.600	0.750	0.000	0.565	0.725	0.741	0.000	0.417	0.789	0.719	0.000	0.818
	0.899				0.817				0.700				0.816				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	37	6	3	0	12	16	12	0	16	61	43	0	4	59	15	0	284
4:15 PM	27	10	1	0	19	13	12	0	18	61	51	0	1	59	12	0	284
4:30 PM	23	13	7	0	17	8	11	0	15	55	52	0	0	70	22	0	293
4:45 PM	25	15	4	0	13	10	13	0	11	54	41	0	0	44	20	0	250
5:00 PM	20	6	0	0	18	16	13	0	17	57	64	0	1	35	15	0	262
5:15 PM	25	8	0	0	17	12	15	0	16	60	57	0	0	50	13	0	273
5:30 PM	31	11	1	0	14	18	12	0	16	58	41	0	3	33	18	0	256
5:45 PM	22	8	3	0	17	13	10	0	19	57	46	0	2	34	11	0	242
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	210	77	19	0	127	106	98	0	128	463	395	0	11	384	126	0	2144
APPROACH %'s :	68.63%	25.16%	6.21%	0.00%	38.37%	32.02%	29.61%	0.00%	12.98%	46.96%	40.06%	0.00%	2.11%	73.70%	24.18%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	112	44	15	0	61	47	48	0	60	231	187	0	5	232	69	0	1111
PEAK HR FACTOR :	0.757	0.733	0.536	0.000	0.803	0.734	0.923	0.000	0.833	0.947	0.899	0.000	0.313	0.829	0.784	0.000	0.948
	0.929				0.886				0.919				0.832				

Prepared by National Data & Surveying Services

Fairview Rd & Airline Hwy (SR 25)

Peak Hour Turning Movement Count

ID: 18-08305-003
City: Hollister

Day: Wednesday
Date: 05/30/2018

	PEAK HOURS	COUNT PERIODS
AM	07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:00 PM - 05:00 PM	04:00 PM - 06:00 PM

Fairview Rd – SOUTHBOUND

	Right	Through	Left	U-turn	Departing
AM	63	24	47	0	269
NOON	0	0	0	0	0
PM	48	47	61	0	173
	0	0	0	0	

Airline Hwy (SR 25) – WESTBOUND

		PM	NOON	AM
Right	0	69	0	115
Through	0	232	0	262
Left	0	5	0	5
U-turn	0	0	0	0
Departing		307	0	263

Airline Hwy (SR 25) – EASTBOUND

	AM	NOON	PM	
Departing	494	0	392	
U-turn	0	0	0	0
Left	70	0	60	0
Through	203	0	231	0
Right	80	0	187	0

Fairview Rd – NORTHBOUND

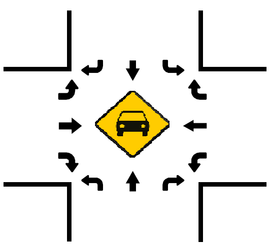
	Departing	U-turn	Left	Through	Right
		0	0	0	0
PM	239	0	112	44	15
NOON	0	0	0	0	0
AM	109	0	169	84	13

CONTROL

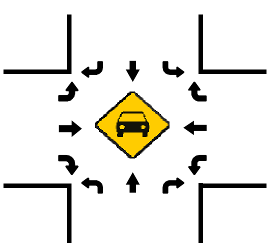
0

	AM	NOON	PM
TEV	1135	0	1111
PHF	0.82		0.95

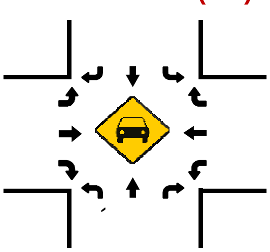
Total Vehicles (AM)



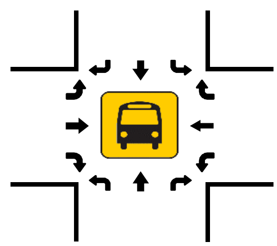
Total Vehicles (NOON)



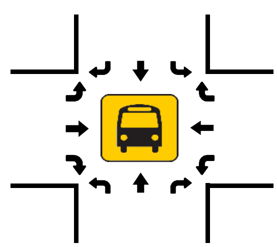
Total Vehicles (PM)



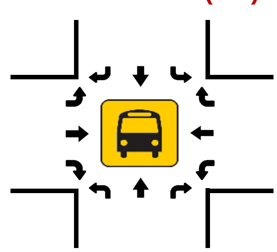
Total Vehicles (AM)



Total Vehicles (NOON)



Total Vehicles (PM)



Pedestrians (Crosswalks)

Crosswalk	AM	NOON	PM
North leg	0	0	0
South leg	0	0	0
West leg	0	0	0
East leg	0	0	0
Northwest corner	0	0	0
Northeast corner	0	0	0
Southwest corner	0	0	0
Southeast corner	0	0	0

PINNACLE TRAFFIC ENGINEERING

831 C Street • Hollister, CA 95023 (831-638-9260)

SR 25 and Project Access Road - Morning Peak Period Delay Data

(Date: 5-30-18, Jeremy Hail - Morning Peak Period 7:00 - 9:00 AM) - Peak Hour Between 7:15 & 8:15 AM

Movement	No. Veh.	Total Delay (*)		Period Vol.	Delay Per Veh.		LOS
#1A - NBLT:	1	15	Sec.	8	1.9	Sec.	A
#2A - EBLT:	7	105	Sec.	6	17.5	Sec.	B
#2B - EBRT:	8	120	Sec.	10	12.0	Sec.	B
#2A & 2B - EBLT & RT:	15	225	Sec.	16	14.1	Sec.	B

Total Delay = 240 Sec. Tot. Vol.= 867 Ave. Delay = 0.28 Sec. per Vehicle (LOS A)

(*) No. of delay vehicle times 15 seconds per vehicle.

Start Time	Move.	- Number of Vehicles in Queue -																			
		1 Minute				2 Minute				3 Minute				4 Minute				5 Minute			
7:15 AM	#1- NBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2A - EBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2B - EBRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:20 AM	#1- NBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2A - EBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2B - EBRT	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:25 AM	#1- NBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2A - EBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2B - EBRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	#1- NBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2A - EBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2B - EBRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:35 AM	#1- NBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2A - EBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2B - EBRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:40 AM	#1- NBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2A - EBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2B - EBRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	#1- NBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2A - EBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2B - EBRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

7:50 AM	**#1- NBLT**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2A - EBLT	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	**1**	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2B - EBRT	0	0	0	**1**	**2**	**1**	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0
7:55 AM	**#1- NBLT**	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2A - EBLT	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2B - EBRT	0	0	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**
8:00 AM	**#1- NBLT**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2A - EBLT	0	0	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2B - EBRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:05 AM	**#1- NBLT**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2A - EBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2B - EBRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:10 AM	**#1- NBLT**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2A - EBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	0	**1**	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2B - EBRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PINNACLE TRAFFIC ENGINEERING

831 C Street • Hollister, CA 95023 (831-638-9260)

SR 25 and Project Access Road - Morning Peak Period Delay Data

(Date: 5-30-18, Jeremy Hail - Morning Peak Period 4:00 - 6:00 PM) - Peak Hour Between 4:00 & 5:00 PM

Movement	No. Veh.	Total Delay (*)		PK. Hr. Vol.	Delay Per Veh.		LOS
#1A - NBLT:	3	45	Sec.	3	15.0	Sec.	B
#2A - EBLT:	17	255	Sec.	15	17.0	Sec.	C
#2B - EBRT:	2	30	Sec.	9	3.3	Sec.	A
#2A & 2B - EBLT & RT:	19	285	Sec.	24	11.9	Sec.	B
	Total Delay =	330	Sec. Tot. Vol.=	899	Ave. Delay = 0.37	Sec. per Vehicle (LOS A)	

(*) No. of delay vehicle times 15 seconds per vehicle.

Start Time	Move.	- Number of Vehicles in Queue -																			
		1 Minute				2 Minute				3 Minute				4 Minute				5 Minute			
4:00 PM	#1- NBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2A - EBLT	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2B - EBRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
4:05 PM	#1- NBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2A - EBLT	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2B - EBRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:10 PM	#1- NBLT	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2A - EBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2B - EBRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	#1- NBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2A - EBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2B - EBRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:20 PM	#1- NBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2A - EBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2B - EBRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:25 PM	#1- NBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2A - EBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2B - EBRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	#1- NBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2A - EBLT	0	0	0	0	0	0	1	3	3	2	2	0	0	0	0	0	0	0	1	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2B - EBRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4:35 PM	#1- NBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2A - EBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2B - EBRT	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	0
4:40 PM	#1- NBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2A - EBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2B - EBRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	#1- NBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2A - EBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2B - EBRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:50 PM	#1- NBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2A - EBLT	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2B - EBRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:55 PM	#1- NBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2A - EBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2B - EBRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PINNACLE TRAFFIC ENGINEERING

831 C Street • Hollister, CA 95023 (831-638-9260)

SR 25 and Project Access Road - Morning Peak Period Delay Data

(Date: 5-30-18, Jeremy Hail - Morning Peak Period 7:00 - 9:00 AM) - Peak Period Between ______ & ______ AM

(*) No. of delay vehicle times 15 seconds per vehicle.

Start Time	Move.	1 - Number of Vehicles in Queue -																			
		1 Minute				2 Minute				3 Minute				4 Minute				5 Minute			
7:00 AM	#1- NBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2A - EBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2B - EBRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:05 AM	#1- NBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2A - EBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
	#2B - EBRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:10 AM	#1- NBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2A - EBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2B - EBRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	#1- NBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2A - EBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2B - EBRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:20 AM	#1- NBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2A - EBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2B - EBRT	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:25 AM	#1- NBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2A - EBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2B - EBRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

7:30 AM	#1- NBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2A - EBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2B - EBRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:35 AM	#1- NBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2A - EBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2B - EBRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:40 AM	#1- NBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2A - EBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2B - EBRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	#1- NBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2A - EBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2B - EBRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:50 AM	#1- NBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2A - EBLT	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
	#2B - EBRT	0	0	0	1	2	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0
7:55 AM	#1- NBLT	0	0	1~~0~~	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2A - EBLT	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2B - EBRT	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	#1- NBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2A - EBLT	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2B - EBRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

8:05 AM	#1- NBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2A - EBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2B - EBRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:10 AM	#1- NBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2A - EBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0
	#2B - EBRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	#1- NBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2A - EBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
	#2B - EBRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:20 AM	#1- NBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2A - EBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2B - EBRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:25 AM	#1- NBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2A - EBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2B - EBRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	#1- NBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2A - EBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2B - EBRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:35 AM	#1- NBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2A - EBLT	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2B - EBRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

8:40 AM	#1- NBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2A - EBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2B - EBRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	#1- NBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2A - EBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2B - EBRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:50 AM	#1- NBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2A - EBLT	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
	#2B - EBRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:55 AM	#1- NBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2A - EBLT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	#2B - EBRT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PINNACLE TRAFFIC ENGINEERING

831 C Street • Hollister, CA 95023 (831-638-9260)

SR 25 and Project Access Road - Morning Peak Period Delay Data

(Date: 5-30-18, Jeremy Hall - Morning Peak Period 4:00 - 6:00 PM) - Peak Period Between ______ & _____ AM

(*) No. of delay vehicle times 15 seconds per vehicle.

Start Time	Move.	- Number of Vehicles in Queue -																			
		1 Minute				2 Minute				3 Minute				4 Minute				5 Minute			
4:00 PM	#1- NBLT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	#2A - EBLT	/	/	/	/	/	/	1	/	/	/	/	/	/	/	/	/	/	/	/	/
	#2B - EBRT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	1	/	/	/
4:05 PM	#1- NBLT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	#2A - EBLT	/	/	/	/	/	/	/	/	1	/	/	/	/	/	/	/	/	/	/	/
	#2B - EBRT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
4:10 PM	#1- NBLT	/	/	/	/	1	2	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	#2A - EBLT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	1	/	/
	#2B - EBRT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
4:15 PM	#1- NBLT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	#2A - EBLT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	#2B - EBRT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
4:20 PM	#1- NBLT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	#2A - EBLT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	#2B - EBRT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
4:25 PM	#1- NBLT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	#2A - EBLT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	1	/	/	/	/	/
	#2B - EBRT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

4:30 PM	#1- NBLT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	#2A - EBLT	/	/	/	/	/	/	1	3	3	2	2	/	/	/	/	/	/	/	1	/
	#2B - EBRT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
4:35 PM	#1- NBLT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	#2A - EBLT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	#2B - EBRT	/	/	/	/	/	/	1	/	/	/	/	/	/	/	/	/	/	/	/	/
4:40 PM	#1- NBLT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	#2A - EBLT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	#2B - EBRT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
4:45 PM	#1- NBLT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	#2A - EBLT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	#2B - EBRT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
4:50 PM	#1- NBLT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	#2A - EBLT	/	1	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	#2B - EBRT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
4:55 PM	#1- NBLT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	#2A - EBLT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	#2B - EBRT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
5:00 PM	#1- NBLT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	#2A - EBLT	/	/	/	/	/	/	/	/	/	/	/	/	/	1	/	/	1	/	1	3
	#2B - EBRT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

5:05 PM	#1- NBLT
	#2A - EBLT
	#2B - EBRT
5:10 PM	#1- NBLT
	#2A - EBLT
	#2B - EBRT
5:15 PM	#1- NBLT
	#2A - EBLT
	#2B - EBRT
5:20 PM	#1- NBLT
	#2A - EBLT
	#2B - EBRT
5:25 PM	#1- NBLT
	#2A - EBLT
	#2B - EBRT
5:30 PM	#1- NBLT
	#2A - EBLT
	#2B - EBRT
5:35 PM	#1- NBLT
	#2A - EBLT
	#2B - EBRT

5:40 PM	#1- NBLT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	#2A - EBLT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	#2B - EBRT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
5:45 PM	#1- NBLT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	#2A - EBLT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	#2B - EBRT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
5:50 PM	#1- NBLT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	#2A - EBLT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	#2B - EBRT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
5:55 PM	#1- NBLT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	#2A - EBLT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	#2B - EBRT	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

PINNACLE TRAFFIC ENGINEERING

831 C Street • Hollister, CA 95023 • (831) 638-9260

Ridgemark Assisted Care Community Project; San Benito County, CA

Traffic Impact Analysis (TIA) - PTE #316-A

Speed Data - Airline Hwy. (SR 25) @ Project Access Rd. (LDH; 2:30 PM - 5/30/18)

Data #	Northbound (NB) - MPH		
1.	54	52	
2.	52	51	
3.	52	45	
4.	54	50	
5.	48	56	
6.	53		
7.	53		
8.	52		
9.	53		
10.	52		
11.	55		
12.	52		
13.	52		
14.	54		
15.	54		
16.	60		
17.	60		
18.	53		
19.	50		
20.	54		
21.	35		
22.	55		
23.	54		
24.	60		
25.	63		
Totals:	**1,334**	**254**	
	Total:	**1,588**	

Data #	Southbound (SB) - MPH		
1.	62	59	
2.	52	54	
3.	62	58	
4.	54	59	
5.	57	53	
6.	55	54	
7.	63	64	
8.	62	56	
9.	55		
10.	58		
11.	62		
12.	52		
13.	48		
14.	52		
15.	50		
16.	51		
17.	52		
18.	59		
19.	54		
20.	51		
21.	66		
22.	58		
23.	49		
24.	58		
25.	59		
Totals:	**1,401**	**457**	
	Total:	**1,858**	

Dry & Clear

Dry & Clear

NB Average Travel Speed :

Northbound (NB) : 1,588 / 30 = **52.9 MPH**

85th Percentile Speed (NB): **55 MPH**

SB Average Travel Speed :

Southbound (SB) : 1,858 / 33 = **56.3 MPH**

85th Percentile Speed (SB): **62 MPH**

PINNACLE TRAFFIC ENGINEERING

930 San Benito Street
Hollister, California 95023
(831) 638-9260 / FAX (831) 638-9268

PROJECT: ASSISTED LIVING

2006 - State Route 25-Airline Highway at Project Access Road - Speed Data (MPH):

Data #	Northbound	Southbound
1.	51	48
2.	44	48
3.	40	50
4.	38	53
5.	44	50
6.	50	45
7.	41	46
8.	47	56
9.	51	50
10.	61	65
11.	47	46
12.	47	49
13.	46	50
14.	42	63
15.	48	51
Totals:	697	770

Data #	Northbound	Southbound

Average Speeds :

Northbound - **697 / 15 =** **46.5 MPH**

Southbound - **770 / 15 =** **51.3 MPH**

PINNACLE TRAFFIC ENGINEERING

831 C Street • Hollister, CA 95023 • (831) 638-9260

Ridgemark Assisted Care Community Project; San Benito County, CA

Traffic Impact Analysis (TIA) - PTE #316-A

<u>Corner Sight Distance</u> - Airline Hwy. (SR 25) @ Proj. Access Rd. (LDH; 3:30 PM - 5/30/18)

(10' Setback from West Edge of Pavement - Limit Line / SB RTO Lane - Projected Line)

Data #	Looking South - NB (sec.) (Coming from All-Way Stop)	
1.	10.4	
2.	15.2	
3.	15.4	
4.	17.5	
5.	12.3	
6.	20.3	
7.	16.6	
8.	13.8	
9.	18.8	
10.	19.7	
11.		
12.		
13.		
14.		
15.		
16.		
17.		
18.		
19.		
20.		
Totals:	**160.0**	**0**

Dry & Clear

Data #	Looking North - SB (sec.) (11-12' Setback)	
1.	16.9	
2.	19.8	
3.	20.9	
4.	32.2	
5.	27.7	
6.	35.3	
7.	27.6	
8.	15.5	from Enterprise Rd.
9.	24.9	
10.	24.4	
11.		
12.		
13.		
14.		
15.		
16.		
17.		
18.		
19.		
20.		
Totals:	**245.2**	**0**

Dry & Clear

<u>Average Sight Distance (Seconds) :</u>

Looking South (NB) : Avg. = 160.0 / 10 = **<u>16.0 Seconds</u>**

Looking North (SB) : Avg. = 245.2 / 10 = **<u>24.5 Seconds</u>**

The ability of a highway system to carry traffic is expressed in terms of it's "Service Level" at critical locations, usually intersections. Service levels are defined as follows:

"LOS A" Conditions primarily describe free-flowing operations. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delay at the boundary intersections is minimal. The travel speed exceeds 85% of the base free-flow speed.

"LOS B" Conditions describe reasonably unimpeded operations. The ability to maneuver within the traffic stream is only slightly restricted and control delay at the boundary intersections is not significant. The travel speed is between 67% and 85% of the base free-flow speed.

"LOS C" Conditions describe stable operations. The ability to maneuver and change lanes at mid-segment locations may be more restricted than at LOS B. Longer queues at the boundary intersections may contribute to lower travel speeds. The travel speed is between 50% and 67% of the base free-flow speed.

"LOS D" Conditions describe less stable operations in which small increases in flow may cause substantial increases in delay and decreases in travel speed. This operation may be due to adverse signal progression, high volume, or inappropriate signal timing at the boundary intersections. The travel speed is between 40% and 50% of the base free-flow speed.

"LOS E" Conditions describe unstable operations and significant delay. Such operations may be due to some combination of adverse progression, high volume, and inappropriate signal timing at the boundary intersections. The travel speed is between 30% and 40% of the base free-flow speed.

"LOS F" Conditions describe flow at extreme low speed. Congestion is likely occurring at the boundary intersections, as indicated by high delay and extensive queuing. The travel speed is 30% or less of the base free-flow speed. Also, LOS F is assigned to the subject direction of travel if the through movement at one or more boundary intersections has a volume-to-capacity (V/C) ratio greater than 1.0.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	118	98	30	252	145	215	303	40	94	139	72
Future Volume (veh/h)	89	118	98	30	252	145	215	303	40	94	139	72
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	101	134	111	34	286	165	244	344	45	107	158	82
Adj No. of Lanes	1	1	0	1	1	0	1	1	1	1	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	291	155	128	493	308	178	278	544	462	135	244	127
Arrive On Green	0.16	0.16	0.16	0.28	0.28	0.28	0.16	0.29	0.29	0.08	0.21	0.21
Sat Flow, veh/h	1774	943	781	1774	1110	640	1774	1863	1583	1774	1157	600
Grp Volume(v), veh/h	101	0	245	34	0	451	244	344	45	107	0	240
Grp Sat Flow(s),veh/h/ln	1774	0	1725	1774	0	1750	1774	1863	1583	1774	0	1757
Q Serve(g_s), s	4.8	0.0	13.1	1.3	0.0	23.7	12.7	15.2	2.0	5.6	0.0	11.8
Cycle Q Clear(g_c), s	4.8	0.0	13.1	1.3	0.0	23.7	12.7	15.2	2.0	5.6	0.0	11.8
Prop In Lane	1.00		0.45	1.00		0.37	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	291	0	283	493	0	486	278	544	462	135	0	371
V/C Ratio(X)	0.35	0.00	0.87	0.07	0.00	0.93	0.88	0.63	0.10	0.79	0.00	0.65
Avail Cap(c_a), veh/h	337	0	328	516	0	508	309	544	462	174	0	371
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.1	0.0	38.5	25.2	0.0	33.3	39.0	29.1	24.4	43.0	0.0	34.1
Incr Delay (d2), s/veh	0.7	0.0	18.8	0.1	0.0	23.0	22.2	5.5	0.4	17.2	0.0	8.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	7.7	0.7	0.0	14.5	7.9	8.6	0.9	3.4	0.0	6.6
LnGrp Delay(d),s/veh	35.8	0.0	57.4	25.2	0.0	56.2	61.2	34.6	24.8	60.2	0.0	42.5
LnGrp LOS	D		E	C		E	E	C	C	E		D
Approach Vol, veh/h		346			485			633			347	
Approach Delay, s/veh		51.1			54.1			44.2			47.9	
Approach LOS		D			D			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.7	32.1		20.0	19.3	24.5		30.8				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	9.3	27.2		18.0	16.5	20.0		27.5				
Max Q Clear Time (g_c+I1), s	7.6	17.2		15.1	14.7	13.8		25.7				
Green Ext Time (p_c), s	0.0	2.3		0.4	0.1	1.7		0.5				
Intersection Summary												
HCM 2010 Ctrl Delay			48.9									
HCM 2010 LOS			D									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱		↰	↑	↱	↰	↱	
Traffic Volume (veh/h)	139	212	120	20	95	74	142	242	23	220	393	78
Future Volume (veh/h)	139	212	120	20	95	74	142	242	23	220	393	78
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	143	219	124	21	98	76	146	249	24	227	405	80
Adj No. of Lanes	1	1	0	1	1	0	1	1	1	1	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	383	241	137	221	121	94	178	584	496	264	547	108
Arrive On Green	0.22	0.22	0.22	0.12	0.12	0.12	0.10	0.31	0.31	0.15	0.36	0.36
Sat Flow, veh/h	1774	1118	633	1774	974	755	1774	1863	1583	1774	1511	299
Grp Volume(v), veh/h	143	0	343	21	0	174	146	249	24	227	0	485
Grp Sat Flow(s),veh/h/ln	1774	0	1751	1774	0	1729	1774	1863	1583	1774	0	1810
Q Serve(g_s), s	6.3	0.0	17.4	1.0	0.0	8.9	7.4	9.7	1.0	11.4	0.0	21.3
Cycle Q Clear(g_c), s	6.3	0.0	17.4	1.0	0.0	8.9	7.4	9.7	1.0	11.4	0.0	21.3
Prop In Lane	1.00		0.36	1.00		0.44	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	383	0	378	221	0	216	178	584	496	264	0	655
V/C Ratio(X)	0.37	0.00	0.91	0.09	0.00	0.81	0.82	0.43	0.05	0.86	0.00	0.74
Avail Cap(c_a), veh/h	399	0	393	350	0	341	204	584	496	332	0	655
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.5	0.0	34.9	35.4	0.0	38.9	40.2	24.8	21.8	37.9	0.0	25.4
Incr Delay (d2), s/veh	0.6	0.0	23.7	0.2	0.0	7.4	20.3	2.3	0.2	16.8	0.0	7.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.0	10.9	0.5	0.0	4.7	4.6	5.3	0.4	6.8	0.0	12.0
LnGrp Delay(d),s/veh	31.1	0.0	58.6	35.6	0.0	46.3	60.5	27.1	22.0	54.7	0.0	32.8
LnGrp LOS	C		E	D		D	E	C	C	D		C
Approach Vol, veh/h		486			195			419			712	
Approach Delay, s/veh		50.5			45.1			38.4			39.8	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	18.1	33.1		24.2	13.7	37.5		15.9
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	17.1	26.4		20.5	10.5	33.0		18.0
Max Q Clear Time (g_c+I1), s	13.4	11.7		19.4	9.4	23.3		10.9
Green Ext Time (p_c), s	0.2	3.5		0.3	0.0	2.8		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	42.9
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	343	14	8	486	6	10
Future Vol, veh/h	343	14	8	486	6	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	320	310	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	408	17	10	579	7	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	408	0	1006	408
Stage 1	-	-	-	-	408	-
Stage 2	-	-	-	-	598	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1151	-	267	643
Stage 1	-	-	-	-	671	-
Stage 2	-	-	-	-	549	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1151	-	265	643
Mov Cap-2 Maneuver	-	-	-	-	265	-
Stage 1	-	-	-	-	671	-
Stage 2	-	-	-	-	544	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	14
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	419	-	-	1151	-
HCM Lane V/C Ratio	0.045	-	-	0.008	-
HCM Control Delay (s)	14	-	-	8.2	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱	↰	↑	↰↱	
Traffic Vol, veh/h	469	14	3	389	15	9
Future Vol, veh/h	469	14	3	389	15	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	320	310	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	510	15	3	423	16	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	510	0	939	510
Stage 1	-	-	-	-	510	-
Stage 2	-	-	-	-	429	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1055	-	293	563
Stage 1	-	-	-	-	603	-
Stage 2	-	-	-	-	657	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1055	-	292	563
Mov Cap-2 Maneuver	-	-	-	-	292	-
Stage 1	-	-	-	-	603	-
Stage 2	-	-	-	-	655	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	15.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	356	-	-	1055	-
HCM Lane V/C Ratio	0.073	-	-	0.003	-
HCM Control Delay (s)	15.9	-	-	8.4	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Intersection Delay, s/veh	18
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	70	203	80	5	262	115	169	84	13	47	24	63
Future Vol, veh/h	70	203	80	5	262	115	169	84	13	47	24	63
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	85	248	98	6	320	140	206	102	16	57	29	77
Number of Lanes	1	1	1	1	1	1	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	16.5	21.8	17	12.7
HCM LOS	C	C	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	87%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Right, %	0%	13%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	169	97	70	203	80	5	262	115	47	24	63
LT Vol	169	0	70	0	0	5	0	0	47	0	0
Through Vol	0	84	0	203	0	0	262	0	0	24	0
RT Vol	0	13	0	0	80	0	0	115	0	0	63
Lane Flow Rate	206	118	85	248	98	6	320	140	57	29	77
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.484	0.258	0.198	0.54	0.193	0.014	0.688	0.274	0.146	0.07	0.17
Departure Headway (Hd)	8.453	7.859	8.356	7.848	7.135	8.265	7.757	7.045	9.176	8.668	7.957
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	425	455	429	458	501	432	463	508	389	412	449
Service Time	6.222	5.628	6.128	5.619	4.906	6.035	5.526	4.814	6.964	6.455	5.744
HCM Lane V/C Ratio	0.485	0.259	0.198	0.541	0.196	0.014	0.691	0.276	0.147	0.07	0.171
HCM Control Delay	19	13.4	13.2	19.5	11.6	11.2	26.1	12.5	13.5	12.1	12.4
HCM Lane LOS	C	B	B	C	B	B	D	B	B	B	B
HCM 95th-tile Q	2.6	1	0.7	3.1	0.7	0	5.1	1.1	0.5	0.2	0.6

Intersection	
Intersection Delay, s/veh	13.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	60	231	187	5	232	69	112	44	15	61	47	48
Future Vol, veh/h	60	231	187	5	232	69	112	44	15	61	47	48
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	63	243	197	5	244	73	118	46	16	64	49	51
Number of Lanes	1	1	1	1	1	1	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	13.4	14.8	12.7	11.4
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	75%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Right, %	0%	25%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	112	59	60	231	187	5	232	69	61	47	48
LT Vol	112	0	60	0	0	5	0	0	61	0	0
Through Vol	0	44	0	231	0	0	232	0	0	47	0
RT Vol	0	15	0	0	187	0	0	69	0	0	48
Lane Flow Rate	118	62	63	243	197	5	244	73	64	49	51
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.26	0.125	0.128	0.46	0.333	0.011	0.481	0.129	0.145	0.105	0.097
Departure Headway (Hd)	7.944	7.266	7.309	6.804	6.097	7.599	7.093	6.385	8.128	7.624	6.919
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	453	494	493	533	592	471	508	561	441	470	518
Service Time	5.687	5.009	5.009	4.504	3.797	5.339	4.833	4.125	5.874	5.37	4.664
HCM Lane V/C Ratio	0.26	0.126	0.128	0.456	0.333	0.011	0.48	0.13	0.145	0.104	0.098
HCM Control Delay	13.5	11.1	11.1	15.2	11.8	10.4	16.3	10.1	12.3	11.3	10.4
HCM Lane LOS	B	B	B	C	B	B	C	B	B	B	B
HCM 95th-tile Q	1	0.4	0.4	2.4	1.5	0	2.6	0.4	0.5	0.3	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	118	101	31	252	145	217	307	41	94	147	72
Future Volume (veh/h)	89	118	101	31	252	145	217	307	41	94	147	72
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	101	134	115	35	286	165	247	349	47	107	167	82
Adj No. of Lanes	1	1	0	1	1	0	1	1	1	1	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	295	154	132	492	308	177	280	544	462	135	248	122
Arrive On Green	0.17	0.17	0.17	0.28	0.28	0.28	0.16	0.29	0.29	0.08	0.21	0.21
Sat Flow, veh/h	1774	927	795	1774	1110	640	1774	1863	1583	1774	1181	580
Grp Volume(v), veh/h	101	0	249	35	0	451	247	349	47	107	0	249
Grp Sat Flow(s),veh/h/ln	1774	0	1722	1774	0	1750	1774	1863	1583	1774	0	1760
Q Serve(g_s), s	4.8	0.0	13.4	1.4	0.0	23.9	13.0	15.6	2.1	5.7	0.0	12.4
Cycle Q Clear(g_c), s	4.8	0.0	13.4	1.4	0.0	23.9	13.0	15.6	2.1	5.7	0.0	12.4
Prop In Lane	1.00		0.46	1.00		0.37	1.00		1.00	1.00		0.33
Lane Grp Cap(c), veh/h	295	0	286	492	0	485	280	544	462	135	0	369
V/C Ratio(X)	0.34	0.00	0.87	0.07	0.00	0.93	0.88	0.64	0.10	0.79	0.00	0.67
Avail Cap(c_a), veh/h	335	0	325	512	0	505	307	544	462	173	0	369
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.1	0.0	38.7	25.4	0.0	33.5	39.2	29.4	24.6	43.3	0.0	34.7
Incr Delay (d2), s/veh	0.7	0.0	19.9	0.1	0.0	23.5	23.0	5.7	0.4	17.5	0.0	9.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	7.9	0.7	0.0	14.7	8.2	8.8	1.0	3.4	0.0	7.0
LnGrp Delay(d),s/veh	35.8	0.0	58.7	25.5	0.0	57.0	62.3	35.1	25.1	60.8	0.0	44.1
LnGrp LOS	D		E	C		E	E	D	C	E		D
Approach Vol, veh/h		350			486			643			356	
Approach Delay, s/veh		52.1			54.8			44.8			49.1	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.7	32.3		20.3	19.6	24.5		30.9
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	9.3	27.2		18.0	16.5	20.0		27.5
Max Q Clear Time (g_c+I1), s	7.7	17.6		15.4	15.0	14.4		25.9
Green Ext Time (p_c), s	0.0	2.3		0.4	0.1	1.6		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	49.7
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	139	212	125	21	95	74	149	254	24	220	402	78
Future Volume (veh/h)	139	212	125	21	95	74	149	254	24	220	402	78
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	143	219	129	22	98	76	154	262	25	227	414	80
Adj No. of Lanes	1	1	0	1	1	0	1	1	1	1	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	386	240	141	221	121	94	186	585	498	263	543	105
Arrive On Green	0.22	0.22	0.22	0.12	0.12	0.12	0.10	0.31	0.31	0.15	0.36	0.36
Sat Flow, veh/h	1774	1100	648	1774	974	755	1774	1863	1583	1774	1518	293
Grp Volume(v), veh/h	143	0	348	22	0	174	154	262	25	227	0	494
Grp Sat Flow(s),veh/h/ln	1774	0	1748	1774	0	1729	1774	1863	1583	1774	0	1811
Q Serve(g_s), s	6.3	0.0	17.9	1.0	0.0	9.0	7.8	10.4	1.0	11.5	0.0	22.2
Cycle Q Clear(g_c), s	6.3	0.0	17.9	1.0	0.0	9.0	7.8	10.4	1.0	11.5	0.0	22.2
Prop In Lane	1.00		0.37	1.00		0.44	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	386	0	381	221	0	215	186	585	498	263	0	648
V/C Ratio(X)	0.37	0.00	0.91	0.10	0.00	0.81	0.83	0.45	0.05	0.86	0.00	0.76
Avail Cap(c_a), veh/h	394	0	389	346	0	337	202	585	498	329	0	648
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.7	0.0	35.2	35.8	0.0	39.3	40.5	25.2	22.0	38.4	0.0	26.2
Incr Delay (d2), s/veh	0.6	0.0	25.4	0.2	0.0	7.8	22.5	2.5	0.2	17.2	0.0	8.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	11.3	0.5	0.0	4.8	5.0	5.7	0.5	6.9	0.0	12.6
LnGrp Delay(d),s/veh	31.3	0.0	60.7	36.0	0.0	47.1	63.0	27.7	22.2	55.6	0.0	34.4
LnGrp LOS	C		E	D		D	E	C	C	E		C
Approach Vol, veh/h		491			196			441			721	
Approach Delay, s/veh		52.1			45.8			39.7			41.1	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	18.2	33.5		24.6	14.2	37.5		16.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	17.1	26.4		20.5	10.5	33.0		18.0
Max Q Clear Time (g_c+I1), s	13.5	12.4		19.9	9.8	24.2		11.0
Green Ext Time (p_c), s	0.2	3.5		0.1	0.0	2.8		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	44.2
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	343	28	15	486	13	14
Future Vol, veh/h	343	28	15	486	13	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	320	310	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	408	33	18	579	15	17

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	408	0	1022	408
Stage 1	-	-	-	-	408	-
Stage 2	-	-	-	-	614	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1151	-	261	643
Stage 1	-	-	-	-	671	-
Stage 2	-	-	-	-	540	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1151	-	257	643
Mov Cap-2 Maneuver	-	-	-	-	257	-
Stage 1	-	-	-	-	671	-
Stage 2	-	-	-	-	532	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	15.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	373	-	-	1151	-
HCM Lane V/C Ratio	0.086	-	-	0.016	-
HCM Control Delay (s)	15.6	-	-	8.2	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	469	32	12	389	37	21
Future Vol, veh/h	469	32	12	389	37	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	320	310	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	510	35	13	423	40	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	510	0	959	510
Stage 1	-	-	-	-	510	-
Stage 2	-	-	-	-	449	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1055	-	285	563
Stage 1	-	-	-	-	603	-
Stage 2	-	-	-	-	643	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1055	-	281	563
Mov Cap-2 Maneuver	-	-	-	-	281	-
Stage 1	-	-	-	-	603	-
Stage 2	-	-	-	-	635	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	17.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	343	-	-	1055	-
HCM Lane V/C Ratio	0.184	-	-	0.012	-
HCM Control Delay (s)	17.8	-	-	8.5	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.7	-	-	0	-

Intersection	
Intersection Delay, s/veh	18.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↱		↰	↑	↱
Traffic Vol, veh/h	71	205	81	5	266	115	170	84	13	47	24	65
Future Vol, veh/h	71	205	81	5	266	115	170	84	13	47	24	65
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	87	250	99	6	324	140	207	102	16	57	29	79
Number of Lanes	1	1	1	1	1	1	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	16.7	22.6	17.1	12.8
HCM LOS	C	C	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	87%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Right, %	0%	13%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	170	97	71	205	81	5	266	115	47	24	65
LT Vol	170	0	71	0	0	5	0	0	47	0	0
Through Vol	0	84	0	205	0	0	266	0	0	24	0
RT Vol	0	13	0	0	81	0	0	115	0	0	65
Lane Flow Rate	207	118	87	250	99	6	324	140	57	29	79
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.49	0.26	0.202	0.548	0.197	0.014	0.703	0.276	0.147	0.071	0.176
Departure Headway (Hd)	8.501	7.908	8.401	7.892	7.18	8.307	7.799	7.087	9.232	8.723	8.012
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	423	453	426	455	498	430	461	505	387	409	445
Service Time	6.274	5.68	6.178	5.668	4.955	6.081	5.572	4.86	7.024	6.515	5.803
HCM Lane V/C Ratio	0.489	0.26	0.204	0.549	0.199	0.014	0.703	0.277	0.147	0.071	0.178
HCM Control Delay	19.2	13.5	13.3	19.9	11.7	11.2	27.1	12.6	13.6	12.2	12.5
HCM Lane LOS	C	B	B	C	B	B	D	B	B	B	B
HCM 95th-tile Q	2.6	1	0.7	3.2	0.7	0	5.4	1.1	0.5	0.2	0.6

Intersection	
Intersection Delay, s/veh	13.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	63	238	189	5	237	69	113	44	15	61	47	51
Future Vol, veh/h	63	238	189	5	237	69	113	44	15	61	47	51
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	66	251	199	5	249	73	119	46	16	64	49	54
Number of Lanes	1	1	1	1	1	1	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	13.6	15.2	12.8	11.5
HCM LOS	B	C	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	75%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Right, %	0%	25%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	113	59	63	238	189	5	237	69	61	47	51
LT Vol	113	0	63	0	0	5	0	0	61	0	0
Through Vol	0	44	0	238	0	0	237	0	0	47	0
RT Vol	0	15	0	0	189	0	0	69	0	0	51
Lane Flow Rate	119	62	66	251	199	5	249	73	64	49	54
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.265	0.127	0.136	0.477	0.34	0.011	0.496	0.13	0.146	0.106	0.104
Departure Headway (Hd)	8.015	7.337	7.359	6.854	6.147	7.66	7.154	6.446	8.201	7.697	6.991
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	448	489	490	529	589	467	504	556	437	466	512
Service Time	5.761	5.083	5.059	4.554	3.847	5.404	4.898	4.19	5.952	5.448	4.742
HCM Lane V/C Ratio	0.266	0.127	0.135	0.474	0.338	0.011	0.494	0.131	0.146	0.105	0.105
HCM Control Delay	13.6	11.2	11.2	15.6	12	10.5	16.8	10.2	12.4	11.4	10.6
HCM Lane LOS	B	B	B	C	B	B	C	B	B	B	B
HCM 95th-tile Q	1.1	0.4	0.5	2.5	1.5	0	2.7	0.4	0.5	0.4	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	149	111	30	312	178	257	390	40	108	182	92
Future Volume (veh/h)	122	149	111	30	312	178	257	390	40	108	182	92
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	133	162	121	33	339	193	279	424	43	117	198	100
Adj No. of Lanes	1	1	0	1	1	0	1	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	319	178	133	497	312	178	293	527	448	137	228	115
Arrive On Green	0.18	0.18	0.18	0.28	0.28	0.28	0.17	0.28	0.28	0.08	0.19	0.19
Sat Flow, veh/h	1774	991	741	1774	1116	635	1774	1863	1583	1774	1168	590
Grp Volume(v), veh/h	133	0	283	33	0	532	279	424	43	117	0	298
Grp Sat Flow(s),veh/h/ln	1774	0	1732	1774	0	1751	1774	1863	1583	1774	0	1759
Q Serve(g_s), s	6.6	0.0	16.0	1.4	0.0	28.0	15.6	21.1	2.0	6.5	0.0	16.4
Cycle Q Clear(g_c), s	6.6	0.0	16.0	1.4	0.0	28.0	15.6	21.1	2.0	6.5	0.0	16.4
Prop In Lane	1.00		0.43	1.00		0.36	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	319	0	312	497	0	490	293	527	448	137	0	343
V/C Ratio(X)	0.42	0.00	0.91	0.07	0.00	1.09	0.95	0.80	0.10	0.86	0.00	0.87
Avail Cap(c_a), veh/h	319	0	312	497	0	490	293	527	448	137	0	343
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.3	0.0	40.2	26.4	0.0	36.0	41.4	33.3	26.4	45.6	0.0	39.0
Incr Delay (d2), s/veh	0.9	0.0	28.7	0.1	0.0	65.7	40.0	12.3	0.4	38.3	0.0	24.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.0	10.1	0.7	0.0	22.4	10.8	12.6	0.9	4.6	0.0	10.3
LnGrp Delay(d),s/veh	37.2	0.0	68.9	26.5	0.0	101.7	81.4	45.6	26.8	83.9	0.0	63.6
LnGrp LOS	D		E	C		F	F	D	C	F		E
Approach Vol, veh/h		416			565			746			415	
Approach Delay, s/veh		58.8			97.3			57.9			69.3	
Approach LOS		E			F			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.2	32.8		22.5	21.0	24.0		32.5
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	7.7	28.3		18.0	16.5	19.5		28.0
Max Q Clear Time (g_c+I1), s	8.5	23.1		18.0	17.6	18.4		30.0
Green Ext Time (p_c), s	0.0	1.8		0.0	0.0	0.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	70.7
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	176	282	157	20	143	96	173	352	30	268	460	110
Future Volume (veh/h)	176	282	157	20	143	96	173	352	30	268	460	110
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	181	291	162	21	147	99	178	363	31	276	474	113
Adj No. of Lanes	1	1	0	1	1	0	1	1	1	1	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	430	273	152	280	164	111	195	494	420	300	473	113
Arrive On Green	0.24	0.24	0.24	0.16	0.16	0.16	0.11	0.27	0.27	0.17	0.32	0.32
Sat Flow, veh/h	1774	1126	627	1774	1039	700	1774	1863	1583	1774	1455	347
Grp Volume(v), veh/h	181	0	453	21	0	246	178	363	31	276	0	587
Grp Sat Flow(s),veh/h/ln	1774	0	1752	1774	0	1739	1774	1863	1583	1774	0	1802
Q Serve(g_s), s	9.4	0.0	26.5	1.1	0.0	15.2	10.8	19.4	1.6	16.7	0.0	35.5
Cycle Q Clear(g_c), s	9.4	0.0	26.5	1.1	0.0	15.2	10.8	19.4	1.6	16.7	0.0	35.5
Prop In Lane	1.00		0.36	1.00		0.40	1.00		1.00	1.00		0.19
Lane Grp Cap(c), veh/h	430	0	425	280	0	275	195	494	420	300	0	585
V/C Ratio(X)	0.42	0.00	1.07	0.07	0.00	0.89	0.91	0.73	0.07	0.92	0.00	1.00
Avail Cap(c_a), veh/h	430	0	425	292	0	286	195	494	420	300	0	585
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.9	0.0	41.4	39.2	0.0	45.1	48.1	36.6	30.1	44.7	0.0	36.9
Incr Delay (d2), s/veh	0.7	0.0	62.4	0.1	0.0	27.4	41.1	9.3	0.3	31.7	0.0	37.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	0.0	20.1	0.6	0.0	9.3	7.6	11.3	0.7	10.9	0.0	23.7
LnGrp Delay(d),s/veh	35.6	0.0	103.7	39.3	0.0	72.5	89.2	46.0	30.4	76.4	0.0	74.8
LnGrp LOS	D		F	D		E	F	D	C	E		F
Approach Vol, veh/h		634			267			572			863	
Approach Delay, s/veh		84.3			69.9			58.6			75.3	
Approach LOS		F			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	23.0	33.5		31.0	16.5	40.0		21.8
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	18.5	29.0		26.5	12.0	35.5		18.0
Max Q Clear Time (g_c+I1), s	18.7	21.4		28.5	12.8	37.5		17.2
Green Ext Time (p_c), s	0.0	3.2		0.0	0.0	0.0		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	73.0
HCM 2010 LOS	E

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	400	14	8	578	6	10
Future Vol, veh/h	400	14	8	578	6	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	320	310	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	435	15	9	628	7	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	435	0	1081	435
Stage 1	-	-	-	-	435	-
Stage 2	-	-	-	-	646	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1125	-	241	621
Stage 1	-	-	-	-	653	-
Stage 2	-	-	-	-	522	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1125	-	239	621
Mov Cap-2 Maneuver	-	-	-	-	239	-
Stage 1	-	-	-	-	653	-
Stage 2	-	-	-	-	518	-

Approach	EB		WB		NB	
HCM Control Delay, s	0		0.1		14.7	
HCM LOS					B	

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	388	-	-	1125	-
HCM Lane V/C Ratio	0.045	-	-	0.008	-
HCM Control Delay (s)	14.7	-	-	8.2	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	582	14	3	483	15	9
Future Vol, veh/h	582	14	3	483	15	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	320	310	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	633	15	3	525	16	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	633	0	1165	633
Stage 1	-	-	-	-	633	-
Stage 2	-	-	-	-	532	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	950	-	215	480
Stage 1	-	-	-	-	529	-
Stage 2	-	-	-	-	589	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	950	-	214	480
Mov Cap-2 Maneuver	-	-	-	-	214	-
Stage 1	-	-	-	-	529	-
Stage 2	-	-	-	-	587	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	19.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	270	-	-	950	-
HCM Lane V/C Ratio	0.097	-	-	0.003	-
HCM Control Delay (s)	19.8	-	-	8.8	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Intersection Delay, s/veh	21.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	82	231	97	6	273	146	213	98	14	130	37	100
Future Vol, veh/h	82	231	97	6	273	146	213	98	14	130	37	100
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	89	251	105	7	297	159	232	107	15	141	40	109
Number of Lanes	1	1	1	1	1	1	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	20.1	25.6	21.5	16.2
HCM LOS	C	D	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	88%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Right, %	0%	12%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	213	112	82	231	97	6	273	146	130	37	100
LT Vol	213	0	82	0	0	6	0	0	130	0	0
Through Vol	0	98	0	231	0	0	273	0	0	37	0
RT Vol	0	14	0	0	97	0	0	146	0	0	100
Lane Flow Rate	232	122	89	251	105	7	297	159	141	40	109
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.596	0.293	0.231	0.615	0.237	0.017	0.723	0.355	0.384	0.104	0.258
Departure Headway (Hd)	9.26	8.673	9.333	8.82	8.102	9.284	8.772	8.054	9.775	9.265	8.551
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	389	414	385	409	443	385	412	446	367	386	420
Service Time	7.015	6.428	7.093	6.58	5.862	7.043	6.53	5.812	7.54	7.029	6.315
HCM Lane V/C Ratio	0.596	0.295	0.231	0.614	0.237	0.018	0.721	0.357	0.384	0.104	0.26
HCM Control Delay	24.9	15	14.9	24.8	13.4	12.2	31.4	15.2	18.5	13.1	14.3
HCM Lane LOS	C	B	B	C	B	B	D	C	C	B	B
HCM 95th-tile Q	3.7	1.2	0.9	4	0.9	0.1	5.6	1.6	1.8	0.3	1

Intersection	
Intersection Delay, s/veh	19.4
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	101	249	241	9	268	157	146	67	19	120	70	72
Future Vol, veh/h	101	249	241	9	268	157	146	67	19	120	70	72
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	106	262	254	9	282	165	154	71	20	126	74	76
Number of Lanes	1	1	1	1	1	1	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	19.8	22.8	16.9	15.3
HCM LOS	C	C	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	78%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Right, %	0%	22%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	146	86	101	249	241	9	268	157	120	70	72
LT Vol	146	0	101	0	0	9	0	0	120	0	0
Through Vol	0	67	0	249	0	0	268	0	0	70	0
RT Vol	0	19	0	0	241	0	0	157	0	0	72
Lane Flow Rate	154	91	106	262	254	9	282	165	126	74	76
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.405	0.222	0.26	0.603	0.534	0.024	0.675	0.363	0.34	0.188	0.178
Departure Headway (Hd)	9.494	8.84	8.8	8.289	7.574	9.128	8.617	7.902	9.68	9.171	8.458
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	380	406	408	435	477	392	420	454	371	391	424
Service Time	7.246	6.591	6.547	6.036	5.321	6.879	6.367	5.652	7.433	6.924	6.211
HCM Lane V/C Ratio	0.405	0.224	0.26	0.602	0.532	0.023	0.671	0.363	0.34	0.189	0.179
HCM Control Delay	18.6	14.1	14.6	22.9	18.7	12.1	27.6	15.1	17.4	14	13
HCM Lane LOS	C	B	B	C	C	B	D	C	C	B	B
HCM 95th-tile Q	1.9	0.8	1	3.9	3.1	0.1	4.8	1.6	1.5	0.7	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	149	114	31	312	178	259	394	41	108	190	92
Future Volume (veh/h)	122	149	114	31	312	178	259	394	41	108	190	92
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	133	162	124	34	339	193	282	428	45	117	207	100
Adj No. of Lanes	1	1	0	1	1	0	1	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	319	176	135	497	312	178	293	527	448	137	232	112
Arrive On Green	0.18	0.18	0.18	0.28	0.28	0.28	0.17	0.28	0.28	0.08	0.19	0.19
Sat Flow, veh/h	1774	980	750	1774	1116	635	1774	1863	1583	1774	1188	574
Grp Volume(v), veh/h	133	0	286	34	0	532	282	428	45	117	0	307
Grp Sat Flow(s),veh/h/ln	1774	0	1730	1774	0	1751	1774	1863	1583	1774	0	1761
Q Serve(g_s), s	6.6	0.0	16.2	1.4	0.0	28.0	15.8	21.4	2.1	6.5	0.0	17.0
Cycle Q Clear(g_c), s	6.6	0.0	16.2	1.4	0.0	28.0	15.8	21.4	2.1	6.5	0.0	17.0
Prop In Lane	1.00		0.43	1.00		0.36	1.00		1.00	1.00		0.33
Lane Grp Cap(c), veh/h	319	0	311	497	0	490	293	527	448	137	0	343
V/C Ratio(X)	0.42	0.00	0.92	0.07	0.00	1.09	0.96	0.81	0.10	0.86	0.00	0.89
Avail Cap(c_a), veh/h	319	0	311	497	0	490	293	527	448	137	0	343
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.3	0.0	40.3	26.4	0.0	36.0	41.5	33.4	26.5	45.6	0.0	39.2
Incr Delay (d2), s/veh	0.9	0.0	30.8	0.1	0.0	65.7	42.6	12.8	0.4	38.3	0.0	27.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.0	10.5	0.7	0.0	22.4	11.2	12.8	1.0	4.6	0.0	10.9
LnGrp Delay(d),s/veh	37.2	0.0	71.1	26.5	0.0	101.7	84.0	46.2	26.9	83.9	0.0	67.1
LnGrp LOS	D		E	C		F	F	D	C	F		E
Approach Vol, veh/h		419			566			755			424	
Approach Delay, s/veh		60.3			97.2			59.2			71.7	
Approach LOS		E			F			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.2	32.8		22.5	21.0	24.0		32.5
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	7.7	28.3		18.0	16.5	19.5		28.0
Max Q Clear Time (g_c+I1), s	8.5	23.4		18.2	17.8	19.0		30.0
Green Ext Time (p_c), s	0.0	1.8		0.0	0.0	0.2		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		71.8
HCM 2010 LOS		E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	176	282	162	21	143	96	180	364	31	268	469	110
Future Volume (veh/h)	176	282	162	21	143	96	180	364	31	268	469	110
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	181	291	167	22	147	99	186	375	32	276	484	113
Adj No. of Lanes	1	1	0	1	1	0	1	1	1	1	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	430	270	155	280	164	111	203	494	420	300	468	109
Arrive On Green	0.24	0.24	0.24	0.16	0.16	0.16	0.11	0.27	0.27	0.17	0.32	0.32
Sat Flow, veh/h	1774	1112	638	1774	1039	700	1774	1863	1583	1774	1461	341
Grp Volume(v), veh/h	181	0	458	22	0	246	186	375	32	276	0	597
Grp Sat Flow(s),veh/h/ln	1774	0	1750	1774	0	1739	1774	1863	1583	1774	0	1803
Q Serve(g_s), s	9.4	0.0	26.5	1.2	0.0	15.2	11.3	20.2	1.7	16.7	0.0	35.0
Cycle Q Clear(g_c), s	9.4	0.0	26.5	1.2	0.0	15.2	11.3	20.2	1.7	16.7	0.0	35.0
Prop In Lane	1.00		0.36	1.00		0.40	1.00		1.00	1.00		0.19
Lane Grp Cap(c), veh/h	430	0	424	280	0	275	203	494	420	300	0	577
V/C Ratio(X)	0.42	0.00	1.08	0.08	0.00	0.89	0.92	0.76	0.08	0.92	0.00	1.03
Avail Cap(c_a), veh/h	430	0	424	292	0	286	203	494	420	300	0	577
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.9	0.0	41.4	39.2	0.0	45.1	47.9	36.9	30.1	44.7	0.0	37.1
Incr Delay (d2), s/veh	0.7	0.0	66.6	0.1	0.0	27.4	40.7	10.4	0.4	31.7	0.0	46.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	0.0	20.6	0.6	0.0	9.3	7.9	11.9	0.8	10.9	0.0	24.8
LnGrp Delay(d),s/veh	35.6	0.0	107.9	39.3	0.0	72.5	88.5	47.4	30.4	76.4	0.0	83.7
LnGrp LOS	D		F	D		E	F	D	C	E		F
Approach Vol, veh/h		639			268			593			873	
Approach Delay, s/veh		87.4			69.8			59.4			81.4	
Approach LOS		F			E			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	23.0	33.5		31.0	17.0	39.5		21.8
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	18.5	29.0		26.5	12.5	35.0		18.0
Max Q Clear Time (g_c+I1), s	18.7	22.2		28.5	13.3	37.0		17.2
Green Ext Time (p_c), s	0.0	3.0		0.0	0.0	0.0		0.1

Intersection Summary			
HCM 2010 Ctrl Delay			76.2
HCM 2010 LOS			E

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	400	28	15	578	13	14
Future Vol, veh/h	400	28	15	578	13	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	320	310	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	435	30	16	628	14	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	435	0	1096	435
Stage 1	-	-	-	-	435	-
Stage 2	-	-	-	-	661	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1125	-	236	621
Stage 1	-	-	-	-	653	-
Stage 2	-	-	-	-	514	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1125	-	233	621
Mov Cap-2 Maneuver	-	-	-	-	233	-
Stage 1	-	-	-	-	653	-
Stage 2	-	-	-	-	507	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	16.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	345	-	-	1125	-
HCM Lane V/C Ratio	0.085	-	-	0.014	-
HCM Control Delay (s)	16.4	-	-	8.2	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱	↰	↑	Y	
Traffic Vol, veh/h	582	32	12	483	37	21
Future Vol, veh/h	582	32	12	483	37	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	320	310	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	633	35	13	525	40	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	633	0	1184	633
Stage 1	-	-	-	-	633	-
Stage 2	-	-	-	-	551	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	950	-	209	480
Stage 1	-	-	-	-	529	-
Stage 2	-	-	-	-	577	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	950	-	206	480
Mov Cap-2 Maneuver	-	-	-	-	206	-
Stage 1	-	-	-	-	529	-
Stage 2	-	-	-	-	569	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	23.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	260	-	-	950	-
HCM Lane V/C Ratio	0.242	-	-	0.014	-
HCM Control Delay (s)	23.2	-	-	8.8	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.9	-	-	0	-

Intersection	
Intersection Delay, s/veh	21.8
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	83	233	98	6	277	146	214	98	14	130	37	102
Future Vol, veh/h	83	233	98	6	277	146	214	98	14	130	37	102
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	90	253	107	7	301	159	233	107	15	141	40	111
Number of Lanes	1	1	1	1	1	1	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	20.4	26.6	21.8	16.4
HCM LOS	C	D	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	88%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Right, %	0%	12%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	214	112	83	233	98	6	277	146	130	37	102
LT Vol	214	0	83	0	0	6	0	0	130	0	0
Through Vol	0	98	0	233	0	0	277	0	0	37	0
RT Vol	0	14	0	0	98	0	0	146	0	0	102
Lane Flow Rate	233	122	90	253	107	7	301	159	141	40	111
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.602	0.295	0.235	0.624	0.241	0.017	0.738	0.357	0.386	0.104	0.265
Departure Headway (Hd)	9.312	8.725	9.382	8.869	8.151	9.332	8.819	8.101	9.832	9.322	8.608
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	388	411	383	408	440	383	409	444	366	384	417
Service Time	7.069	6.481	7.143	6.629	5.911	7.09	6.577	5.859	7.6	7.089	6.374
HCM Lane V/C Ratio	0.601	0.297	0.235	0.62	0.243	0.018	0.736	0.358	0.385	0.104	0.266
HCM Control Delay	25.3	15.1	15	25.3	13.5	12.3	32.8	15.3	18.7	13.2	14.5
HCM Lane LOS	D	C	B	D	B	B	D	C	C	B	B
HCM 95th-tile Q	3.8	1.2	0.9	4.1	0.9	0.1	5.9	1.6	1.8	0.3	1.1

Intersection	
Intersection Delay, s/veh	20.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	104	256	243	9	273	157	147	67	19	120	70	75
Future Vol, veh/h	104	256	243	9	273	157	147	67	19	120	70	75
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	109	269	256	9	287	165	155	71	20	126	74	79
Number of Lanes	1	1	1	1	1	1	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	20.5	23.8	17.2	15.5
HCM LOS	C	C	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	78%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Right, %	0%	22%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	147	86	104	256	243	9	273	157	120	70	75
LT Vol	147	0	104	0	0	9	0	0	120	0	0
Through Vol	0	67	0	256	0	0	273	0	0	70	0
RT Vol	0	19	0	0	243	0	0	157	0	0	75
Lane Flow Rate	155	91	109	269	256	9	287	165	126	74	79
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.412	0.224	0.269	0.625	0.542	0.024	0.694	0.366	0.343	0.19	0.187
Departure Headway (Hd)	9.582	8.927	8.861	8.35	7.635	9.206	8.694	7.979	9.768	9.259	8.546
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	376	402	405	434	473	389	417	451	369	388	420
Service Time	7.334	6.68	6.612	6.101	5.385	6.958	6.446	5.73	7.524	7.015	6.302
HCM Lane V/C Ratio	0.412	0.226	0.269	0.62	0.541	0.023	0.688	0.366	0.341	0.191	0.188
HCM Control Delay	18.9	14.3	14.9	24.1	19.1	12.2	29	15.3	17.6	14.2	13.3
HCM Lane LOS	C	B	B	C	C	B	D	C	C	B	B
HCM 95th-tile Q	2	0.8	1.1	4.1	3.2	0.1	5.1	1.7	1.5	0.7	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	149	119	31	312	178	276	427	41	108	200	92
Future Volume (veh/h)	122	149	119	31	312	178	276	427	41	108	200	92
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	133	162	129	34	339	193	300	464	45	117	217	100
Adj No. of Lanes	1	1	0	1	1	0	1	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	319	173	138	497	312	178	310	527	448	137	223	103
Arrive On Green	0.18	0.18	0.18	0.28	0.28	0.28	0.17	0.28	0.28	0.08	0.19	0.19
Sat Flow, veh/h	1774	962	766	1774	1116	635	1774	1863	1583	1774	1208	557
Grp Volume(v), veh/h	133	0	291	34	0	532	300	464	45	117	0	317
Grp Sat Flow(s),veh/h/ln	1774	0	1728	1774	0	1751	1774	1863	1583	1774	0	1765
Q Serve(g_s), s	6.6	0.0	16.6	1.4	0.0	28.0	16.8	23.8	2.1	6.5	0.0	17.8
Cycle Q Clear(g_c), s	6.6	0.0	16.6	1.4	0.0	28.0	16.8	23.8	2.1	6.5	0.0	17.8
Prop In Lane	1.00		0.44	1.00		0.36	1.00		1.00	1.00		0.32
Lane Grp Cap(c), veh/h	319	0	311	497	0	490	310	527	448	137	0	326
V/C Ratio(X)	0.42	0.00	0.94	0.07	0.00	1.09	0.97	0.88	0.10	0.86	0.00	0.97
Avail Cap(c_a), veh/h	319	0	311	497	0	490	310	527	448	137	0	326
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.3	0.0	40.4	26.4	0.0	36.0	41.0	34.2	26.5	45.6	0.0	40.5
Incr Delay (d2), s/veh	0.9	0.0	34.6	0.1	0.0	65.7	41.9	18.6	0.4	38.3	0.0	43.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.0	10.9	0.7	0.0	22.4	11.9	15.0	1.0	4.6	0.0	12.6
LnGrp Delay(d),s/veh	37.2	0.0	75.0	26.5	0.0	101.7	82.8	52.9	26.9	83.9	0.0	83.5
LnGrp LOS	D		E	C		F	F	D	C	F		F
Approach Vol, veh/h		424			566			809			434	
Approach Delay, s/veh		63.1			97.2			62.5			83.6	
Approach LOS		E			F			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.2	32.8		22.5	22.0	23.0		32.5
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	7.7	28.3		18.0	17.5	18.5		28.0
Max Q Clear Time (g_c+I1), s	8.5	25.8		18.6	18.8	19.8		30.0
Green Ext Time (p_c), s	0.0	1.1		0.0	0.0	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	75.5
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	176	282	179	24	143	96	195	388	35	268	510	110
Future Volume (veh/h)	176	282	179	24	143	96	195	388	35	268	510	110
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	181	291	185	25	147	99	201	400	36	276	526	113
Adj No. of Lanes	1	1	0	1	1	0	1	1	1	1	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	449	270	171	246	144	97	212	558	475	302	522	112
Arrive On Green	0.25	0.25	0.25	0.14	0.14	0.14	0.12	0.30	0.30	0.17	0.35	0.35
Sat Flow, veh/h	1774	1066	677	1774	1039	700	1774	1863	1583	1774	1487	319
Grp Volume(v), veh/h	181	0	476	25	0	246	201	400	36	276	0	639
Grp Sat Flow(s),veh/h/ln	1774	0	1743	1774	0	1739	1774	1863	1583	1774	0	1806
Q Serve(g_s), s	11.0	0.0	32.9	1.6	0.0	18.0	14.6	24.9	2.1	19.9	0.0	45.6
Cycle Q Clear(g_c), s	11.0	0.0	32.9	1.6	0.0	18.0	14.6	24.9	2.1	19.9	0.0	45.6
Prop In Lane	1.00		0.39	1.00		0.40	1.00		1.00	1.00		0.18
Lane Grp Cap(c), veh/h	449	0	441	246	0	241	212	558	475	302	0	634
V/C Ratio(X)	0.40	0.00	1.08	0.10	0.00	1.02	0.95	0.72	0.08	0.91	0.00	1.01
Avail Cap(c_a), veh/h	449	0	441	246	0	241	212	558	475	348	0	634
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.4	0.0	48.6	48.9	0.0	56.0	56.9	40.6	32.6	53.0	0.0	42.2
Incr Delay (d2), s/veh	0.6	0.0	65.7	0.2	0.0	63.7	47.8	7.7	0.3	25.6	0.0	37.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	0.0	23.9	0.8	0.0	12.9	10.0	14.0	1.0	11.9	0.0	29.4
LnGrp Delay(d),s/veh	41.0	0.0	114.2	49.1	0.0	119.8	104.7	48.3	32.9	78.6	0.0	80.1
LnGrp LOS	D		F	D		F	F	D	C	E		F
Approach Vol, veh/h		657			271			637			915	
Approach Delay, s/veh		94.1			113.3			65.2			79.6	
Approach LOS		F			F			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	26.6	43.5		37.4	20.0	50.1		22.5
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	25.5	35.6		32.9	15.5	45.6		18.0
Max Q Clear Time (g_c+I1), s	21.9	26.9		34.9	16.6	47.6		20.0
Green Ext Time (p_c), s	0.3	3.9		0.0	0.0	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	83.4
HCM 2010 LOS	F

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	431	14	8	635	6	10
Future Vol, veh/h	431	14	8	635	6	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	320	310	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	468	15	9	690	7	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	468	0	1176	468
Stage 1	-	-	-	-	468	-
Stage 2	-	-	-	-	708	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1094	-	211	595
Stage 1	-	-	-	-	630	-
Stage 2	-	-	-	-	488	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1094	-	209	595
Mov Cap-2 Maneuver	-	-	-	-	209	-
Stage 1	-	-	-	-	630	-
Stage 2	-	-	-	-	484	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	15.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	352	-	-	1094	-
HCM Lane V/C Ratio	0.049	-	-	0.008	-
HCM Control Delay (s)	15.8	-	-	8.3	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	667	14	3	547	15	9
Future Vol, veh/h	667	14	3	547	15	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	320	310	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	725	15	3	595	16	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	725	0	1326	725
Stage 1	-	-	-	-	725	-
Stage 2	-	-	-	-	601	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	878	-	172	425
Stage 1	-	-	-	-	479	-
Stage 2	-	-	-	-	547	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	878	-	171	425
Mov Cap-2 Maneuver	-	-	-	-	171	-
Stage 1	-	-	-	-	479	-
Stage 2	-	-	-	-	545	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	23.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	220	-	-	878	-
HCM Lane V/C Ratio	0.119	-	-	0.004	-
HCM Control Delay (s)	23.6	-	-	9.1	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0	-

Intersection	
Intersection Delay, s/veh	30.5
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	82	241	118	15	302	175	241	130	23	139	63	100
Future Vol, veh/h	82	241	118	15	302	175	241	130	23	139	63	100
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	89	262	128	16	328	190	262	141	25	151	68	109
Number of Lanes	1	1	1	1	1	1	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	26.5	41.4	30.2	19.1
HCM LOS	D	E	D	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	85%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Right, %	0%	15%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	241	153	82	241	118	15	302	175	139	63	100
LT Vol	241	0	82	0	0	15	0	0	139	0	0
Through Vol	0	130	0	241	0	0	302	0	0	63	0
RT Vol	0	23	0	0	118	0	0	175	0	0	100
Lane Flow Rate	262	166	89	262	128	16	328	190	151	68	109
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.739	0.441	0.259	0.722	0.328	0.047	0.891	0.478	0.457	0.197	0.292
Departure Headway (Hd)	10.157	9.552	10.445	9.928	9.204	10.285	9.769	9.046	10.89	10.377	9.657
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	356	378	345	364	391	349	371	399	331	346	372
Service Time	7.894	7.289	8.18	7.663	6.939	8.019	7.502	6.779	8.647	8.133	7.413
HCM Lane V/C Ratio	0.736	0.439	0.258	0.72	0.327	0.046	0.884	0.476	0.456	0.197	0.293
HCM Control Delay	36.9	19.6	16.8	34.7	16.4	13.5	55.3	19.8	22.5	15.7	16.4
HCM Lane LOS	E	C	C	D	C	B	F	C	C	C	C
HCM 95th-tile Q	5.7	2.2	1	5.4	1.4	0.1	8.9	2.5	2.3	0.7	1.2

Intersection	
Intersection Delay, s/veh	36
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	101	283	292	30	288	176	190	124	39	152	133	72
Future Vol, veh/h	101	283	292	30	288	176	190	124	39	152	133	72
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	106	298	307	32	303	185	200	131	41	160	140	76
Number of Lanes	1	1	1	1	1	1	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	41.7	44.1	27.3	22.6
HCM LOS	E	E	D	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	76%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Right, %	0%	24%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	190	163	101	283	292	30	288	176	152	133	72
LT Vol	190	0	101	0	0	30	0	0	152	0	0
Through Vol	0	124	0	283	0	0	288	0	0	133	0
RT Vol	0	39	0	0	292	0	0	176	0	0	72
Lane Flow Rate	200	172	106	298	307	32	303	185	160	140	76
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.621	0.501	0.317	0.844	0.809	0.098	0.898	0.511	0.516	0.432	0.219
Departure Headway (Hd)	11.186	10.518	10.721	10.203	9.478	11.18	10.662	9.937	11.621	11.106	10.385
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	322	343	336	354	381	321	340	363	310	325	346
Service Time	8.951	8.283	8.483	7.965	7.24	8.945	8.427	7.701	9.391	8.876	8.155
HCM Lane V/C Ratio	0.621	0.501	0.315	0.842	0.806	0.1	0.891	0.51	0.516	0.431	0.22
HCM Control Delay	30.7	23.4	18.4	49.5	42.2	15.2	60.2	22.7	26.2	22.1	16.1
HCM Lane LOS	D	C	C	E	E	C	F	C	D	C	C
HCM 95th-tile Q	3.9	2.7	1.3	7.7	7.1	0.3	8.7	2.8	2.8	2.1	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	149	119	31	312	178	276	427	41	108	200	92
Future Volume (veh/h)	122	149	119	31	312	178	276	427	41	108	200	92
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	133	162	129	34	339	193	300	464	45	117	217	100
Adj No. of Lanes	1	2	0	1	2	0	2	2	0	2	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	240	261	195	365	451	252	396	1045	101	230	649	289
Arrive On Green	0.14	0.14	0.14	0.21	0.21	0.21	0.11	0.32	0.32	0.07	0.27	0.27
Sat Flow, veh/h	1774	1933	1444	1774	2192	1224	3442	3262	315	3442	2384	1061
Grp Volume(v), veh/h	133	147	144	34	272	260	300	251	258	117	159	158
Grp Sat Flow(s),veh/h/ln	1774	1770	1608	1774	1770	1647	1721	1770	1807	1721	1770	1675
Q Serve(g_s), s	4.6	5.2	5.6	1.0	9.6	9.8	5.6	7.4	7.5	2.2	4.8	5.0
Cycle Q Clear(g_c), s	4.6	5.2	5.6	1.0	9.6	9.8	5.6	7.4	7.5	2.2	4.8	5.0
Prop In Lane	1.00		0.90	1.00		0.74	1.00		0.17	1.00		0.63
Lane Grp Cap(c), veh/h	240	239	217	365	364	339	396	567	579	230	482	456
V/C Ratio(X)	0.56	0.62	0.66	0.09	0.75	0.77	0.76	0.44	0.45	0.51	0.33	0.35
Avail Cap(c_a), veh/h	483	482	438	483	482	448	416	567	579	343	482	456
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.8	27.0	27.2	21.3	24.7	24.8	28.4	17.8	17.8	29.8	19.3	19.3
Incr Delay (d2), s/veh	2.0	2.6	3.4	0.1	4.5	5.6	7.5	2.5	2.5	1.7	1.8	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	2.7	2.7	0.5	5.1	5.0	3.1	4.0	4.1	1.1	2.5	2.6
LnGrp Delay(d),s/veh	28.8	29.6	30.6	21.4	29.2	30.4	35.9	20.3	20.3	31.6	21.1	21.4
LnGrp LOS	C	C	C	C	C	C	D	C	C	C	C	C
Approach Vol, veh/h		424			566			809			434	
Approach Delay, s/veh		29.7			29.3			26.1			24.0	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.9	25.7		13.4	12.1	22.5		18.1
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	6.6	19.4		18.0	8.0	18.0		18.0
Max Q Clear Time (g_c+I1), s	4.2	9.5		7.6	7.6	7.0		11.8
Green Ext Time (p_c), s	0.1	3.0		1.3	0.0	3.2		1.8

Intersection Summary	
HCM 2010 Ctrl Delay	27.2
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	176	282	179	24	143	96	195	388	35	268	510	110
Future Volume (veh/h)	176	282	179	24	143	96	195	388	35	268	510	110
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	181	291	185	25	147	99	201	400	36	276	526	113
Adj No. of Lanes	1	2	0	1	2	0	2	2	0	2	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	345	409	253	212	248	157	299	961	86	376	914	195
Arrive On Green	0.19	0.19	0.19	0.12	0.12	0.12	0.09	0.29	0.29	0.11	0.31	0.31
Sat Flow, veh/h	1774	2102	1300	1774	2081	1319	3442	3286	294	3442	2902	621
Grp Volume(v), veh/h	181	244	232	25	124	122	201	215	221	276	320	319
Grp Sat Flow(s),veh/h/ln	1774	1770	1633	1774	1770	1630	1721	1770	1811	1721	1770	1753
Q Serve(g_s), s	5.8	8.1	8.5	0.8	4.2	4.5	3.6	6.2	6.2	4.9	9.6	9.6
Cycle Q Clear(g_c), s	5.8	8.1	8.5	0.8	4.2	4.5	3.6	6.2	6.2	4.9	9.6	9.6
Prop In Lane	1.00		0.80	1.00		0.81	1.00		0.16	1.00		0.35
Lane Grp Cap(c), veh/h	345	344	318	212	211	195	299	517	529	376	557	552
V/C Ratio(X)	0.52	0.71	0.73	0.12	0.59	0.63	0.67	0.41	0.42	0.73	0.57	0.58
Avail Cap(c_a), veh/h	505	503	465	505	503	464	375	517	529	408	557	552
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.9	23.8	23.9	24.9	26.4	26.5	28.0	18.0	18.1	27.3	18.1	18.2
Incr Delay (d2), s/veh	1.2	2.7	3.2	0.2	2.6	3.3	3.3	2.4	2.4	6.2	4.3	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	4.2	4.1	0.4	2.2	2.2	1.8	3.3	3.4	2.7	5.3	5.3
LnGrp Delay(d),s/veh	24.1	26.5	27.2	25.1	28.9	29.9	31.3	20.5	20.5	33.5	22.4	22.5
LnGrp LOS	C	C	C	C	C	C	C	C	C	C	C	C
Approach Vol, veh/h		657			271			637			915	
Approach Delay, s/veh		26.1			29.0			23.9			25.8	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.4	23.0		16.8	10.0	24.4		12.1
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	7.5	18.5		18.0	6.9	19.1		18.0
Max Q Clear Time (g_c+I1), s	6.9	8.2		10.5	5.6	11.6		6.5
Green Ext Time (p_c), s	0.1	4.1		1.9	0.1	3.3		1.1

Intersection Summary			
HCM 2010 Ctrl Delay			25.7
HCM 2010 LOS			C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	241	118	15	302	175	241	130	23	139	63	100
Future Volume (veh/h)	82	241	118	15	302	175	241	130	23	139	63	100
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	89	262	128	16	328	190	262	141	25	151	68	109
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	114	473	402	34	389	330	304	586	104	190	588	500
Arrive On Green	0.06	0.25	0.25	0.02	0.21	0.21	0.17	0.38	0.38	0.11	0.32	0.32
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	1541	273	1774	1863	1583
Grp Volume(v), veh/h	89	262	128	16	328	190	262	0	166	151	68	109
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	0	1815	1774	1863	1583
Q Serve(g_s), s	3.7	9.2	4.9	0.7	12.7	8.1	10.8	0.0	4.7	6.2	1.9	3.8
Cycle Q Clear(g_c), s	3.7	9.2	4.9	0.7	12.7	8.1	10.8	0.0	4.7	6.2	1.9	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	114	473	402	34	389	330	304	0	690	190	588	500
V/C Ratio(X)	0.78	0.55	0.32	0.48	0.84	0.57	0.86	0.00	0.24	0.80	0.12	0.22
Avail Cap(c_a), veh/h	130	473	402	118	447	380	343	0	690	305	588	500
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.6	24.3	22.7	36.4	28.5	26.7	30.2	0.0	15.9	32.7	18.2	18.9
Incr Delay (d2), s/veh	23.1	1.4	0.5	10.2	12.4	1.6	18.0	0.0	0.8	7.4	0.4	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	4.9	2.2	0.4	7.8	3.6	6.8	0.0	2.5	3.5	1.1	1.8
LnGrp Delay(d),s/veh	57.7	25.7	23.2	46.6	40.9	28.3	48.2	0.0	16.7	40.1	18.6	19.9
LnGrp LOS	E	C	C	D	D	C	D		B	D	B	B
Approach Vol, veh/h		479			534			428			328	
Approach Delay, s/veh		31.0			36.6			36.0			28.9	
Approach LOS		C			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	33.0	5.9	23.6	17.4	28.2	9.3	20.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	12.9	20.6	5.0	18.5	14.5	19.0	5.5	18.0
Max Q Clear Time (g_c+I1), s	8.2	6.7	2.7	11.2	12.8	5.8	5.7	14.7
Green Ext Time (p_c), s	0.1	1.4	0.0	2.5	0.1	1.4	0.0	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	33.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	101	283	292	30	288	176	190	124	39	152	133	72
Future Volume (veh/h)	101	283	292	30	288	176	190	124	39	152	133	72
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	106	298	307	32	303	185	200	131	41	160	140	76
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	135	479	408	59	399	339	241	463	145	199	590	502
Arrive On Green	0.08	0.26	0.26	0.03	0.21	0.21	0.14	0.34	0.34	0.11	0.32	0.32
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	1361	426	1774	1863	1583
Grp Volume(v), veh/h	106	298	307	32	303	185	200	0	172	160	140	76
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	0	1788	1774	1863	1583
Q Serve(g_s), s	4.1	9.9	12.5	1.2	10.7	7.3	7.7	0.0	4.9	6.2	3.9	2.4
Cycle Q Clear(g_c), s	4.1	9.9	12.5	1.2	10.7	7.3	7.7	0.0	4.9	6.2	3.9	2.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.24	1.00		1.00
Lane Grp Cap(c), veh/h	135	479	408	59	399	339	241	0	608	199	590	502
V/C Ratio(X)	0.78	0.62	0.75	0.55	0.76	0.55	0.83	0.00	0.28	0.80	0.24	0.15
Avail Cap(c_a), veh/h	139	492	418	127	479	407	241	0	608	238	590	502
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.8	23.0	23.9	33.3	25.8	24.5	29.5	0.0	16.9	30.3	17.7	17.2
Incr Delay (d2), s/veh	24.2	2.3	7.4	7.7	5.7	1.4	21.2	0.0	1.2	15.4	0.9	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	5.4	6.3	0.7	6.1	3.3	5.2	0.0	2.6	3.9	2.1	1.1
LnGrp Delay(d),s/veh	56.0	25.3	31.3	41.0	31.5	25.8	50.7	0.0	18.0	45.7	18.6	17.8
LnGrp LOS	E	C	C	D	C	C	D		B	D	B	B
Approach Vol, veh/h		711			520			372			376	
Approach Delay, s/veh		32.5			30.1			35.6			30.0	
Approach LOS		C			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.3	28.3	6.8	22.5	14.0	26.7	9.8	19.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	9.4	19.1	5.0	18.5	9.5	19.0	5.5	18.0
Max Q Clear Time (g_c+I1), s	8.2	6.9	3.2	14.5	9.7	5.9	6.1	12.7
Green Ext Time (p_c), s	0.0	1.6	0.0	1.9	0.0	1.7	0.0	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	32.0
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	149	122	32	312	178	278	431	42	108	208	92
Future Volume (veh/h)	122	149	122	32	312	178	278	431	42	108	208	92
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	133	162	133	35	339	193	302	468	46	117	226	100
Adj No. of Lanes	1	1	0	1	1	0	1	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	319	171	140	495	311	177	310	529	450	137	228	101
Arrive On Green	0.18	0.18	0.18	0.28	0.28	0.28	0.17	0.28	0.28	0.08	0.19	0.19
Sat Flow, veh/h	1774	948	778	1774	1116	635	1774	1863	1583	1774	1225	542
Grp Volume(v), veh/h	133	0	295	35	0	532	302	468	46	117	0	326
Grp Sat Flow(s),veh/h/ln	1774	0	1725	1774	0	1751	1774	1863	1583	1774	0	1767
Q Serve(g_s), s	6.6	0.0	16.9	1.5	0.0	27.9	16.9	24.0	2.1	6.5	0.0	18.4
Cycle Q Clear(g_c), s	6.6	0.0	16.9	1.5	0.0	27.9	16.9	24.0	2.1	6.5	0.0	18.4
Prop In Lane	1.00		0.45	1.00		0.36	1.00		1.00	1.00		0.31
Lane Grp Cap(c), veh/h	319	0	311	495	0	488	310	529	450	137	0	329
V/C Ratio(X)	0.42	0.00	0.95	0.07	0.00	1.09	0.97	0.88	0.10	0.86	0.00	0.99
Avail Cap(c_a), veh/h	319	0	311	495	0	488	310	529	450	137	0	329
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.3	0.0	40.6	26.5	0.0	36.1	41.0	34.2	26.4	45.6	0.0	40.6
Incr Delay (d2), s/veh	0.9	0.0	37.8	0.1	0.0	67.1	43.5	19.1	0.5	38.3	0.0	47.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.0	11.3	0.7	0.0	22.5	12.1	15.2	1.0	4.6	0.0	13.3
LnGrp Delay(d),s/veh	37.2	0.0	78.4	26.6	0.0	103.1	84.6	53.3	26.9	83.9	0.0	88.3
LnGrp LOS	D		E	C		F	F	D	C	F		F
Approach Vol, veh/h		428			567			816			443	
Approach Delay, s/veh		65.6			98.4			63.4			87.1	
Approach LOS		E			F			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.2	32.9		22.5	22.0	23.1		32.4
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	7.7	28.4		18.0	17.5	18.6		27.9
Max Q Clear Time (g_c+I1), s	8.5	26.0		18.9	18.9	20.4		29.9
Green Ext Time (p_c), s	0.0	1.1		0.0	0.0	0.0		0.0

Intersection Summary			
HCM 2010 Ctrl Delay			77.3
HCM 2010 LOS			E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	176	282	183	25	143	96	202	400	36	268	519	110
Future Volume (veh/h)	176	282	183	25	143	96	202	400	36	268	519	110
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	181	291	189	26	147	99	208	412	37	276	535	113
Adj No. of Lanes	1	1	0	1	1	0	1	1	1	1	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	449	267	174	246	144	97	220	558	475	302	516	109
Arrive On Green	0.25	0.25	0.25	0.14	0.14	0.14	0.12	0.30	0.30	0.17	0.35	0.35
Sat Flow, veh/h	1774	1056	686	1774	1039	700	1774	1863	1583	1774	1492	315
Grp Volume(v), veh/h	181	0	480	26	0	246	208	412	37	276	0	648
Grp Sat Flow(s),veh/h/ln	1774	0	1742	1774	0	1739	1774	1863	1583	1774	0	1807
Q Serve(g_s), s	11.0	0.0	32.9	1.7	0.0	18.0	15.1	25.9	2.2	19.9	0.0	45.0
Cycle Q Clear(g_c), s	11.0	0.0	32.9	1.7	0.0	18.0	15.1	25.9	2.2	19.9	0.0	45.0
Prop In Lane	1.00		0.39	1.00		0.40	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	449	0	441	246	0	241	220	558	475	302	0	626
V/C Ratio(X)	0.40	0.00	1.09	0.11	0.00	1.02	0.95	0.74	0.08	0.91	0.00	1.04
Avail Cap(c_a), veh/h	449	0	441	246	0	241	220	558	475	348	0	626
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.4	0.0	48.6	49.0	0.0	56.0	56.5	40.9	32.6	53.0	0.0	42.5
Incr Delay (d2), s/veh	0.6	0.0	69.0	0.2	0.0	63.7	45.8	8.5	0.3	25.6	0.0	45.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	0.0	24.2	0.8	0.0	12.9	10.2	14.6	1.0	11.9	0.0	30.3
LnGrp Delay(d),s/veh	41.0	0.0	117.6	49.2	0.0	119.8	102.3	49.4	33.0	78.6	0.0	88.1
LnGrp LOS	D		F	D		F	F	D	C	E		F
Approach Vol, veh/h		661			272			657			924	
Approach Delay, s/veh		96.6			113.0			65.2			85.3	
Approach LOS		F			F			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	26.6	43.5		37.4	20.6	49.5		22.5
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	25.5	35.6		32.9	16.1	45.0		18.0
Max Q Clear Time (g_c+I1), s	21.9	27.9		34.9	17.1	47.0		20.0
Green Ext Time (p_c), s	0.3	3.7		0.0	0.0	0.0		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		86.0
HCM 2010 LOS		F

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱	↰	↑	Y	
Traffic Vol, veh/h	431	28	15	635	13	14
Future Vol, veh/h	431	28	15	635	13	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	320	310	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	468	30	16	690	14	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	468	0	1191	468
Stage 1	-	-	-	-	468	-
Stage 2	-	-	-	-	723	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1094	-	207	595
Stage 1	-	-	-	-	630	-
Stage 2	-	-	-	-	481	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1094	-	204	595
Mov Cap-2 Maneuver	-	-	-	-	204	-
Stage 1	-	-	-	-	630	-
Stage 2	-	-	-	-	474	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	17.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	309	-	-	1094	-
HCM Lane V/C Ratio	0.095	-	-	0.015	-
HCM Control Delay (s)	17.9	-	-	8.3	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱	↰	↑	Y	
Traffic Vol, veh/h	667	32	12	547	37	21
Future Vol, veh/h	667	32	12	547	37	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	320	310	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	725	35	13	595	40	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	725	0	1346	725
Stage 1	-	-	-	-	725	-
Stage 2	-	-	-	-	621	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	878	-	167	425
Stage 1	-	-	-	-	479	-
Stage 2	-	-	-	-	536	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	878	-	165	425
Mov Cap-2 Maneuver	-	-	-	-	165	-
Stage 1	-	-	-	-	479	-
Stage 2	-	-	-	-	528	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	29
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	212	-	-	878	-
HCM Lane V/C Ratio	0.297	-	-	0.015	-
HCM Control Delay (s)	29	-	-	9.2	-
HCM Lane LOS	D	-	-	A	-
HCM 95th %tile Q(veh)	1.2	-	-	0	-

Intersection	
Intersection Delay, s/veh	31.6
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	83	243	119	15	306	175	242	130	23	139	63	102
Future Vol, veh/h	83	243	119	15	306	175	242	130	23	139	63	102
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	90	264	129	16	333	190	263	141	25	151	68	111
Number of Lanes	1	1	1	1	1	1	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	27	43.7	30.9	19.3
HCM LOS	D	E	D	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	85%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Right, %	0%	15%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	242	153	83	243	119	15	306	175	139	63	102
LT Vol	242	0	83	0	0	15	0	0	139	0	0
Through Vol	0	130	0	243	0	0	306	0	0	63	0
RT Vol	0	23	0	0	119	0	0	175	0	0	102
Lane Flow Rate	263	166	90	264	129	16	333	190	151	68	111
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.747	0.445	0.263	0.731	0.333	0.047	0.909	0.481	0.46	0.199	0.299
Departure Headway (Hd)	10.229	9.623	10.485	9.967	9.258	10.351	9.835	9.112	10.954	10.44	9.72
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	355	376	343	362	389	347	369	398	329	344	369
Service Time	7.954	7.349	8.241	7.724	7	8.074	7.558	6.835	8.716	8.201	7.481
HCM Lane V/C Ratio	0.741	0.441	0.262	0.729	0.332	0.046	0.902	0.477	0.459	0.198	0.301
HCM Control Delay	37.8	19.9	17	35.6	16.6	13.6	58.8	20	22.8	15.8	16.6
HCM Lane LOS	E	C	C	E	C	B	F	C	C	C	C
HCM 95th-tile Q	5.8	2.2	1	5.6	1.4	0.1	9.3	2.5	2.3	0.7	1.2

Intersection	
Intersection Delay, s/veh	38
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	104	290	294	30	293	176	191	124	39	152	133	72
Future Vol, veh/h	104	290	294	30	293	176	191	124	39	152	133	72
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	109	305	309	32	308	185	201	131	41	160	140	76
Number of Lanes	1	1	1	1	1	1	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	44.4	47.1	28	23
HCM LOS	E	E	D	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	76%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Right, %	0%	24%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	191	163	104	290	294	30	293	176	152	133	72
LT Vol	191	0	104	0	0	30	0	0	152	0	0
Through Vol	0	124	0	290	0	0	293	0	0	133	0
RT Vol	0	39	0	0	294	0	0	176	0	0	72
Lane Flow Rate	201	172	109	305	309	32	308	185	160	140	76
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.63	0.506	0.328	0.871	0.821	0.099	0.92	0.516	0.521	0.436	0.221
Departure Headway (Hd)	11.281	10.613	10.788	10.27	9.545	11.262	10.744	10.019	11.727	11.212	10.491
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	320	340	334	354	381	318	336	359	307	321	342
Service Time	9.048	8.381	8.553	8.035	7.309	9.033	8.514	7.789	9.502	8.987	8.265
HCM Lane V/C Ratio	0.628	0.506	0.326	0.862	0.811	0.101	0.917	0.515	0.521	0.436	0.222
HCM Control Delay	31.5	23.8	18.8	54	44	15.3	64.8	23.1	26.7	22.4	16.2
HCM Lane LOS	D	C	C	F	E	C	F	C	D	C	C
HCM 95th-tile Q	4	2.7	1.4	8.2	7.3	0.3	9.2	2.8	2.8	2.1	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	149	122	32	312	178	278	431	42	108	208	92
Future Volume (veh/h)	122	149	122	32	312	178	278	431	42	108	208	92
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	133	162	133	35	339	193	302	468	46	117	226	100
Adj No. of Lanes	1	2	0	1	2	0	2	2	0	2	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	242	260	200	365	451	252	397	1043	102	229	655	281
Arrive On Green	0.14	0.14	0.14	0.21	0.21	0.21	0.12	0.32	0.32	0.07	0.27	0.27
Sat Flow, veh/h	1774	1906	1467	1774	2192	1224	3442	3257	319	3442	2415	1035
Grp Volume(v), veh/h	133	150	145	35	272	260	302	253	261	117	164	162
Grp Sat Flow(s),veh/h/ln	1774	1770	1604	1774	1770	1647	1721	1770	1806	1721	1770	1680
Q Serve(g_s), s	4.6	5.3	5.7	1.1	9.6	9.9	5.6	7.5	7.6	2.2	4.9	5.2
Cycle Q Clear(g_c), s	4.6	5.3	5.7	1.1	9.6	9.9	5.6	7.5	7.6	2.2	4.9	5.2
Prop In Lane	1.00		0.91	1.00		0.74	1.00		0.18	1.00		0.62
Lane Grp Cap(c), veh/h	242	241	219	365	364	338	397	567	578	229	480	456
V/C Ratio(X)	0.55	0.62	0.67	0.10	0.75	0.77	0.76	0.45	0.45	0.51	0.34	0.36
Avail Cap(c_a), veh/h	481	480	435	481	480	447	415	567	578	342	480	456
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.7	27.0	27.2	21.4	24.7	24.9	28.4	17.9	17.9	29.9	19.4	19.5
Incr Delay (d2), s/veh	1.9	2.6	3.5	0.1	4.6	5.7	7.7	2.5	2.5	1.8	1.9	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	2.8	2.7	0.5	5.2	5.0	3.1	4.1	4.2	1.1	2.7	2.7
LnGrp Delay(d),s/veh	28.7	29.6	30.7	21.5	29.3	30.6	36.1	20.4	20.4	31.7	21.3	21.7
LnGrp LOS	C	C	C	C	C	C	D	C	C	C	C	C
Approach Vol, veh/h		428			567			816			443	
Approach Delay, s/veh		29.7			29.4			26.2			24.2	
Approach LOS		C			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.9	25.7		13.5	12.2	22.5		18.1				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	6.6	19.4		18.0	8.0	18.0		18.0				
Max Q Clear Time (g_c+I1), s	4.2	9.6		7.7	7.6	7.2		11.9				
Green Ext Time (p_c), s	0.1	3.1		1.3	0.0	3.2		1.8				
Intersection Summary												
HCM 2010 Ctrl Delay			27.3									
HCM 2010 LOS			C									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	176	282	183	25	143	96	202	400	36	268	519	110
Future Volume (veh/h)	176	282	183	25	143	96	202	400	36	268	519	110
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	181	291	189	26	147	99	208	412	37	276	535	113
Adj No. of Lanes	1	2	0	1	2	0	2	2	0	2	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	347	408	258	212	248	157	307	959	86	376	908	191
Arrive On Green	0.20	0.20	0.20	0.12	0.12	0.12	0.09	0.29	0.29	0.11	0.31	0.31
Sat Flow, veh/h	1774	2084	1316	1774	2081	1319	3442	3287	294	3442	2912	613
Grp Volume(v), veh/h	181	246	234	26	124	122	208	221	228	276	324	324
Grp Sat Flow(s),veh/h/ln	1774	1770	1630	1774	1770	1630	1721	1770	1811	1721	1770	1755
Q Serve(g_s), s	5.8	8.2	8.5	0.8	4.2	4.5	3.7	6.4	6.5	4.9	9.8	9.9
Cycle Q Clear(g_c), s	5.8	8.2	8.5	0.8	4.2	4.5	3.7	6.4	6.5	4.9	9.8	9.9
Prop In Lane	1.00		0.81	1.00		0.81	1.00		0.16	1.00		0.35
Lane Grp Cap(c), veh/h	347	346	319	212	211	195	307	516	528	376	552	547
V/C Ratio(X)	0.52	0.71	0.73	0.12	0.59	0.63	0.68	0.43	0.43	0.73	0.59	0.59
Avail Cap(c_a), veh/h	504	502	463	504	502	463	391	516	528	407	552	547
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.8	23.8	23.9	24.9	26.4	26.6	28.0	18.2	18.2	27.3	18.4	18.4
Incr Delay (d2), s/veh	1.2	2.7	3.4	0.3	2.6	3.3	3.2	2.6	2.6	6.2	4.5	4.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	4.3	4.1	0.4	2.2	2.2	1.9	3.5	3.6	2.7	5.5	5.5
LnGrp Delay(d),s/veh	24.1	26.5	27.3	25.2	29.0	29.9	31.2	20.7	20.7	33.6	22.9	23.1
LnGrp LOS	C	C	C	C	C	C	C	C	C	C	C	C
Approach Vol, veh/h		661			272			657			924	
Approach Delay, s/veh		26.1			29.0			24.1			26.1	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.4	23.0		16.9	10.2	24.3		12.1
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	7.5	18.5		18.0	7.2	18.8		18.0
Max Q Clear Time (g_c+I1), s	6.9	8.5		10.5	5.7	11.9		6.5
Green Ext Time (p_c), s	0.1	4.1		1.9	0.1	3.2		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	25.9
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	83	243	119	15	306	175	242	130	23	139	63	102
Future Volume (veh/h)	83	243	119	15	306	175	242	130	23	139	63	102
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	90	264	129	16	333	190	263	141	25	151	68	111
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	115	476	405	34	390	332	305	583	103	190	584	496
Arrive On Green	0.06	0.26	0.26	0.02	0.21	0.21	0.17	0.38	0.38	0.11	0.31	0.31
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	1541	273	1774	1863	1583
Grp Volume(v), veh/h	90	264	129	16	333	190	263	0	166	151	68	111
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	0	1815	1774	1863	1583
Q Serve(g_s), s	3.7	9.2	5.0	0.7	12.9	8.1	10.8	0.0	4.7	6.2	2.0	3.9
Cycle Q Clear(g_c), s	3.7	9.2	5.0	0.7	12.9	8.1	10.8	0.0	4.7	6.2	2.0	3.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	115	476	405	34	390	332	305	0	687	190	584	496
V/C Ratio(X)	0.78	0.55	0.32	0.48	0.85	0.57	0.86	0.00	0.24	0.80	0.12	0.22
Avail Cap(c_a), veh/h	130	476	405	118	447	380	343	0	687	305	584	496
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.5	24.2	22.6	36.4	28.5	26.6	30.2	0.0	15.9	32.7	18.3	19.0
Incr Delay (d2), s/veh	23.4	1.4	0.4	10.2	13.3	1.6	18.1	0.0	0.8	7.4	0.4	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	4.9	2.2	0.4	8.0	3.7	6.8	0.0	2.5	3.5	1.1	1.8
LnGrp Delay(d),s/veh	57.9	25.6	23.1	46.6	41.9	28.2	48.3	0.0	16.8	40.1	18.7	20.0
LnGrp LOS	E	C	C	D	D	C	D		B	D	B	C
Approach Vol, veh/h		483			539			429			330	
Approach Delay, s/veh		31.0			37.2			36.1			29.0	
Approach LOS		C			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	32.9	5.9	23.7	17.4	28.0	9.4	20.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	12.9	20.6	5.0	18.5	14.5	19.0	5.5	18.0
Max Q Clear Time (g_c+I1), s	8.2	6.7	2.7	11.2	12.8	5.9	5.7	14.9
Green Ext Time (p_c), s	0.1	1.4	0.0	2.5	0.1	1.4	0.0	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	33.7
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	104	290	294	30	293	176	191	124	39	152	133	72
Future Volume (veh/h)	104	290	294	30	293	176	191	124	39	152	133	72
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	109	305	309	32	308	185	201	131	41	160	140	76
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	139	487	414	59	403	343	241	458	143	199	582	495
Arrive On Green	0.08	0.26	0.26	0.03	0.22	0.22	0.14	0.34	0.34	0.11	0.31	0.31
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	1361	426	1774	1863	1583
Grp Volume(v), veh/h	109	305	309	32	308	185	201	0	172	160	140	76
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	0	1788	1774	1863	1583
Q Serve(g_s), s	4.2	10.1	12.5	1.2	10.9	7.3	7.7	0.0	4.9	6.2	3.9	2.4
Cycle Q Clear(g_c), s	4.2	10.1	12.5	1.2	10.9	7.3	7.7	0.0	4.9	6.2	3.9	2.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.24	1.00		1.00
Lane Grp Cap(c), veh/h	139	487	414	59	403	343	241	0	601	199	582	495
V/C Ratio(X)	0.79	0.63	0.75	0.55	0.76	0.54	0.83	0.00	0.29	0.80	0.24	0.15
Avail Cap(c_a), veh/h	139	492	418	127	479	407	241	0	601	238	582	495
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.7	22.8	23.7	33.3	25.7	24.3	29.5	0.0	17.1	30.3	17.9	17.4
Incr Delay (d2), s/veh	24.8	2.5	7.1	7.7	6.0	1.3	21.7	0.0	1.2	15.4	1.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	5.5	6.3	0.7	6.2	3.3	5.2	0.0	2.6	3.9	2.2	1.1
LnGrp Delay(d),s/veh	56.5	25.3	30.8	41.0	31.8	25.7	51.2	0.0	18.3	45.7	18.9	18.0
LnGrp LOS	E	C	C	D	C	C	D		B	D	B	B
Approach Vol, veh/h		723			525			373			376	
Approach Delay, s/veh		32.3			30.2			36.0			30.1	
Approach LOS		C			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.3	28.0	6.8	22.8	14.0	26.4	10.0	19.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	9.4	19.1	5.0	18.5	9.5	19.0	5.5	18.0
Max Q Clear Time (g_c+I1), s	8.2	6.9	3.2	14.5	9.7	5.9	6.2	12.9
Green Ext Time (p_c), s	0.0	1.6	0.0	1.9	0.0	1.7	0.0	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	32.0
HCM 2010 LOS	C

Ridgemark Assisted Care (#316-A) - August 2018 - "Signal Warrant Peak Hour Volumes"

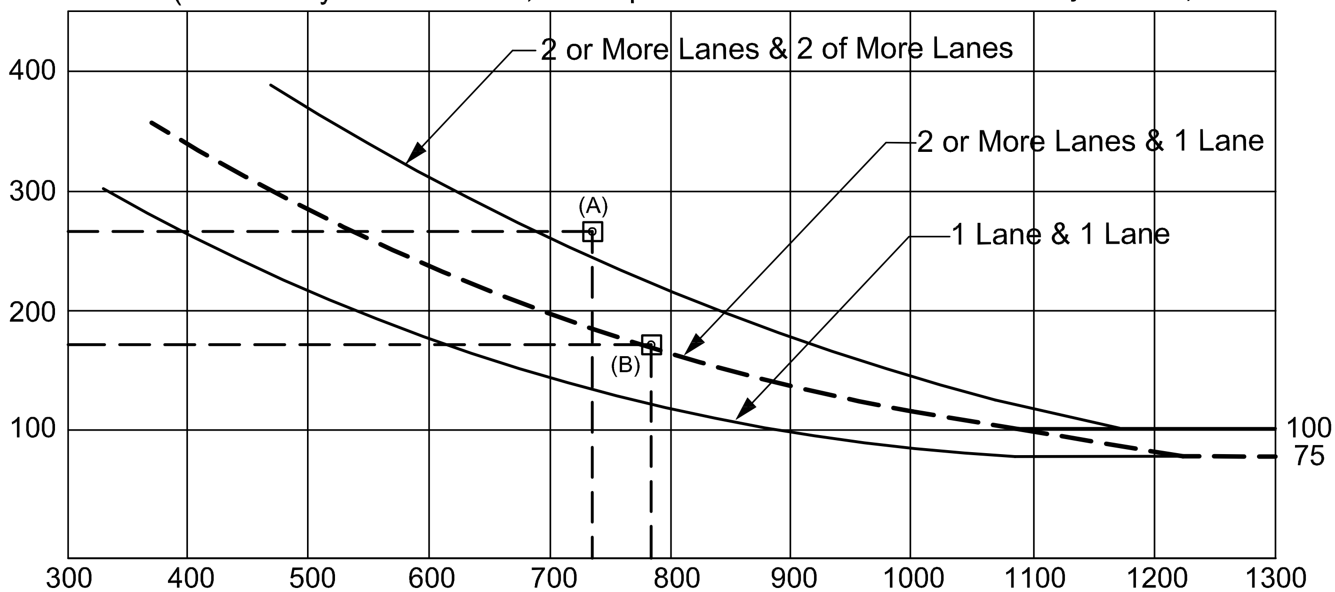
#3 - SR 25 / Fairview Road Intersection

	Existing		Exist. + Proj.		Background		Background + Proj.		Cumulative		Cumulative + Proj.		
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	
	Trips	Trips	Trips	Trips	Trips	Trips	Trips	Trips	Trips	Trips	Trips	Trips	
SR 25													
NBLT	5	5	5	5	6	9	6	9	15	30	15	30	NBLT
NBTH	262	232	266	237	273	268	277	273	302	288	306	293	NBTH
NBRT	115	69	115	69	146	157	146	157	175	176	175	176	NBRT
SBLT	70	60	71	63	82	101	83	104	82	101	83	104	SBLT
SBTH	203	231	205	238	231	249	233	256	241	283	243	290	SBTH
SBRT	80	187	81	189	97	241	98	243	118	292	119	294	SBRT
Totals:	735	784	743	801	835	1025	843	1042	933	1170	941	1187	
RM Dwy.													
EBLT	169	112	170	113	213	146	214	147	241	190	242	191	EBLT
EBTH	84	44	84	44	98	67	98	67	130	124	130	124	EBTH
EBRT	13	15	13	15	14	19	14	19	23	39	23	39	EBRT
Totals:	266	171	267	172	325	232	326	233	394	353	395	354	
#3 (70%	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	70%
#3 (100%)	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES	YES	YES	100%

#3 - Airline Hwy. (SR 25) / Fairview Rd.

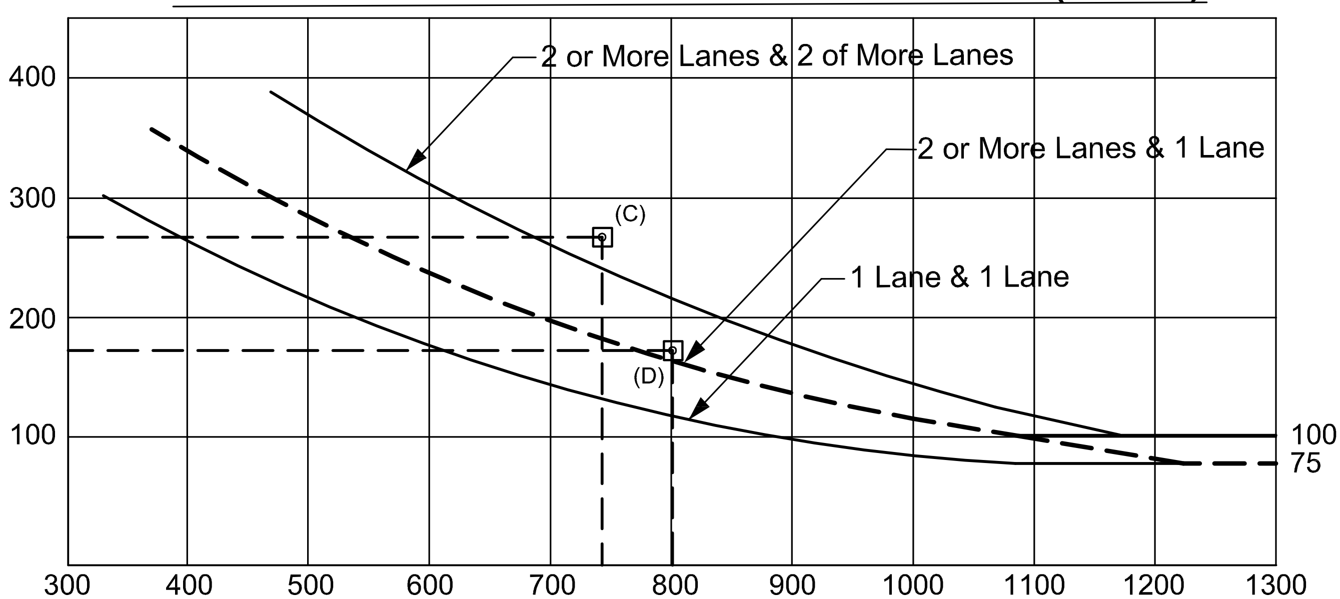
Warrant #3 - Peak Hour Volume (70%)

(Community Less Than 10,000 Population or Above 40 MPH on Major Road)



	Airline Hwy. (Both App.)	RM Exit	Met
(A) Existing AM Peak Hour:	735 (a)	266 (b) - One Lane	YES
(B) Existing PM Peak Hour:	784 (a)	171 (b) - One Lane	YES

Warrant #3 - Peak Hour Volume (70%)



	Airline Hwy. (Both App.)	RM Exit	Met
(C) Exist. + Project AM Peak Hour:	743 (a)	267 (b) - One Lane	YES
(D) Exist. + Project PM Peak Hour:	801 (a)	172 (b) - One Lane	YES

(a) Airline Hwy. Considered as having 2 lanes

(b) RM exit includes Total Left, Thru & Right Vol.

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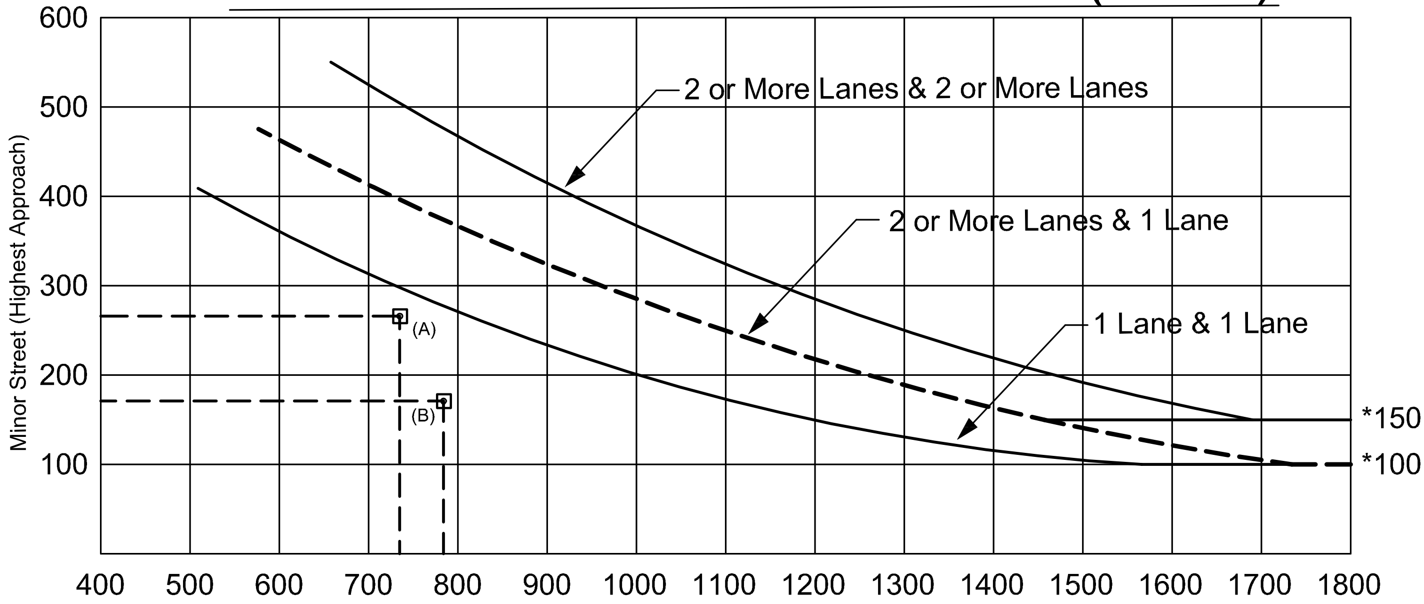
#3 - Airline Hwy. (SR 25) / Fairview Rd.

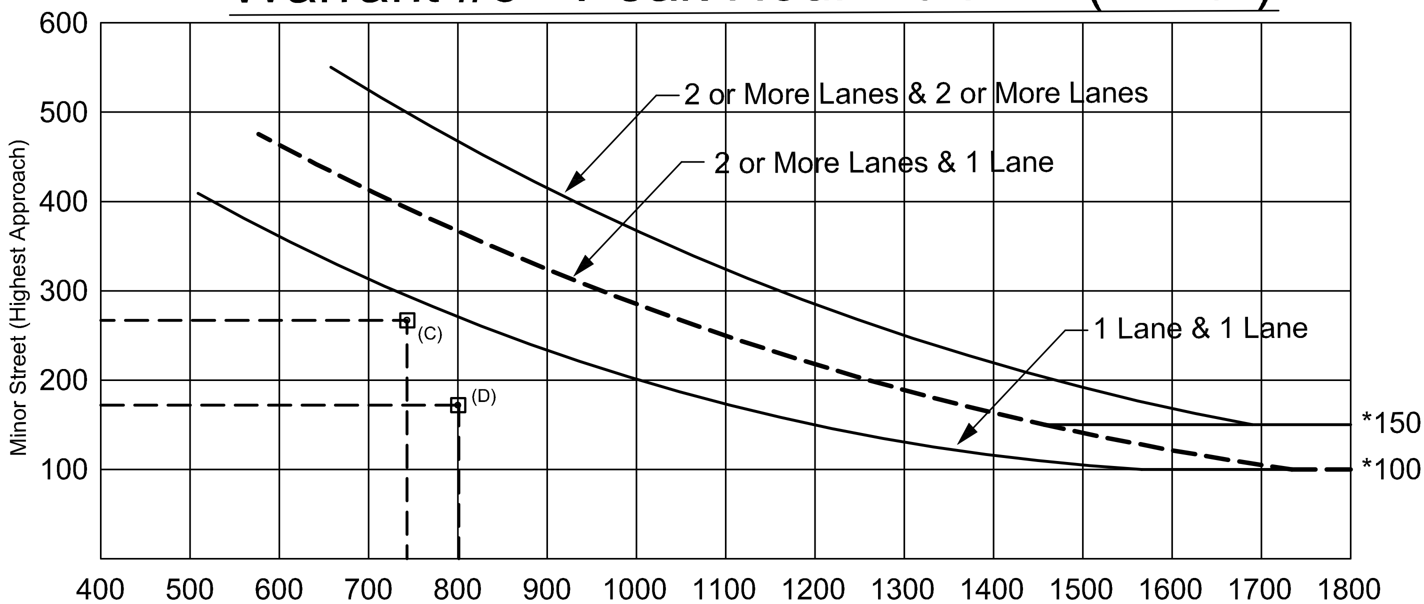
Warrant #3 - Peak Hour Volume (100%)



	Airline Hwy. (Both App.)	RM Exit	Met
(A) Existing Weekday AM Peak Hour:	735 (a)	266 (b) - One Lane	NO
(B) Existing Weekday PM Peak Hour:	784 (a)	171 (b) - One Lane	NO

(a) Airline Hwy. Considered as having 2 lanes (b) RM exit includes Total Left, Thru & Right Vol.

Warrant #3 - Peak Hour Volume (100%)



	Airline Hwy. (Both App.)	RM Exit	Met
(A) Exist. + Project Weekday AM Peak Hour:	743 (a)	267 (b) - One Lane	NO
(B) Exist. + Project Weekday PM Peak Hour:	801 (a)	172 (b) - One Lane	NO

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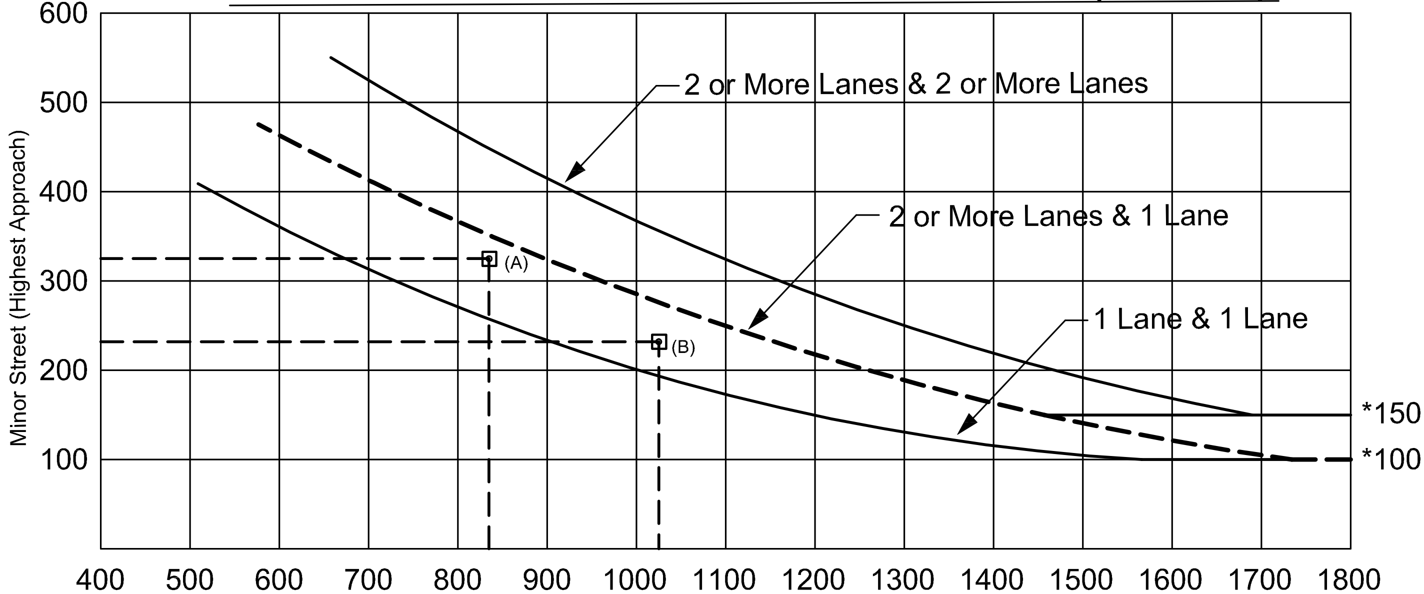
#3 - Airline Hwy. (SR 25) / Fairview Rd.

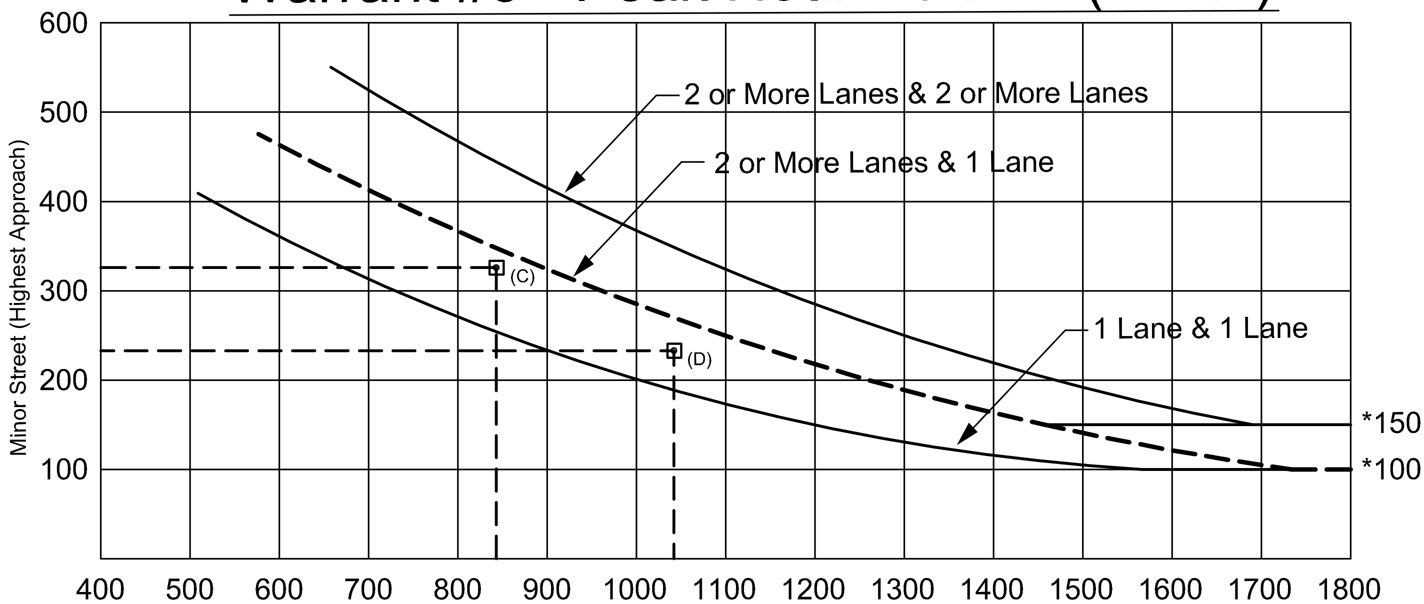
Warrant #3 - Peak Hour Volume (100%)



	Airline Hwy. (Both App.)	RM Exit	Met
(A) Background Weekday AM Peak Hour:	835 (a)	325 (b) - One Lane	NO
(B) Background Weekday PM Peak Hour:	1025 (a)	232 (b) - One Lane	NO

(a) Airline Hwy. Considered as having 2 lanes (b) RM exit includes Total Left, Thru & Right Vol.

Warrant #3 - Peak Hour Volume (100%)



	Airline Hwy. (Both App.)	RM Exit	Met
(A) BG. + Project Weekday AM Peak Hour:	843 (a)	326 (b) - One Lane	NO
(B) BG. + Project Weekday PM Peak Hour:	1042 (a)	233 (b) - One Lane	NO

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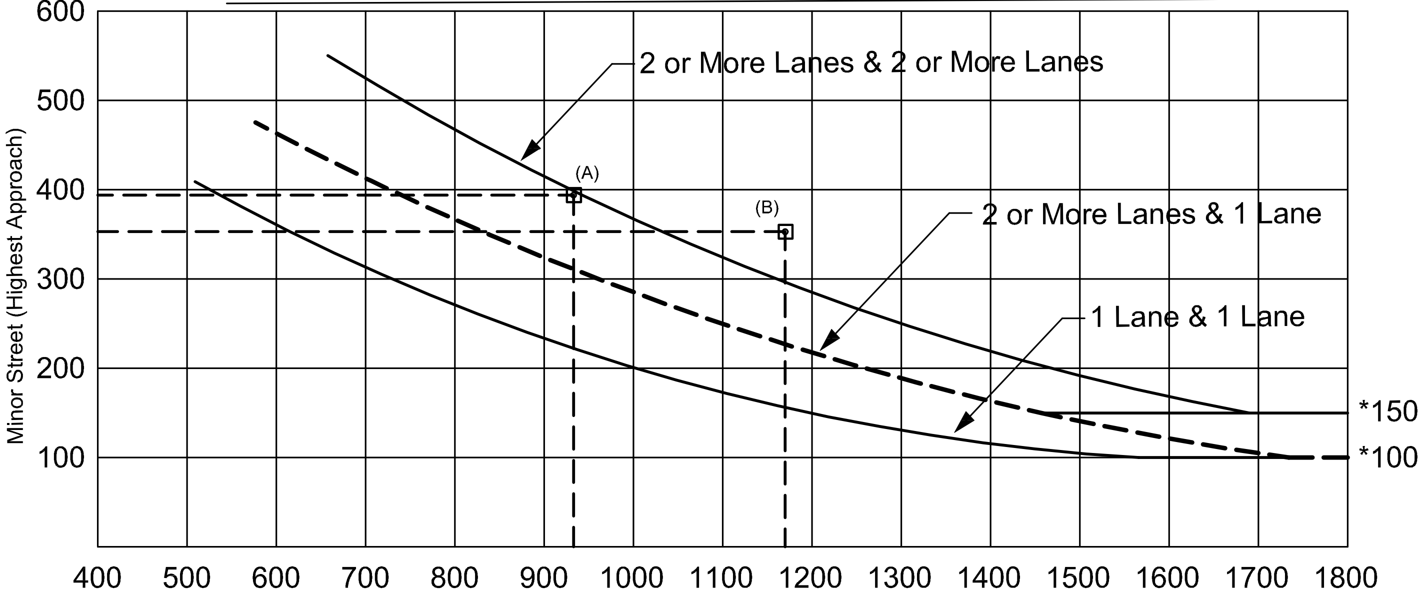
#3 - Airline Hwy. (SR 25) / Fairview Rd.

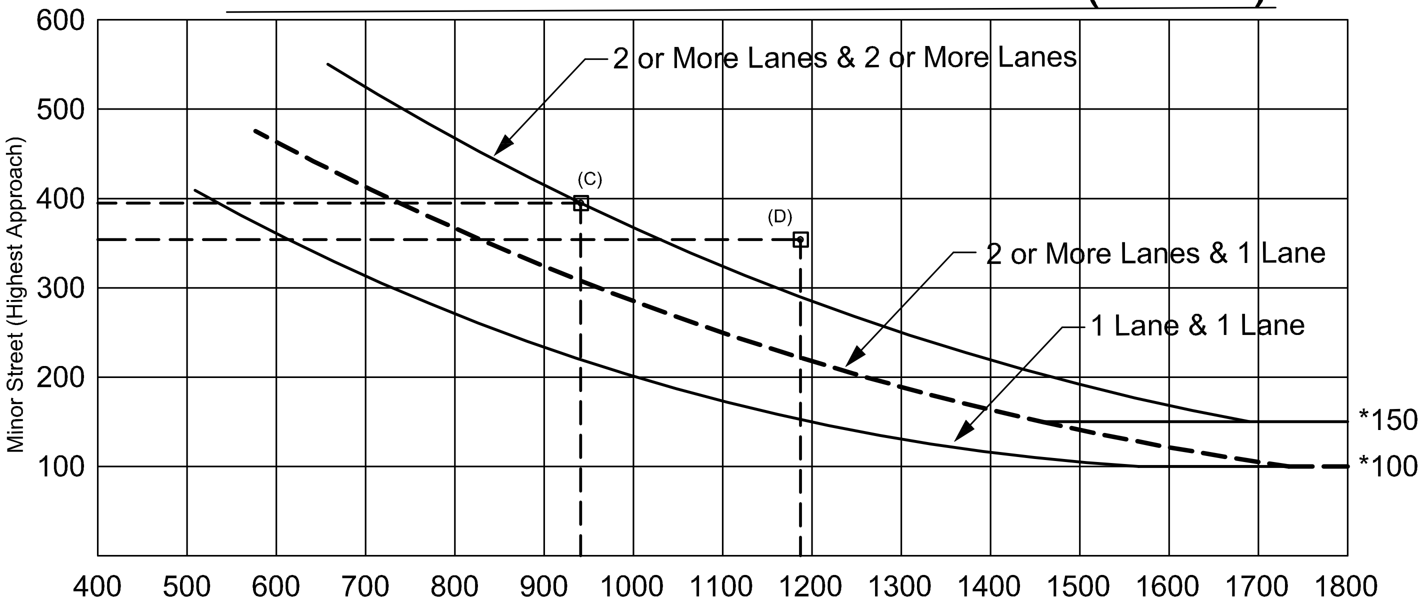
Warrant #3 - Peak Hour Volume (100%)



	Airline Hwy. (Both App.)	RM Exit	Met
(A) Cumulative Weekday AM Peak Hour:	933 (a)	394 (b) - One Lane	YES
(B) Cumulative Weekday PM Peak Hour:	1170 (a)	353 (b) - One Lane	YES

(a) Airline Hwy. Considered as having 2 lanes (b) RM exit includes Total Left, Thru & Right Vol.

Warrant #3 - Peak Hour Volume (100%)



	Airline Hwy. (Both App.)	RM Exit	Met
(A) Cum. + Project Weekday AM Peak Hour:	941 (a)	395 (b) - One Lane	YES
(B) Cum. + Project Weekday PM Peak Hour:	1187 (a)	354 (b) - One Lane	YES

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RIDGEMARK ASSISTED CARE
- Traffic Impact Analysis -

PEAK HOUR TRAFFIC SIGNAL WARRANTS

Keith Higgins
Traffic Engineer

July 3, 2019

Teri Wissler Adam
EMC Planning Group
301 Lighthouse Avenue, Suite C
Monterey, CA 93940

Re: Ridgemark Assisted Care Community Peer Review, San Benito County, CA

Dear Teri:

As you requested, this letter summarizes my peer review of the traffic study for the proposed assisted care center on Airline Highway (State Route 25, or SR 25) near Ridgemark Drive in San Benito County, California. The proposed project is a senior assisted living facility with 155 units (180 beds). The traffic study for the project was prepared by Pinnacle Traffic Engineering in August 2018.

In general, the traffic study adequately evaluated the proposed project and its potential impacts. The following comments summarize my review and agreements with the traffic study scope and conclusions.

1. Study Intersections – The Pinnacle Traffic Engineering study reviewed two intersections – Airline Highway (SR 25) / Union Road and Airline Highway (SR 25) / Fairview Road – as well as the shared project access with Airline Highway (SR 25). Due to the relatively low project trip generation, this is an adequate study area.
2. Analysis Scenarios – The study analyzed Existing, Existing Plus Project, Background, Background Plus Project, Cumulative and Cumulative Plus Project conditions. These match the required analysis scenarios per San Benito County requirements. The analysis results and descriptions of field observations are reasonable and appear accurate.
3. Project Trip Generation, Distribution and Assignment – The project trip generation uses rates from Trip Generation Manual, 10th Edition, Institute of Transportation Engineers, 2017, which is the industry standard source for estimating trip generation. The traffic study uses the "peak hour of generator" rates, which reflect a slightly more conservative method to estimate the project trip generation. The trip distribution and assignment are also reasonable.
4. Sight distance analysis on pages 16 and 17 is reasonable. Adequate sight distance is provided along SR 25 at the existing Sunnyslope County Water District Driveway.
5. Analysis Methodology – The intersections were analyzed using the 2010 Highway Capacity Manual methodologies. This is consistent with both San Benito County and Caltrans requirements.

6. Project Impact Conclusions – No project impacts were found by the traffic study. I agree that the analysis in the traffic study supports this conclusion. This includes the project access at Airline Highway (SR 25), which I agree does not require signalization with the project.

The following additional comments address concerns and recommended modifications to the traffic study:

7. Page 8, paragraph 2 states the study intersections currently operate within acceptable limits as defined by San Benito County (LOS D or better). This is true. However, SR 25 is a state highway under Caltrans jurisdiction. According to the "Guide for the Preparation of Traffic Impact Studies," Caltrans, December 2002, "Caltrans endeavors to maintain a target LOS at the transition between LOS "C" and LOS "D" (see Appendix "C-3") on State highway facilities, however, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. If an existing State highway facility is operating at less than the appropriate target LOS, the existing MOE should be maintained." In this case, LOS D would not be acceptable to Caltrans. The SR 25/Union Road intersection therefore operates deficiently in the AM and PM peak hours according to Caltrans LOS standards.

8. Page 16 – The project site appears to show a connection to Ralphs Lane. It is not clear if this will be a full access or for emergency vehicles, pedestrians and bicycles only. This should be clarified and the analysis update to include any impacts on the Ralphs Lane neighborhood.

9. Page 21, Background and Background Plus Project Conditions:
    a. The traffic study does not provide detail regarding the derivation of the traffic volume growth under Background conditions, as compared to Existing condition. Add additional information regarding how this growth was estimated.
    b. The Background condition volumes are not shown on an exhibit. Add such an exhibit.
10. Page 26 - Cumulative Project Access Volumes – The property south of the project site also shares the project access road and the access on Airline Highway. Currently, this property only has a single home on it, although it could support upwards of 50 higher-density residential units if redeveloped. The effects of this future development should be considered in the traffic study.
11. Page 26 - Water District Driveway Intersection with Shared Access Road – The northbound Airline Highway (SR 25) left turn lane is about 400 feet long, including bay taper. The adequacy of this left turn lane to accommodate deceleration and vehicle storage for existing, existing plus project, background plus project and cumulative plus project traffic conditions should be analyzed.
12. Project Internal Circulation – The traffic study does not address internal circulation in the project site. Add such a section to the traffic study, addressing the following topics:

a. Internal pedestrian circulation, including across the project access road between the portions of the project east and west of that roadway.
b. Provision for stop signs on parking area exits to project access road
c. Layout of proposed roundabout at southwest corner of site, specifically if the offset of the north access road from the center of the roundabout island would encourage vehicles to incorrectly circulate around the center island.

If you have any questions regarding the contents of this letter or need additional information, please do not hesitate to contact me at your convenience. Thank you for the opportunity to assist you with this project.

Respectfully submitted,

Keith Higgins

Keith B. Higgins, PE, TE

PINNACLE TRAFFIC ENGINEERING
831 C Street
Hollister, California 95023
(831) 638-9260 • PinnacleTE.com

July 15, 2019

Matthew J. Kelley, PE, LS, QSD
Kelley Engineering & Surveying
400 Park Center Drive, Ste. 4
Hollister, CA 95023

RE: Ridgemark Assisted Care Community Project (PLN180004); San Benito County, California
Project Traffic Impact Analysis (TIA) - Response to Comments

Dear Mr. Kelley,

Per your request, I've reviewed the comments provided by Keith B. Higgins, PE, TE (letter dated July 3, 2019) on the Project TIA prepared by Pinnacle Traffic Engineering (Aug. 3, 2018). The comments indicate that overall the Project TIA is acceptable based on industry standards (study scope, analysis scenarios, project trip generation, sight distance analysis, analysis methodologies and conclusions). Mr. Higgins also provided some additional comments that require further consideration. These comments were discussed in detail with Mr. Higgins to ensure that each comment is adequately addressed. The following is a response to the additional comments:

#7. The "Level of Service" (LOS) D threshold was used as the lower limit for acceptable operations to be consistent with the Transportation and Circulation Section of the County's 2035 General Plan EIR (as stated on Page 4 of the TIA). If the LOS D threshold is in question County staff should consult with Caltrans. Therefore, this comment is noted and no changes to the Project TIA are warranted.

#8. The Project Site Plan (Figure 3) in the TIA shows a connection to the public street system west of the project site. As discussed in the Project TIA (Page 10), this connection would be for emergency vehicle access. The current site plan no longer includes this public street system connection. Therefore, this comment is noted and no changes to the Project TIA are warranted.

#9. The comment is requesting additional information regarding the "background" and "background plus project" conditions. However, when discussing the comment with Mr. Higgins he noticed that his copy of the Project TIA was missing several pages. The additional information is already presented in the Project TIA (Pages 18 - 20), and therefore, no changes are warranted.

#10. As discussed in the Project TIA (Page 23), the analysis of future "cumulative" conditions was based on lists of known approved and pending projects provided by County and City (Hollister) staff. There was no approved or pending project for the subject property south of the project site at that time. In addition, the analysis of General Plan "buildout" traffic conditions was beyond the scope defined for the Project TIA. Therefore, this comment is noted and no changes to the Project TIA are warranted.

#11. The comment is requesting an analysis of the northbound left turn lane on Airline Highway (SR 25) at the project access road (shared with Sunnyslope Water District). A discussion regarding the 95th percentile queue for the northbound left turn movement under "cumulative plus project" conditions is provided in the Project TIA (Page 26). The Synchro software operational analysis indicates the 95th percentile queue would not exceed 1-2 vehicles during the AM or PM peak hour. The northbound left turn lane on Airline Highway (SR 25) is approximately 310' in length plus a 90' bay taper (total of 400' for storage and deceleration). The left turn lane standards in the Caltrans Highway Design Manual (HDM, Topic 405) require storage for a minimum of 2 vehicles (50') plus the appropriate deceleration. Based on the existing conditions, deceleration for northbound vehicles traveling on Airline Highway (SR 25) is adequate for a 40-45 mph design speed (Table 405.2B). As stated in the Caltrans HDM (Topic 405.2 (2.d)), the design speeds in Table 405.2B may be reduced 10 mph to 20 mph for a lower entry speed. A review of existing conditions indicates the northbound left turn lane could be extended by 150' without impacting the southbound left turn lane at Fairview Avenue, if desired by the County or Caltrans. County staff may consult with Caltrans regarding the northbound left turn lane.

#12. The comment states the Project TIA does not address internal circulation. As discussed in the Project TIA (Page 1), the TIA scope was defined in consultation with County and Caltrans staff. An evaluation of internal circulation or parking was not included in the TIA scope defined by County staff. It's my understanding that Kelley Engineering & Surveying developed the project site design in cooperation with the County's Resource Management Agency (Planning Services and Public Works). Therefore, the comments provided by Mr. Higgins should be addressed by County staff.

Please contact my office with any questions regarding the response to comments material.

Pinnacle Traffic Engineering

Larry D. Hail, CE, TE, PTOE
President

ldh:msw

Keith Higgins
Traffic Engineer

July 25, 2019

Teri Wissler Adam
EMC Planning Group
301 Lighthouse Avenue, Suite C
Monterey, CA 93940

Re: Ridgemark Assisted Care Community Peer Review, San Benito County, CA

Dear Teri:

As you requested, this letter traffic study is a response to the Pinnacle Traffic Engineering response to comments letter dated July 15, 2019. I also received the complete report from Larry Hail at Pinnacle Traffic Engineering on Friday, July 12, 2019. It included pages 18 through 20 which were missing from the copy used for the original peer review. All the responses are acceptable as submitted, with the following additional information or action items.

1. Comment 11 – As mentioned in the response letter, the northbound left turn lane has a total of 400 feet of deceleration and storage. Subtracting the 50 feet of storage results in a deceleration length of 350 feet, which accommodates about 44 miles per hour of deceleration. The speed limit is 55 miles per hour, which Caltrans would normally consider have a design speed of 60 miles per hour. According to the Caltrans Highway Design Manual Section 405.2, Caltrans may allow 10 to 20 miles per hour of deceleration to occur in the travel lane. Given the very low northbound left turn volume at this location, Caltrans acceptance is very likely. However, this should be confirmed with Caltrans.

   Also, the southbound SR 25 left turn at Fairview Road has a higher volume. Deceleration at that location is probably more critical. Caltrans should be consulted on the allocation of the available median between the northbound left turn lane at the project driveway and the southbound left turn lane at Fairview Road.

2. Comment 12 – The design of the roundabout in the southwest corner of the project must be approved by San Benito County Public Works and fire service.

If you have any questions regarding the contents of this letter or need additional information, please do not hesitate to contact me at your convenience. Thank you for the opportunity to assist you with this project.

Respectfully submitted,

Keith Higgins

Keith B. Higgins, PE, TE

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