Project Plans

A

APPENDIX

PEOPLE'S SELF HELP HOUSING

GREENFIELD, CALIFORNIA

REFERENCE

APPLICABLE CODES:

2019 Building Standards Administrative Code, Part 1, CBSC
2019 California Building Code (CBC) Part 2, CBSC (2006 IBC & California Amendments)
2019 California Electrical Code (CEC) Part 3, CBSC (2005 NEC & California Amendments)
2019 California Mechanical Code (CMC) Part 4, CBSC (2006 UMC & California Amendments)
2019 California Plumbing Code (CPC), Part 5 CBSC (2006 UPC & California Amendments)
2019 California Energy Code, Part 6 CBSC
2019 California Fire Code, Part 9 CBSC (2006 IFC & California Amendments)
2019 California Referenced Standards, Part 12, CBSC
Title 19 C.C.R., Public Safety, SFM Regulations
NFPA 13, Automatic Sprinkler System, 2010 edition
NFPA 72, Nat'l Fire Alarm Code, (Ca Amended) 2010 Edition (See UL Standard 1971 for "Visual Devices)
City of Greenfield Municipal Code (Current Edition)

RESIDENTIAL UNITS SHALL COMPLY w/ 11A & 11B (CBC 11B-233.1 & 11B-233.3.1.2)

Should any condition develop that is not covered by the approved plans and specifications such that the finished work will not comply with title 24 , a change order detailing and specifying the required work shall be submitted to and approved prior to proceeding with the work

The intent of the plans and specifications is to construct this work in accordance with the california building standards code, titles 19 and 24, california code of regulations. should any conditions develop not covered by the approved plans and specifications wherein the finished work will not comply with title 24, california code of regulations, a change order detailing and specifying the required work shall be submitted to and approved by the owner before proceeding with the work.

PROJECT DIRECTORY

OWNER / APPLICANT: Peoples' Self-Help Housing Corp.
3533 Empleo Street
San Luis Obispo, California 93401
P: 805-540-2465
F: 805-544-1901
Efrain Lopez (owner)
Sheryl Flores (Applicant):
sherylf@pshhc.org

ARCHITECT: THE PAUL DAVIS PARTNERSHIP, LLP
Attn: Paul W. Davis, AIA,
286 Eldorado Street
Monterey, CA 93940
P: 831-373-2784 ext. 207/ 206
F: 373-7459
paulw@pauldavispartnership.com

ENGINEER & SURVEYOR: MONTEREY BAY ENGINEERS, INC.
Attn: Steven C. Wilson
607 Charles Ave., Suite B
Seaside, CA 93955
P: 831-899-7899
F: 831-899-7879

PROJECT INFORMATION

ZONING:	R-M (MULTI-FAMILY RESIDENTIAL (7 to 15 DU/AC)
APN:	009-082-013-000
PARCEL SIZE:	198,400 SF /4.6 ACRES
MAX. LOT COVERAGE ALLOWED:	60%
PROVIDED:	49,372 SF (25% OF PARCEL) - SEE A1.1 FOR EACH HOUSE LOT
FLOOR AREA RATIO PROVIDED:	59,572 SF (30% OF PARCEL)
MAX. BUILDING HEIGHT ALLOWED:	35'
PROVIDED:	15'-26' (SINGLE STORY & TWO STORIES)
PARKING REQUIREMENT:	SINGLE FAMILY HOMES (2-COVERED)
PROVIDED:	20'x20' 2-CAR GARAGE PER HOUSE
CONSTRUCTION TYPE:	V-B
FIRE SPRINKLER:	NFPA 13R

BUILDING AREA BREAKDOWN:

SINGLE STORY HOUSE:		1,557 SF @ 20 = 31,140
FIRST FLOOR	1,126 SF	
GARAGE	431 SF	
TWO-STORY HOUSE:		1,777 SF @ 16 = 28,432
FIRST FLOOR	587 SF	
SECOND FLOOR	757 SF	
GARAGE	433 SF	
		59,572 SF

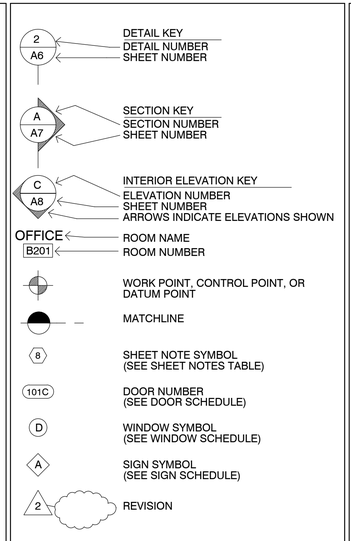
SHEET INDEX

ABBREVIATIONS

&	AND	CTR.	COUNTER	H.B.	HOSE BIB	Or	OVER
L	ANGLE	CTSK.	COUNTERSINK	HBD.	HARDBOARD	OBS.	OBSCURE
@	AT	CY.	CUBIC YARD	H.C.	HOLLOW CORE	O.C.	ON CENTER
℄	CENTERLINE			HDR.	HEADER	O.D.	OUTSIDE DIAMETER
P	PLATE	DBL.	DOUBLE	HDWD.	HARDWOOD	O.F.C.I.	OWNER FURNISH, CONTRACTOR INSTALL
ϕ	DIAMETER OR ROUND	DEPT.	DEPARTMENT	HDWR.	HARDWARE		
⊥	PERPENDICULAR	DET.	DETAIL	H.M.	HOLLOW METAL	OFF.	OFFICE
//	PARALLEL	D.F.	DOUGLAS FIR	HORIZ.	HORIZONTAL	O.H.M.S.	OVALHEAD MACHINE SCREW
#	POUND OR NUMBER	D.H.	DOUBLE HUNG	HGT.	HEIGHT	O.H.W.S.	OVALHEAD WOOD SCREW
(E)	EXISTING	DIAG.	DIAGONAL	HTG.	HEATING	OPNG.	OPENING
		DIA.	DIAMETER	H.W.	HOT WATER	OPP.	OPPOSITE
A.B.	ANCHOR BOLT	DIMEN.	DIMENSION	HVAC	HEATING, VENTILATING, AND AIR CONDITIONING	O.S.B.	ORIENTED STRAND BOARD
A.B.S.	ACRYLONITRILE BUTADIENE STYRENE	DISP.	DISPENSER			P.A.F.	POWDER ACTUATED FASTENER
		DN.	DOWN			PART. BD.	PARTICLE BOARD
A.C.	ASPHALTIC CONCRETE	DRWG.	DRAWING	I.C.B.O.	INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS	P.G.	PAINT GRADE
A/C	AIR CONDITIONING	D.S.	DOWNSPOUT			PERF.	PERFORATED
ACOUS.	ACOUSTICAL	DWR.	DRAWER	I.D.	INSIDE DIAMETER	P.L.F.	POUNDS PER LINEAL FOOT
ADJ.	ADJUSTABLE, ADJACENT			INCL.	INCLUDED, INCLUDING	P.L.	PROPERTY LINE.
AGGR.	AGGREGATE	E.	EAST	INSUL.	INSULATION	PL. LAM.	PLASTIC LAMINATE
ALUM.	ALUMINUM	EA.	EACH	INT.	INTERIOR	PLAS.	PLASTER
ANOD.	ANODIZED	ELEV.	ELEVATION, ELEVATOR	INV.	INVERT	PLY.	PLYWOOD
A.P.A.	AMERICAN PLYWOOD ASSOCIATION	ELEC.	ELETRIC (AL)			PR.	PAIR
		EMER.	EMERGENCY	JAN.	JANITOR	P.S.F.	POUNDS PER SQUARE FOOT
APPROX.	APPROXIMATE	ENCL.	ENCLOSURE	J.H.	JOIST HANGER	P.S.I.	POUNDS PER SQUARE INCH
ARCH.	ARCHITECT (URAL)	EQUIP.	EQUIPMENT	JT.	JOINT	P.T.	PRESSURE TREADED
		EXIST. (E)	EXISTING			PART.	PARTITION
BD.	BOARD	EXH.	EXHAUST	KIT.	KITCHEN	P.T.D.	PAPER TOWEL DISPENSER
BIT.	BITUMINOUS	EXP.	EXPOSED, EXPANSION			P.V.C.	POLYVINYL CHLORIDE
BLDG.	BUILDING	EXT.	EXTERIOR	L.	LONG, LENGTH		
BLK.	BLOCK			LAM.	LAMINATE, LAMINATED	R.	RISER (S)
BLKG.	BLOCKING	F.A.	FIRE ALARM	LAV.	LAVATORY	R.A.	RETURN AIR
B.M.	BENCH MARK	FAST.	FASTEN, FASTENER	L.B.	LAG BOLT	RAD.	RADIUS
BM.	BEAM	F.B.	FLAT BAR	LOC.	LOCATE, LOCATION	R.D.	ROOF DRAIN
BOT.	BOTTOM	F.D.	FLOOR DRAIN	L.W.	LIGHT WEIGHT	REG.	REGISTER
BRG.	BEARING	FDN.	FOUNDATION			REF.	REFRIGERATOR
BTWN.	BETWEEN	F.E.C.	FIRE EXTINGUISHER CABINET	MAS.	MASONRY	REINF.	REINFORCED, REINFORCING
B.W.	BOTH WAYS	FIBERGL.	FIBERGLASS	MAT.	MATERIAL (S)	REQ'D.	REQUIRED
		FIN.	FINISH (ED)	MAX.	MAXIMUM	REQMT.	REQUIREMENT
CAB.	CABINET	F.H.M.S.	FLAT HEAD MACHINE SCREW	M.B.	MACHINE BOLT	RESIL.	RESILIENT
C.B.	CATCH BASIN	F.H.W.S.	FLAT HEAD WOOD SCREW	M.C.	MEDICINE CABINET	R.H.M.S.	ROUND HEAD METAL SCREW
C.C.B.R.	CLOSED CELL BACKER ROD	FLASH.	FLASHING	M.H.	MAN HOLE	R.H.W.S.	ROUND HEAD WOOD SCREW
CEM.	CEMENT	FLR.	FLOOR (ING)	MECH.	MECHANICAL	RM.	ROOM
CER.	CERAMIC	FLUOR.	FLUORESCENT	MEMB.	MEMBRANE	R.O.	ROUGH OPENING
C.F.	CUBIC FOOT	F.O.	FACE OF	MEZZ.	MEZZANINE	R.O.W.	RIGHT OF WAY
C.I.	CAST IRON	F.O.C.	FACE OF CONCRETE	MFR.	MANUFACTURE (ER)	R.S.	RESAWN
CLKG.	CAULKING	F.O.F.	FACE OF FINISH	MIN.	MINIMUM	RUB.	RUBBER
CLG.	CEILING	F.O.M.	FACE OF MASONRY	MIR.	MIRROR	RWD.	REDWOOD
CL.	CLOSET	F.O.S.	FACE OF STUDS	MISC.	MISCELLANEOUS	R.W.L.	RAIN WATER LEADER
CLR.	CLEAR (ANCE)	F.P.	FIREPLACE	MLDG.	MOULDING		
COL.	COLUMN	F.S.	FULL SIZE	M.I.W.	MALLEABLE IRON WASHER	S.	SOUTH
COMP.	COMPOSITION	FT.	FOOT OR FEET	M.O.	MASONRY OPENING	S.B.	SOLID BLOCKING
CONC.	CONCRETE	FTG.	FOOTING	MTD.	MOUNTED	S.C.	SOLID CORE
CONN.	CONNECT (ION)	FURR.	FURRED (ING)	MTL.	METAL	SCHED.	SCHEDULE
CONSTR.	CONSTRUCT (ION)			MULL.	MULLION	S.D.	STORM DRAIN
CONT.	CONTINUOUS	GA.	GAUGE			SECT.	SECTION
CORR.	CORRUGATED	GALV.	GALVANIZED	N.	NORTH	SERV.	SERVICE
CSMT.	CASEMENT	G.B.	GRAB BAR	(N)	NEW	S.F.	SQUARE FEET (FOOT)
CSWK.	CASEWORK	G.I.	GALVANIZED IRON	NAT.	NATURAL	S.G.	STAIN GRADE
C.T.	CERAMIC TILE	GL.	GLASS, GLAZING	N.I.C.	NOT IN CONTRACT	SH.	SHELF, SHELVING
		GR.	GRADE, GRADING	NOM.	NOMINAL	SHWR.	SHOWER
		G.W.B.	GYPSUM WALLBOARD	N.T.S.	NOT TO SCALE		

SHT.	SHEET		
SHTG.	SHEATHING		
SIM.	SIMILAR		
S.O.H.	SIMILAR OPPOSITE HAND		
S.S.	STAINLESS STEEL		
S.M.	SHEET METAL		
S.M.S.	SHEET METAL SCREW		
SPECS.	SPECIFICATIONS		
SQ.	SQUARE		
STL.	STEEL		
STD.	STANDARD		
STAG.	STAGGERED		
STOR.	STORAGE		
STRUCT.	STRUCTURAL		
SUSP.	SUSPENDED		
SYM.	SYMETRICAL		
SYS.	SYSTEM		
T.	TREAD (S)		
T.B.	TOWEL BAR		
T.C.	TOP OF CURB		
TEL.	TELEPHONE		
TEMP.	TEMPERED		
T.E.N.	TYPICAL EDGE NAILING		
T & G	TONGUE AND GROOVE		
T.GR.	TOP OF GRATE		
THK.	THICK (NESS)		
THRESH.	THRESHOLD		
T.O.	TOP OF		
T.P.	TOP OF PAVEMENT		
T.P.H.	TOILET PAPER HOLDER		
TV	TELEVISION		
T.W.	TOP OF WALL		
TYP.	TYPICAL		
U.B.C.	UNIFORM BUILDING CODE		
U.L.	UNDERWRITER'S LABORATORIES		
U.O.N.	UNLESS OTHERWISE NOTED		
UR.	URINAL		
V.B.	VAPOR BARRIER		
VAR.	VARIES		
VERT.	VERTICAL		
V.G.	VERTICAL GRAIN		
V.T.	VINYL TILE		
W.	WEST		
W.	WIDE, WIDTH		
W/	WITH		
W.C.	WATER CLOSET		
WD.	WOOD		
WDW.	WINDOW		
W.H.	WATER HEATER		
W.I.C.	WOODWORK INSTITUTE OF CALIFORNIA		
W/O	WITHOUT		
W.P.	WATERPROOF		
W.R.	WATER RESISTANT		
W.S.	WOOD SCREW		
W.SCT.	WAINSCOT		
WT.	WEIGHT		
W.W.M.	WELDED WIRE MESH		

SYMBOLS



VICINITY MAP

PROJECT LOCATION

Project / Owner:

People's Self Help Housing

296 APPLE AVENUE
GREENFIELD, CA

A.P.N.: 109-082-013-000

THE PAUL DAVIS PARTNERSHIP
ARCHITECTS & PLANNERS

The Paul Davis Partnership, LLP
286 Eldorado Street
Monterey, CA 93940
(831) 373-2784 FAX (831) 373-7459
EMAIL: info@pauldavispartnership.com

Drawn By: AC

Drawing Date: 7/12/2021

Project Number: 2107

Revisions:

Sheet Title:
TITLE SHEET
ABBREVIATIONS
PROJECT INFO.

Sheet Number:

A0.1

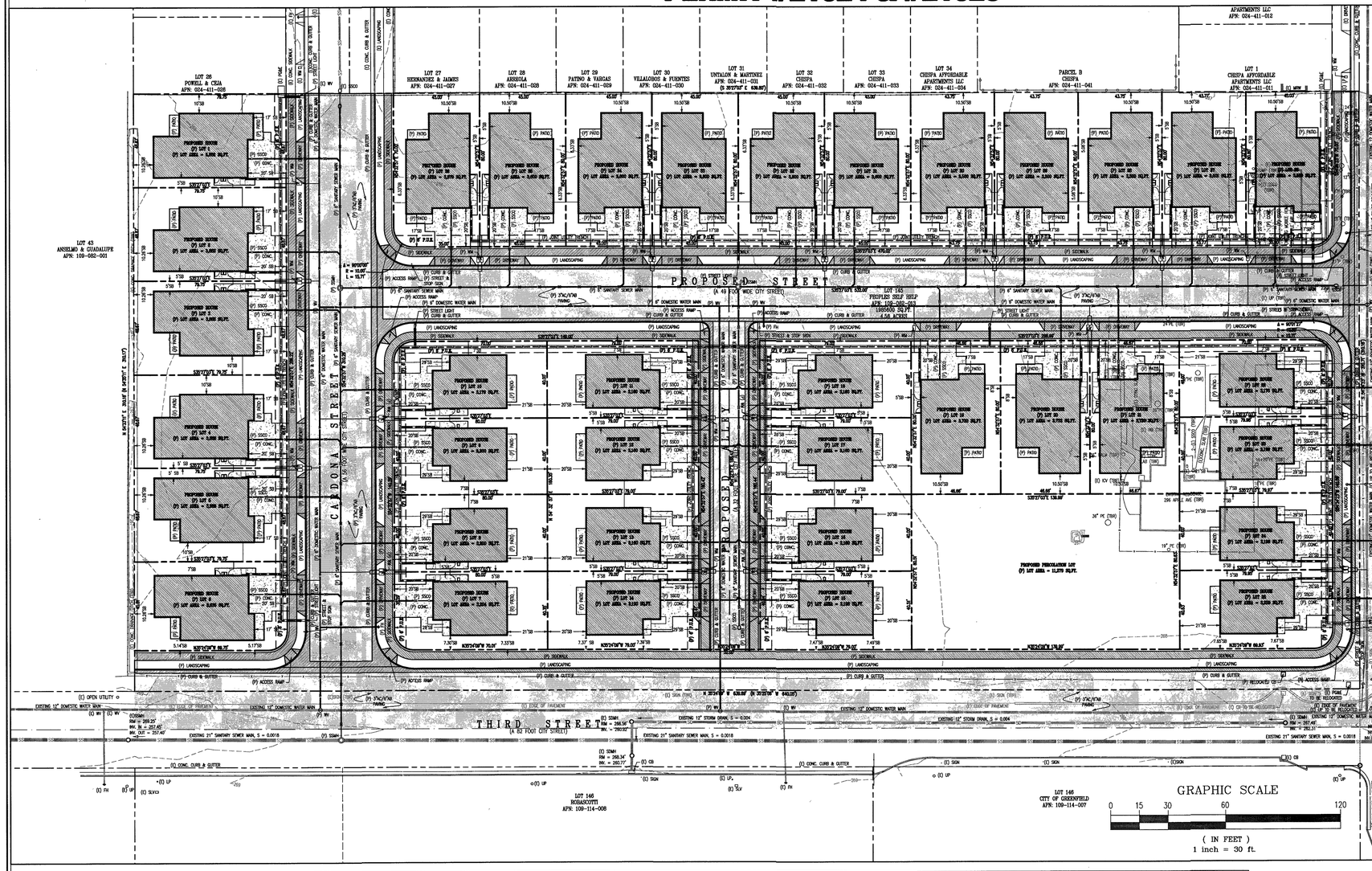
VESTING TENTATIVE SUBDIVISION MAP
APPLE AVENUE SUBDIVISION
LOT 45, VOLUME 1 CITIES & TOWNS, PAGE 64
APN: 109-082-013
296 APPLE AVENUE
GREENFIELD, CA 93927

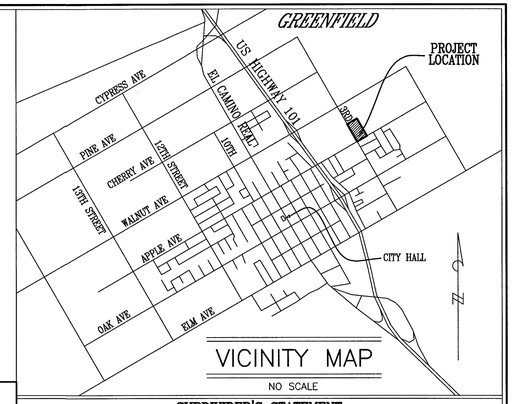
PREPARED FOR

PEOPLE'S SELF-HELP HOUSING

JULY, 2021

PERMIT #21024 & #21025





VICINITY MAP

NO SCALE

SUBDIVIDER'S STATEMENT

1.	SUBDIVIDER:	PEOPLE'S SELF-HELP HOUSING 3533 EMPLEO STREET SAN LUIS OBISPO, CA 93401 (805) 540-2465 VOICE
2.	OWNERS:	PEOPLES SELF-HELP HOUSING 3533 EMPLEO STREET SAN LUIS OBISPO, CA 93401 (805) 540-2465 VOICE
3.	ENGINEER & SURVEYOR:	STEVEN C. WILSON MONTEREY BAY ENGINEERS, INC. 607 CHARLES AVE. SUITE B SEASIDE, CA 93955 (831) 899-7899 VOICE (831) 899-7879 FACSIMILE
4.	PROPERTY LOCATION:	296 APPLE AVENUE GREENFIELD, CA 93927 ASSESSOR'S PARCEL: 109-082-013
5.	LEGAL DESCRIPTION:	LOT 145 VOL. 1, SURVEYS, PG. 64
6.	PRESENT ZONING:	R-M MULTIPLE FAMILY RESIDENTIAL
7.	PROPOSED ZONING:	R-M MULTIPLE FAMILY RESIDENTIAL
8.	EXISTING USE:	(VACANT) R-M MULTIPLE FAMILY RESIDENTIAL
9.	PROPOSED USE:	MEDIUM HIGH DENSITY SINGLE FAMILY RESIDENTIAL
10.	TOTAL LAND AREA	GROSS = 198,600 SQ. FT. = 4.560 ACRES
11.	TOTAL PROPOSED LOTS	36
12.	TOTAL LOT DENSITY	7.89 UNITS PER ACRE
13.	EXISTING UTILITLY SUPPLIERS:	
	ELECTRICITY:	P. G. & E.
	GAS:	P. G. & E.
	CATV:	SPECTRUM
	WATER:	CALIFORNIA WATER SERVICE COMPANY
	SEWER:	CITY OF GREENFIELD

14. BOUNDARY LOCATIONS SHOWN HEREON WERE DETERMINED WITH THE BENEFIT OF A FIELD SURVEY, SUPPLEMENTED BY RECORD DATA.
15. ELEVATIONS SHOWN ARE BASED ON NAVD-88 DATUM. THE BENCHMARK IS A USC & GS DISC STAMPED "T 1190" NGS ID# GU2424 BENCHMARK ELEVATION = 326.03'
16. CONTOUR INTERVAL = ONE FOOT
17. TREE TYPES ARE INDICATED WHEN KNOWN. DIAMETER OF TREES ARE SHOWN IN INCHES
18. ● DENOTES A FOUND 1" IRON PIPE TAGGED "LS 3880" UNLESS OTHERWISE NOTED.

LEGEND

(E) EXISTING	INV INVERT ELEVATION	SD STORM DRAIN LINE	
(N) NEW	LF LINEAR FEET	SS SEWER LINE	
AB AGGREGATE BASE	(P) PROPOSED	W WATER LINE	
AC ASPHALT CONCRETE	R RADIUS	CTCC JOINT UTILITY TRENCH	
BFP BACKFLOW PREVENTER	RIM RIM ELEVATION	4" PVC RAIN WATER LEADER	
BW BACK OF SIDEWALK	RWL RAIN WATER LEADER	4" PERFORATED WALL DRAIN	
C&G CURB & GUTTER	S SLOPE	PROPOSED BUILDING	
CB CATCH BASIN	SD STORM DRAIN	ASPHALT	
CL CENTERLINE	SF SQUARE FEET	BUILDING PAD(S)	
CO CLEAN OUT	TB THRUST BLOCK	CONCRETE	
D/W DRIVEWAY	TBD TO BE DETERMINED	LANDSCAPING	
DI DROP INLET	TBR TO BE REMOVED/RELOCATED		
DS DOWN SPOUT	TC TOP OF CURB		
FD FLOOR DRAIN	TDC TOP OF DEPRESSED CURB		
FF FINISHED FLOOR	UP UTILITY POLE		

PROPOSED LOT CONFIGURATION

LOT DESIGNATION	LOT 1	LOT 2	LOT 3	LOT 4	LOT 5	LOT 6	LOT 7	LOT 8	LOT 9	LOT 10	LOT 11	LOT 12	LOT 13	LOT 14	LOT 15	LOT 16	LOT 17	LOT 18	LOT 19	LOT 20	LOT 21	LOT 22	LOT 23	LOT 24	LOT 25	LOT 26	LOT 27	LOT 28	LOT 29	LOT 30	LOT 31	LOT 32	LOT 33	LOT 34	LOT 35	LOT 36	TOTAL
EASEMENT AREAS (SQ. FT.)	292	292	292	292	292	255	221	240	240	663	678	240	240	242	243	240	240	678	280	280	280	663	240	240	224	693	263	263	263	263	270	270	270	270	270	250	11,152
NET AREAS (SQ. FT.)	3,590	3,590	3,590	3,590	3,590	3,380	2,982	2,960	2,960	2,516	2,482	2,920	2,920	2,948	2,955	2,920	2,920	2,482	3,453	3,453	3,453	2,515	2,959	2,958	3,005	2,887	3,238	3,237	3,237	3,237	3,330	3,330	3,330	3,330	3,330	3,329	110,027
GROSS AREAS (SQ. FT.)	3,882	3,882	3,882	3,882	3,882	3,635	3,204	3,200	3,200	3,179	3,160	3,160	3,160	3,190	3,198	3,160	3,160	3,160	3,733	3,733	3,733	3,178	3,199	3,198	3,229	3,580	3,501	3,500	3,500	3,500	3,600	3,600	3,600	3,600	3,600	3,579	121,179
PERCOLATION POND DEDICATION "A"																																					11,279
STREET DEDICATION "B"																																					66,142
SITE TOTAL AREA (SQ. FT.)																																					198,600

REVISIONS	
DATE	BY
09-23-21	SPH
10-04-21	SPH

JOB No. 21-014

SCALE: 1" = 30'

REGISTERED PROFESSIONAL ENGINEER STEVEN C. WILSON No. 25136 CIVIL STATE OF CALIFORNIA

10/4/2021

VESTING TENTATIVE SUBDIVISION MAP

APPLE AVENUE SUBDIVISION

LOT 145

FILED IN VOL. 1 - CITIES & TOWNS, AT PAGE 64, RECORDS OF MONTEREY COUNTY

ASSESSOR'S PARCEL No. 109-082-013

CITY OF GREENFIELD | COUNTY OF MONTEREY | STATE OF CALIFORNIA

PREPARED FOR

PEOPLE'S SELF-HELP HOUSING

BY

MONTEREY BAY ENGINEERS, INC.

607 CHARLES AVE SUITE B (831) 899-7899 SEASIDE, CA 93955

SCALE: 1" = 30' | JULY, 2021 | SHEET 1 OF 7

LOT 26
POWELL & CEJA
APN: 024-411-026

LOT 27
HERNANDEZ & JAIMES
APN: 024-411-027

LOT 28
ARREOLA
APN: 024-411-028

LOT 29
PATINO & VARGAS
APN: 024-411-029

LOT 30
VILLALOBOS & FUENTES
APN: 024-411-030

LOT 31
UNTALON & MARTINEZ
APN: 024-411-031
(S 35°27'03" E 639.80')

LOT 32
CHISPA
APN: 024-411-032

LOT 33
CHISPA
APN: 024-411-033

LOT 34
CHISPA AFFORDABLE APARTMENTS LLC
APN: 024-411-034

PARCEL B
CHISPA
APN: 024-411-041

LOT 1
CHISPA AFFORDABLE APARTMENTS LLC
APN: 024-411-011

LOT 145
PEOPLES SELF HELP
APN: 109-082-013
1985600 SQ.FT.
4.56 ACRES

N 54°25'11" E 310.16' (N 54°25'11" E 310.17')

(E) CONC DRAINAGE DITCH (TBR)

(E) POWER POLE

(E) CONC.

(E) WM

(E) WV

(E) SSCO

(E) SIGN

(E) MRW

(E) EDGE OF PAVEMENT

EXISTING 12" DOMESTIC WATER MAIN

EXISTING 12" SANITARY SEWER MAIN, S = 0.002

(E) WM (TBR)

(E) WP TO BE RELOCATED

24"P (TBR)
20"P (TBR)
2 - (E) UP STUMP (TBR)
(E) SSCO (TBR)
21+30"P (TBR)
12"PE
17"P (TBR)
24"PE (TBR)
28"P (TBR)
(E) HB (TBR)
EXISTING MOBILE HOME 296 APPLE AVE (TBR)
(E) CONC SLAB (TBR)
21"P (TBR)
(E) GM (TBR)
22"P (TBR)
(E) UP (TBR)
18" SNAG (TBR)
24"PE (TBR)
SHED (TBR)
(E) CONC SLAB (TBR)
24"PE (TBR)
32"PE (TBR)
36"PE (TBR)
(E) ICV (TBR)
(E) HB (TBR)
2-(E) SSCO (TBR)
(E) CONC SLAB (TBR)
36" PALM (TBR)
(E) CONC SLAB (TBR)
(E) GM (TBR)
(E) ICV (TBR)
EXISTING RESIDENCE 296 APPLE AVE (TBR)
16+20"PE (TBR)
16"PE (TBR)
36" PE (TBR)
19" PE (TBR)
18+18"PE (TBR)
20"PE (TBR)
S 54°25'11" E 310.17' (310.16')
EXISTING 12" DOMESTIC WATER MAIN
(E) EDGE OF PAVEMENT
EXISTING 12" SANITARY SEWER MAIN, S = 0.002
APPLE AVENUE
(A 54' FOOT CITY STREET)

GENERAL DEMOLITION NOTES

1. THE GENERAL CONTRACTOR AND SUB-CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMITTING THEIR PROPOSAL TO BECOME FAMILIAR WITH ALL EXISTING FIELD CONDITIONS AND REPORT ANY DISCREPANCIES TO THE PROJECT CIVIL ENGINEER AND ARCHITECT.
2. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY PROTECTION MEASURES TO SAFEGUARD THE PUBLIC DURING CONSTRUCTION ACTIVITIES.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL EXISTING UNDERGROUND AND OVERHEAD UTILITIES TO SAFEGUARD AGAINST THE INTERRUPTION OF SERVICES TO THE PUBLIC.
4. OWNER HAS FIRST RIGHT OF REFUSAL OF ALL SALVAGEABLE ITEMS. ALL EXISTING PERSONAL PROPERTY TO BE REMOVED BY OTHERS PRIOR TO DEMOLITION. ALL REMAINING ITEMS ARE THE PROPERTY OF THE OWNER. GENERAL CONTRACTOR SHALL COORDINATE WITH THE OWNER THE SALVAGE OF FIXTURES, FURNISHINGS, DOORS AND MISCELLANEOUS EQUIPMENT.
5. WHILE AN ATTEMPT HAS BEEN MADE TO SHOW THE ITEMS TO BE REMOVED, IT IS THE RESPONSIBILITY OF THE VARIOUS CONTRACTORS TO CONDUCT ON-SITE EXAMINATIONS AND FAMILIARIZE THEMSELVES WITH THE ACTUAL SITE CONDITIONS. ADDITIONAL ITEMS NOT SHOWN TO BE REMOVED, INTERFERING WITH THE COMPLETE REMOVAL OF THE EXISTING BUILDING , SHALL BE REMOVED WITHOUT ADDITIONAL COST TO THE OWNER.
6. CARE SHOULD BE EXCERCISED IN THE REMOVAL OF WORK TO PREVENT THE RELEASE OF TOXIC SUBSTANCES. SHOULD TOXIC SUBSTANCES, SUCH AS ASBESTOS BE ENCOUNTERED, THE OWNER AND THE PROJECT ENGINEER SHALL BE NOTIFIED. UPON AUTHORIZATION. THE DISPOSAL OF SAME SHALL CONFORM TO ALL GOVERNING CODES AND REGULATIONS. DISPOSAL SHALL BE DONE ONLY BY CONTRACTORS LICENSED FOR THIS WORK.
7. DURING DEMOLITION AND CONSTRUCTION OPERATIONS, PROVIDE ALL NECESSARY PROTECTION AND SAFE PASSAGE FOR THE PUBLIC. SUCH AS BUT NOT LIMITED TO: BARRICADES, TEMPORARY PARTITIONS, DUST BARRIERS, SIGNS, ETC. ERECT AND MAINTAIN THESE BARRIERS TO THE SATISFACTION OF THE CITY ENGINEER AND ALL APPLICABLE RULES AND REGULATIONS.
8. CONTRACTOR SHALL TAKE PRECAUTIONS AS TO MINIMIZE DAMAGE TO ITEMS TO REMAIN; INCLUDING ALL UTILITIES. DURING DEMOLITION AND CONSTRUCTION OPERATIONS ITEMS NOT SPECIFICALLY NOTED FOR REMOVAL THAT ARE DAMAGED, SHALL BE REPAIRED OR REPLACED TO MATCH EXISTING CONDITIONS AT NO ADDITIONAL COST TO THE OWNER.
9. COORDINATE CONSTRUCTION TIMING, MOVEMENT OF CONSTRUCTION MATERIALS AND STORAGE OF REFUSE CONTAINERS WITH THE OWNER.
10. DEMOLISH ENTIRE EXISTING BUILDINGS INCLUDING ALL CONCRETE SLABS, RETAINING WALLS, ASPHALT PAVING AS SHOWN ON THIS PLAN.

(E) CONC DRAINAGE DITCH (TBR)

(E) SIGN (TBR)

N 35°24'09" W 639.69' (N 35°25'06" W 640.05')

(E) SIGN (TBR)

(E) SIGN TO BE RELOCATED

(E) PG&E

(E) SSCO

(E) EDGE OF PAVEMENT

EXISTING 12" DOMESTIC WATER MAIN

(E) EDGE OF PAVEMENT

(E) WV

EXISTING 12" DOMESTIC WATER MAIN

(E) EDGE OF PAVEMENT

(E) EDGE OF PAVEMENT

(E) CB TO BE RELOCATED

(E) EDGE OF PAVEMENT

(E) WV

(E) SSMH
RIM = 269.25'
INV. IN = 257.45'
INV. OUT = 257.40'

EXISTING 21" SANITARY SEWER MAIN, S = 0.0018

THIRD STREET
(A 82 FOOT CITY STREET)

(E) SDMH
RIM = 268.56'
INV. = 260.92'

EXISTING 12" STORM DRAIN, S = 0.004

EXISTING 21" SANITARY SEWER MAIN, S = 0.0018

(E) SDMH
RIM = 268.34'
INV. = 260.77'

EXISTING 12" STORM DRAIN, S = 0.004

(E) SDMH
RIM = 267.49'
INV. = 262.31'

EXISTING 12" DOMESTIC WATER MAIN

(E) SSMH
RIM = 268.29'
INV.IN = 262.02'
INV.OUT = 258.94'

EXISTING 21" SANITARY SEWER MAIN, S = 0.0018

(E) CONC. CURB & GUTTER

(E) CB

(E) CONC. CURB & GUTTER

(E) SIGN

(E) SIGN

(E) SIGN

(E) CB

(E) LP

(E) UP

(E) SLV

(E) UP

(E) SIGN

(E) LP

(E) SLV

(E) FH

(E) UP

LOT 146
ROBASCOTTI
APN: 109-114-008

LOT 146
CITY OF GREENFIELD
APN: 109-114-007

GRAPHIC SCALE
0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

SCALE: 1" = 20'

REGISTERED PROFESSIONAL ENGINEER
STEVEN C. WILSON
No. 25136
CIVIL
STATE OF CALIFORNIA
10/4/2021

REVISIONS	
DATE	BY
09-23-21	SPH
10-04-21	SPH

JOB No. 21-014

VESTING TENTATIVE SUBDIVISION MAP

APPLE AVENUE SUBDIVISION
DEMOLITION PLAN

LOT 145
FILED IN VOL. 1 – CITIES & TOWNS, AT PAGE 64, RECORDS OF MONTEREY COUNTY
ASSESSOR'S PARCEL No. 109-082-013

CITY OF GREENFIELD | COUNTY OF MONTEREY | STATE OF CALIFORNIA

PREPARED FOR
PEOPLE'S SELF-HELP HOUSING
BY
MONTEREY BAY ENGINEERS, INC.
607 CHARLES AVE SUITE B | (831) 899-7899 | SEASIDE, CA 93955

SCALE: 1" = 20' | JULY, 2021 | SHEET 2 OF 7

LOT 25
RAYAS
APN: 024-411-025

LOT 26
POWELL & CEJA
APN: 024-411-026

LOT 27
HERNANDEZ & JAIMES
APN: 024-411-027

LOT 28
ARREOLA
APN: 024-411-028

LOT 29
PATINO & VARGAS
APN: 024-411-029

LOT 30
VILLALOBOS & FUENTES
APN: 024-411-030

LOT 31
UNTALON & MARTINEZ
APN: 024-411-031
(S 35°27'03" E 639.80')

LOT 32
CHISPA
APN: 024-411-032

LOT 33
CHISPA
APN: 024-411-033

LOT 34
CHISPA AFFORDABLE APARTMENTS LLC
APN: 024-411-034

PARCEL B
CHISPA
APN: 024-411-041

LOT 2
CHISPA AFFORDABLE APARTMENTS LLC
APN: 024-411-012

LOT 1
CHISPA AFFORDABLE APARTMENTS LLC
APN: 024-411-011

LOT 43
ANSELMO & GUADALUPE
APN: 109-082-001

PROPOSED STREET
(A 49 FOOT WIDE CITY STREET)

LOT 145
PEOPLES SELF HELP
APN: 109-062-013
1985600 SQ.FT.
4.56 ACRES

CARDONA STREET
(A 56 FOOT WIDE CITY STREET)

PROPOSED ALLEY
(A 32 FOOT WIDE CITY ALLEY)

THIRD STREET
(A 82 FOOT CITY STREET)

PROPOSED PERCOLATION LOT
(P) LOT AREA = 11,279 SQ.FT.

LOT 146
ROBASCOTTI
APN: 109-114-008

GRAPHIC SCALE
0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

SCALE: 1" = 20'

REVISIONS	
DATE	BY
09-23-21	SPH
10-04-21	SPH

VESTING TENTATIVE SUBDIVISION MAP

APPLE AVENUE SUBDIVISION
PROPOSED SUBDIVISION LAYOUT

LOT 145
FILED IN VOL. 1 – CITIES & TOWNS, AT PAGE 64, RECORDS OF MONTEREY COUNTY
ASSESSOR'S PARCEL No. 109-082-013

CITY OF GREENFIELD | COUNTY OF MONTEREY | STATE OF CALIFORNIA

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BY
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607 CHARLES AVE SUITE B (831) 899-7899 SEASIDE, CA 93955

REGISTERED PROFESSIONAL ENGINEER
STEVEN C. WILSON
No. 25136
STATE OF CALIFORNIA
10/4/2021

JOB No. 21-014 | SCALE: 1" = 20' | JULY, 2021 | SHEET 3 OF 7

LOT 28
ARREOLA
APN: 024-411-028

LOT 29
PATINO & VARGAS
APN: 024-411-029

LOT 30
VILLALOBOS & FUENTES
APN: 024-411-030

LOT 31
UNTALON & MARTINEZ
APN: 024-411-031
(S 35°27'03" E 639.80')

LOT 32
CHISPA
APN: 024-411-032

LOT 33
CHISPA
APN: 024-411-033

LOT 34
CHISPA AFFORDABLE APARTMENTS LLC
APN: 024-411-034

PARCEL B
CHISPA
APN: 024-411-041

LOT 1
CHISPA AFFORDABLE APARTMENTS LLC
APN: 024-411-011

PROPOSED HOUSE (P) LOT 35 (P) LOT AREA = 3,600 SQ.FT.
PROPOSED HOUSE (P) LOT 34 (P) LOT AREA = 3,600 SQ.FT.
PROPOSED HOUSE (P) LOT 33 (P) LOT AREA = 3,600 SQ.FT.
PROPOSED HOUSE (P) LOT 32 (P) LOT AREA = 3,600 SQ.FT.
PROPOSED HOUSE (P) LOT 31 (P) LOT AREA = 3,600 SQ.FT.
PROPOSED HOUSE (P) LOT 30 (P) LOT AREA = 3,500 SQ.FT.
PROPOSED HOUSE (P) LOT 29 (P) LOT AREA = 3,500 SQ.FT.
PROPOSED HOUSE (P) LOT 28 (P) LOT AREA = 3,500 SQ.FT.
PROPOSED HOUSE (P) LOT 27 (P) LOT AREA = 3,501 SQ.FT.
PROPOSED HOUSE (P) LOT 26 (P) LOT AREA = 3,580 SQ.FT.

S35°27'03"E 470.02'

(P) SIDEWALK
(P) LANDSCAPING
(P) DRIVEWAY
(P) CURB & GUTTER
(P) ACCESS RAMP
(P) 3"AC/6"AB PAVING

PROPOSED STREET
(A 49 FOOT WIDE CITY STREET)

S35°27'03"E 532.00'

LOT 145
PEOPLES SELF HELP
APN: 109-082-013
1985600 SQ.FT.
4.56 ACRES

(P) STREET & STOP SIGN
S35°27'03"E 288.99'
S35°27'03"E 149.00'
S35°27'03"E 139.99'
S35°27'03"E 79.00'
S35°27'03"E 79.97'
S35°27'03"E 79.98'
S35°27'03"E 79.95'

PROPOSED HOUSE (P) LOT 11 (P) LOT AREA = 3,160 SQ.FT.
PROPOSED HOUSE (P) LOT 12 (P) LOT AREA = 3,160 SQ.FT.
PROPOSED HOUSE (P) LOT 13 (P) LOT AREA = 3,160 SQ.FT.
PROPOSED HOUSE (P) LOT 14 (P) LOT AREA = 3,190 SQ.FT.
PROPOSED HOUSE (P) LOT 15 (P) LOT AREA = 3,198 SQ.FT.
PROPOSED HOUSE (P) LOT 16 (P) LOT AREA = 3,160 SQ.FT.
PROPOSED HOUSE (P) LOT 17 (P) LOT AREA = 3,160 SQ.FT.
PROPOSED HOUSE (P) LOT 18 (P) LOT AREA = 3,160 SQ.FT.
PROPOSED HOUSE (P) LOT 19 (P) LOT AREA = 3,733 SQ.FT.
PROPOSED HOUSE (P) LOT 20 (P) LOT AREA = 3,733 SQ.FT.
PROPOSED HOUSE (P) LOT 21 (P) LOT AREA = 3,733 SQ.FT.
PROPOSED HOUSE (P) LOT 22 (P) LOT AREA = 3,178 SQ.FT.
PROPOSED HOUSE (P) LOT 23 (P) LOT AREA = 3,199 SQ.FT.
PROPOSED HOUSE (P) LOT 24 (P) LOT AREA = 3,198 SQ.FT.
PROPOSED HOUSE (P) LOT 25 (P) LOT AREA = 3,229 SQ.FT.

PROPOSED PERCOLATION LOT
(P) LOT AREA = 11,279 SQ.FT.

N35°24'09"W 139.99'
N35°24'09"W 79.00'
N35°24'09"W 69.93'
N35°24'09"W 32.00'
N 35°24'09" W 639.69' (N 35°25'06" W 640.05')

(P) 6' P.U.E.
(P) 8' P.U.E.

PROPOSED ALLEY
(A 32 FOOT WIDE CITY STREET)

APPLE AVENUE
(A 54 FOOT CITY STREET)

THIRD STREET
(A 82 FOOT CITY STREET)

THIRD STREET
(A 40 FOOT CITY STREET)

EXISTING 12" STORM DRAIN, S = 0.004
EXISTING 21" SANITARY SEWER MAIN, S = 0.0018
EXISTING 12" DOMESTIC WATER MAIN
EXISTING 8" DOMESTIC WATER MAIN, S = 0.002
EXISTING 12" SANITARY SEWER MAIN, S = 0.002
EXISTING 18" SANITARY SEWER MAIN
EXISTING 12" DOMESTIC WATER MAIN, S = 0.002
EXISTING 12" SANITARY SEWER MAIN, S = 0.002

(E) SDMH RIM = 268.56' INV. = 260.92'
(E) SDMH RIM = 268.34' INV. = 260.77'
(E) SDMH RIM = 267.49' INV. = 262.31'
(E) SDMH RIM = 268.29' INV.IN = 262.03' INV.IN = 259.07' INV.OUT = 258.94'
(E) SSMH RIM = 268.06' INV.IN = 258.81' INV.IN = 258.98' INV.IN = 258.85' INV.OUT = 258.68'
(E) SDMH RIM = 267.85'
(E) CB
(E) WV
(E) FH
(E) LP
(E) SLV
(E) UP
(E) SIGN
(E) SSCO
(E) MW
(E) MH
(E) PG&E TO BE RELOCATED
(E) WM TO BE RELOCATED
(E) CB TO BE RELOCATED
(E) RELOCATED CB
(E) EDGE OF PAVEMENT
(E) CONC. CURB & GUTTER
(E) CONC. SIDEWALK
(E) DRIVEWAY
(E) CURB & GUTTER
(E) SIGN & POLE TO BE RELOCATED
(E) EDGE OF PAVEMENT
(E) 3"AC/6"AB PAVING

LOT 5
JARAMILLO
APN: 024-201-005

LOT 6
NAVARRO PROPERTIES LLC
APN: 024-201-006

LOT 7
ZAMORA
APN: 024-201-007

LOT 8
CHILDERS
APN: 024-201-008

LOT 9
ROCHA
APN: 024-201-009

LOT 146
ROBASCOTTI
APN: 109-114-008

LOT 146
CITY OF GREENFIELD
APN: 109-114-007

GRAPHIC SCALE
0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

SCALE: 1" = 20'

REGISTERED PROFESSIONAL ENGINEER
STEVEN C. WILSON
No. 25,138
CIVIL
STATE OF CALIFORNIA
10/4/2021

REVISIONS	
DATE	BY
09-23-21	SPH
10-04-21	SPH

VESTING TENTATIVE SUBDIVISION MAP

APPLE AVENUE SUBDIVISION
PROPOSED SUBDIVISION LAYOUT

LOT 145
FILED IN VOL. 1 - CITIES & TOWNS, AT PAGE 64, RECORDS OF MONTEREY COUNTY
ASSESSOR'S PARCEL No. 109-082-013

CITY OF GREENFIELD | COUNTY OF MONTEREY | STATE OF CALIFORNIA

PREPARED FOR
PEOPLE'S SELF-HELP HOUSING
BY
MONTEREY BAY ENGINEERS, INC.
607 CHARLES AVE SUITE B | (831) 899-7899 | SEASIDE, CA 93955

JOB No. 21-014 | SCALE: 1" = 20' | JULY, 2021 | SHEET 4 OF 7

LOT 25
RAYAS
APN: 024-411-025

LOT 26
POWELL & CEJA
APN: 024-411-026

LOT 27
HERNANDEZ & JAIMES
APN: 024-411-027

LOT 28
ARREOLA
APN: 024-411-028

LOT 29
PATINO & VARGAS
APN: 024-411-029

LOT 30
VILLALOBOS & FUENTES
APN: 024-411-030

LOT 31
UNTALON & MARTINEZ
APN: 024-411-031
(S 3527'03" E 639.80')

LOT 32
CHISPA
APN: 024-411-032

LOT 33
CHISPA
APN: 024-411-033

LOT 34
CHISPA AFFORDABLE
APARTMENTS LLC
APN: 024-411-034

PARCEL B
CHISPA
APN: 024-411-041

LOT 2
CHISPA AFFORDABLE
APARTMENTS LLC
APN: 024-411-012

LOT 1
CHISPA AFFORDABLE
APARTMENTS LLC
APN: 024-411-011

LOT 43
ANSELMO & GUADALUPE
APN: 109-082-001

LOT 145
PEOPLES SELF HELP
APN: 109-082-013
1985600 SQ.FT.
4.56 ACRES

LOT 146
ROBASCOTTI
APN: 109-114-008

PROPOSED PERCOLATION LOT
(P) LOT AREA = 11,279 SQ.FT.

PROPOSED STREET
(A 49 FOOT WIDE CITY STREET)

CARDONA STREET
(A 56 FOOT WIDE CITY STREET)

PROPOSED ALLEY
(A 32 FOOT WIDE CITY ALLEY)

THIRD STREET
(A 82 FOOT CITY STREET)

SCALE: 1" = 20'

GRAPHIC SCALE
0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

REVISIONS		
	DATE	BY
	09-23-21	SPH
	10-04-21	SPH

VESTING TENTATIVE SUBDIVISION MAP

APPLE AVENUE SUBDIVISION
PROPOSED SUBDIVISION UTILITY LAYOUT

LOT 145
FILED IN VOL. 1 – CITIES & TOWNS, AT PAGE 64, RECORDS OF MONTEREY COUNTY
ASSESSOR'S PARCEL No. 109-082-013

CITY OF GREENFIELD | COUNTY OF MONTEREY | STATE OF CALIFORNIA

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BY
MONTEREY BAY ENGINEERS, INC.
607 CHARLES AVE SUITE B | (831) 899-7899 | SEASIDE, CA 93955

REGISTERED PROFESSIONAL ENGINEER
SIDNEY C. WILSON
No. 25136
CIVIL
STATE OF CALIFORNIA
10/4/2021

JOB No. 21-014 | SCALE: 1" = 20' | JULY, 2021 | SHEET 5 OF 7

LOT 28
ARREOLA
APN: 024-411-028

LOT 29
PATINO & VARGAS
APN: 024-411-029

LOT 30
VILLALOBOS & FUENTES
APN: 024-411-030

LOT 31
UNTALON & MARTINEZ
APN: 024-411-031
(S 35°27'03" E 639.80')

LOT 32
CHISPA
APN: 024-411-032

LOT 33
CHISPA
APN: 024-411-033

LOT 34
CHISPA AFFORDABLE APARTMENTS LLC
APN: 024-411-034

PARCEL B
CHISPA
APN: 024-411-041

LOT 1
CHISPA AFFORDABLE APARTMENTS LLC
APN: 024-411-011

LOT 5
JARAMILLO
APN: 024-201-005

LOT 6
NAVARRO PROPERTIES LLC
APN: 024-201-006

LOT 7
ZAMORA
APN: 024-201-007

LOT 8
CHILDERS
APN: 024-201-008

LOT 9
ROCHA
APN: 024-201-009

PROPOSED STREET
(A 49 FOOT WIDE CITY STREET)

APPLE AVENUE
(A 54 FOOT CITY STREET)

THIRD STREET
(A 82 FOOT CITY STREET)

THIRD STREET
(A 40 FOOT CITY STREET)

PROPOSED ALLEY
(A 32 FOOT WIDE PRIVATE ALLEY)

LOT 145
PEOPLES SELF HELP
APN: 109-082-013
1985600 SQ.FT.
4.56 ACRES

PROPOSED PERCOLATION LOT
(P) LOT AREA = 11,279 SQ.FT.

LOT 146
ROBASCOTTI
APN: 109-114-008

LOT 146
CITY OF GREENFIELD
APN: 109-114-007

GRAPHIC SCALE
0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

SCALE: 1" = 20'

REGISTERED PROFESSIONAL ENGINEER
STEVEN C. WILSON
No. 25136
CIVIL
STATE OF CALIFORNIA
10/4/2021

REVISIONS	
DATE	BY
09-23-21	SPH
10-04-21	SPH

VESTING TENTATIVE SUBDIVISION MAP

APPLE AVENUE SUBDIVISION
PROPOSED SUBDIVISION UTILITY LAYOUT

LOT 145
FILED IN VOL. 1 - CITIES & TOWNS, AT PAGE 64, RECORDS OF MONTEREY COUNTY
ASSESSOR'S PARCEL No. 109-082-013

CITY OF GREENFIELD | COUNTY OF MONTEREY | STATE OF CALIFORNIA

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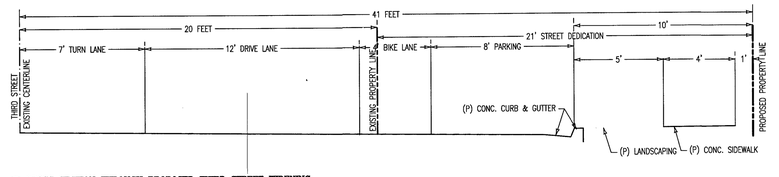
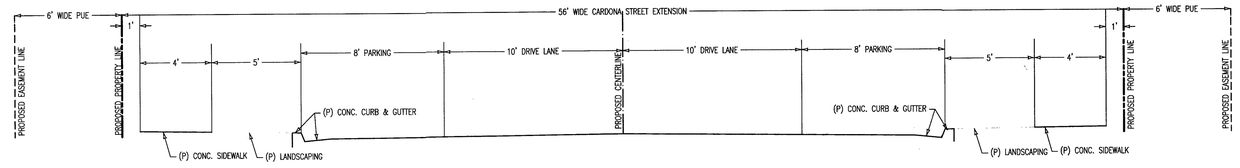
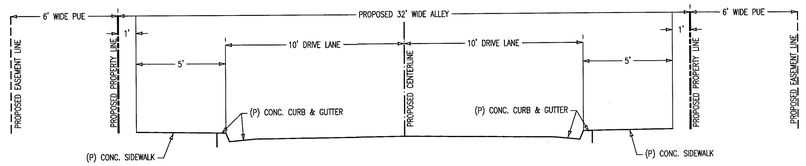
JOB No. 21-014 | SCALE: 1" = 20' | JULY, 2021 | SHEET 6 OF 7



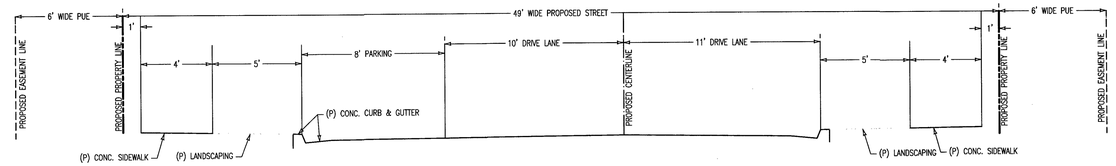
A CROSS SECTION THROUGH PROPOSED THIRD STREET WIDENING
SCALE: 1" = 4'



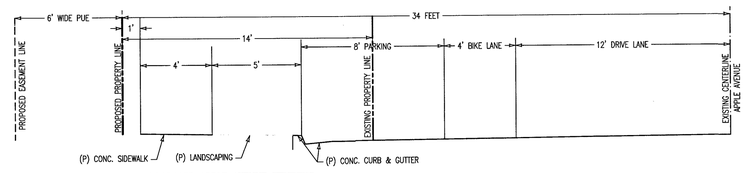
B CROSS SECTION THROUGH PROPOSED CARDONA STREET EXTENSION
SCALE: 1" = 4'



C CROSS SECTION THROUGH PROPOSED ALLEY
SCALE: 1" = 4'



D CROSS SECTION THROUGH PROPOSED STREET
SCALE: 1" = 4'



E CROSS SECTION THROUGH PROPOSED APPLE AVENUE WIDENING
SCALE: 1" = 4'

REVISIONS	
DATE	BY
09-23-21	SPH
10-04-21	SPH

JOB No. 21-014

VESTING TENTATIVE SUBDIVISION MAP

APPLE AVENUE SUBDIVISION
PROPOSED SUBDIVISION – STREET LAYOUT

LOT 145
FILED IN VOL. 1 – CITIES & TOWNS, AT PAGE 64, RECORDS OF MONTEREY COUNTY
ASSESSOR'S PARCEL No. 109-082-013

CITY OF GREENFIELD | COUNTY OF MONTEREY | STATE OF CALIFORNIA

PREPARED FOR
PEOPLE'S SELF-HELP HOUSING
BY
MONTEREY BAY ENGINEERS, INC.
607 CHARLES AVE. SUITE B | (831) 899-7899 | SEASIDE, CA 93955

SCALE: 1" = 4' | JULY, 2021 | SHEET 7 OF 7

LEGEND

X — LOT NUMBER

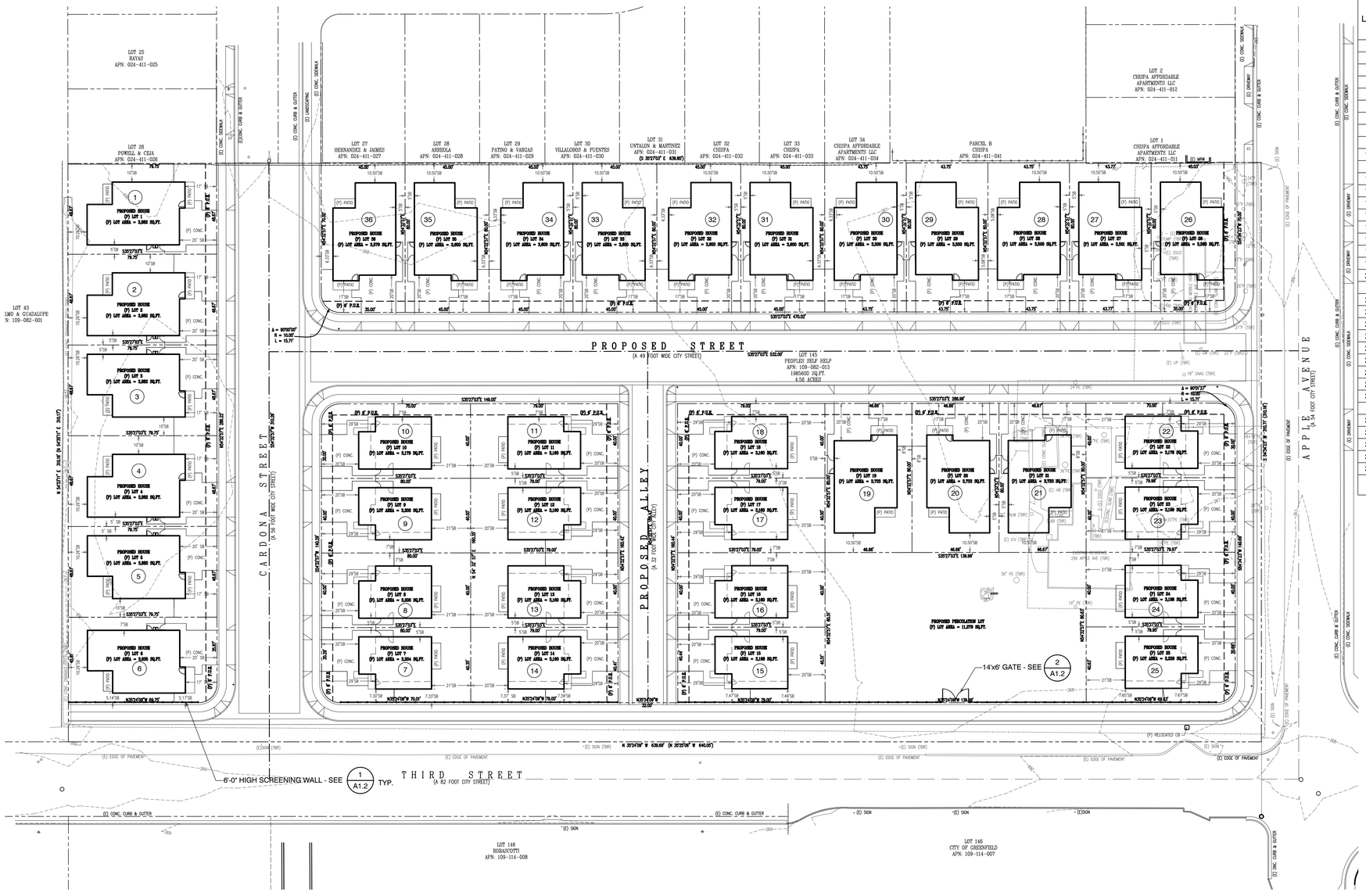
DESIGN ANALYSIS

PLANNED DEVELOPMENT IS PROPOSED WITH PD - SPECIFIC DEVELOPMENT STANDARDS FOR MINIMUM LOT SIZE, MINIMUM LOT WIDTH AND DEPTH, BUILDING SETBACKS (FRONT, SIDE, STREET-SIDE, AND REAR), AND ANY OTHER PERTINENT STANDARDS THAT REQUIRE THE PROPOSED PLANNED DEVELOPMENT.

ZONING:	R-M (MULTI-FAMILY RESIDENTIAL (7 to 15 DU/AC)
PARCEL:	109-082-013-000
SITE AREA:	4.6 AC (198,400 SF)
MINIMUM DENSITY:	7 DU/AC
MAX. DENSITY:	15 DU/AC
LOT COVERAGE:	60% REQUIRED - SEE TABLE BELOW

LOTS & BUILDING TYPES BREAKDOWN

LOT	SIZE (SF)		HOUSE TYPE	COVERED PATIO	HOUSE AREA (SF) 1st Floor	HOUSE AREA (SF) 2nd Floor	GARAGE AREA (SF)	TOTAL FLOOR AREA (SF)	LOT COVERAGE
1	3,882	B	3BR/1 STORY	70	1,126		431	1,557	41.9
2	3,882	B	3BR/1 STORY	70	1,126		431	1,557	41.9
3	3,882	B	3BR/1 STORY	70	1,126		431	1,557	41.9
4	3,882	B	3BR/1 STORY	70	1,126		431	1,557	41.9
5	3,882	B	3BR/1 STORY	70	1,126		431	1,557	41.9
6	3,635	B	3BR/1 STORY	70	1,126		431	1,557	44.8
7	3,204	A	3BR/2 STORY	32	587	757	433	1,777	32.8
8	3,200	A	3BR/2 STORY	32	587	757	433	1,777	32.9
9	3,200	A	3BR/2 STORY	32	587	757	433	1,777	32.9
10	3,179	A	3BR/2 STORY	32	587	757	433	1,777	33.1
11	3,160	A	3BR/2 STORY	32	587	757	433	1,777	33.3
12	3,160	A	3BR/2 STORY	32	587	757	433	1,777	33.3
13	3,160	A	3BR/2 STORY	32	587	757	433	1,777	33.3
14	3,190	A	3BR/2 STORY	32	587	757	433	1,777	33.0
15	3,198	A	3BR/2 STORY	32	587	757	433	1,777	32.9
16	3,160	A	3BR/2 STORY	32	587	757	433	1,777	33.3
17	3,160	A	3BR/2 STORY	32	587	757	433	1,777	33.3
18	3,160	A	3BR/2 STORY	32	587	757	433	1,777	33.3
19	3,733	B	3BR/1 STORY	70	1,126		431	1,557	43.6
20	3,733	B	3BR/1 STORY	70	1,126		431	1,557	43.6
21	3,733	B	3BR/1 STORY	70	1,126		431	1,557	43.6
22	3,178	A	3BR/2 STORY	32	587	757	433	1,777	33.1
23	3,199	A	3BR/2 STORY	32	587	757	433	1,777	32.9
24	3,198	A	3BR/2 STORY	32	587	757	433	1,777	32.9
25	3,229	A	3BR/2 STORY	32	587	757	433	1,777	32.6
26	3,580	B	3BR/1 STORY	70	1,126		431	1,557	45.4
27	3,501	B	3BR/1 STORY	70	1,126		431	1,557	46.5
28	3,500	B	3BR/1 STORY	70	1,126		431	1,557	46.5
29	3,500	B	3BR/1 STORY	70	1,126		431	1,557	46.5
30	3,500	B	3BR/1 STORY	70	1,126		431	1,557	46.5
31	3,600	B	3BR/1 STORY	70	1,126		431	1,557	45.2
32	3,600	B	3BR/1 STORY	70	1,126		431	1,557	45.2
33	3,600	B	3BR/1 STORY	70	1,126		431	1,557	45.2
34	3,600	B	3BR/1 STORY	70	1,126		431	1,557	45.2
35	3,600	B	3BR/1 STORY	70	1,126		431	1,557	45.2
36	3,579	B	3BR/1 STORY	70	1,126		431	1,557	45.5
				1,912	31,912	12,112	15,548	59,572	



TRUE NORTH / NORTH

SITE PLAN - 36 HOMES

SCALE: 1" = 30'-0"

0 7.5 15 30 60

SCALE: 1" = 30'-0"

Project / Owner:

People's Self Help Housing

296 APPLE AVENUE
GREENFIELD, CA

A.P.N.: 109-082-013-000

THE PAUL DAVIS PARTNERSHIP
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Drawn By: AC

Drawing Date: 7/12/2021

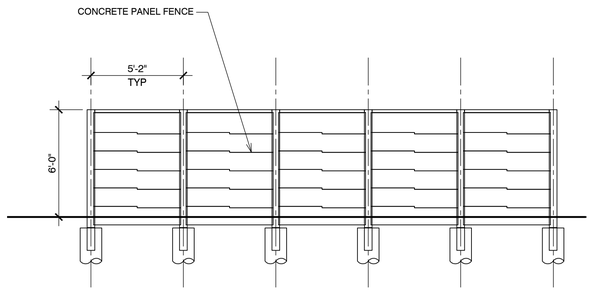
Project Number: 2107

Revisions:

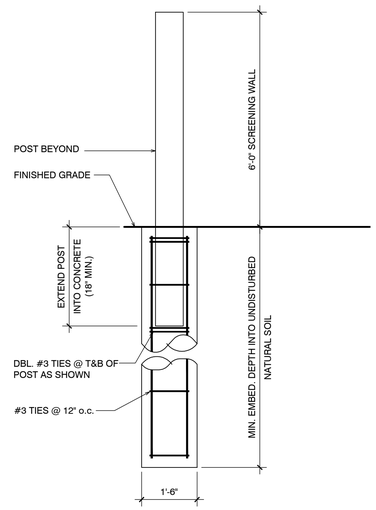
Sheet Title:
SITE PLAN

Sheet Number:

A1.1



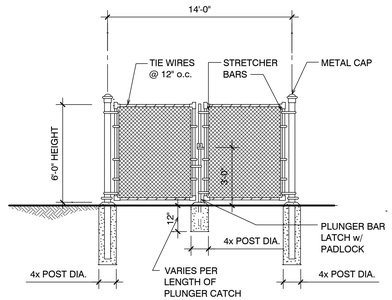
ELEVATION



SECTION - A

1 SCREENING CONCRETE WALL ELEVATION AND SECTION

NO SCALE



NOTES
1. THE CONTRACTOR SHALL PROVIDE A SUITABLE METHOD TO VISUALLY ASSURE OBTAINING 2 INCHES CLEARANCE BETWEEN POST AND BOTTOM OF CONCRETE.

2. STRETCHER BARS FOR GATES ARE REQUIRED ON BOTH SIDES OF EACH GATE. STRETCHER BARS (SIZE 3/16"x3/4") MIN. ANCHOR WITH BANDS NOT EXCEEDING 12" SPACING OR OTHER APPROVED ANCHOR.

CHAIN LINK FENCE GATE DETAIL

SCALE: N.T.S.

GENERAL NOTES
1. ALL DIMENSIONS ARE TYPICAL AND MAY BE VARIED AT THE RECOMMENDATION O F THE MANUFACTURER AT INSTALLATION

2. HOG RINGS SHALL BE GALVANIZED OR ALUMINUM ALLOY

3. THE TENSION WIRE SHALL BE EITHER NO. 7 GAUGE STEEL WIRE GALVANIZED AT THE RATE PF 0.7 PER SQ. FT. MIN. OR ALUM. WIRE OF ALLOY ALCLAD 5056-H38 OR EQUAL WITH A WIRE DIAMETER OF 0.1875 OR LARGER

4. ALL TUBULAR POST TO HAVE METAL CAP

5. FENCE FABRIC SHALL BE WOVEN IN 1-3/4 INCH MESH FROM NO.9 GAGE STEEL BLACK CONFORMING TO THE "STANDARD SPECIFICATION FOR ZINC-COATED STEEL BLACK (ASTM A392). BLACK OR BROWN SLATS SHALL BE WOVEN INTO THE FENCE FABRIC AFTER ERECTION. SLATS SHALL BE PRIVACY LINK OR APPROVED EQUAL AND SHALL BE BOTTOM LOCKING SLATS

2 CHAINLINK FENCE GATE DETAIL

NO SCALE

Project / Owner:

People's Self Help Housing

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Project Number: 2107

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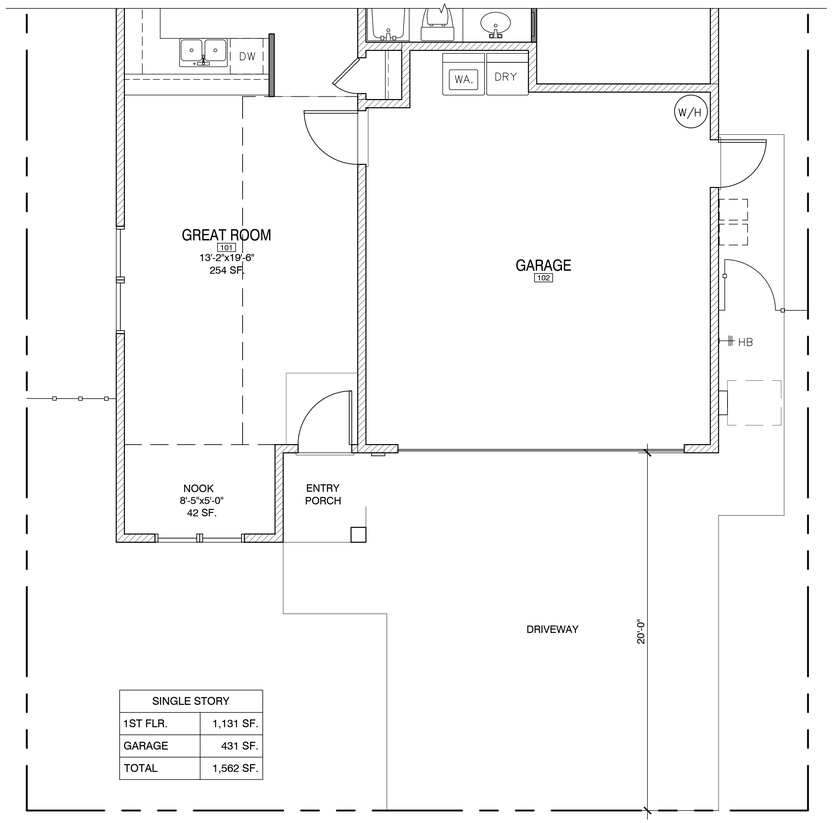
Sheet Title:
SITE DETAILS

Sheet Number:

A1.2



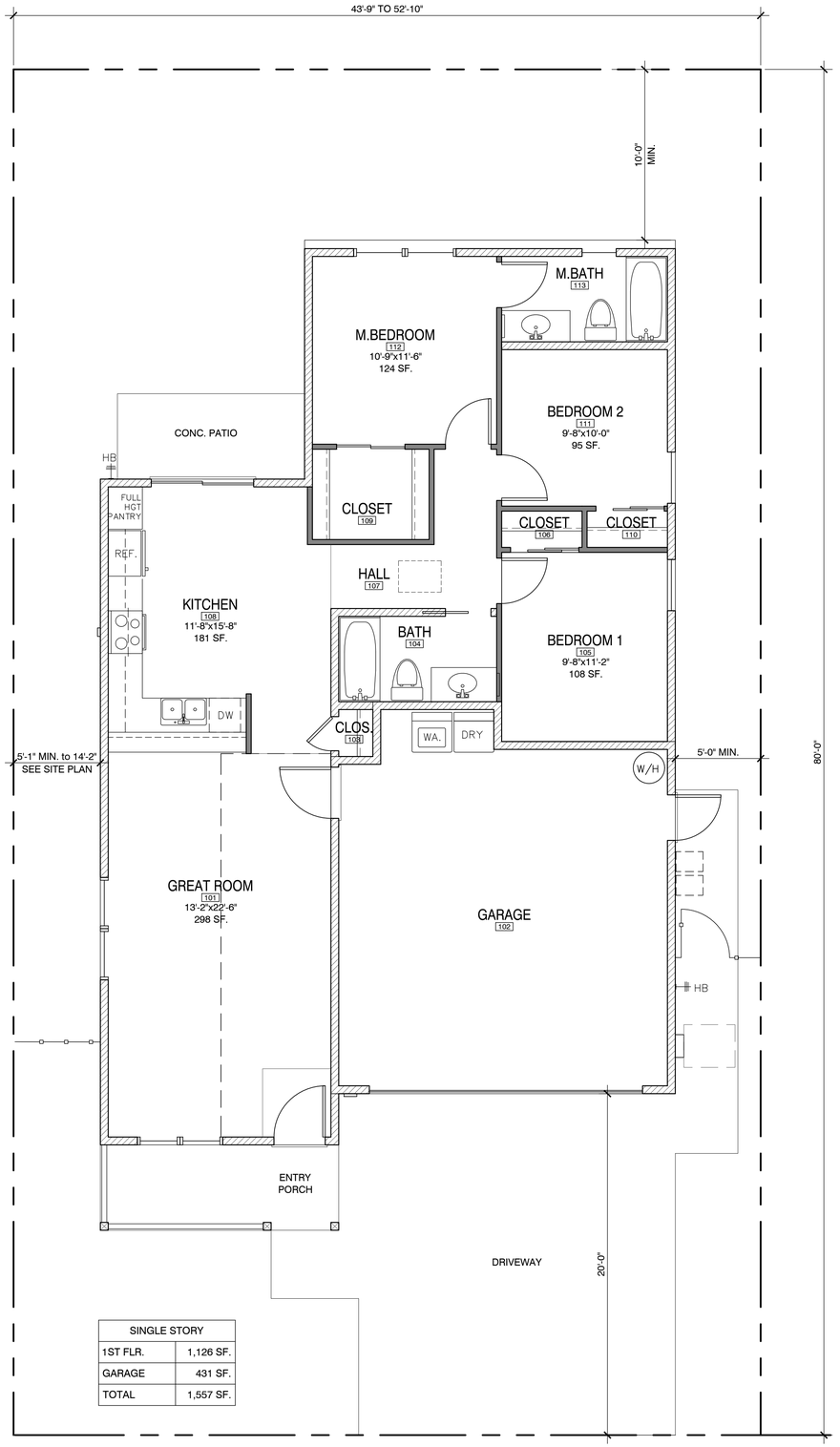
SINGLE STORY	
1ST FLR.	1,131 SF.
GARAGE	431 SF.
TOTAL	1,562 SF.

PLAN NORTH

FLOOR PLAN - SINGLE-STORY - ALT. C

SCALE: 1/4" = 1'-0"

0 1 2 4 8
SCALE: 1/4" = 1'-0"



SINGLE STORY	
1ST FLR.	1,126 SF.
GARAGE	431 SF.
TOTAL	1,557 SF.

PLAN NORTH

FLOOR PLAN - SINGLE-STORY

SCALE: 1/4" = 1'-0"

0 1 2 4 8
SCALE: 1/4" = 1'-0"

Project / Owner:

People's Self Help Housing

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Drawn By: AC

Drawing Date: 7/12/2021

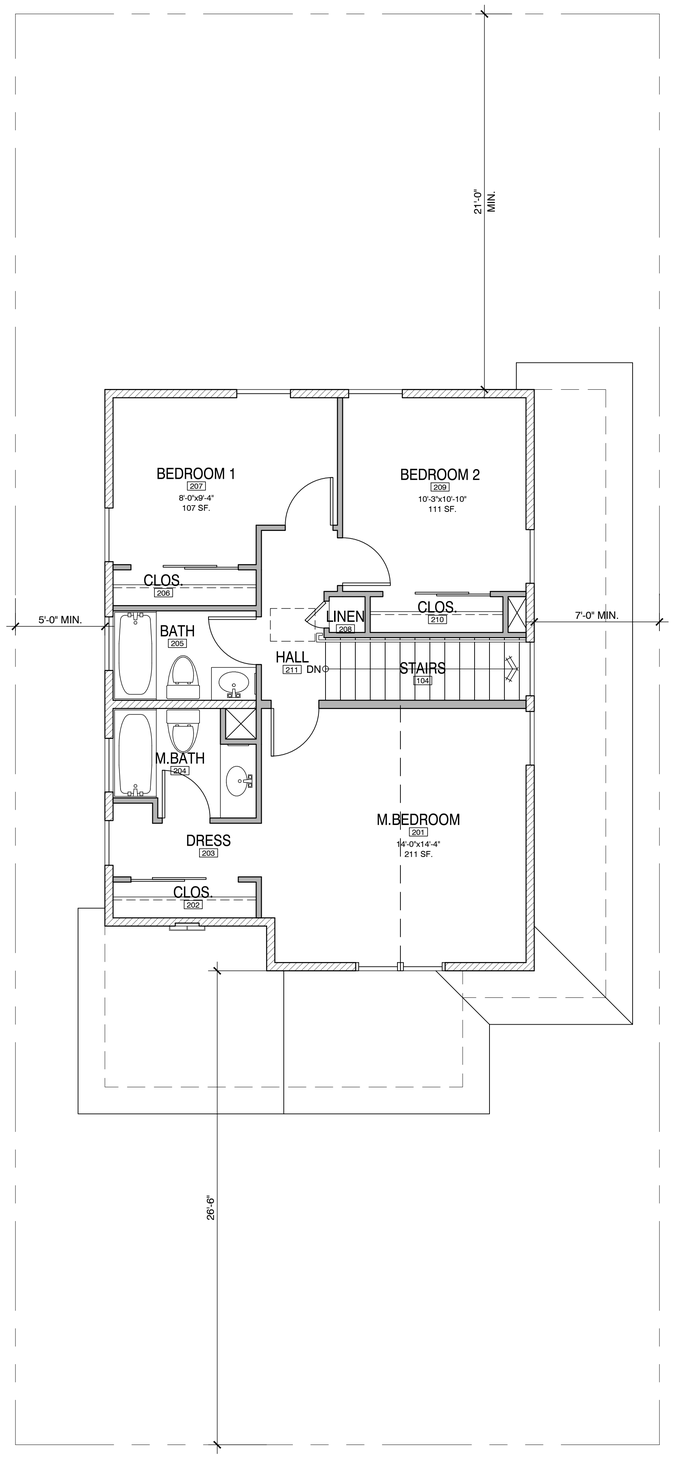
Project Number: 2107

Revisions:

Sheet Title:
PROPOSED FLOOR PLAN - SINGLE STORY

Sheet Number:

A2.1



TWO-STORY	
1ST FLR.	587 SF.
2ND FLR.	757 SF.
GARAGE	433 SF.
TOTAL	1,777 SF.

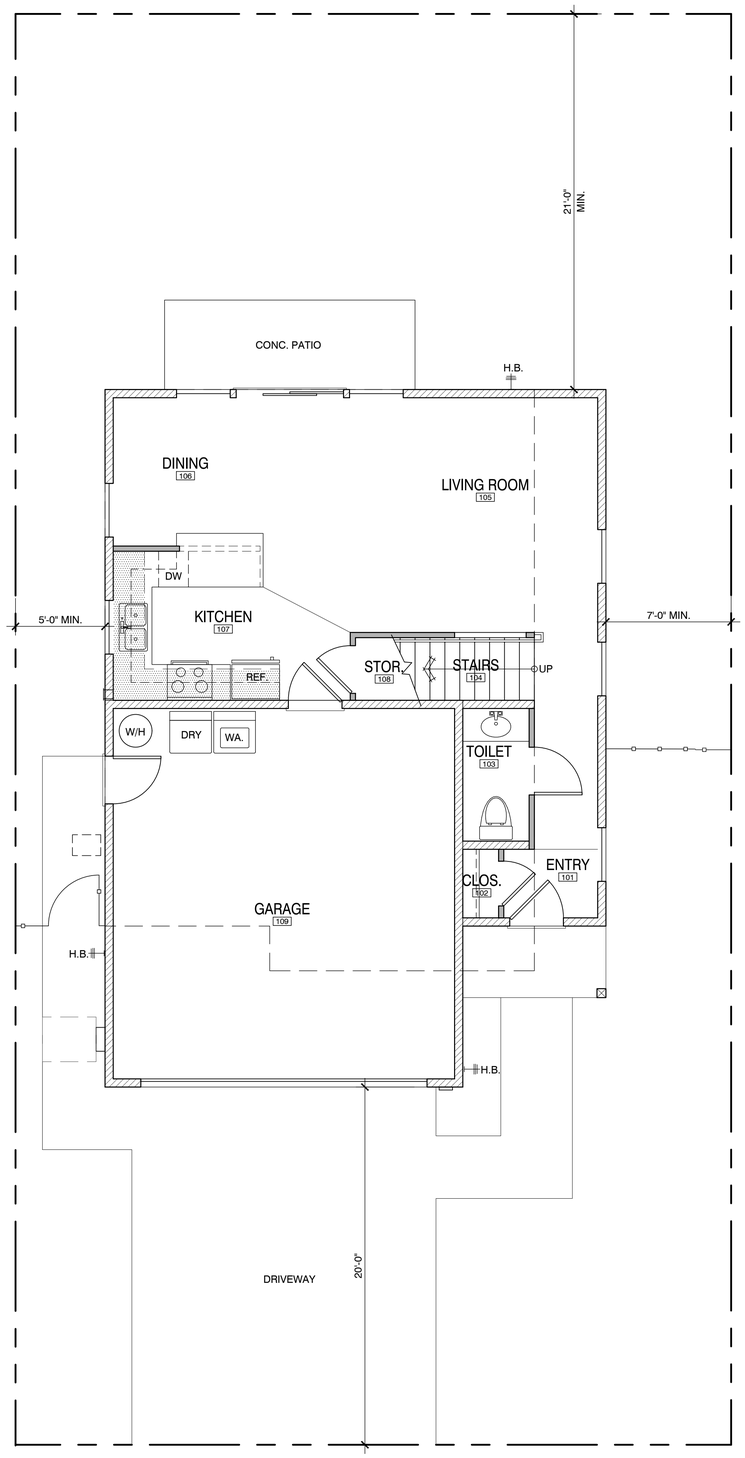
PLAN NORTH

SECOND FLOOR PLAN - TWO-STORY

SCALE: 1/4" = 1'-0"

0 1 2 4 8

SCALE: 1/4" = 1'-0"



PLAN NORTH

FIRST FLOOR PLAN - TWO-STORY

SCALE: 1/4" = 1'-0"

0 1 2 4 8

SCALE: 1/4" = 1'-0"

Project / Owner:

People's Self Help Housing

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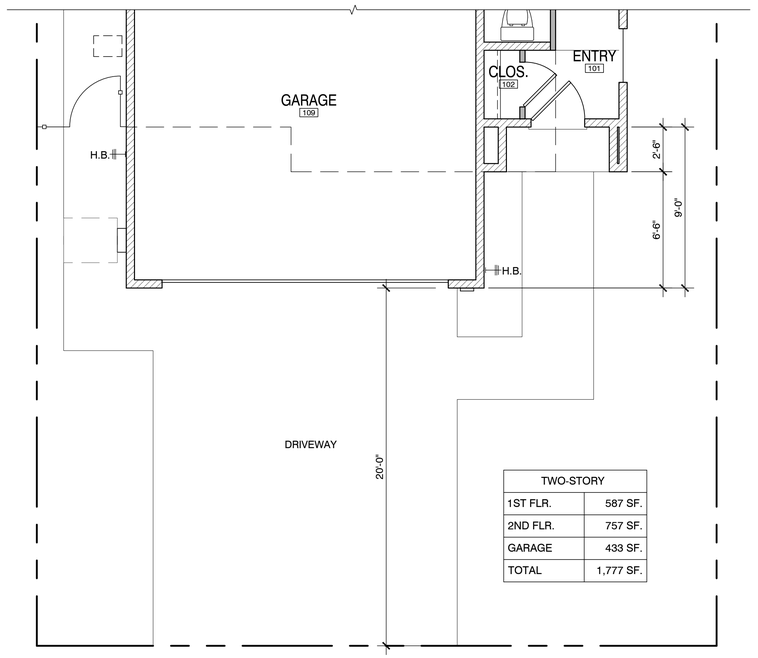
Revisions:

Sheet Title:
PROPOSED FLOOR PLANS - TWO-STORY

Sheet Number:

A2.2



TWO-STORY	
1ST FLR.	587 SF.
2ND FLR.	757 SF.
GARAGE	433 SF.
TOTAL	1,777 SF.

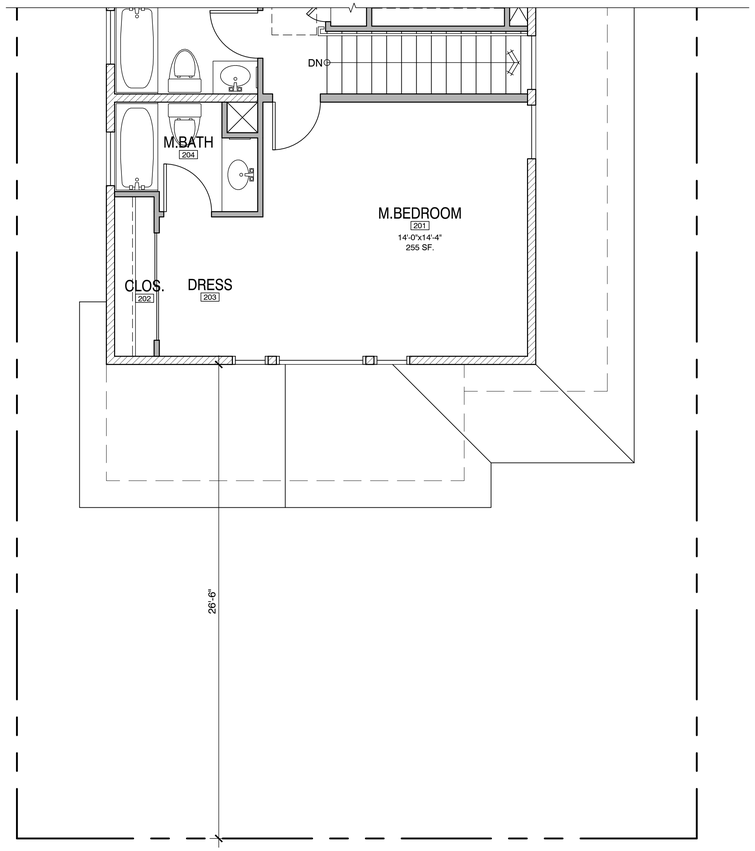
PLAN NORTH

FIRST FLOOR PLAN - TWO-STORY @ ALT. B

SCALE: 1/4" = 1'-0"

0 1 2 4 8

SCALE: 1/4" = 1'-0"



TWO-STORY	
1ST FLR.	607 SF.
2ND FLR.	780 SF.
GARAGE	433 SF.
TOTAL	1,820 SF.

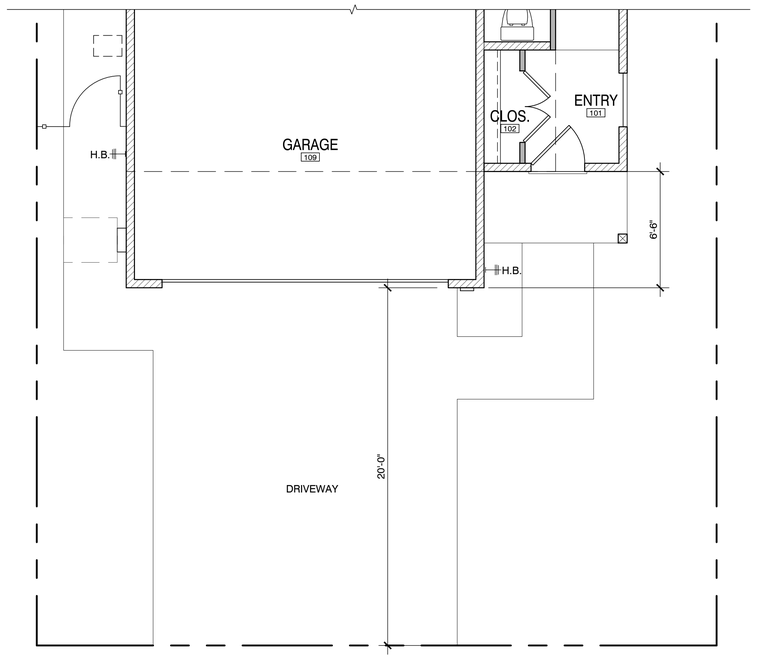
PLAN NORTH

SECOND FLOOR PLAN - TWO-STORY @ ALT. C

SCALE: 1/4" = 1'-0"

0 1 2 4 8

SCALE: 1/4" = 1'-0"



PLAN NORTH

FIRST FLOOR PLAN - TWO-STORY @ ALT.C

SCALE: 1/4" = 1'-0"

0 1 2 4 8

SCALE: 1/4" = 1'-0"

Project / Owner:

People's Self Help Housing

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Drawing Date: 7/12/2021

Project Number: 2107

Revisions:

Sheet Title:
PROPOSED FLOOR PLANS - TWO-STORY

Sheet Number:

A2.3

Exterior Material / Color - Scheme # 1

	ROOF ASPHALT SHINGLE:	OWENS CORNING TIMBER COOL ROOF	
	CEM. PLASTER BODY COLOR:	LAHABRA P-174 DESERT BIEGE	
PT-1	TRIM/FASCIA, GUTTER, POST/BEAM	SW7001 Marshmallow	
PT-2	HORIZ. LAP SIDING COLOR:	SW9111 Antler Velvet	
PT-3	BOARD & BATT SIDING COLOR:	SW9128 Green Onyx	
PT-4	ENTRY DOORS & SHUTTERS:	SW2837 Aurora brown	

Exterior Material / Color - Scheme # 2

	ROOF ASPHALT SHINGLE:	OWENS CORNING FOREST BROWN COOL ROOF	
	CEM. PLASTER BODY COLOR:	LAHABRA X-504 BLUE GRAY	
PT-1	TRIM/FASCIA, GUTTER, POST/BEAM	SW7001 Marshmallow	
PT-5	HORIZ. LAP SIDING COLOR:	SW6255 Morning fog	
PT-6	BOARD & BATT SIDING COLOR:	SW6256 Serious gray	
PT-7	ENTRY DOORS & SHUTTERS:	SW6655 Adventure orange	

Exterior Material / Color - Scheme # 3

	ROOF ASPHALT SHINGLE:	OWENS CORNING MOUNTAIN SIDE COOL ROOF	
	CEM. PLASTER BODY COLOR:	LAHABRA X-696 SOUTHERN MOSS	
PT-1	TRIM/FASCIA, GUTTER, POST/BEAM	SW7001 Marshmallow	
PT-8	HORIZ. LAP SIDING COLOR:	SW7713 Tawny tan	
PT-6	BOARD & BATT SIDING COLOR:	SW7715 Pottery Urn	
PT-7	ENTRY DOORS & SHUTTERS:	SW6165 Connected Gray	

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Drawing Date: 7/12/2021

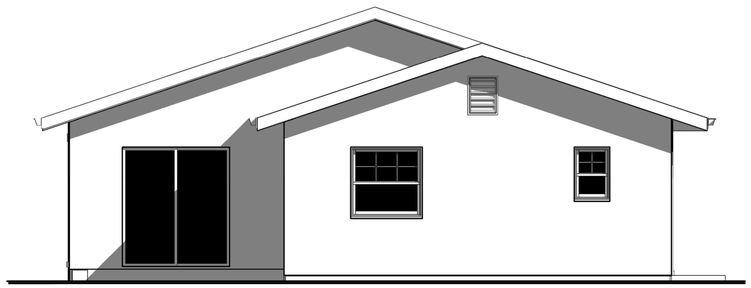
Project Number: 2107

Revisions:

Sheet Title:
PROPOSED EXTERIOR MATERIALS & COLORS

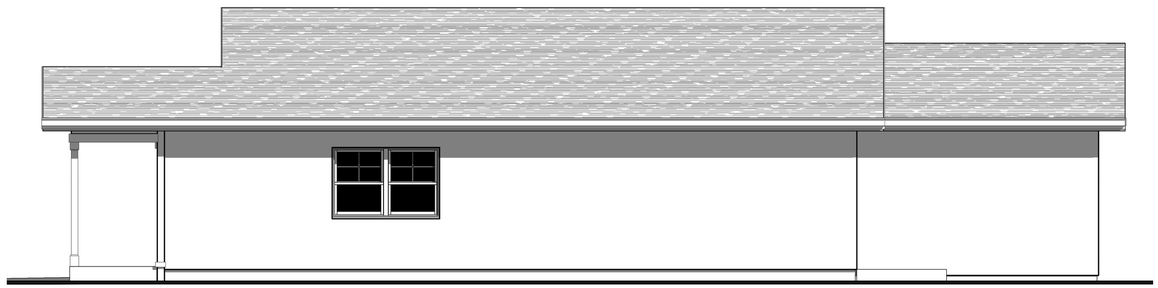
Sheet Number:

A3.0



NORTH

SOUTH



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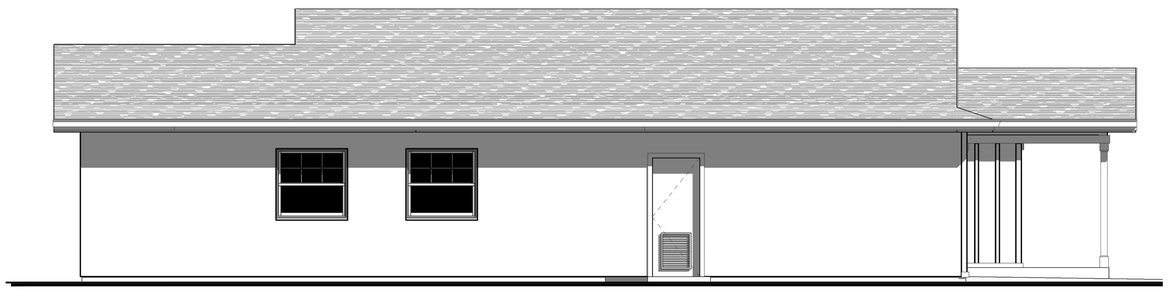

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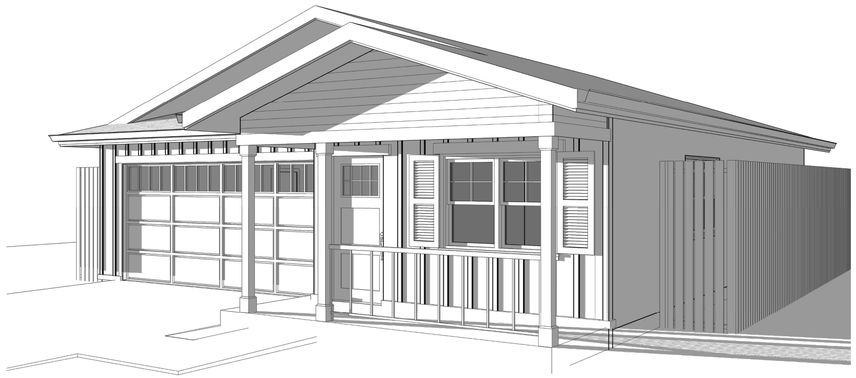

PERSPECTIVE

PROPOSED EXTERIOR ELEVATION - SINGLE-STORY

SCALE: 1/4" = 1'-0"

0 1 2 4 8

SCALE: 1/4" = 1'-0"

EXTERIOR FINISH SCHEDULE

ROOF: Class A rated minimum 30-year High Definition asphalt shingle Cool Roof on underlayment per CRC R905.1. Packaging for roof materials shall bear manufacturer's and approved testing agency's labels for field inspection.

FLASHING: 24 GA. Galvanized Sheet Metal, paint **all** sides prior to installation and a second coat after installation

WALLS: General - At a minimum, provide a minimum of one layer of Tyvek StuccoWrap water resistive barrier complying with CRC 703.2. and shall be attached to the studs or sheathing, with flashing as described in the manufacturer's installation instructions, in such a manner as to provide a continuous water-resistive barrier behind the exterior wall veneer/covering.

CEMENT PLASTER: Minimum thickness to be 7/8", three coats on of Grade "D" 60-minute paper with expanded metal lath on Tyvek StuccoWrap on wood sheathing. A minimum 26 GA galvanized metal weep screed with minimum 3-1/2" attachment flange at or below foundation plate is required at 4" minimum above earth and 2" minimum above finish paving. Comply with CBC chapters 2507 and 2512.

NOTES:
1. All exterior wall and surfaces, gutters, downspouts, flashing, trim and exposed concrete foundations shall be painted.
2. Paint all roof jacks, roof caps, dampers and flues to match roof color.
3. **Verify head heights of windows to align with the doors.**

Project / Owner:

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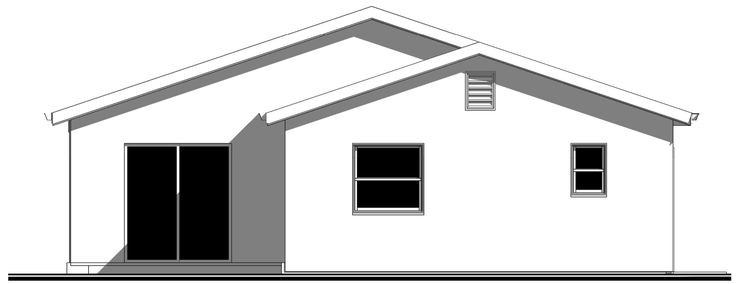
Sheet Title:
PROPOSED EXTERIOR ELEVATIONS-SINGLE-STORY

Sheet Number:

A3.1A



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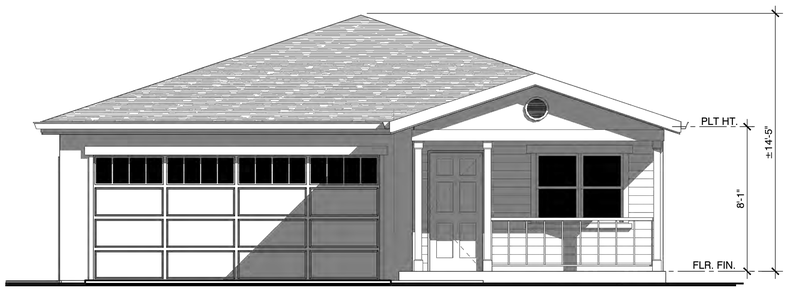

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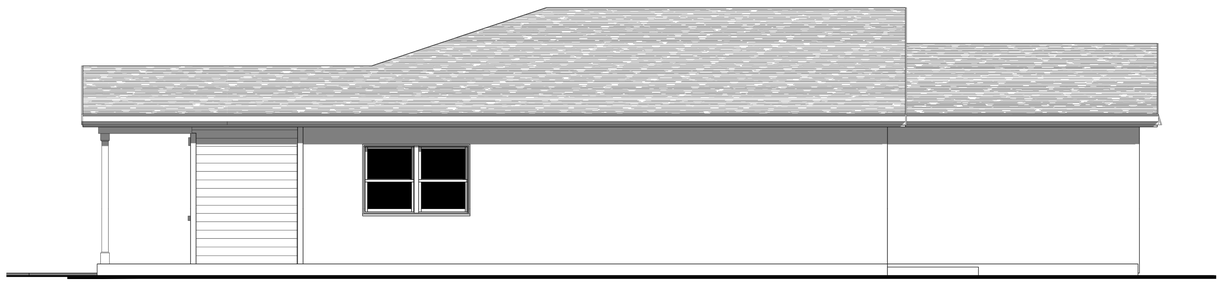

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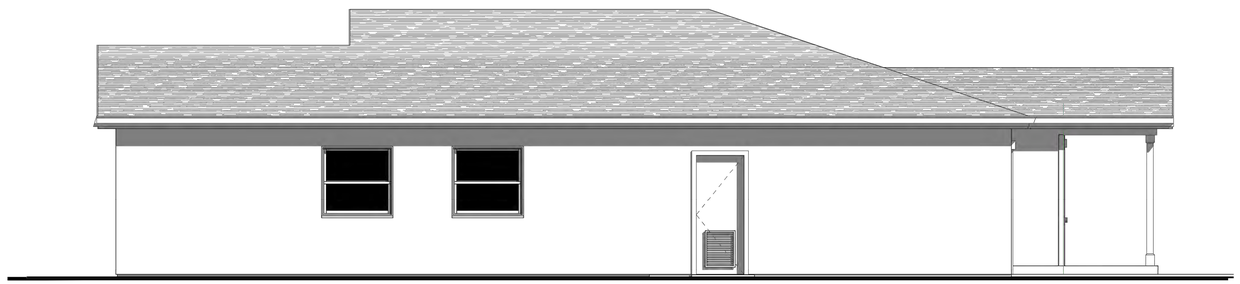

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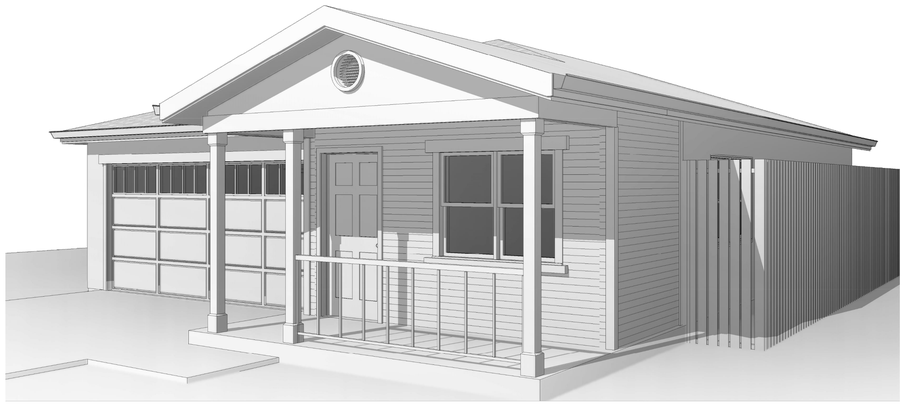

PERSPECTIVE

PROPOSED EXTERIOR ELEVATION - SINGLE-STORY

SCALE: 1/4" = 1'-0"

0 1 2 4 8

SCALE: 1/4" = 1'-0"

EXTERIOR FINISH SCHEDULE

ROOF: Class A rated minimum 30-year High Definition asphalt shingle Cool Roof on underlayment per CRC R905.1. Packaging for roof materials shall bear manufacturer's and approved testing agency's labels for field inspection.

FLASHING: 24 GA. Galvanized Sheet Metal, paint **all** sides prior to installation and a second coat after installation

WALLS: General - At a minimum, provide a minimum of one layer of Tyvek StuccoWrap water resistive barrier complying with CRC 703.2. and shall be attached to the studs or sheathing, with flashing as described in the manufacturer's installation instructions, in such a manner as to provide a continuous water-resistive barrier behind the exterior wall veneer/covering.

CEMENT PLASTER: Minimum thickness to be 7/8", three coats on of Grade "D" 60-minute paper with expanded metal lath on Tyvek StuccoWrap on wood sheathing. A minimum 26 GA galvanized metal weep screed with minimum 3-1/2" attachment flange at or below foundation plate is required at 4" minimum above earth and 2" minimum above finish paving. Comply with CBC chapters 2507 and 2512.

NOTES:
1. All exterior wall and surfaces, gutters, downspouts, flashing, trim and exposed concrete foundations shall be painted.
2. Paint all roof jacks, roof caps, dampers and flues to match roof color.
3. **Verify head heights of windows to align with the doors.**

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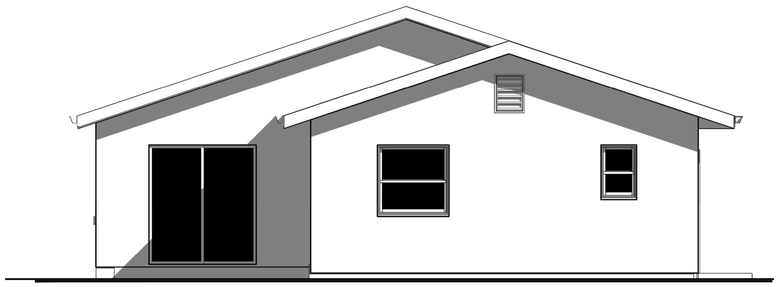
PROPOSED EXTERIOR ELEVATIONS-SINGLE-STORY

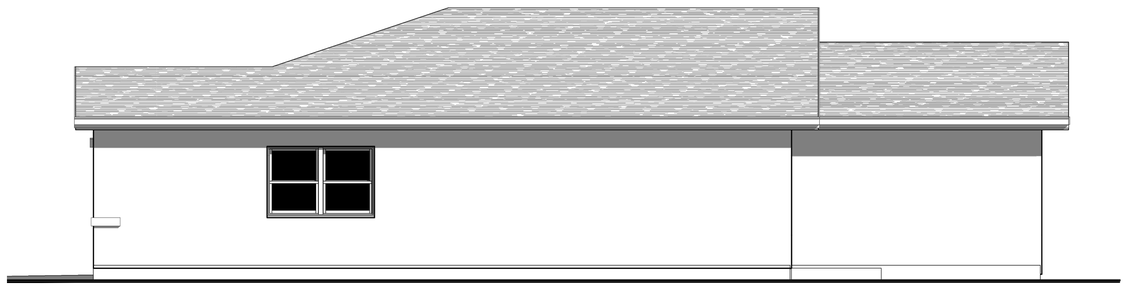
Sheet Number:

A3.1B



NORTH

SOUTH



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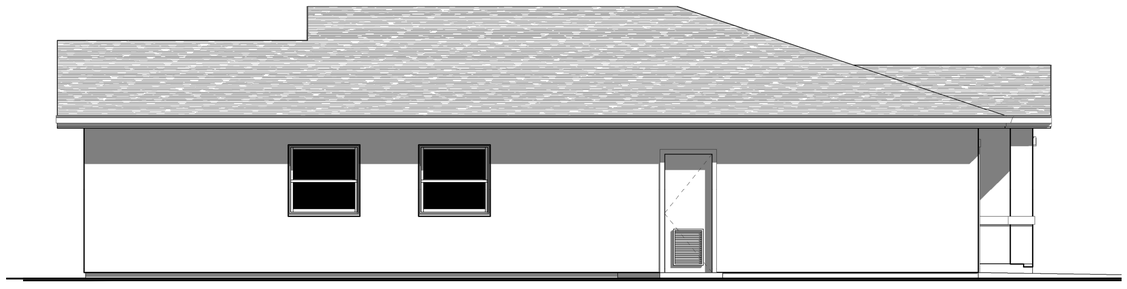

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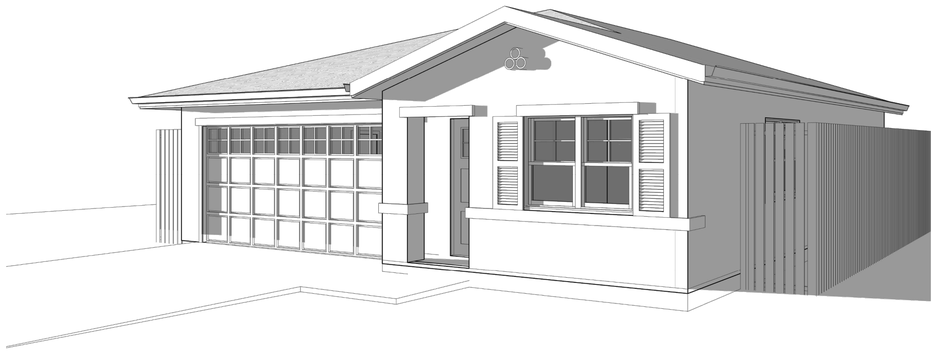

PERSPECTIVE

PROPOSED EXTERIOR ELEVATION - SINGLE-STORY

SCALE: 1/4" = 1'-0"

0 1 2 4 8

SCALE: 1/4" = 1'-0"

EXTERIOR FINISH SCHEDULE

ROOF: Class A rated minimum 30-year High Definition asphalt shingle Cool Roof on underlayment per CRC R905.1. Packaging for roof materials shall bear manufacturer's and approved testing agency's labels for field inspection.

FLASHING: 24 GA. Galvanized Sheet Metal, paint **all** sides prior to installation and a second coat after installation

WALLS: General - At a minimum, provide a minimum of one layer of Tyvek StuccoWrap water resistive barrier complying with CRC 703.2. and shall be attached to the studs or sheathing, with flashing as described in the manufacturer's installation instructions, in such a manner as to provide a continuous water-resistive barrier behind the exterior wall veneer/covering.

CEMENT PLASTER: Minimum thickness to be 7/8", three coats on of Grade "D" 60-minute paper with expanded metal lath on Tyvek StuccoWrap on wood sheathing. A minimum 26 GA galvanized metal weep screed with minimum 3-1/2" attachment flange at or below foundation plate is required at 4" minimum above earth and 2" minimum above finish paving. Comply with CBC chapters 2507 and 2512.

NOTES:
1. All exterior wall and surfaces, gutters, downspouts, flashing, trim and exposed concrete foundations shall be painted.
2. Paint all roof jacks, roof caps, dampers and flues to match roof color.
3. **Verify head heights of windows to align with the doors.**

Project / Owner:

People's Self Help Housing

296 APPLE AVENUE
GREENFIELD, CA

A.P.N.: 109-082-013-000

THE PAUL DAVIS PARTNERSHIP
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Drawn By: AC

Drawing Date: 7/12/2021

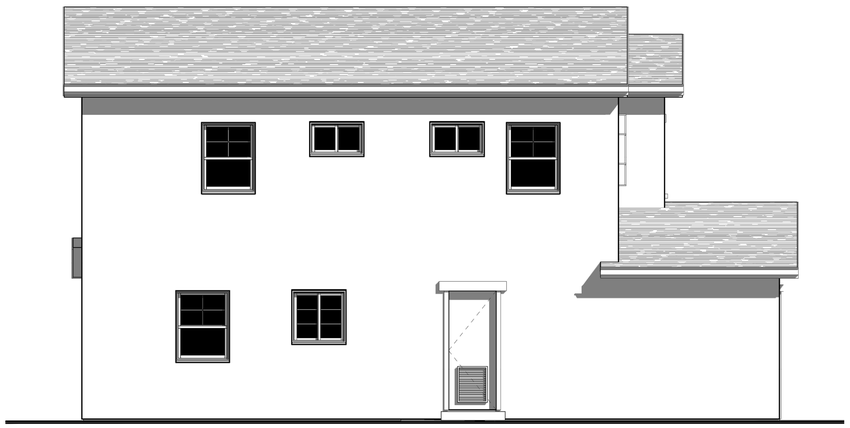
Project Number: 2107

Revisions:

Sheet Title:
PROPOSED EXTERIOR ELEVATIONS-SINGLE-STORY

Sheet Number:

A3.1C



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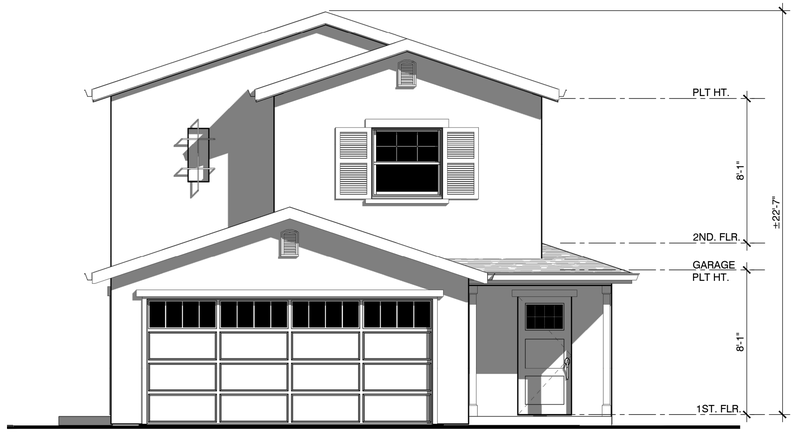

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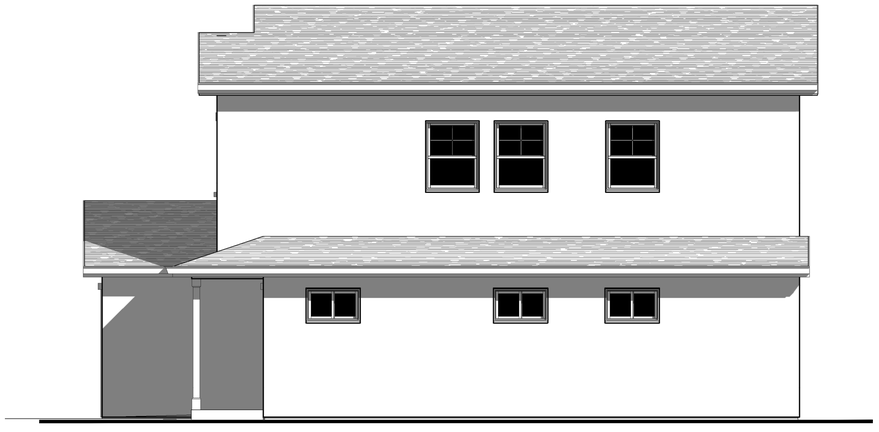

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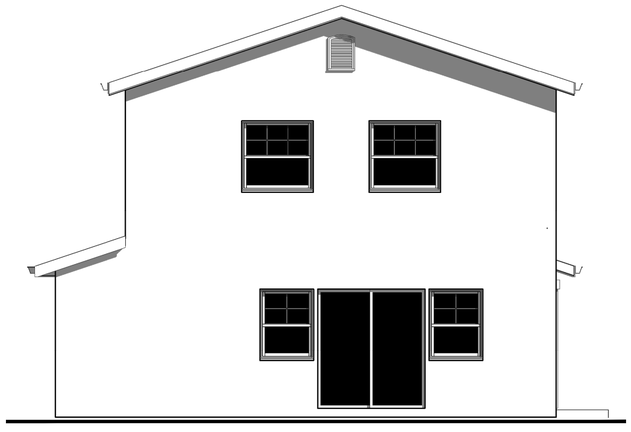

NORTH

PERSPECTIVE

PROPOSED EXTERIOR ELEVATION - TWO-STORY

SCALE: 1/4" = 1'-0"

0 1 2 4 8

SCALE: 1/4" = 1'-0"

EXTERIOR FINISH SCHEDULE

ROOF: Class A rated minimum 30-year High Definition asphalt shingle Cool Roof on underlayment per CRC R905.1. Packaging for roof materials shall bear manufacturer's and approved testing agency's labels for field inspection.

FLASHING: 24 GA. Galvanized Sheet Metal, paint **all** sides prior to installation and a second coat after installation

WALLS: General - At a minimum, provide a minimum of one layer of Tyvek StuccoWrap water resistive barrier complying with CRC 703.2. and shall be attached to the studs or sheathing, with flashing as described in the manufacturer's installation instructions, in such a manner as to provide a continuous water-resistive barrier behind the exterior wall veneer/covering.

CEMENT PLASTER: Minimum thickness to be 7/8", three coats on of Grade "D" 60-minute paper with expanded metal lath on Tyvek StuccoWrap on wood sheathing. A minimum 26 GA galvanized metal weep screed with minimum 3-1/2" attachment flange at or below foundation plate is required at 4" minimum above earth and 2" minimum above finish paving. Comply with CBC chapters 2507 and 2512.

NOTES:
1. All exterior wall and surfaces, gutters, downspouts, flashing, trim and exposed concrete foundations shall be painted.
2. Paint all roof jacks, roof caps, dampers and flues to match roof color.
3. **Verify head heights of windows to align with the doors.**

Project / Owner:

People's Self Help Housing

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GREENFIELD, CA

A.P.N.: 109-082-013-000

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Drawn By: AC

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Project Number: 2107

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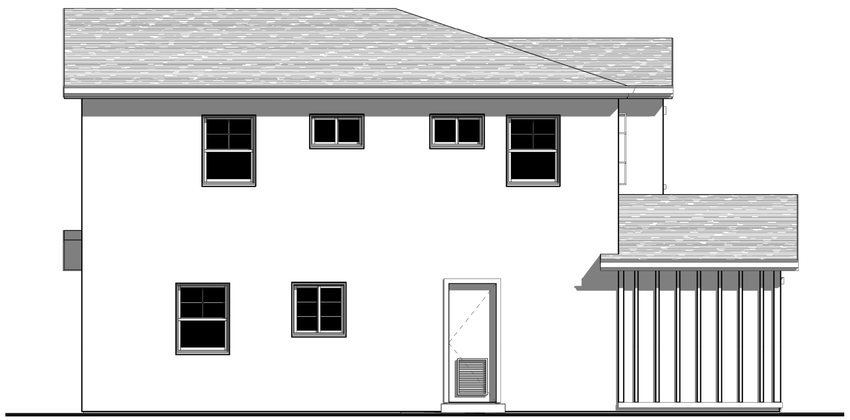
Sheet Title:
PROPOSED EXTERIOR ELEVATIONS-TWO-STORY

Sheet Number:

A3.2A



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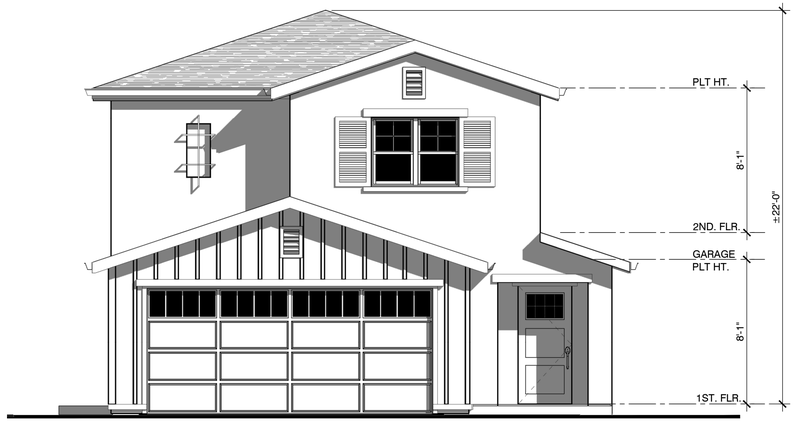

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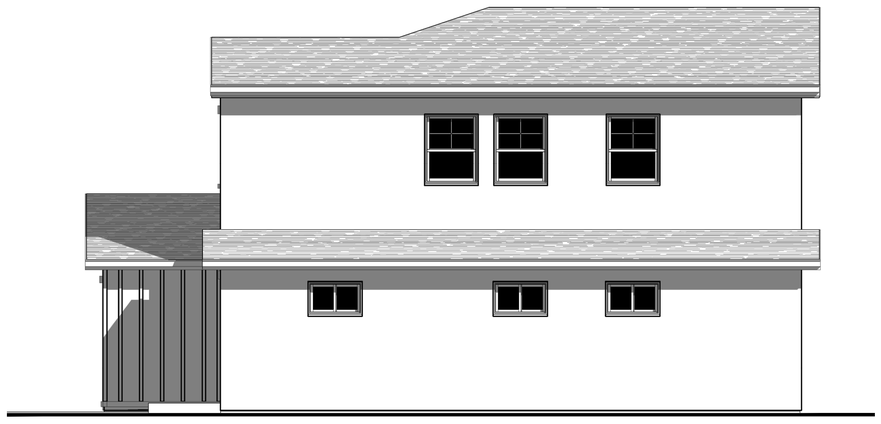

EAST

NORTH

PERSPECTIVE

PROPOSED EXTERIOR ELEVATION - TWO-STORY

SCALE: 1/4" = 1'-0"

0 1 2 4 8

SCALE: 1/4" = 1'-0"

EXTERIOR FINISH SCHEDULE

ROOF: Class A rated minimum 30-year High Definition asphalt shingle Cool Roof on underlayment per CRC R905.1. Packaging for roof materials shall bear manufacturer's and approved testing agency's labels for field inspection.

FLASHING: 24 GA. Galvanized Sheet Metal, paint **all** sides prior to installation and a second coat after installation

WALLS: General - At a minimum, provide a minimum of one layer of Tyvek StuccoWrap water resistive barrier complying with CRC 703.2. and shall be attached to the studs or sheathing, with flashing as described in the manufacturer's installation instructions, in such a manner as to provide a continuous water-resistive barrier behind the exterior wall veneer/covering.

CEMENT PLASTER: Minimum thickness to be 7/8", three coats on of Grade "D" 60-minute paper with expanded metal lath on Tyvek StuccoWrap on wood sheathing. A minimum 26 GA galvanized metal weep screed with minimum 3-1/2" attachment flange at or below foundation plate is required at 4" minimum above earth and 2" minimum above finish paving. Comply with CBC chapters 2507 and 2512.

NOTES:
1. All exterior wall and surfaces, gutters, downspouts, flashing, trim and exposed concrete foundations shall be painted.
2. Paint all roof jacks, roof caps, dampers and flues to match roof color.
3. **Verify head heights of windows to align with the doors.**

Project / Owner:

People's Self Help Housing

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Drawn By: AC

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Sheet Title:
PROPOSED EXTERIOR ELEVATIONS-TWO-STORY

Sheet Number:

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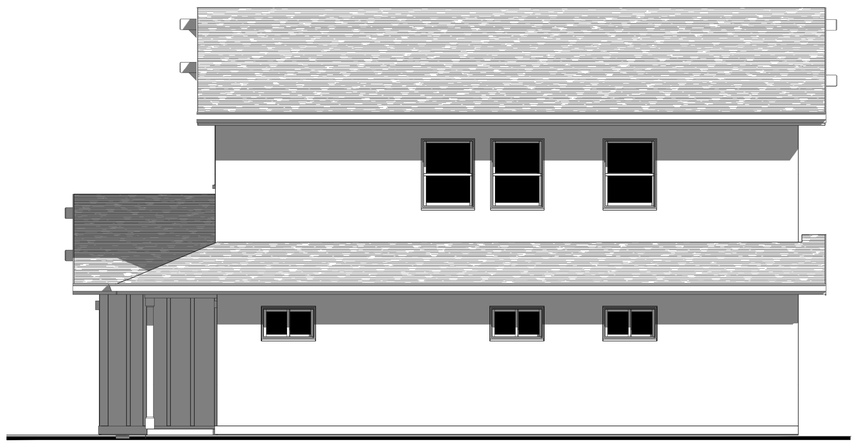

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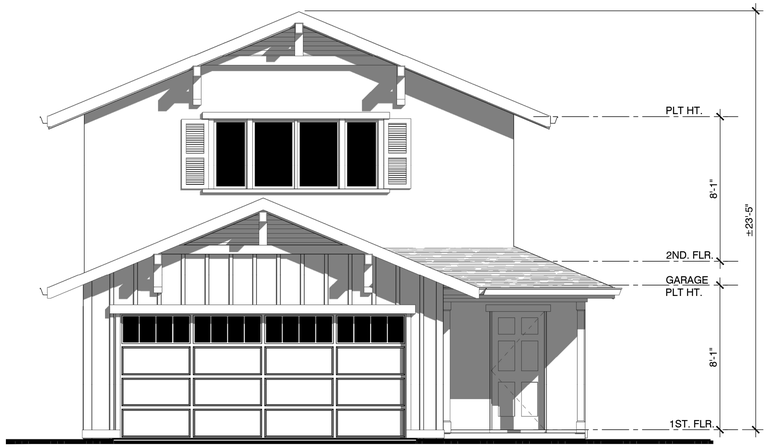

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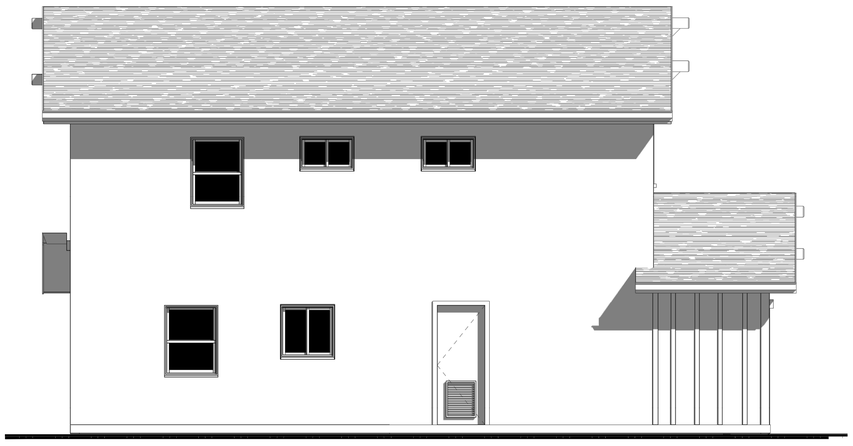
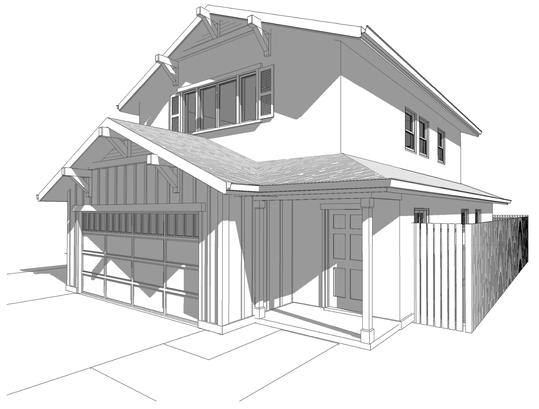


EAST

NORTH



PERSPECTIVE

PROPOSED EXTERIOR ELEVATION - TWO-STORY

SCALE: 1/4" = 1'-0"

0 1 2 4 8

SCALE: 1/4" = 1'-0"

EXTERIOR FINISH SCHEDULE

ROOF: Class A rated minimum 30-year High Definition asphalt shingle Cool Roof on underlayment per CRC R905.1. Packaging for roof materials shall bear manufacturer's and approved testing agency's labels for field inspection.

FLASHING: 24 GA. Galvanized Sheet Metal, paint **all** sides prior to installation and a second coat after installation

WALLS: General - At a minimum, provide a minimum of one layer of Tyvek StuccoWrap water resistive barrier complying with CRC 703.2. and shall be attached to the studs or sheathing, with flashing as described in the manufacturer's installation instructions, in such a manner as to provide a continuous water-resistive barrier behind the exterior wall veneer/covering.

CEMENT PLASTER: Minimum thickness to be 7/8", three coats on of Grade "D" 60-minute paper with expanded metal lath on Tyvek StuccoWrap on wood sheathing. A minimum 26 GA galvanized metal weep screed with minimum 3-1/2" attachment flange at or below foundation plate is required at 4" minimum above earth and 2" minimum above finish paving. Comply with CBC chapters 2507 and 2512.

NOTES:
1. All exterior wall and surfaces, gutters, downspouts, flashing, trim and exposed concrete foundations shall be painted.
2. Paint all roof jacks, roof caps, dampers and flues to match roof color.
3. **Verify head heights of windows to align with the doors.**

Project / Owner:

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GREENFIELD, CA

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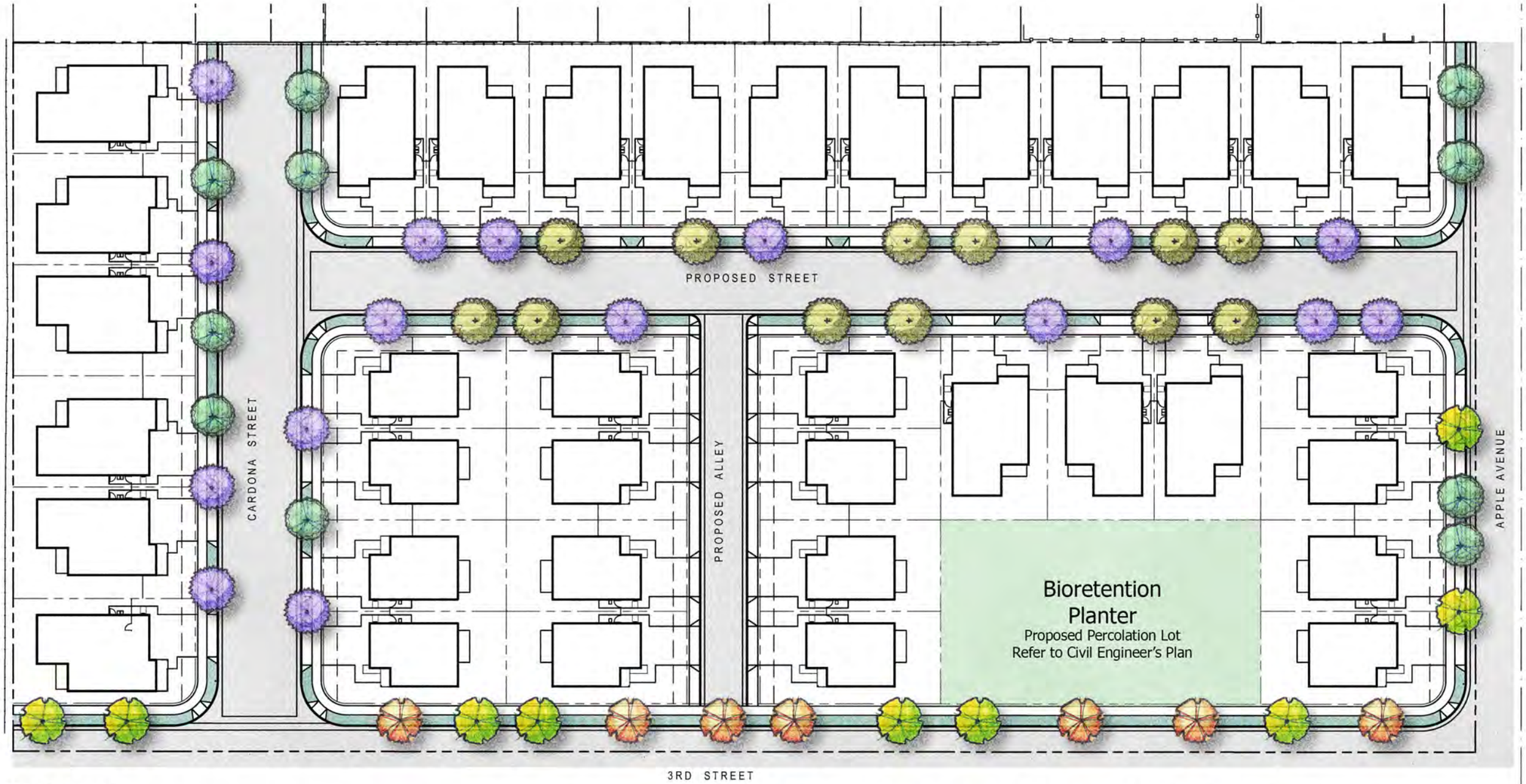
PROPOSED EXTERIOR ELEVATIONS-TWO-STORY

Sheet Number:

A3.2C



Bioretention Planters

ABBREV	SIZE		BOTANICAL NAME / COMMON NAME	*WUCOLS RATING
ZONE A – BASIN BOTTOM GROUND COVER				
F	30" OC	1G	CAREX TUMULICOLA / BERKELEY SEDGE	L
G	36" OC	1G	JUNCUS PATENS / COMMON RUSH	L
ZONE B – BASIN SIDE SLOPE GROUND COVER				
H	60" OC	1G	BACCHARIS PILULARIS 'PIGEON POINT' / PROSTRATE COYOTE BRUSH	VL
I	36" OC	1G	LEYMUS CONDENSATUS 'CANYON PRINCE' / CANYON PRINCE WILD RYE	L
J	48" OC	1G	MUHLENBERGIA RIGENS / DEER GRASS	L

Street Trees – Per City of Greenfield "City Street Trees" List

- GLEDITSIA TRIACANTHOS 'SHADEMASTER'/SHADEMASTER HONEYLOCUST
- KOELREUTERIA PANICULATA / GOLDENRAIN TREE
- LAGERSTROEMIA INDICA 'TUSCARORA' / CRAPE MYRTLE (CORAL PINK)
- PLATANUS ACERIFOLIA 'BLOODGOOD' / LONDON PLANE TREE
- PYRUS KAWAKAMI / EVERGREEN PEAR

JBLA
Jim Burrows
Landscape Architecture

JBLA Job #21-125
October 8, 2021

NORTH

SCALE: 1" = 50'-0"

0 50 100 150 200

CONCEPTUAL STREET TREE PLAN
With Bioretention Planter Notes

APPLE AVENUE SUBDIVISION
Greenfield, CA
Peoples Self Help Housing

Lot 4

TYPICAL
INTERIOR LOT
FRONT YARD
LANDSCAPE

Lot 7

TYPICAL
CORNER LOT
FRONT YARD
LANDSCAPE

STREET TREES
(PER CITY OF GREENFIELD
"CITY STREET TREES" LIST)

MEDIUM HEIGHT
SHRUBS
(3-5' HEIGHT)

LOW PARKWAY
GROUND COVERS
& GRASSES
(30" HEIGHT)

MEDIUM HEIGHT
ACCENT SHRUBS
(3-4' HEIGHT)

FRONT YARD TREES
(1 PER LOT)

LOW FOREGROUND
GROUND COVERS
& GRASSES
(30" HEIGHT)

SCALE: 1" = 10'-0"

0 10 20 30 40

CONCEPTUAL LANDSCAPE PLAN

Jim Burrows
Landscape Architecture

JBLA Job #21-125
October 8, 2021

APPLE AVENUE SUBDIVISION

Greenfield, CA
Peoples Self Help Housing

Plant List – 36 Homes, Greenfield, CA – Sunset Zone 14

ABBREV	SIZE	BOTANICAL NAME / COMMON NAME	*WUCOLS RATING
Street Trees – Per City of Greenfield "City Street Trees" List			
Trees must be planted 2-1/2' to 3' behind sidewalk. Trees must be planted with root guards and braced with 2x2" redwood stakes per planting details. Trees to be standard form, 8' minimum height, 1" minimum caliper			
GLE TRI 'SM'	15G	GLEDITSIA TRIACANTHOS 'SHADEMASTER'/SHADEMASTER HONEYLOCUST	L
KOE PAN	15G	KOELREUTERIA PANICULATA / GOLDENRAIN TREE	M
LAG IND 'T'	15G	LAGERSTROEMIA INDICA 'TUSCARORA' / CRAPE MYRTLE (CORAL PINK)	L
PLA ACE 'B'	15G	PLATANUS ACERIFOLIA 'BLOODGOOD' / LONDON PLANE TREE	M
PYR KAW	15G	PYRUS KAWAKAMI / EVERGREEN PEAR	M
Front Yard Trees			
ARB 'M'	15G	ARBUTUS 'MARINA' / 'MARINA' ARBUTUS (STD.)	L
CHI TAS	15G	CHITALPA TASHKENTENSIS / CHITALPA (MULTI-TRUNK)	L
KOE PAN	15G	KOELREUTERIA PANICULATA / GOLDENRAIN TREE	M
LAG IND 'T'	15G	LAGERSTROEMIA INDICA 'TUSCARORA' / CRAPE MYRTLE (CORAL PINK)	L
PIS CHI	15G	PISTACIA CHINENSIS / CHINESE PISTACHE	M
PRU CER 'KV'	15G	PRUNUS CERASIFERA 'KRAUTER VESUVIUS' / PURPLE-LEAF PLUM	L
Medium Height Shrubs (3-5' height)			
ARC DEN 'HM'	5G	ARCTOSTAPHYLOS DENSIFLORA 'HOWARD MCMINN' / MANZANITA	VL
CAL 'LJ'	5G	CALLISTEMON 'LITTLE JOHN' / DWARF BOTTLEBRUSH	L
LOR CHI	5G	LOROPETALUM CHINENSIS 'PURPLE MAJESTY' / RED FRINGE FLOWER	L
RHA CAL 'EC'	5G	RHAMNUS CALIFORNICA 'EVE CASE' / COFFEEBERRY	L
ROS OFF 'TB'	5G	ROSMARINUS OFFICINALIS 'TUSCAN BLUE' / ROSEMARY	L
SAL MIC 'HL'	5G	SALVIA MICROPHYLLA 'HOT LIPS' / HOT LIPS SAGE	L
Medium Height Accent Shrubs (3-4' height, in groupings of one to three)			
BOU 'R'	5G	BOUGAINVILLEA 'ROSENKA' / BOUGAINVILLEA	L
PHO TEN 'YW'	5G	PHORMIUM TENAX 'YELLOW WAVE' / DWARF NEW ZEALAND FLAX	L
ROS FLO 'I'	5G	ROSA FLORIBUNDA 'ICEBERG' / ICEBERG ROSE	M
YUC GLO 'W'	5G	YUCCA GLORIOSA 'WALBRISTAR' / BRIGHT STAR YUCCA	L
Low Foreground Ground Covers and Grasses			
A	36" OC	1G LAVANDULA ANGUSTIFOLIA 'MUNSTEAD' / MUNSTEAD LAVENDER	L
B	60" OC	1G MYOPORUM PARVIFOLIUM 'PUTAH CREEK' / TRAILING MYOPORUM	L
C	36" OC	1G PENSTEMON 'MARGARITA BOP' / MARGARITA BOP PENSTEMON	L
D	36" OC	1G SALVIA 'DARA'S CHOICE / DARA'S CHOICE SAGE	L
Low Parkway Ground Covers and Grasses			
E	42" OC	1G BOUTELOUA GRACILIS 'BLONDE AMBITION' / BLUE GRAMMA GRASS	L
F	36" OC	1G FESTUCA MAIREI / ATLAS FESCUE	L
G	48" OC	1G LANTANA 'NEW GOLD' / 'NEW GOLD' LANTANA	L
H	36" OC	1G LAVANDULA ANGUSTIFOLIA 'MUNSTEAD' / MUNSTEAD LAVENDER	L
I	36" OC	1G LOMANDRA LONGIFOLIA 'BREEZE' / DWARF MAT RUSH	L

MULCH

MULCH ALL GROUND COVER AND PLANTER AREAS WITH 3" MINIMUM LAYER 'WALK-ON' BARK.

LEGEND

VL = VERY LOW WATER USE
L = LOW WATER USE
M = MEDIUM WATER USE
H = HIGH WATER USE
G = GALLONS
B = BOX
OC = ON-CENTER SPACING
STD = STANDARD FORMS
DRB = DEEP ROOT BARRIER, AS REQUIRED PER PLANTING DETAIL SHEET.

***WATER-USE EVALUATION OF PLANT MATERIALS**

WATER USE OF PROPOSED PLANTS HAVE BEEN EVALUATED USING THE "WATER USE CLASSIFICATION OF LANDSCAPE SPECIES" (WUCOLS IV, UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION.)

TREES


Arbutus Marina


Chitalpa tashkentensis


Koelreuteria paniculata


Lagerstroemia 'Tuscarora'


Pistachia chinensis


Prunus Krauter Vesuvius

SHRUBS


Arctostaphylos Howard McMinn


Bougainvillea 'Rosenka'


Callistemon Little John


Loropetalum Purple Majesty


Phormium Yellow Wave


Rhamnus Eve Case


Rosa floribunda "Iceberg'


Rosmarinus Tuscan Blue


Salvia Hot Lips


Yucca gloriosa Bright Star

GROUND COVERS


Bouteloua 'Blonde Ambition'


Festuca mairei


Lantana New Gold


Lavendula Munstead


Lomandra longifolia 'Breeze'


Myoporum Putah Creek


Penstemon Margarita BOP


Salvia Dara's Choice

Jim Burrows Landscape Architecture

JBLA Job #21-125
October 8, 2021

APPLE AVENUE SUBDIVISION

Greenfield, CA
Peoples Self Help Housing

Water Efficienct Landscape Worksheet

This worksheet is filled out by the project applicant and it is a required item of the Landscape Documentation Package.
One worksheet complete for point of connection (water meter).*

			ZONE 1
Select your city:	Greenfield	Project name or address:	Greenfield Interior Lot
Reference Evapotranspiration (ETo):	49.5	Landscape Area Sector Type:	Residential

California Water Efficient Landscape Worksheet

Reference Evapotranspiration (ET_o)	49.5	Project Type	Residential	0.55

Hydrozone # / Planting Description[a]	Plant Factor (PF)	Irrigation Method[b]	Irrigation Efficiency (IE)[c]	ETAF (PF/IE)	Landscape Area (Sq. Ft.)	ETAF x Area	Estimated Total Water Use (ETWU)[d]
Regular Landscape Areas							
Low Water Use Trees	0.2	Bubbler	0.77	0.26		0	0
Low Water Use	0.2	Drip	0.81	0.25	636	157	4819
Very Low Water Use	0.1	Drip	0.81	0.12		0	0
High Water Use	0.8	Overhead	0.75	1.07		0	0
				Average	***Total***	***Total***	
				0.25	636	157	
				Average ETAF for Regular Landscape Areas :			**In Compliance**
Special Landscape Areas							
SLA-1				0	-	0	0
				Totals	0	0	

Total Landscape Area	636
Statewide ETAF	0.25
ETWU Total	4,819
Maximum Allowed Water Allowance (MAWA)[e]	10,735

ETAF Calculations

Regular Landscape Areas	
Total ETAF x Area	157
Total Area	636
Average ETAF	0.25

Average ETAF for Regular Landscape Areas must be 0.55 or below for residential areas, and 0.45 or below for non-residential areas.

Percentage of MAWA
45%

All Landscape Areas		
Total ETAF x Area	157	0.45 Non-Residential
Total Area	636	0.55 Residential
Average ETAF	0.25	0.81 Drip
		0.75 Overhead

TYPICAL INTERIOR FRONT YARD LANDSCAPE

Water Efficienct Landscape Worksheet

This worksheet is filled out by the project applicant and it is a required item of the Landscape Documentation Package.
One worksheet complete for point of connection (water meter).*

			ZONE 1
Select your city:	Greenfield	Project name or address:	Greenfield Corner Lot
Reference Evapotranspiration (ETo):	49.5	Landscape Area Sector Type:	Residential

California Water Efficient Landscape Worksheet

Reference Evapotranspiration (ET_o)	49.5	Project Type	Residential	0.55

Hydrozone # / Planting Description[a]	Plant Factor (PF)	Irrigation Method[b]	Irrigation Efficiency (IE)[c]	ETAF (PF/IE)	Landscape Area (Sq. Ft.)	ETAF x Area	Estimated Total Water Use (ETWU)[d]
Regular Landscape Areas							
Low Water Use Trees	0.2	Bubbler	0.77	0.26		0	0
Low Water Use	0.2	Drip	0.81	0.25	1,016	251	7699
Very Low Water Use	0.1	Drip	0.81	0.12		0	0
High Water Use	0.8	Overhead	0.75	1.07		0	0
				Average	***Total***	***Total***	
				0.25	1,016	251	
				Average ETAF for Regular Landscape Areas :			**In Compliance**
Special Landscape Areas							
SLA-1				0	-	0	0
				Totals	0	0	

Total Landscape Area	1,016
Statewide ETAF	0.25
ETWU Total	7,699
Maximum Allowed Water Allowance (MAWA)[e]	17,150

ETAF Calculations

Regular Landscape Areas	
Total ETAF x Area	251
Total Area	1016
Average ETAF	0.25

Average ETAF for Regular Landscape Areas must be 0.55 or below for residential areas, and 0.45 or below for non-residential areas.

Percentage of MAWA
45%

All Landscape Areas		
Total ETAF x Area	251	0.45 Non-Residential
Total Area	1016	0.55 Residential
Average ETAF	0.25	0.81 Drip
		0.75 Overhead

TYPICAL CORNER FRONT YARD LANDSCAPE

WATER EFFICIENT LANDSCAPE ORDINANCE (WELO) WORKSHEETS

Water Conservation Notes

The following water conservation techniques shall be employed in this Project:

- Planting and irrigation design shall conform to the "Model Water Efficient Landscape Ordinance" (MWELO).
- Water conserving plants, defined as "Low" in the "Water Use Classification of Landscape Species" (WUCOLS IV, University of California Cooperative Extension), shall be utilized in 95% of the total planting area.
- Irrigation system shall be separated into distinct hydrozones based on plant material types, exposure and orientation.
- Soil amendments and mulch shall be utilized to improve water holding capacity of soil.
- Automatic irrigation system shall utilize "Smart Controller" technology with water budgeting feature to adjust water application based on soil moisture and/or local weather data.
- Recommendations shall be given for annual irrigation schedule at project completion.
- Lawn is not used.

Statement of Water Conserving Irrigation Design

The following principles of irrigation design are utilized to conserve water and improve the efficiency of the irrigation system:

- All irrigation shall be drip or dripline emitters. No overhead spray heads will be used.
- Irrigation hydrozone application shall be adjusted according to water needs and weather.
- Irrigation system master valve shall be used.
- Irrigation system "Smart controller" with water budgeting feature shall be used.
- Irrigation system flow sensor shall be used.
- Irrigation system of rain shut-off device connected to irrigation controller shall be used.

To maintain the irrigation efficiency intended in the design, the irrigation system shall be tested and maintained on a monthly basis by maintenance staff.

JBLA
Jim Burrows
Landscape Architecture

JBLA Job #21-125
October 8, 2021

APPLE AVENUE SUBDIVISION

Greenfield, CA
Peoples Self Help Housing

CalEEMod Results

APPENDIX B

Apple Ave Subdivision_Proposed Emissions - Monterey County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Apple Ave Subdivision_Proposed Emissions

Monterey County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	36.00	Dwelling Unit	4.60	64,800.00	103

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.6	**Precipitation Freq (Days)**	55
Climate Zone	4			**Operational Year**	2025
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot acreage adjusted to match project description.

Water And Wastewater - The proposed project would connect to the municipal sanitary sewer system.

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation - All residences will be residences will be low and very-low income 3-bedroom housing units.

Landscaping equipment is set to electric only to reflect phasing out of gas-powered landscaping tools potentially by 2024 (AB 1346).

100 percent of electrical energy demand from renewable sources.

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	11.69	4.60
tblWater	AerobicPercent	87.46	97.79
tblWater	SepticTankPercent	10.33	0.00

Apple Ave Subdivision_Proposed Emissions - Monterey County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					
2022	3.2379	33.1402	21.0736	0.0400	19.8049	1.6136	21.4185	10.1417	1.4845	11.6262	0.0000	3,861.0676	3,861.0676	1.1977	0.0169	3,888.6989
2023	45.2543	14.6289	16.6899	0.0287	0.1643	0.7017	0.8356	0.0436	0.6603	0.6964	0.0000	2,739.9044	2,739.9044	0.6126	0.0162	2,760.0400
Maximum	**45.2543**	**33.1402**	**21.0736**	**0.0400**	**19.8049**	**1.6136**	**21.4185**	**10.1417**	**1.4845**	**11.6262**	**0.0000**	**3,861.0676**	**3,861.0676**	**1.1977**	**0.0169**	**3,888.6989**

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	25.7962	0.7594	34.0865	0.0600		4.4193	4.4193		4.4193	4.4193	470.2053	485.6302	955.8355	0.5814	0.0396	982.1686
Energy	0.0283	0.2421	0.1030	1.5400e-003		0.0196	0.0196		0.0196	0.0196		308.9971	308.9971	5.9200e-003	5.6600e-003	310.8333
Mobile	0.9748	1.3959	9.9111	0.0202	2.0875	0.0173	2.1048	0.5568	0.0162	0.5730		2,050.3162	2,050.3162	0.1388	0.1022	2,084.2395
Total	**26.7993**	**2.3974**	**44.1005**	**0.0817**	**2.0875**	**4.4562**	**6.5437**	**0.5568**	**4.4551**	**5.0118**	**470.2053**	**2,844.9435**	**3,315.1488**	**0.7262**	**0.1474**	**3,377.2414**

Biological Peer Review and Report

C

APPENDIX

Planning for Success.

July 14, 2022

Paul Mugan
Community Development Director
City of Greenfield
599 El Camino Real
Greenfield, CA 93927

Re: 296 Apple Avenue – Peer Review of Biological Resource Assessment

Dear Paul,

This letter documents a peer review of the biological resource assessment prepared to address potential biological and aquatic (wetland) resources occurring at or within the vicinity of the proposed project site at 296 Apple Avenue in the City of Greenfield, Monterey County, California:

- *Biological Resource Assessment for 296 Apple Avenue*, Althouse and Meade, Inc. July 2021

The purpose of this peer review is to determine if the assessment was conducted according to professional standards, comprehensively addresses biological resources with the potential to occur on or in the vicinity of the project site, and are adequate for inclusion in a legally-defensible environmental document.

Biological Resource Assessment Summary

1. The *Biological Resource Assessment* was prepared by Althouse and Meade in July 2021 and is based on a field visit on June 22, 2021.

2. The *Biological Resource Assessment* contains a comprehensive description of the habitat conditions on the project site and in the surrounding area and includes a list of the habitat types and plant and animal species observed during field visits.

3. The *Biological Resource Assessment* lists all sensitive biotic resources with potential to occur on the project site including the distribution and known occurrences of special-status species and sensitive habitats in the project area in the California Natural Diversity Database.

4. The field visit by an Althouse and Meade biologist found marginal habitat on the project site for several special-status plant and animal species.

5. The *Biological Resource Assessment* includes a comprehensive discussion of potential impacts (impact analysis) to special-status species and provides recommendations for project avoidance and minimization.

6. The field visit by an Althouse and Meade biologist did not find evidence for wetlands or jurisdictional Waters of the U.S.

Issue Areas

The Althouse and Meade biologist concluded that the following are the only special-status plant and wildlife species with a potential for occurrence at the site or in the immediate vicinity:

- protruding buckwheat (*Eriogonum nudum* var. *inductum*);
- Cooper's hawk (*Accipiter cooperii*);
- white-tailed kite (*Elanus leucurus*);
- Yuma myotis (*Myotis yumanensis*);
- bank swallow (*Riparia riparia*); and
- San Joaquin kit fox (*Vulpes macrotis mutica*)

Conclusions

We agree with the conclusion that there is low potential for the six special-status plant and animal species listed above to occur on the project site. The remaining species reported from the region and listed in Appendices A and B of the report are considered unlikely to occur due to the lack of suitable habitat. Raptors such as Cooper's hawk and white-tailed kite could potentially forage or nest on the site. Special-status bat species, such as Yuma myotis, could potentially roost in building crevices found on the site.

There is a very low potential for San Joaquin kit fox to migrate through or forage at the project site.

The biological resource assessment takes a cautious approach and requires mitigation measures including pre-construction surveys for nesting birds and bats. A mitigation measure to avoid impacts to San Joaquin kit fox is also included. We agree that the proposed mitigation measures suitably reduce the potential for impacts to the species identified.

The biological resource assessment was prepared consistent with professional standards. All necessary components of this analysis were present including complete discussions of the regulatory setting, methodology, mapping, baseline environmental conditions, results of field surveys, and impact analysis. The assessment provides a comprehensive and accurate review and analysis of the biological resources found at the project site and provides avoidance and minimization measures to minimize impacts to sensitive species and habitat. It is our professional opinion that no additional analysis of biological resources is needed in order to prepare an adequate CEQA document.

I hope this peer review meets your needs at this time. If you have any questions, please contact me at furtado@emcplanning.com.

Sincerely,

Patrick Furtado

Patrick Furtado, MS
Senior Biologist

Biological Resource Assessment

for

296 Apple Avenue

APN(s) 109-82-013
City of Greenfield, California

Prepared for

People's Self-Help Housing
c/o Sheryl Flores
3533 Empleo Street
San Luis Obispo, CA 93401
(805) 540-2465

by

ALTHOUSE AND MEADE, INC.
BIOLOGICAL AND ENVIRONMENTAL SERVICES
1602 Spring Street
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July 2021

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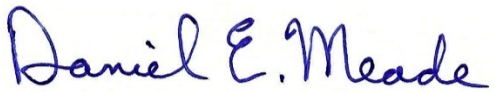
I certify that this Biological Resource Assessment was prepared according to professional standards and that the statements furnished in the report and associated maps are true and correct to the best of my knowledge and belief.



Signature — 7/8/2021 Date

Signature — 7/8/2021 Date

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Cover Page: Photo of fallow cropland habitat and residential structures, view southeast. June 22, 2021.

SYNOPSIS

- This report describes the study of biological resources at a 4.9-acre site (Study Area) in the City of Greenfield, California. The Study Area includes Assessor's Parcel Number (APN) 109-82–013.
- The project is a residential development with associated infrastructure and parking, and would impact the entire site.
- Habitat types identified and mapped within the Study Area are fallow cropland and anthropogenic.
- Botanical surveys identified 33 species of vascular plants in the Study Area. One special status plant (protruding buckwheat) is known from within five miles of the Study Area. Protruding buckwheat was not found in the Study Area and no special status plants were observed in the Study Area.
- Wildlife surveys detected 10 animal species in the Study Area. There are four special status animals with low potential to occur in the Study Area (Cooper's hawk, white-tailed kite, Yuma myotis, and bank swallow). No special status animals were observed in the Study Area.
- Biological resources that could be impacted by the Project include: fallow cropland and anthropogenic habitats, nesting birds, special status birds, and bats. The project is within the historical range of San Joaquin kit fox, however this species has not been reported within 40 miles of the project within the last 30 years. . Mitigation recommendations are provided to reduce potential impacts to sensitive biological resources.

1 INTRODUCTION

1.1 Purpose

This Biological Resource Assessment provides information regarding biological resources associated with 296 Apple Avenue, a 4.9-acre Study Area in the City of Greenfield, California. Results include a habitat assessment, botanical and wildlife inventory, a discussion of special status species that have potential to occur within the Study Area, an analysis of potential impacts to biological resources, and mitigation recommendations. Project plans are not finalized, therefore we assume the entire property will be developed.

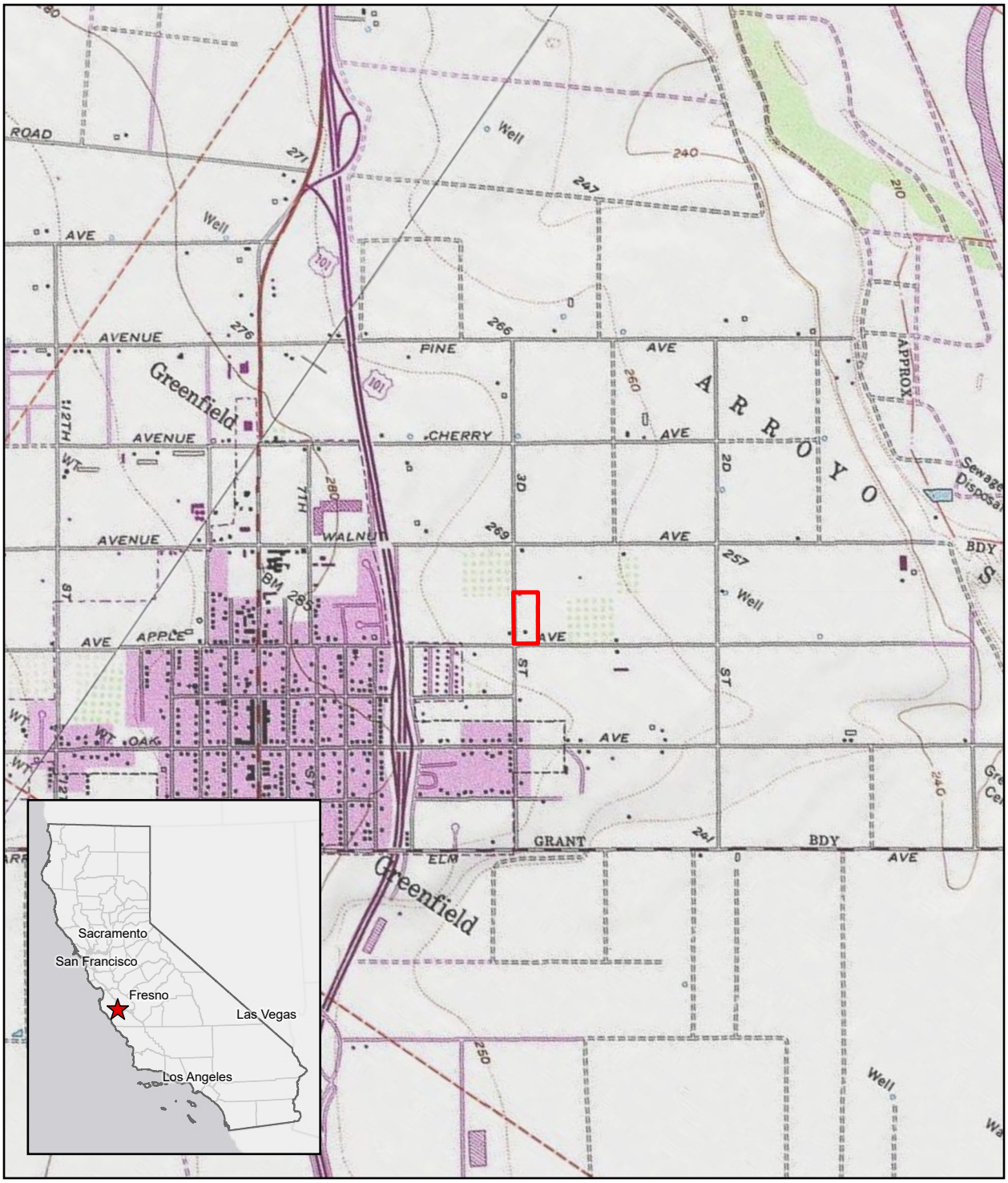
1.2 Project Location

The Study Area is in the City of Greenfield, east of State Highway 101 and 3rd Street, northwest of Apple Avenue. The site is in APN 109-082-013, equivalent to 4.9 acres. Location coordinates are 36.33001°N, 121.23698°W (WGS 84) in the Greenfield United States Geological Survey (USGS) 7.5-minute topographic quadrangle (Figure 1). The Study Area is planned for Medium Density Residential in the City's General Plan with a zoning designation of R-M, Multiple Family Residential - 7 to 15 dwelling units/acre (Greenfield 2017a, 2017b).

1.3 Local and Regional Context

The City of Greenfield (City) is in south Salinas Valley, 35 miles south of the City of Salinas, and 13 miles north of King City in southern Monterey County. Highway 101, a major north-south route bisects the City. The Monterey/San Benito County line is 4.5 miles northeast. The region is largely agriculture fields and vineyards; however, over the years the City has maintained a rural community character (City 2005b). The area surrounding the site is mixed with single-family residences south, southwest, east, and northwest. Greenfield Park is located opposite 3rd Street and agricultural fields/rural residential development occurs to the west, northwest, and north. The Salinas River is two miles northeast. Elevations onsite and within the vicinity are flat at approximately 270 feet above mean sea level (Figure 2).

Figure 1. United States Geological Survey Topographic Map



Legend

Study Area (4.9 acres)

0 1,000 2,000 Feet

PSHH Greenfield
Map Center: 121.23833°W 36.33036°N
Greenfield, Monterey County, California

USGS Quadrangle: Greenfield

ALTHOUSE AND MEADE, INC.
BIOLOGICAL AND ENVIRONMENTAL SERVICES

Map Updated:
June 29, 2021 12:20 PM by MCM

Figure 2. Aerial Photograph

Legend

Study Area (4.9 acres)

PSHH Greenfield
Map Center: 121.23687°W 36.33003°N
Greenfield, Monterey County, California

Imagery Source: ESRI World Imagery

0 100 200 Feet

ALTHOUSE AND MEADE, INC.
BIOLOGICAL AND ENVIRONMENTAL SERVICES

Map Updated:
June 29, 2021 12:21 PM by MCM

1.4 Regulatory Framework

Standards for environmental protection and restoration, in the form of laws and regulations, are created within three different organizational levels of government: Federal, State, and Local. Entities exist within each level to create and enforce regulations that help ensure protection of specific and pertinent regional issues threatening ecosystems and environments. The following regulations are applicable to the proposed Project.

1.4.1 Federal Law and Regulations

Endangered Species Act. The federal Endangered Species Act (FESA) provides the legal framework for the listing and protection of species (and their habitats) identified as being endangered or threatened with extinction. "Critical Habitat" is a term within the FESA designed to guide actions by federal agencies and is defined as "an area occupied by a species listed as threatened or endangered within which are found physical or geographical features essential to the conservation of the species, or an area not currently occupied by the species which is itself essential to the conservation of the species." Actions that jeopardize endangered or threatened species and/or critical habitat are considered a 'take' under the FESA. "Take" under federal definition means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.

Projects that would result in "take" of any federally listed threatened or endangered species, or critical habitats, are required to obtain permits from the USFWS through either Section 7 (interagency consultation with a federal nexus) or Section 10 (Habitat Conservation Plan) of FESA, depending on the involvement by the federal government in permitting and/or funding of the project. Through Section 10, it is required to prepare a Habitat Conservation Plan (HCP) to be approved by the United States Fish and Wildlife Service (USFWS), which results in the issuance of an Incidental Take Permit (ITP). Through Section 7, which can only occur when a separate federal nexus in a project exists (prompting interagency consultation), a consultation by the various federal agencies involved can take place to determine appropriate actions to mitigate negative effects on endangered and threatened species and their habitat.

Migratory Bird Treaty Act. All migratory, non-game bird species that are native to the U.S. or its territories are protected under the federal Migratory Bird Treaty Act (MBTA) of 1918 (50 C.F.R. Section 10.13), as amended under the Migratory Bird Treaty Reform Act of 2004. The MBTA makes it illegal to purposefully take (pursue, hunt, shoot, wound, kill, trap, capture, or collect) any migratory bird, or the parts, nests, or eggs of such a bird, except under the terms of a valid Federal permit. Migratory non-game native bird species are protected by international treaty under the federal MBTA.

1.4.2 State Law and Regulations

California Endangered Species Act. The California Endangered Species Act (CESA), similar to FESA, contains a process for listing of species and regulating potential impacts to listed species. State threatened and endangered species include both plants and wildlife, but do not include invertebrates. The designation "rare species" applies only to California native plants. State threatened and endangered plant species are regulated largely under the Native Plant Preservation Act in conjunction with the CESA. State threatened and endangered animal species are legally

protected against "take." The CESA authorizes the California Department of Fish and Wildlife (CDFW) to enter into a memorandum of agreement for take of listed species to issue an incidental take permit for a state-listed threatened and endangered species only if specific criteria are met. Section 2080 of the CESA prohibits the take of species listed as threatened or endangered pursuant to the Act. Section 2081 allows CDFW to authorize take prohibited under Section 2080 provided that: 1) the taking is incidental to an otherwise lawful activity; 2) the taking will be minimized and fully mitigated; 3) the applicant ensures adequate funding for minimization and mitigation; and 4) the authorization will not jeopardize the continued existence of the listed species.

California Environmental Quality Act (CEQA). CEQA defines a "project" as any action undertaken from public or private entity that requires discretionary governmental review (a non-ministerial permittable action). All "projects" are required to undergo some level of environmental review pursuant to CEQA, unless an exemption applies. CEQA's environmental review process includes an assessment of existing resources, broken up by categories (i.e., air quality, aesthetics, etc.), a catalog of potential impacts to those resources caused by the proposed project, and a quantifiable result determining the level of significance an impact would generate. The goal of environmental review under CEQA is to avoid or mitigate impacts that would lead to a "significant effect" on a given resource; section 15382 of the CEQA Guidelines defines a "significant effect" as

> *a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment, but may be considered in determining whether the physical change is significant.*

Public agencies are required to implement CEQA and execute jurisdiction to determine when applicable activities are or are not subject to CEQA. A public agency with the most prominent nexus and jurisdiction to a project is called the lead agency. The lead agencies determine the scope of what is considered an impact and what constitutes a "significant effect". "Biological resources" is one of the varying categories considered during environmental review through CEQA. A lead agency can require a biological assessment to be prepared to report on existing biological resources and recommended mitigation measures that will reduce or lessen potential negative impacts to those biological resources. The questions listed in CEQA's Appendix G: Biological Resources section, which are used to guide assessment of impacts to biological resources are as follows:

- *Does the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?*
- *Does the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?*
- *Does the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?*
- *Does the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?*
- *Does the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*

- *Does the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?*

The lead agency has the final determination over whether a project is or is not permissible, based upon the environmental review, completed requirements and environmental documentation, and their judgement that the project will not have a significant effect on the environment, or that all significant effects have been mitigated for.

California Fish and Game Code (CFGC). The California Fish and Game Code (CFGC) is one of the 29 legal codes that form the general statutory law of California. A myriad of statutes regarding fish and game are specified in the CFGC; the following codes are specifically relevant to the proposed Project:

California Native Plant Protection Act. Sections 1900-1913 of the California Fish and Game Code contain the regulations of the Native Plant Protection Act of 1977. The intent of this act is to help conserve and protect rare and endangered plants in the state. The act allowed the CFGC to designate plants as rare or endangered.

1.4.3 Local Policies and Regulations

1.4.3.1 General Plan

The Conservation, Recreation, and Open Space Element (CROSE) of the General Plan focuses on protection and enhancement of community resources to ensure a high quality of living in Greenfield (City 2005a). These resources include agricultural, biological, historical/cultural, recreation, open space, and scenic resources. Goal 7.5 of the CROSE focuses on Biological Resources with 4 policies and 4 programs:

- *Policy 7.5.1 Use land use planning to reduce the impact of development on important ecological and biological resources identified during application review and analysis.*
- *Policy 7.5.2 Encourage preservation of portions of important wildlife habitats that would be disturbed by major development.*
- *Policy 7.5.3 Develop open space uses in an ecologically sensitive manner.*
- *Policy 7.5.4 Development in sensitive habitat areas should be avoided or mitigated to the maximum extent possible.*
    - *Program 7.5.A – Prior to development, areas with potential wildlife habitat shall be surveyed for special status plant and/or animal species. If any special status plant or animal species are found in areas proposed for development, the appropriate resource agencies shall be contacted and species-specific management strategies established to ensure the protection of the particular species.*
    - *Program 7.5.B – Participate with regional, state, and federal agencies and organizations to establish and preserve open space that provides habitat for local wildlife.*
    - *Program 7.5.C – At the discretion of the City, development proposals will be required to submit detailed biological resource assessments as part of the application or CEQA review process. Projects shall demonstrate compliance with the recommendations of those assessments.*

- *Program 7.5.D – The City shall explore the feasibility of a citywide habitat mitigation fee as an alternative to site-specific mitigation requirements.*

1.4.3.2 Walnut Avenue Specific Plan (WASP)

The WASP is a 62.6-acre land use plan, intended for a multi-functional area for community events, activities, and shopping. The City prepared an Environmental Impact Report (EIR) for the WASP to help facilitate future development and streamline the CEQA process.

The EIR identified one biological resource mitigation measure This is the only Bio MM for the Walnut Avenue Specific Plan:

BIO-1 Prior to initiating construction activities for any individual project for which construction would begin during the period [of] February 1 to August 31, individual project developers will conduct pre-construction surveys for protected nesting birds. If present, appropriate protection measures will be implemented (DRAFT EIR, page 3-57).

1.4.3.3 City of Greenfield Tree Guidelines

Chapter 12.10.070 of the City's Municipal Code (City 2021) states that it is unlawful for any person other than the director or authorized agents or employees to do the following to any tree in any public street within the city or must receive a written permit prior to bracing, cutting, moving, planting, pruning, removing, replacing, spraying or trimming trees.

1.5 Special Status Species and Sensitive Habitat Regulations

For purposes of this Biological Resource Assessment, special status species are those plants and animals listed, proposed for listing, or candidates for listing as threatened or endangered by the USFWS under the FESA; those listed or proposed for listing as rare, threatened, or endangered by the CDFW under the CESA; animals designated as "Species of Special Concern," "Fully Protected," or "Watch List" by the CDFW; and plants with a California Rare Plant Rank (CRPR) of 1, 2, 3, or 4. In the following sections, further details are provided to highlight the different guidelines and qualifications that are used to help identify special status species in this report. In Sections 3.4 and 3.5, the various qualifications are listed in the special status species tables (Table 3 and Table 5) for each species with potential to occur in the project area.

1.5.1 California Natural Diversity Database (CNDDB)

"Special Plants" and "Special Animals" are broad terms used to refer to all the plant and animal taxa inventoried by the CNDDB, regardless of their legal or protection status (CDFW 2021b, CDFW 2021c). The Special Plants list includes vascular plants, high priority bryophytes (mosses, liverworts, and hornworts), and lichens. The Special Animals list is also referred to by the California Department of Fish and Wildlife (CDFW) as the list of "species at risk" or "special status species."

According to the CNDDB, Special Plants and Animals lists include: taxa that are officially listed or proposed for listing by California or the Federal Government as Endangered, Threatened, or Rare; taxa which meet the criteria for listing, as described in Section 15380 of CEQA Guidelines; taxa deemed biologically rare, restricted in range, declining in abundance, or otherwise vulnerable; population(s) in California that may be marginal to the taxon's entire range but are threatened with extirpation in California; and/or taxa closely associated with a habitat that is declining in California

at a significant rate. Separately, the Special Plants List includes taxa listed in the California Native Plant Society's Inventory of Rare and Endangered Plants of California, as well as taxa determined to be Sensitive Species by the Bureau of Land Management, U.S. Fish and Wildlife Service, or U.S. Forest Service. The Special Animals List distinctively includes taxa considered by the CDFW to be a Species of Special Concern (SSC) and taxa designated as a special status, sensitive, or declining species by other state or federal agencies.

1.5.2 Federal and State Endangered Species Listings

The Federal and California Endangered Species Acts are the regulatory documents that govern the listing and protection of species, and their habitats, identified as being endangered or threatened with extinction. Possible listing status under both Federal and California ESA includes Endangered and Threatened (FE, FT, CE, or CT). Species in the process of being listed are given the status of either Proposed Federally Endangered/Threatened, Candidate for California Endangered/Threatened (PE, PT, CCE, or CCT). The CESA has one additional status: Rare (CR).

1.5.3 Global and State Ranks

Global and State Ranks reflect an assessment of the condition of the species or habitats across its entire range. Basic ranks assign a numerical value from 1 to 5, respectively for species with highest risk to most secure. Other ranking variations include rank ranges, rank qualifiers, and infraspecific taxon ranks. All Heritage Programs, such as the CNDDB use the same ranking methodology, originally developed by The Nature Conservancy and now maintained and recently revised by NatureServe. Procedurally, state programs such as the CNDDB develop the State ranks. The Global ranks are determined collaboratively among the Heritage Programs for the states/provinces containing the species. Rank definitions, where G represents Global and S represents State, are as follows:

- **G1/S1:** Critically imperiled globally/in state because of extreme rarity (5 or fewer populations).
- **G2/S2:** Imperiled globally/in state because of rarity (6 to 20 populations).
- **G3/S3:** Vulnerable; rare and local throughout range or in a special habitat or narrowly endemic (on the order of 21 to 100 populations).
- **G4/S4:** Apparently secure globally/in state; uncommon but not rare (of no immediate conservation concern).
- **G5/S5:** Secure; common, widespread, and abundant.
- **G#G#/S#S#:** Rank range - numerical range indicating uncertainty in the status of a species, (e.g., G2G3 more certain than G3, but less certain that G2).
- **G/S#?:** Inexact numeric rank
- **Q:** Questionable taxonomy - Taxonomic distinctiveness of this entity is questionable.
- **T#:** Infraspecific taxa (subspecies or varieties) – indicating an infraspecific taxon that has a lower numerical ranking (rarer) than the given global rank of species.

1.5.4 California Rare Plant Ranks

Plant species are considered rare when their distribution is confined to localized areas, their habitat is threatened, they are declining in abundance, or they are threatened in a portion of their range. The California Rare Plant Rank (CRPR) categories range from species with a low threat (4) to species that are presumed extinct (1A). All but a few species are endemic to California. All of them are judged to be vulnerable under present circumstances, or to have a high potential for becoming vulnerable. Threat ranks are assigned as decimal values to a CRPR to further define the level of threat to a given species. The rare plant ranks and threat levels are defined below.

- **1A:** Plants presumed extirpated in California and either rare or extinct elsewhere.
- **1B:** Plants rare, threatened, or endangered in California and elsewhere.
- **2A:** Plants presumed extirpated in California, but common elsewhere
- **2B:** Plants rare, threatened, or endangered in California, but more common elsewhere
- **4:** Plants of limited distribution - a watch list
- **0.1:** Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)
- **0.2:** Moderately threatened in California (20-80% occurrences threatened/moderate degree and immediacy of threat)
- **0.3:** Not very threatened in California (less than 20% of occurrences threatened/low degree and immediacy of threat or no current threats known)

1.5.5 California Department of Fish and Wildlife Animal Rank

The California Department of Fish and Wildlife (CDFW) assigns one of three ranks to Special Animals: Watch List (WL), Species of Special Concern (SSC), or Fully Protected (FP). Unranked species are referred to by the term Special Animal (SA).

Animals listed as Watch List (WL) are taxa that were previously designated as SSC, but no longer merit that status, or taxa that which do not yet meet SSC criteria, but for which there is concern and a need for additional information to clarify status.

Animals listed as California Species of Special Concern (SSC) may or may not be listed under California or federal Endangered Species Acts. They are considered rare or declining in abundance in California. The Special Concern designation is intended to provide the CDFW biologists, land planners, and managers with lists of species that require special consideration during the planning process to avert continued population declines and potential costly listing under federal and state endangered species laws. For many species of birds, the primary emphasis is on the breeding population in California. For some species that do not breed in California but winter here, emphasis is on wintering range. The SSC designation thus may include a comment regarding the specific protection provided such as nesting or wintering.

Animals listed as Fully Protected (FP) are those species considered by CDFW as rare or faced with possible extinction. Most, but not all, have subsequently been listed under the CESA or FESA. Fully Protected species may not be taken or possessed at any time and no provision of the

California Fish and Game code authorizes the issuance of permits or licenses to take any Fully Protected species.

1.5.6 Sensitive Habitats

Sensitive Natural Community is a state-wide designation given by CDFW to specific vegetation associations of ecological importance. Sensitive Natural Communities rarity and ranking involves the knowledge of range and distribution of a given type of vegetation, and the proportion of occurrences that are of good ecological integrity (CDFW 2019a). Evaluation is conducted at both the Global (G) and State (S) levels, resulting in a rank ranging from 1 for very rare and threatened to 5 for demonstrably secure. Natural Communities with ranks of S1-S3 are considered Sensitive Natural Communities in California and may need to be addressed in the environmental review processes of CEQA and its equivalents.

2 METHODS

2.1 Literature and Data Review

Althouse and Meade conducted a data search from the CNDDB and the California Native Plant Society (CNPS) On-line Inventory of Rare and Endangered Plants of California on June 22, 2021 (CDFW 2021a, CNPS 2021). Supplemental occurrence data included online herbarium records maintained by the Consortium of California Herbaria (CCH 2021). The search area included the Greenfield USGS 7.5-minute quadrangle and the 8 surrounding quadrangles (North Chalone Peak, Paraiso Springs, Pinalito Canyon, Reliz Canyon, San Lucas, Soledad, Thompson Canyon, and Topo Valley). Biologists used the compiled data to determine the potential for each sensitive plant and wildlife species to occur within the Study Area. The complete list of species and determinations is provided in Appendix A and Appendix B.

2.2 Sensitive Species Evaluation

Special status species lists produced by database and literature searches were cross-referenced and analyzed according to the described habitat types in the Study Area in order to identify all potential special status species that could occur in or near the Study Area. After review of the literature, and completing site visits, the following criteria were used to determine the potential for special-status species to occur within the Study Area:

- **Present:** The species was observed in the Study Area during field surveys.
- **High Potential:** Highly suitable habitat and CNDDB or CNPS occurrence records indicate the species is likely to occur in the Study Area or the immediate vicinity. Individuals may not have been observed during field surveys; however, the species likely occurs in or immediately adjacent to the Study Area and (for wildlife) could move into the Study Area in the future.
- **Moderate Potential:** Moderately suitable habitat is present in the Study Area and CNDDB occurrences or surveys have recorded the species in the vicinity of the Study Area. Individuals were not observed during field surveys, but the species could be present, at least seasonally or as a transient.
- **Low Potential:** Marginally suitable habitat is present in the Study Area, and there are no occurrence records or other historical (i.e., 50 years or older) records in the vicinity of the Study Area. Individuals were not observed during surveys and are not expected to be present.
- **No Potential:** Suitable habitat for the species is not present in the Study Area, and/or the species is not known to occur in the region.

Each special status species that could occur in or near the Study Area is individually discussed in Sections 3.4.1 and 3.5.1.

2.3 Soils

A soil report was created by importing the Study Area as an Area of Interest (AOI) into the Natural Resources Conservation Service (NRCS) Soil Survey Geographic Database (SSURGRO) via their

online portal. The resulting soil report was reviewed, and a map was created using the U.S. Department of Agriculture (USDA) NRCS Soil Survey GIS data (USDA 2020b). Soils data are summarized in Section 3.2.

2.4 Surveys

On June 22, 2021, Althouse and Meade, Inc. Biologist Kristen Andersen conducted a pedestrian survey to inventory plant and wildlife species, describe habitat types, and to collect photographic documentation of the property. Each habitat type was field inspected and described by species composition, as interpreted in Section 3.3. All plant and animal species observed in the field were identified and documented in Sections 3.4.2 and 3.5.2.

The survey method included meandering transects with an emphasis on identifying plants, animals, and habitat types within the Study Area and surrounding areas of the property. Transects were also utilized to describe general conditions and dominant species, compile species lists, and evaluate potential habitat for special status species.

TABLE 1. BIOLOGICAL SURVEY

Survey Date	Biologist	Weather Observations	Activities
6/22/2021	Kristen Andersen	71-76°F, clear skies, winds 5- 15 mph	Biological survey, habitat mapping, species inventory

2.4.1 Botanical

Spring botanical surveys were conducted on June 22, 2021 by Kristen Andersen according to agency guidelines (USFWS 2000, CDFW 2018b, and CNPS 2001). All plant species observed on the property were identified and recorded by a qualified botanist. Botanical surveys were appropriately timed to identify all special status plant species known from the region (Table 3) that have potential to occur at the site. Focused survey efforts were conducted in habitats suitable for special status species. Identification of botanical resources included field observations and laboratory analysis of collected material. Botanical nomenclature used in this document follows the Jepson eFlora, with data provided by the participants of the Consortium of California Herbaria (CCH 2021). A list of plants observed in the Study Area and surrounding property were compiled in Table 4.

2.4.2 Wildlife

Identification of wildlife resources were made by direct observations or by visual signs of animal presence such as burrows/dens, vocalization, tracks, and/or scat. Wildlife observations were recorded during the June 22nd field survey and compiled in Table 6. Birds were identified by sight, using 10-power binoculars, or by vocalizations. Reptiles were identified by sight, often using binoculars. Mammals recorded in the Study Area were identified by sight, burrows, dens, scat, and tracks. Wildlife surveys were appropriately timed to identify all special status animal species known from the region that have potential to occur at the site (Table 5). Wildlife nomenclature for birds is in accordance with the American Ornithological Society Checklist (Chesser et al. 2019) and Revised Checklist of North American Mammals North of Mexico (Baker et al. 2003).

2.5 Maps

Mapping efforts utilized Samsung Galaxy Tab 4 tablets equipped with Garmin GLO GPS Receivers and a third-party mapping application. Biological resource habitats were mapped in the field onsite. Hand notation of habitats on high resolution aerials were digitized into polygon layers. Maps were created using aerial photo interpretation, field notation, and spatial data imported to Esri ArcGIS, a Geographic Information System (GIS) software program. Soil data was overlaid on a 2020 National Agriculture Imagery Program (NAIP) aerial of San Luis Obispo County (USDA 2020b).

3 RESULTS

3.1 Existing Conditions

The site is mostly undeveloped and is described as a flat agricultural fallow field that extends northwest from Apple Avenue toward Walnut Avenue. The property contains a main residence and a caretaker's residence in the southwestern portion, accessible from Apple Avenue (Photo 1 and Photo 2). The two residences and associated anthropogenic land uses consist of planted shade trees, the front and back yards, parking, and access. Fallow cropland habitat extends northwest of the residences and has not been actively farmed for several years. It has been planed flat and is compacted. Each habitat is further discussed in Section 3.3 below.

Photo 1. Main residence with abandoned house, view northwest. June 22, 2021.

Photo 2. Caretaker's residence (photo right) with fenced yard, view east. June 22, 2021.

3.2 Soils

Two soil map units are represented within the Study Area: Arroyo Seco gravelly sandy loam 20 to 2 percent slopes and Elder loam gravelly substratum 0 to 2 percent slopes (USDA 2021, Figure 3).

Arroyo Seco gravelly sandy loam 20 to 2 percent slopes (AsA) is the primary soil type represented on the Study Area, accounting for 93 percent. The typical soil profile is gravelly sandy loam (0 to 42 inches) over gravelly coarse sandy loam (42 to 60 inches). This soil class is considered well drained with a very low runoff class. This soil class formed from alluvial fans derived from igneous rock and is classified as prime farmland if irrigated (USDA 2020a).

Elder loam gravelly substratum 0 to 2 percent slopes (EcA) is located in the northwestern corner of the Study Area (approximately 7 percent). The typical soil profile is silty loam, 0 to 40 inches. Elder loam is well drained with a low runoff class. This soil class formed from alluvial fans derived from igneous and sedimentary rock and is classified as prime farmland if irrigated (USDA 2020a).

Figure 3. USDA Soil Survey

Soil Type	Study Area
Arroyo Seco gravelly sandy loam	90%
Elder loam	10%

Legend

Study Area (4.9 acres)

NRCS Soils

N

0 100 200 Feet

PSHH Greenfield
Map Center: 121.23687°W 36.33003°N
Greenfield, Monterey County, California

Source: USDA NRCS Soil Survey

3.3 Habitat Types

Table 2 lists two habitat types described and mapped within the Study Area (Figure 4). Most of the Study Area, approximately 4.16 acres, is fallow cropland. The remaining area consists of approximately 0.74-acre of anthropogenic land uses consisting of residential structures, planted vegetation, and driveways.

TABLE 2. HABITAT TYPES

Habitat Type	Approximate Area (Acres)
Fallow Cropland	4.16
Anthropogenic	0.74
TOTAL	**4.90**

3.3.1 Fallow Cropland

Approximately 4.16 acres of fallow cropland (85 percent) is present in the Study Area and is the dominant habitat type on the site. Historical aerials show farming was prevalent in this portion of the site dating back before 1989. Cropland habitat on the property has not been farmed in several years and is currently dominated by weedy forbs and bare ground (Photo 3 and Photo 4). Despite long periods of inactive farming, cropland habitat has not reverted to grassland and remains bare with weedy vegetation that tends to recruit in disturbed areas. Dominant species are Russian thistle (*Salsola tragus*), cheeseweed (*Malva parviflora*), foxtail barley (*Hordeum murinum*), wild mustard (*Hirschfeldia incana*), oriental rocket (*Sisymbriium orientale*), bindweed (*Convolvulus arvensis*), pigweed (*Chenopodium murale*), and prostrate knotweed (*Polygonum aviculare*). Soils within cropland habitat appeared to have not been tilled in several years, were planed flat and notably compacted (Photo 3). Very few burrows were observed indicating low presence of burrowing animals. No dens were observed.

Photo 3. Fallow cropland habitat with high percent bare ground, view northwest. June 22, 2021.

Photo 4. Fallow cropland habitat with weedy forbs and view of residential structures in background, view south. June 22, 2021.

3.3.2 Anthropogenic

The Study Area contains approximately 0.74-acre of anthropogenic land uses, defined by an abandoned residential structure with garden and driveway, and currently occupied trailer residence (Figure 4). Residential structures are surrounded by planted non-native trees, including Peruvian pepper trees (*Schinus molle*) and athel (*Tamarix aphylla*). One native palm tree, California fan palm (*Washingtonia filifera*), occurs on the north side of the house. An abandoned garden persists with planted vegetation such as fava beans (*Vicia faba*), tomatillos (*Physalis philadelphica*), and corn (*Zea mays*). Some planted escapees from the garden were observed within fallow cropland habitat. One house cat was observed hunting in the small garden, suggesting small mice or other rodents are present. Trash and debris piles were noted throughout the periphery of each home, which could also provide refugia for small mammals, snakes and lizards. Two European starlings (*Sturnus vulgaris*) were observed carrying nesting material to a Peruvian pepper tree in the northwest corner of anthropogenic habitat and several common bird species were observed vocalizing from the tree canopies.

Photo 5. Abandoned residential structure with small garden in southwest portion of the Study Area, view northwest. June 22, 2021.

Photo 6. Farming equipment and materials staged around abandoned house within anthropogenic habitat on the property, view southeast. June 22, 2021.

3.4 Potential Wetlands and Jurisdictional Waters

No evidence of wetlands or waters of the U.S. or State of California was observed in the Study Area during site visits conducted in June 2021. Data reviewed in the National Wetland Inventory (NWI) (USFWS 2021) and National Hydrography Dataset (NHD) (USGS 2021) showed no wetland or waters mapped in the Study Area, and supports in-field observations that wetlands or waters do not occur on the Study Area.

Figure 4. Biological Resources

Legend

- Study Area (4.9 acres)
- California Fan Palm (*Washingtonia filifera*); Native
- Peruvian Pepper Tree (*Schinus molle*); Introduced
- Athel (*Tamarix aphylla*); Introduced

Habitats

- Anthropogenic (0.74 acres)
- Fallow Cropland (4.16 acres)

N

0 100 200 Feet

PSHH Greenfield
Map Center: 121.23687°W 36.33003°N
Greenfield, Monterey County, California

Biological Survey Date: 06/22/2021

3.5 Botanical Resources

Literature and data base searches of special status plant occurrences within at least five miles of the Project determined 33 special status plant species are known to occur in the region (Appendix A, CDFW 2021b, CNPS 2021). Figure 5 depicts the current GIS data for special status plants mapped near the Study Area by the CNDDB. Figure 7 shows USFWS Critical Habitat designations.

3.5.1 Special Status Plant Species

Based on an analysis of known ecological requirements for the special status plant species reported from the region, and the habitat conditions that were observed in the Study Area, it was determined that one special status plant has low potential to occur within the Study Area: protruding buckwheat (*Eriogonum nudum* var. *inductum*). One species (Monterey spineflower), which is listed under the FESA and occurs within six miles of the Study Area, has no potential to occur on the site. Each species is discussed below and Table 3 summarizes species with potential to occur in the Study Area.

1. **Protruding Buckwheat** (*Eriogonum nudum* var. *inductum*) is a CRPR 4.2 species endemic to California. It is known to occur in shadscale scrub, foothill woodland, and chaparral habitats with clay soils between 100- and 1,100-meters elevation. It is a perennial herb that typically blooms between May and October. The closest known record is approximately 0.7 miles southwest of the Study Area (CCH #CDA22630) in 1975. The sandy loam and gravelly soils in the Study Area are not suited to support this species, however the nearest occurrence represents an anomaly for this species where protruding buckwheat was observed within a residential neighborhood similar to conditions found in the Study Area. The disturbed, cropland habitat in the Study Area is not likely to support protruding buckwheat and this species has low potential to occur. Protruding buckwheat was not detected in the Study Area during appropriately timed surveys in June 2021.

The remaining special status plant species was determined to have no potential to occur in the Study Area due to lack of suitable habitat present. However, this species is listed as threatened under the Federal Endangered Species Act (FESA), and although it is not expected to occur, Monterey spineflower warrants further discussion:

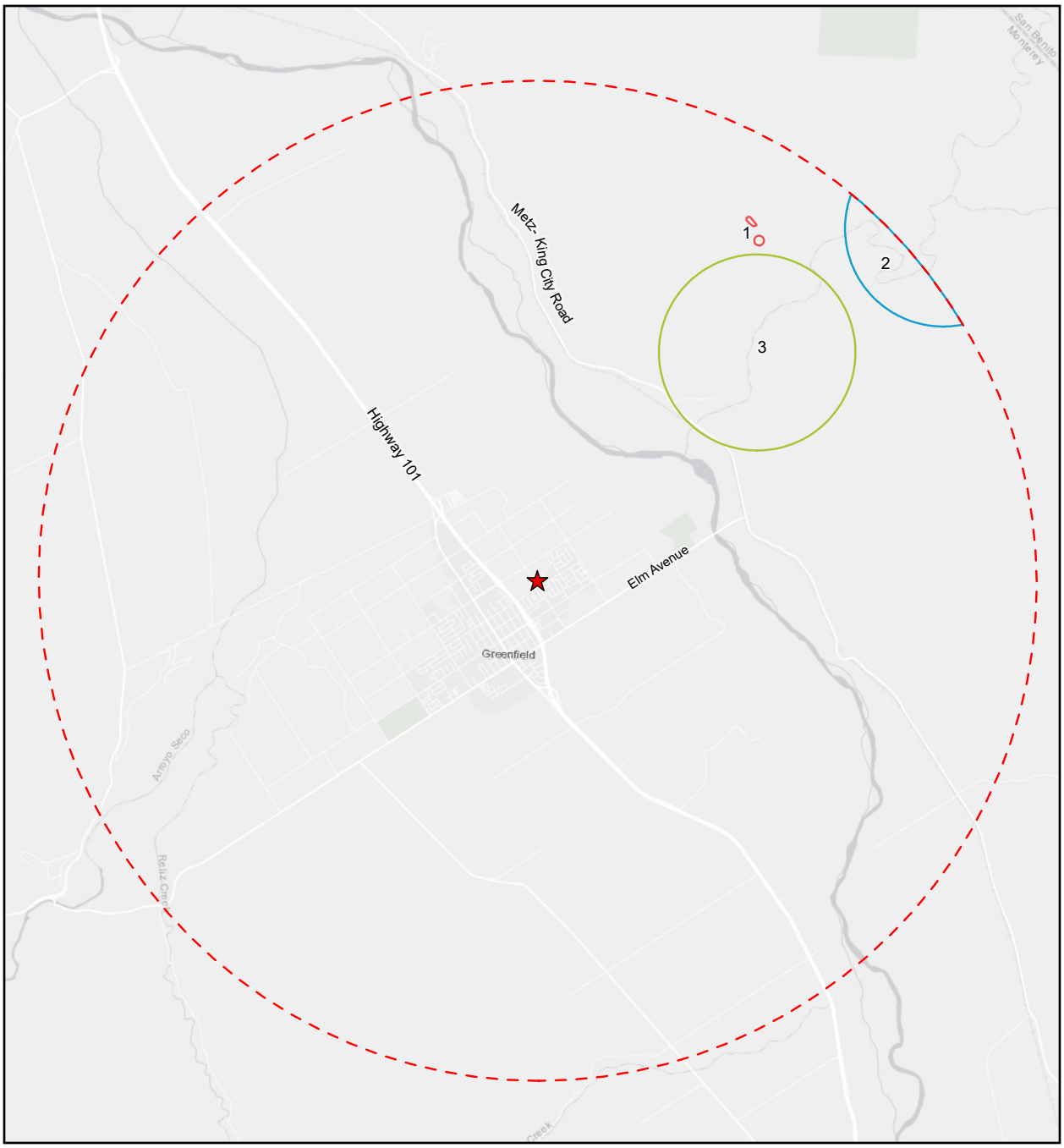
2. **Monterey Spineflower** (*Chorizanthe pungens* var. *pungens*) is listed as Threatened by the Federal Endangered Species Act (FESA) and is a CRPR 1B.2 variety. It is endemic to Santa Cruz, Monterey, and San Luis Obispo Counties. It is known to occur on sandy soils in coastal dunes, maritime chaparral, coastal scrub, cismontane woodland and grassland habitats between 3- and 450-meters elevation. It is an annual herb that typically blooms between April and June (sometimes July and August). The closest known record is approximately 5.4 miles northwest of the Study Area (CNDDB #28) in 2013. Despite the sandy loam soils in the Study Area, the historically disturbed quality of cropland habitat is not suitable for this species, and Monterey spineflower has no potential to occur on the site. Monterey spineflower was not detected in the Study Area during the appropriately timed June 2021 survey.

TABLE 3. SPECIAL STATUS PLANT LIST

	Scientific Name	Common Name	Federal/State Status Global/State Rank CA Rare Plant Rank	Blooming Period	Habitat Preference	Potential to Occur
1.	***Eriogonum nudum* var. *indictum***	Protuding buckwheat	-/- G5T4/S4 4.2	May-Oct	Clay soils, shadscale scrub, foothill woodland, chaparral	**Low**. Appropriate habitat with clay soils is not present, however the nearest occurrence is less than one mile from the site (CCH #CDA22630) in 1975.

See section 1.5 for status and rank definitions.

Figure 5. California Natural Diversity Database Plant Records



Label	Common Name
1	Indian Valley bush-mallow
2	Lemmon's jewelflower
3	pale-yellow layia

Legend

Project Location

5-Mile Buffer

N

0 1 2 Miles

PSHH Greenfield
Map Center: 121.23796°W 36.33093°N
Greenfield, Monterey County, California

CNDDB GIS Data Last Updated: June 2021

3.5.2 Botanical Survey Results

Botanical surveys conducted on June 22, 2021 identified 33 species, subspecies, and varieties of vascular plant taxa in the Study Area (Table 4). The list includes five species native to California and 28 introduced (naturalized or planted) species. Native plant species account for approximately 15 percent of the Study Area flora; introduced species account for approximately 85 percent.

TABLE 4. VASCULAR PLANT LIST

Scientific Name	Common Name	Special Status	Origin
Trees - 3 Species			
Schinus molle	Peruvian pepper tree	None	Introduced
Tamarix aphylla	Athel	None	Introduced
Washingtonia filifera	California fan palm	None	Native
Shrubs - 4 Species			
Baccharis pilularis	Coyote brush	None	Native
Hedera helix	English ivy	None	Introduced
Opuntia littoralis	Prickly pear	None	Native
Pelargonium x *hortorum*	Garden pelargonium	None	Introduced
Forbs - 21 Species			
Amsinckia sp.	Fiddleneck	None	Native
Artemisia douglasiana	Mugwort	None	Native
Bassia hyssopifolia	Five-hook bassia	None	Introduced
Centaurea solstitialis	Yellow star thistle	None	Introduced
Chenopodium album	Lamb's-quarters	None	Introduced
Chenopodium murale	Pigweed	None	Introduced
Convolvulus arvensis	Bindweed	None	Introduced
Erodium cicutarium	Redstem filaree	None	Introduced
Hirschfeldia incana	Wild mustard	None	Introduced
Lactuca serriola	Prickly lettuce	None	Introduced
Malva parviflora	Cheeseweed	None	Introduced
Oenothera speciosa	Mexican evening primrose	None	Introduced
Physalis philadelphica	Tomatillo	None	Introduced

Scientific Name	Common Name	Special Status	Origin
Polygonum aviculare	Prostrate knotweed	None	Introduced
Raphanus sativus	Wild radish	None	Introduced
Salsola tragus	Russian thistle	None	Introduced
Sisymbrium orientale	Oriental rocket	None	Introduced
Sonchus oleraceus	Common sow thistle	None	Introduced
Spergularia rubra	Red sand spurrey	None	Introduced
Taraxacum officinale	Dandelion	None	Introduced
Vicia faba	Fava bean	None	Introduced
Graminoids - 5 Species			
Bromus diandrus	Ripgut brome	None	Introduced
Cynodon dactylon	Bermuda grass	None	Introduced
Hordeum murinum	Foxtail barley	None	Introduced
Stipa tenuissima	Mexican feathergrass	None	Introduced
Zea mays	Corn	None	Introduced

See Section 1.5 for status and rank definitions.

3.6 Wildlife Resources

Literature and data base searches of special status animal occurrences within at least five miles of the Project determined 43 special status animal species are known to occur in the region (Appendix B, CDFW 2021c). Figure 6 and Figure 7 depict the current GIS data for special status species mapped near the Study Area by the CNDDB and USFWS Critical Habitat.

3.6.1 Special Status Animal Species

Based on an analysis of known ecological requirements for the special-status wildlife species reported or known from the region (Appendix B), and the habitat conditions that were observed in the Study Area, it was determined that four special status animal species have low potential to occur within the Study Area (Cooper's hawk, white-tailed kite, Yuma myotis, and bank swallow). Each species is discussed below and summarized in Table 5.

1. **Cooper's Hawk** (*Accipiter cooperii*) is a CDFW Watch List species (for nesting occurrences only) that occurs regularly in California during the winter months and during spring and fall migration (CDFW 2018a). It is generally regarded as a regular but uncommon nesting species in San Luis Obispo County (Hall et al. 1992). Cooper's hawks frequent oak and riparian woodland habitats, and increasingly urban areas, where they prey primarily upon small birds (Curtis et al. 2006) . The closest reported occurrence of nesting Cooper's hawk is located approximately 10 miles northeast of the Study Area (CNDDB #105), in riparian habitat near

Pinnacles National Park in 2006. Sightings have been reported of Cooper's hawks within less than one mile of the Study Area on eBird (Rinkert 2012), with several observations reported along the Salinas River approximately two miles east of the project (eBird 2021). One occurrence noted breeding behavior with the observance of a fledgling (Davis 2017), signifying that Cooper's hawks may nest more closely to the site than confirmed through the CNDDB. Suitable nesting habitat is not present in the Study Area, but this species could be seen foraging in the area and have a low potential to occur utilizing the site. Cooper's hawks were not observed during our June 2021 site survey.

2. **White-tailed Kite** (*Elanus leucurus*) is a CDFW Fully Protected species that can be found throughout California but known to forage and nest in certain areas of California in fluctuating numbers (CDFW 2018b; Lehman 2018). The species nests primarily in evergreen trees, especially coast live oaks (*Quercus agrifolia*), near meadows, marshes, farmlands or grasslands where it forages on small animals, especially voles (Dunk 1995). Communal nocturnal roosts sites, which may shift in location, are often used from early fall to early winter. The closest reported nesting occurrence of white-tailed kite is located approximately 3.5 miles north of the Study Area (CNDDB #155) near Pinnacles National Park in 2007, where an active nest was observed in a coast live oak tree within riparian woodland habitat. Observations of white-tailed kites have also been reported along the Salinas River near Metz Road, east of the project by approximately 2.0 miles (Bailey 2012). Suitable riparian or oak tree nesting habitat is not present in the Study Area but there is potential to find white-tailed kites "kiting" (hovering high above ground) or foraging within the Study Area. Due to the lack of nesting habitat and limited prey-base on site, potential for white-tailed kites to occur in the Study Area is reduced to low. The white-tailed kite was not observed on the property during June 2021 surveys.

3. **Yuma Myotis** (*Myotis yumanensis*) is a Special Animal tracked by the California Department of Fish and Game. The Yuma myotis is a small bat widely distributed throughout western North America. It is the species of bat most commonly associated with man-made structures. It is often associated with permanent water sources. Crevices are preferred roost areas including those found in cliffs, buildings and bridges, although it will also roost in tree cavities (Bogan et al. 2005). The species emerges after sunset and forages on insects. Yuma myotis has been recorded at seven localities within San Luis Obispo County (Pierson, 2002). Althouse and Meade, Inc. (A&M) biologists working with Paul Collins of the Santa Barbara Museum of Natural History identified this species acoustically in the Santa Margarita area in 2003. Yuma myotis could occur in the abandoned residential structure on the subject property, though roosting near a water source is preferred. The nearest CNDDB occurrence is approximately 11 miles north of the Study Area in Pinnacles National Park in 2002 (CNDDB #79). With the Salinas River to the east, it is possible that Yuma myotis could roost or forage within the Study Area, and this species has low potential to occur.

4. **Bank Swallow** (*Riparia riparia*) is a state-listed threatened species with a Global Rank of G5 (Secure) and a State Rank of S2 (Imperiled). It typically nests in colonies, excavating tunnels into vertical sandbanks along rivers, streams, lakes, and ocean coasts. This species forages over any habitat, especially near water. The closest reported observation of bank swallow is historic, with an observation radius that overlaps with the Study Area, observed in 1972 (CNDDB #68). More recent observations made on eBird include a sighting within two miles east of the Study Area at a potential breeding site on a bank above Metz Road in 2015

(Rinkert 2015). The disturbed quality and cropland habitat in the Study Area provides low suitability for foraging and nesting for this species. Bank swallows were not observed during our June 2021 survey.

The remaining special status animal species was determined to have a discountable potential to occur in the Study Area due to low quality habitat and long term absence from the region. However, this species is listed as endangered under the Federal Endangered Species Act (FESA), and although they are not expected to occur, San Joaquin kit fox warrant further discussion:

5. **San Joaquin Kit Fox** (*Vulpes macrotis mutica*; SJKF) is federally listed as endangered and state listed as threatened. The SJKF is one of two subspecies of the kit fox, *Vulpes macrotis*, which is the smallest canid species in North America. It is endemic to the San Joaquin Valley and a few adjacent valleys in the central region of California (Cypher et al. 2013). The SJKF is primarily nocturnal and typically occurs in annual grassland or mixed shrub/grassland habitats throughout low, rolling hills and in valleys. They need loose sandy soils in order to dig their burrows and a prey population of black-tailed jackrabbits, rodents, desert cottontails, insects, some birds, reptiles and vegetation (CDFW 2014, CNDDB 2017). The most suitable habitat for SJKF has low precipitation, sparse vegetation coverage with high densities of kangaroo rats (*Dipodomys* spp.). For the SJKF to succeed in an area it needs large expanses of non-fragmented suitable habitat. This type of habitat is decreasing rapidly by conversion into agricultural land or degraded by urban development (Cypher et al. 2013). Female SJKF began preparing natal dens in September and October and then breeding occurs from December through February. Pups are born from January to March and family groups typically split up the following October (Meaney et al. 2006). The closest reported occurrence of the SJKF located approximately 2.0 miles from the project (CNDDB #1013), in 1975 along Metz Road, northeast of the Salinas River. This historical occurrence is one of several in the vicinity, all reported in the same year (1975). Two more recent occurrences within the nine-quad CNDDB search are located more than 12 miles to the east (CNDDB #180) and 10 miles south (CNDDB #939) of the Study Area, reported in 1993 and 1988, respectively. These more recent occurrences were in areas geographically separated from the Study Area by valleys and canyons situated in the Diablo Range. Other supporting documents, such as the Historical Range figure (USFWS 2020), show that SJKF have not been documented in the area since before 1990, with recent occurrences (2006 to present) generally located to the east and south in the interior valleys, with the exception of a the most recent report in 2007 at the California National Guard post at Camp Roberts. Due to the lack of suitable grassland habitat and no recent occurrences near the Study Area, it is our professional opinion that kit fox have no potential to occur. The SJKF, or sign of SJKF, was not observed on the property during the 2021 site surveys and is not likely to be present.

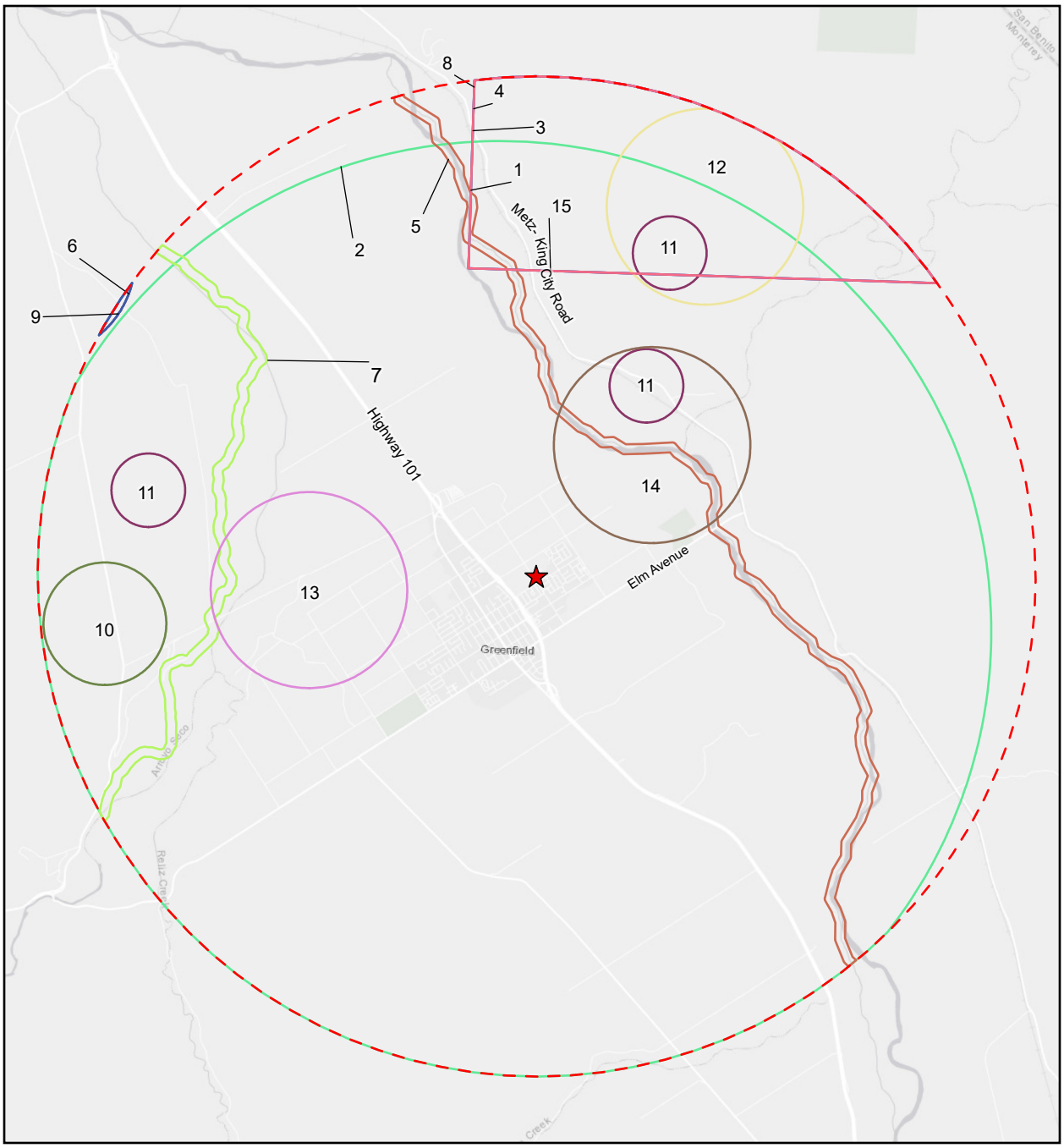
TABLE 5. SPECIAL STATUS ANIMAL LIST

	Scientific Name	Common Name	Federal/State Status Global/State Rank CDFW Status	Habitat Preference	Potential to Occur
1.	***Accipiter cooperii***	Cooper's Hawk	-/- G5/S4 WL	Oak woodland, riparian, open fields. Nests in dense trees, esp. coast live oak.	No Potential (nesting). Appropriate woodland habitat is not present in the Study Area for nesting. **Low** (foraging). Cooper's hawks have been observed foraging in the vicinity and could be seen in flight over the Study Area, though foraging prey-base is limited on the site.
2.	***Elanus leucurus***	White-Tailed Kite	-/- G5/S3S4 FP	Nests in dense tree canopy near open foraging areas	No Potential (nesting). Suitable nesting habitat of open-country trees or trees among forest or woodland edge is not present in the Study Area. **Low** (foraging). The Study Area could be utilized for forage, with nearby nesting occurrence within 3.5 mi north (CNDDB #155) in 2007.
3.	***Myotis yumanensis***	Yuma Myotis	-/- G5/S4 SA	Caves, mines, buildings, tree cavities, rock crevices, or under bridges. Feeds near open water.	**Low**. The abandoned residential structure and surrounding trees could provide roosting habitat, though foraging habitat (open water) is over 2 miles from the Study Area.
4.	***Riparia riparia***	Bank Swallow	-/CT G5/S2 SA	Nests colonially in riparian and other lowland habitats west of the desert. Requires vertical banks or cliffs with sandy soils (to dig cavities) near streams, lakes, or the ocean.	No Potential (nesting). Appropriate riparian nesting habitat with vertical banks is not present in the Study Area. **Low** (foraging). Bank swallows have been documented in the area and could be transient over the site or utilize the site when foraging.

	Scientific Name	Common Name	Federal/State Status Global/State Rank CDFW Status	Habitat Preference	Potential to Occur
5.	***Vulpes macrotis mutica***	San Joaquin Kit Fox	FE/CT G4T2/S2 SA	Annual grasslands or grassy open stages with scattered shrubby vegetation. Needs loose textured sandy soil and prey base.	No Potential. Appropriate open grassland habitat is not present and the mapped historical range for kit fox shows no observations in the area beyond 1990 (CDFW 2020).

See section 1.5 for status and rank definitions.

Figure 6. California Natural Diversity Database Animal Records



Label	Common Name	Label	Common Name
1	American peregrine falcon	8	prairie falcon
2	bank swallow	9	Salinas pocket mouse
3	California condor	10	San Joaquin coachwhip
4	golden eagle	11	San Joaquin kit fox
5	Monterey hitch	12	Townsend's big-eared bat
6	pallid bat	13	western bumble bee
7	Pinnacles optioservus Riffle beetle	14	western spadefoot
		15	white-tailed kite

Legend

Project Location

5-Mile Buffer

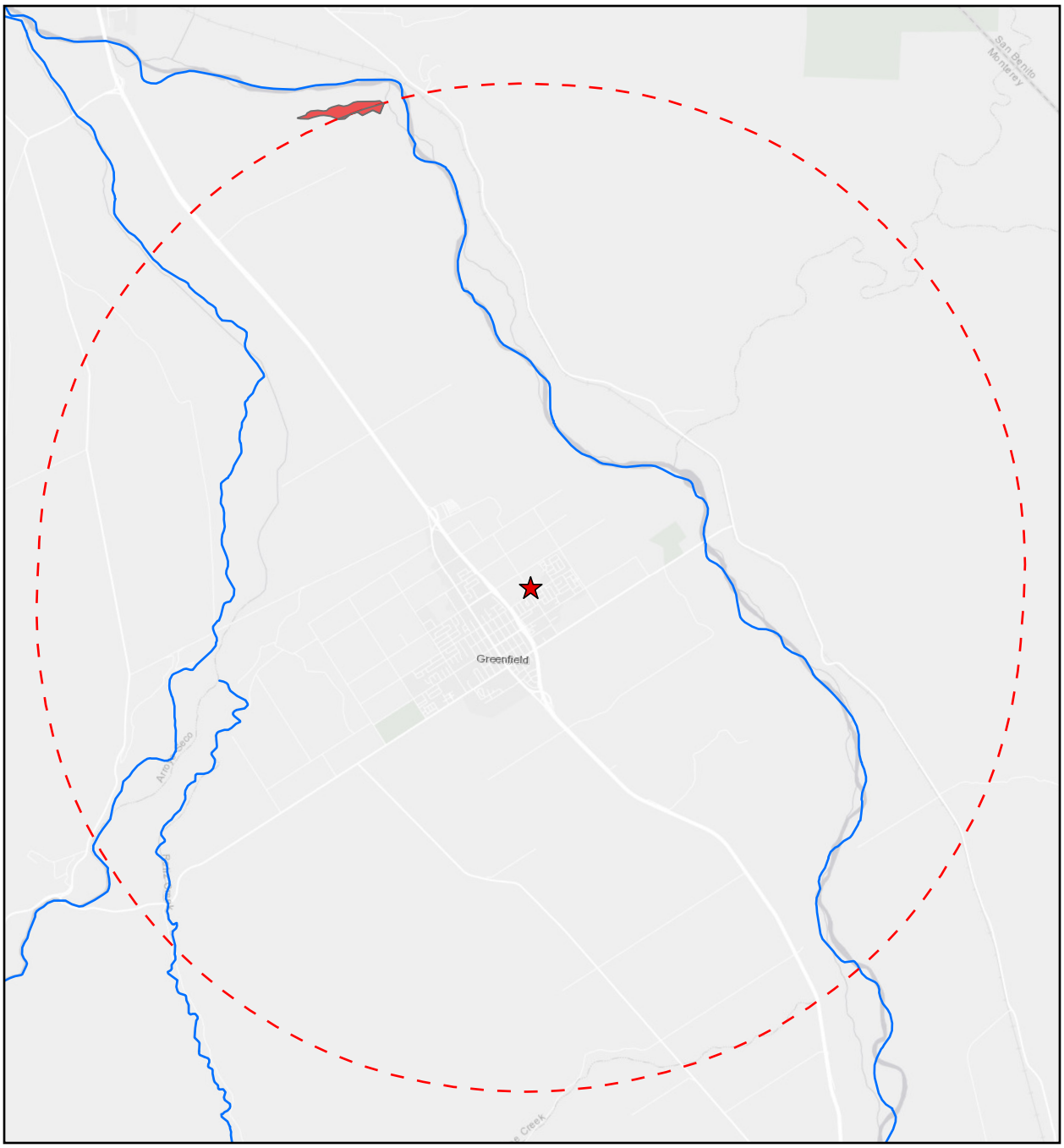
N

0 1 2 Miles

PSHH Greenfield
Map Center: 121.23772°W 36.3303°N
Greenfield, Monterey County, California

CNDDB GIS Data Last Updated: June 2021

Figure 7. United States Fish and Wildlife Service Critical Habitat



Legend

Project Location

5-Mlle Buffer

NMFS Critical Habitat

Steelhead

USFWS Critical Habitat

Monterey spineflower

N

0 1 2 Miles

PSHH Greenfield
Map Center: 121.23678°W 36.33204°N
Greenfield. Monterey County, California

USFWS Critical Habitat Data Last Updated: August 14, 2019

3.6.2 Wildlife Survey Results

A total of 10 wildlife taxa were observed within the Study Area during the June 2021 surveys: nine birds, and one mammal. Table 6 provides a list of the wildlife observed in the Study Area. Several common bird species were observed utilizing the trees surrounding the residential structure, and two European starlings were observed carrying nesting material to a Peruvian pepper tree (*Schinus molle*) located by the northwest corner of the house. Very few burrows were observed across the site that appeared to be old gopher burrows, none of which were active. One house cat (*Felis catus*) was observed hunting in the abandoned garden area.

TABLE 6. WILDLIFE LIST

Scientific Name	Common Name	Special Status	Habitat Type
Birds – 9 Species			
Calypte anna	Anna's Hummingbird	None	Many habitats
Corvus brachyrhynchos	American Crow	None	Many habitats, esp. urban
Hirundo rustica	Barn Swallow	None	Riparian, grasslands, lakes
Melospiza melodia	Song Sparrow	None	Oak, riparian woodland
Mimus polyglottos	Northern Mockingbird	None	Riparian, chaparral, woodlands, urban
Petrochelidon pyrrhonota	Cliff Swallow	None	Urban; open areas near water
Streptopelia decaocto	Eurasian Collared Dove	None	Urban areas
Sturnus vulgaris	European Starling	None	Agricultural, livestock areas
Zenaida macroura	Mourning Dove	None	Open and semi-open habitats
Mammals – 1 Species			
Felis catus	Feral Cat	None	Varied

See Section 1.6 for status and rank definitions.

3.6.3 Habitat Connectivity and Wildlife Movement

Wildlife movement corridors are defined as areas that connect suitable wildlife habitat areas in a region otherwise fragmented by rugged terrain, changes in vegetation, or human disturbance. Natural features such as canyon drainages, ridgelines, or areas with vegetation cover provide corridors for wildlife travel. Wildlife movement corridors are important because they provide access to mates, food, and water; allow the dispersal of individuals away from high population density areas; and facilitate the exchange of genetic traits between populations (Beier and Loe 1992). Wildlife movement corridors are considered sensitive by resource and conservation

agencies, including Monterey County. The Salinas River to the east of the proposed Project could provide connectivity to resources between the Diablo and Santa Lucia Ranges, however fragmentation and development likely detour movement around the City of Greenfield itself. Residential communities surround the Project site, thereby reducing potential for movement through the area. Although it is reasonable to assume that wildlife movement may occur locally within the Project area, the Project area does not provide a throughway for wildlife species to off-site areas of habitat and therefore does not function as a significant regional corridor.

4 ENVIRONMENTAL IMPACT ANALYSIS AND MITIGATION

There are two types of habitats present within the 4.9-acre Study Area: fallow cropland and anthropogenic. The Project could affect nesting birds, and special status bats (*Yuma myotis*). This section provides mitigation recommendations (**BIO**) designed to reduce impacts to biological resources onsite to less than significant, as summarized by Table 7.

TABLE 7. IMPACTS AND MITIGATION SUMMARY

Biological Resource	Potential Effect from Proposed Project	Mitigation Measure
Fallow Cropland Habitat	Less than Significant	None See BIO-1 for nesting birds
Anthropogenic Habitat	Less than Significant	None See BIO-1 for nesting birds
Special Status Plants	No Effect	None
Nesting Birds	Less than Significant with Mitigation Incorporated	Preconstruction Surveys BIO-1
Cooper's Hawk **White-tailed Kite** **Bank Swallow**	No Effect (nesting) Negligible (foraging)	None
Yuma myotis	Less than Significant with Mitigation Incorporated	Bat Surveys BIO-2, BIO-3, BIO-4
San Joaquin Kit Fox	None anticipated. Less than Significant with Mitigation Incorporated	BIO-5
Wildlife Corridors	No Effect	None

4.1 Habitats

The proposed Project would impact up to 4.16 acres of fallow cropland habitat and 0.74 acre anthropogenic habitat during development of residential housing, landscaping, utilities, and parking (Figure 8). Final site plans will determine the extent of impacted agricultural and ruderal habitats and will include any temporary impacts that might occur during construction of the permanent infrastructure. Fallow cropland and anthropogenic habitats are not classified sensitive communities by CDFW or CNPS definition and impacts to these habitats are not considered significant, except where these habitat impacts affect other sensitive biological resources such as sensitive animals or nesting birds (see Section 4.4).

Figure 8. Biological Resources Impacts

Legend

Study Area (4.9 acres)

Potentially Impacted Area

Habitats

Anthropogenic (0.74 acres)

Fallow Cropland (4.16 acres)

N

0 100 200 Feet

PSHH Greenfield
Map Center: 121.23689°W 36.33001°N
Greenfield, Monterey County, California

Imagery Source: ESRI World Imagery

4.2 Potential Wetlands and Jurisdictional Waters

No Waters of the U.S. or Waters of the State were observed. No mitigation is required for impacts to wetlands or waters.

4.3 Botanical Resources

No special status plants were detected during appropriately timed botanical surveys conducted in June 2021. No mitigation is required for botanical resources.

4.4 Wildlife Resources

4.4.1 Nesting Birds

Impacts to or take of nesting birds could occur if Project activities (i.e., removal of onsite structures and/or non-native trees) are conducted during nesting season (February 15 through August 31; CDFW). To reduce potential adverse effects of the proposed Project on nesting birds, the following mitigation measure is recommended.

BIO-1. **Preconstruction Nesting Bird Survey.** If ground or vegetation disturbing activities commence between February 15 and August 31, preconstruction nesting bird surveys shall be conducted within one week (7 days) of starting work. Surveys shall cover the entire work area plus a 100-foot buffer for non-raptor, common bird species. If surveys do not locate nesting birds, construction activities may commence. If an active bird nest (a nest with eggs or young) is located, a protective buffer shall be established by a qualified biologist. The buffer shall consist of a 50-foot radius no work area around the nest until the chicks have fledged and are no longer dependent on the nest. The qualified biologist may increase or decrease the buffer on a case-by-case basis in consultation with the City, if the species, location, topography, or work scope support the determination. A preconstruction survey report shall be submitted to the City immediately upon completion of the survey, and prior to start of work. The report shall detail appropriate fencing or flagging of buffer zones if applicable. A map of the project site and nest locations shall be included with the report.

4.4.2 Special Status Birds

Cooper's hawk, white-tailed kite, and bank swallow have no potential to nest on the property but could utilize the site for forage. Mitigation is only necessary to protect these species when nesting and impacts would be negligible to special status birds when foraging. No further mitigation is required for special status birds.

4.4.3 Special Status Bats

Special status bat species, Yuma myotis, and common bat species have potential to roost in existing, abandoned structures and in tree snags of mapped trees in the Study Area. To reduce impacts to potential roosting bat colonies, the following mitigation measures are recommended.

BIO-2. Prior to demolition of structures or removal of large trees, a qualified biologist shall conduct a survey of existing structures and trees on the Property to determine if roosting bats are present. If possible, the survey shall be conducted during the non-breeding season (November through March). Surveys may include installation of bat detector technology to confirm presence and identify potential bat species. The biologist shall have access to all interior attics, as needed. If a colony of bats is found roosting in any structure, further surveys shall be conducted sufficient to determine the species present and the type of roost (day, night, maternity, etc.). If the bats are not part of an active maternity colony, passive exclusion measures may be implemented with approval from CDFW. November is the best time of the year to exclude bats from a roost because it is after the breeding season and before winter hibernation (not all species hibernate).

BIO-3. If bats are roosting in a structure on the Property during the daytime but are not part of an active maternity colony, then exclusion measures must include one-way valves that allow bats to get out but are designed so that the bats may not re-enter the structure.

4.4.4 San Joaquin Kit Fox

SJKF are very unlikely to occur in the Study Area. To ensure that incidental take of SJKF does not occur, the following mitigation measure is provided (MM 3.4-2 extracted from the City of Greenfield, Mitigation Monitoring and Reporting Program; Baker 2016):

BIO-4. During construction activities the project applicant shall use "best management practices" to ensure no incidental take of SJKF occurs during construction or from project-related activity onsite. The recommended measures (as outlined in the USFWS Standardized Recommendations for the Protection of the SJKF Prior to or During Ground Disturbance [June 1999]) include:

a. Restrict project-related vehicle traffic to established roads or other designated areas onsite. Vehicles should observe a 20-mile per hour speed limit in all project areas (except on paved pre-existing roads with an established speed limit). Off-road traffic outside of the designated project areas should be prohibited;

b. To the extent possible, night-time construction should be minimized;

c. All excavated, steep-walled holes or trenches more than two feet deep shall be covered at the close of each working day by plywood or similar materials or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, each shall be thoroughly inspected for trapped animals that should be allowed to escape before proceeding;

d. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored open onsite for one or more nights shall be thoroughly

inspected for animals before the pipe is subsequently buried, capped, or otherwise used or moved in any way;

e. All food-related trash items, such as wrappers, cans, bottles, and food scraps, shall be disposed of in closed containers and removed at least once a week from the project site;

f. No firearms shall be allowed on the project site;

g. No pets (i.e., dogs, cats, etc.) shall be permitted onsite;

h. Use of rodenticides and herbicides in project areas shall be prohibited. If rodent control must be conducted, zinc phosphide is preferred because of a proven (and recognized by the USFWS) lower risk to kit fox.

Furthermore, the applicant shall retain a qualified biologist to present the importance of following best management practices to reduce impacts to possible fox (as well as other sensitive species) during project implementation. A fact sheet conveying this information shall be prepared by the biologist and distributed to any personnel who may enter the project site. Should a kit fox be found onsite, the biologist shall be notified immediately in order to outline additional avoidance measures that should be implemented as well as consult with regulatory agencies.

4.4.5 Habitat Connectivity and Wildlife Movement

This Project does not propose impacts that would impede or block wildlife from utilizing this site for movement; therefore, no mitigation measures are recommended.

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6 APPENDICES

- **Appendix A. Special Status Plants Reported from the Region**
- **Appendix B. Special Status Animals Reported from the Region**

APPENDIX A. SPECIAL STATUS PLANTS REPORTED FROM THE REGION

	Scientific Name	Common Name	Federal/State Status Global/State Rank CA Rare Plant Rank	Blooming Period	Habitat Preference	Potential to Occur
1.	***Acanthomintha obovata* ssp. *obovata***	San Benito Thorn-Mint	-/- G4T3T4/S3S4 4.2	Apr-Jul	Grassy slopes, oak woodland, chaparral, vertic clay, occasionally serpentine	No Potential. Appropriate habitat with suitable soils is not present in the Study Area.
2.	***Amsinckia douglasiana***	Douglas' Fiddleneck	-/- G4/S4 4.2	Mar-May	Valley and foothill grassland. Dry habitats with unstable shaly sedimentary slopes. 150-1600 m.	No Potential. Appropriate habitat with suitable soils is not present in the Study Area.
3.	***Astragalus macrodon***	Salinas Milk-Vetch	-/- G4/S4 4.3	Apr-Jul	Eroded pale shales or sandstone, serpentine alluvium	No Potential. Suitable soils are not present in the Study Area.
4.	***Astragalus nuttallii* var. *nuttallii***	Ocean Bluff Milk-Vetch	-/- G4T4/S4 4.2	Jan-Nov	Coastal bluffs, dunes. Sandy soils. <250 m.	No Potential. Appropriate coastal habitat is not present in the Study Area.
5.	***Caulanthus lemmonii***	Lemmon's Jewelflower	-/- G3/S3 1B.2	Feb-May	Grassland, chaparral, scrub	No Potential. Appropriate habitat it's not present in the Study Area.
6.	***Centromadia parryi* ssp. *congdonii***	Congdon's Tarplant	-/- G3T1T2/S1S2 1B.1	May-Nov	Grassland, disturbed sites. Terraces, swales, floodplains, Alkaline, heavy clay soil <300 m.	No Potential. Suitable soils and depressional features are not present in the Study Area.
7.	***Chorizanthe biloba* var. *immemora***	Hernandez Spineflower	-/- G3T1T2/S1S2 1B.2	May-Sep	Serpentine, gravel, vertic clay	No Potential. Suitable soils are not present in the Study Area.

	Scientific Name	Common Name	Federal/State Status Global/State Rank CA Rare Plant Rank	Blooming Period	Habitat Preference	Potential to Occur
8.	***Chorizanthe douglasii***	Douglas' Spineflower	-/- G4/S4 4.3	Apr-Jul	Cismontane woodland, lower montane coniferous forest, chaparral, coastal scrub, valley and foothill grassland; in sand or gravel.	No Potential. Appropriate habitat is not present and the heavily disturbed land use in the Study Area is not suitable to support this species.
9.	***Chorizanthe pungens*** **var.** ***pungens***	Monterey Spineflower	FT/- G2T2/S2 1B.2	Apr-Aug	Sand	No Potential. Suitable sandy substrate in wash habitat is not present in the Study Area. Nearest occurrenceis over 5 miles northwest (CNDDB #28).
10.	***Chorizanthe robusta*** **var.** ***robusta***	Robust Spineflower	FE/- G2T1/S1 1B.1	Apr-Sep	Sand or gravel, dunes, openings, coastal	No Potential. Appropriate sandy coastal habitat is not present in the Study Area.
11.	***Clarkia breweri***	Brewer's Clarkia	-/- G4/S4 4.2	Apr-Jun	Chaparral, talus, occasionally serpentine	No Potential. Appropriate habitat with suitable soils is not present in the Study Area.
12.	***Clarkia jolonensis***	Jolon Clarkia	-/- G2/S2 1B.2	Apr-Jun	Dry woodland	No Potential. Appropirate woodland habitat is not present in the Study Area.
13.	***Clarkia lewisii***	Lewis' Clarkia	-/- G4/S4 4.3	May-Jul	Coastal scrub, woodland, chaparral	No Potential. Appropirate habitat is not present in the Study Area.
14.	***Clinopodium mimuloides***	Monkey-Flower Savory	-/- G3/S3 4.2	Jun-Oct	Moist places, streambanks, chaparral, woodland	No Potential. Appropriate habitat with mesic conditions is not present in the Study Area.

	Scientific Name	Common Name	Federal/State Status Global/State Rank CA Rare Plant Rank	Blooming Period	Habitat Preference	Potential to Occur
15.	***Collinsia multicolor***	San Francisco Collinsia	-/- G2/S2 1B.2	Feb-May	Moist, +- shady scrub, forest	No Potential. Appropriate habitat with mesic conditions is not present in the Study Area.
16.	***Convolvulus simulans***	Small-Flowered Morning-Glory	-/- G4/S4 4.2	Mar-Jul	Clay substrates, occasionally serpentine, annual grassland, coastal-sage scrub, chaparral	No Potential. Appropriate habitat and soils are not present in the Study Area to support this species.
17.	***Cryptantha rattanii***	Rattan's Cryptantha	-/- G4/S4 4.3	Apr-Jul	Rocky, gravelly slopes, grassland, coastal scrub, chaparral, foothill woodland	No Potential. Appropriate sloping habitat is not present in the Study Area.
18.	***Delphinium californicum* ssp. *interius***	Hospital Canyon Larkspur	-/- G3T3/S3 1B.2	Apr-Jun	Generally slopes in open woodland, eastern side of coast ranges	No Potential. Appropriate sloping woodland habitat is not present in the Study Area.
19.	***Delphinium recurvatum***	Recurved Larkspur	-/- G2?/S2? 1B.2	Mar-Jun	Poorly drained, fine, alkaline soils in grassland, Atriplex scrub	No Potential. Appropirate grassland habitat with alkaline soils is not present in the Study Area.
20.	***Delphinium umbraculorum***	Umbrella Larkspur	-/- G3/S3 1B.3	Apr-Jun	Moist oak forest	No Potential. Appropriate forest habitat is not present in the Study Area.
21.	***Eriogonum butterworthianum***	Butterworth's Buckwheat	-/CR G2/S2 1B.3	Jun-Jul	Sandstone	No Potential. Heavily disturbed land use in the Study Area is not suitable to support this species.

	Scientific Name	Common Name	Federal/State Status Global/State Rank CA Rare Plant Rank	Blooming Period	Habitat Preference	Potential to Occur
22.	***Eriogonum elegans***	Elegant Wild Buckwheat	-/- G4G5/S4S5 4.3	May-Nov	Uncommon. Cismontane woodland, valley and foothill grassland. Usually in sandy or gravelly substrates; often in washes, sometimes roadsides.	No Potential. Appropriate habitat is not present in the Study Area and nearest occurrence is over 9 miles southeast (CCH # SBBG179105) in 1931.
23.	***Eriogonum heermannii* var. *occidentale***	Western Heermann's Buckwheat	-/- G5T2/S2 1B.2	Jul-Oct	Gravel bars, steep, clay slopes, often serpentine	No Potential. Appropriate soils and sloping habitat is not present in the Study Area.
24.	***Eriogonum nortonii***	Pinnacles Buckwheat	-/- G2/S2 1B.3	Apr-Sep	Sand	No Potential. Heavily disturbed land use in the Study Area is not suitable to support this species.
25.	***Eriogonum nudum* var. *indictum***	Protuding buckwheat	-/- G5T4/S4 4.2	May-Oct	Clay soils, shadscale scrub, foothill woodland, chaparral	**Low**. Appropriate habitat with clay soils is not present, however the nearest occurrence is less than one mile from the site (CCH #CDA22630) in 1975.
26.	***Lagophylla diabolensis***	Diablo Range Hare-Leaf	-/- G2/S2 1B.2	Apr-Sep	Grassy openings in woodland, vertic clay	No Potential. Appropriate habitat with clay soils is not present in the Study Area.
27.	***Layia heterotricha***	Pale-Yellow Layia	-/- G2/S2 1B.1	Mar-Jun	Open clayey or sandy soil, sometimes +- alkaline	No Potential. Suitable soils are not present in the Study Area to support this species.

	Scientific Name	Common Name	Federal/State Status Global/State Rank CA Rare Plant Rank	Blooming Period	Habitat Preference	Potential to Occur
28.	***Malacothamnus aboriginum***	Indian Valley Bush-Mallow	-/- G3/S3 1B.2	Apr-Oct	Open rocky slopes	No Potential. Appropriate rocky sloping habitat is not present in the Study Area.
29.	***Malacothamnus davidsonii***	Davidson's Bush-Mallow	-/- G2/S2 1B.2	Jun-Jan	Sandy washes in coastal scrub, riparian woodland, chaparral	No Potential. Appropriate habitat with sandy washes is not present in the Study Area.
30.	***Plagiobothrys uncinatus***	Hooked Popcornflower	-/- G2/S2 1B.2	Apr-May	Chaparral, canyon sides, rocky outcrops, +- fire follower	No Potential. Appropriate chaparral and canyon habitat is not present in the Study Area.
31.	***Senecio aphanactis***	Chaparral Ragwort	-/- G3/S2 2B.2	Jan-May	Alkaline flats, dry open rocky areas	No Potential. Appropriate alkaline soils are not present in the Study Area.
32.	***Senecio astephanus***	San Gabriel Ragwort	-/- G3/S3 4.3	May-Jul	Steep rocky slopes in chaparral/coastal-sage scrub and oak woodland	No Potential. Appropriate habitat is not present in the Study Area.
33.	***Sidalcea hickmanii* ssp. *hickmanii***	Hickman's Checkerbloom	-/- G3T2/S2 1B.3	May-Jul	Chaparral	No Potential. Appropriate chaparral habitat is not present in the Study Area.

State/Rank Abbreviations:

FE: Federally Endangered
FT: Federally Threatened
PE: Proposed Federally Endangered
PT: Proposed Federally Threatened
CE: California Endangered
CR: California Rare
CT: California Threatened
CCE: Candidate for California Endangered
CCT: Candidate for California Threatened

California Rare Plant Ranks:

CRPR 1A: Plants presumed extirpated in California and either rare or extinct elsewhere
CRPR 1B: Plants rare, threatened, or endangered in California and elsewhere
CRPR 2A: Plants presumed extirpated in California, but common elsewhere
CRPR 2B: Plants rare, threatened, or endangered in California, but more common elsewhere
CRPR 4: Plants of limited distribution - a watch list
0.1 - Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
0.2 - Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
0.3 - Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

Global/State Ranks:

G1/S1 – Critically Imperiled
G2/S2 – Imperiled
G3/S3 – Vulnerable G4/S4 – Apparently Secure
G5/S5 – Secure
Q – Element is very rare but there are taxonomic questions associated with it.
Range rank – (e.g., S2S3 means rank is somewhere between S2 and S3)
? – (e.g., S2? Means rank is more certain than S2S3 but less certain that S2)

APPENDIX B. SPECIAL STATUS ANIMALS REPORTED FROM THE REGION

	Scientific Name	Common Name	Federal/State Status Global/State Rank CDFW Status	Habitat Preference	Potential to Occur
1.	***Accipiter cooperii***	Cooper's Hawk	-/- G5/S4 WL	Oak woodland, riparian, open fields. Nests in dense trees, esp. coast live oak.	No Potential (nesting). Appropriate woodland habitat is not present in the Study Area for nesting. **Low** (foraging). Cooper's hawks have been observed foraging in the vicinity and could be seen in flight over the Study Area, though foraging prey-base is limited on the site.
2.	***Accipiter striatus***	Sharp-Shinned Hawk	-/- G5/S4 WL	Riparian, coniferous, and deciduous woodlands near water.	No Potential. Appropriate woodland habitat is not present in the Study Area.
3.	***Agelaius tricolor***	Tricolored Blackbird	-/CT G2G3/S1S2 SSC	Requires open water, protected nesting substrate, & foraging area with insect prey near nesting colony.	No Potential. Appropriate riparian nesting habitat and water sources are not present in the the Study Area.
4.	***Ambystoma californiense***	California Tiger Salamander	FT/CT G2G3/S2S3 WL	Need underground refuges, ground squirrel burrows & vernal pools or other seasonal water for breeding.	No Potential. Seasonal water sources are not present and the Study Area is not within dispersal range between any known breeding ponds.
5.	***Anniella pulchra***	Northern California Legless Lizard	-/- G3/S3 SSC	Sandy or loose loamy soils under coastal scrub or oak trees. Soil moisture essential.	No Potential. Appropriate scrub or oak tree habitat with leaf litter and soil moisture is not present in the Study Area.
6.	***Antrozous pallidus***	Pallid Bat	-/- G5/S3 SSC	Rock crevices, caves, tree hollows, mines, old buildings, and bridges.	No Potential. The disturbed quality of cropland habitat in the Study Area is not suitable foraging or roosting habitat for pallid bats.

	Scientific Name	Common Name	Federal/State Status Global/State Rank CDFW Status	Habitat Preference	Potential to Occur
7.	***Aquila chrysaetos***	Golden Eagle	-/- G5/S3 FP	Nests in large, prominent trees in valley and foothill woodland. Requires adjacent food source.	No Potential. Nesting and foraging habiat is not present in the Study Area.
8.	***Ardea herodias***	Great Blue Heron	-/- G5/S4 SA	Rookeries located in tall trees near foraging areas.	No Potential. Appropriate rookery habitat is not present in the Study Area.
9.	***Asio otus***	Long-Eared Owl	-/- G5/S3? SSC	Riparian with tall willows and cottonwoods; CLOs paralleling streams; requires adjacent open land for hunting and presence of old crow, magpie, or raptor nests	No Potential. Appropriate riparian habitat is not present in the Study Area.
10.	***Athene cunicularia***	Burrowing Owl	-/- G4/S3 SSC	Burrows in squirrel holes in open habitats with low vegetation.	No Potential. The disturbed quality of cropland habitat in the Study Area is not suitable for this species, and compacted soils are not conducive to burrowing.
11.	***Bombus caliginosus***	Obscure Bumble Bee	-/- G4?/S1S2 SA	Open coastal grasslands and meadows. Food plant genera include Baccharis, Cirsium, Lupinus, Lotus, Grindelia and Phacelia.	No Potential. Appropriate grassland or meadow habitat is not present in the Study Area.
12.	***Bombus crotchii***	Crotch Bumble Bee	-/CCE G3G4/S1S2 SA	Open grassland and scrub habitats. Food plant genera include Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, and Eriogonum.	No Potential. Appropriate grassland and scrub habitats with specific host plants are not present in the Study Area.
13.	***Bombus occidentalis***	Western Bumble Bee	-/CCE G2G3/S1 SA	Wide variety of natural, agricultural, urban, and rural habitats. Flower-rich meadows of forests and subalpine zones.	No Potential. Fallow cropland habiat on the site is nearly barren and suitable host plants are not present. Nearest occurrence is 2.3 miles west of the Study Area (CNDDB #293) in 1967.

	Scientific Name	Common Name	Federal/State Status Global/State Rank CDFW Status	Habitat Preference	Potential to Occur
14.	***Branchinecta lynchi***	Vernal Pool Fairy Shrimp	FT/- G3/S3 SA	Clear water sandstone depression pools, grassed swale, earth slump, or basalt flow depression pools.	No Potential. Appropriate vernal pool habitat is not present in the Study Area.
15.	***Corynorhinus townsendii***	Townsend's Big-Eared Bat	-/- G3G4/S2 SSC	Roosts in caves, abandoned buildings, tunnels. Roosting sites limiting. Sensitive to human disturbance.	No Potential. Human disturbance is high in the area and abandoned structures are typically only used along the Pacific coast, where human disturbance is absent.
16.	***Dipodomys venustus elephantinus***	Big-Eared Kangaroo Rat	-/- G4T2/S2 SSC	Forages under shrubs & in the open. Burrows for cover and for nesting.	No Potential. Shrub habitat is not present and the Study Area is outside the known range for this species.
17.	***Elanus leucurus***	White-Tailed Kite	-/- G5/S3S4 FP	Nests in dense tree canopy near open foraging areas	No Potential (nesting). Suitable nesting habitat of open-country trees or trees aong forest or woodland edge is not present in the Study Area. **Low**. The Study Area could be utilized for forage, with nearby nesting occurrence within 3.5 mi north (CNDDB #155) in 2007.
18.	***Emys marmorata***	Western Pond Turtle	-/- G3G4/S3 SSC	Permanent or semi-permanent streams, ponds, lakes.	No Potential. Appropirate aquatic resources are not present in the Study Area.
19.	***Eumops perotis californicus***	Western Mastiff Bat	-/- G5T4/S3S4 SSC	Roosts in crevices in cliff faces, high buildings, trees, and tunnels. Inhabits many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, and chaparral	No Potential. Appropriate roosting and foraging habitat is not present in the Study Area.

	Scientific Name	Common Name	Federal/State Status Global/State Rank CDFW Status	Habitat Preference	Potential to Occur
20.	***Falco mexicanus***	Prairie Falcon	-/- G5/S4 WL	Inhabits dry, open terrain. Nests on cliffs near open areas for hunting.	No Potential. Appropriate nesting and foraging habitat is not present in the Study Area.
21.	***Falco peregrinus anatum***	American Peregrine Falcon	FD/CD G4T4/S3S4 FP	Nests on cliffs, banks, dunes, mounds, and human-made structures, especially near water.	No Potential. Appropriate nesting and foraging habitat is not present in the Study Area.
22.	***Gymnogyps californianus***	California Condor	FE/CE G1/S1 FP	Deep canyons containing clefts in the rocky walls provide nesting sites. Forages up to 100 miles from roost/nest.	No Potential. Canyon habitat is not present and the Study Area is outside the known range for California condor.
23.	***Idiostatus kathleenae***	Pinnacles Shieldback Katydid	-/- G1G2/S1S2 SA	Known only from Pinnacles National Monument.	No Potential. The Study Area is outside the known range for this species.
24.	***Lasiurus blossevillii***	Western Red Bat	-/- G5/S3 SSC	Roosts primarily in trees, from sea level up through mixed conifer forests.	No Potential. Appropriate large-leaved trees for roosting are not present in the Study Area
25.	***Lasiurus cinereus***	Hoary Bat	-/- G5/S4 SA	Forages in open habitats or habitat mosaics with trees. Roosts in dense foliage of medium to large trees. Feeds on moths. Requires water.	No Potential. The disturbed quality of the Study Area is not suited to support hoary bats.
26.	***Lavinia exilicauda harengus***	Pajaro/Salinas Hitch	-/- G4T2T4/S2S4 SSC	Monterey hitch can occupy a wide variety of habitats, although they are most abundant in lowland areas with large pools or in small reservoirs that mimic such conditions.	No Potential. Stream habitat is not present in the Study Area.
27.	***Masticophis flagellum ruddocki***	San Joaquin Coachwhip	-/- G5T2T3/S2? SSC	Open, dry, treeless areas, including grasslands and saltbush scrub; takes refuge in burrows and under shaded vegetation	No Potential. Appropriate grassland or scrub habitat is not present in the Study Area.

	Scientific Name	Common Name	Federal/State Status Global/State Rank CDFW Status	Habitat Preference	Potential to Occur
28.	***Myotis ciliolabrum***	Western Small-Footed Myotis	-/- G5/S3 SA	Prefers open stands in forests and woodlands. Requires drinking water. Feeds on a wide variety of small flying insects.	No Potential. Appropriate forest or woodland habitat is not present in the Study Area.
29.	***Myotis evotis***	Long-Eared Myotis	-/- G5/S3 SA	Nursery colonies in buildings, crevices, spaces under bark, and snags. Caves used primarily as night roosts. Most commonly found in mixed coniferous forests, from humid coastal areas to montane forests.	No Potential. Appropriate mixed coniferous forests are not present in vicninty to the Study Area; therefore the abandoned structure has no roosting potential.
30.	***Myotis thysanodes***	Fringed Myotis	-/- G4/S3 SA	Variety of habitats, uses caves, mines, buildings, or crevices for maternity colonies and roosts, and other protected locations among oak, pinon, and juniper forests	No Potential. The level of human disturbance is high and abandoned structures on site are not in protected locations near appropriate forest habitat.
31.	***Myotis yumanensis***	Yuma Myotis	-/- G5/S4 SA	Caves, mines, buildings, tree cavities, rock crevices, or under bridges. Feeds near open water.	**Low**. The abandoned residential structure and surrounding trees could provide roosting habitat, though foraing habitat (open water) is over 2 miles from the Study Area.
32.	***Oncorhynchus mykiss irideus pop. 9***	Steelhead - South-Central California Coast Dps	FT/- G5T2Q/S2 SA	Federal listing refers to runs in coastal basins from the Pajaro River south to, but not including, the Santa Maria River.	No Potential. Riverine habitat is not present in the Study Area.
33.	***Optioservus canus***	Pinnacles Optioservus Riffle Beetle	-/- G1/S1 SA	Found on rocks and in gravel of riffles in cool, swift, clear streams.	No Potential. Stream habitat is not present in the Study Area.
34.	***Perognathus inornatus psammophilus***	Salinas Pocket Mouse	-/- G4T2?/S1 SSC	Annual grassland and desert shrub in Salinas Valley, with friable soils	No Potential. The Study Area is outside the known range for this species and suitable habitat is not present.

	Scientific Name	Common Name	Federal/State Status Global/State Rank CDFW Status	Habitat Preference	Potential to Occur
35.	***Phrynosoma blainvillii***	Coast Horned Lizard	-/- G3G4/S3S4 SSC	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes.	No Potential. Sandy wash habitat is not present in the Study Area.
36.	***Rana boylii***	Foothill Yellow-Legged Frog	-/CCT G3/S3 SSC	Partly shaded, shallow streams and riffles with rocky substrate. Min. 15 weeks for larval development.	No Potential. Aquatic resources are not present in the Study Area.
37.	***Rana draytonii***	California Red-Legged Frog	FT/- G2G3/S2S3 SSC	Lowlands and foothills in or near sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks for larval development.	No Potential. Riparian habitat with aquatic resources suitable for breeding are not present in the Study Area.
38.	***Riparia riparia***	Bank Swallow	-/CT G5/S2 SA	Nests colonially in riparian and other lowland habitats west of the desert. Requires vertical banks or cliffs with sandy soils (to dig cavities) near streams, lakes, or the ocean.	No Potential (nesting). Appropriate riparian nesting habitat with vertical banks is not present in the Study Area. **Low** (foraging). Bank swallows have been documented in the area and could be transient over the site or utilize the site when foraging.
39.	***Spea hammondii***	Western Spadefoot	-/- G3/S3 SSC	Grassland and woodland habitats with vernal pools for breeding. Most of year spent underground.	No Potential. Appropriate breeding habitat is not present within dispersal distance from the Study Area.
40.	***Taricha torosa***	Coast Range Newt	-/- G4/S4 SSC	Lives in terrestrial habitats & will migrate over 1 km to breed in ponds, reservoirs & slow moving streams.	No Potential. Known breeding ponds are not in the vicinity of the Study Area and dispersal is not likely to occur across the site.
41.	***Taxidea taxus***	American Badger	-/- G5/S3 SSC	Needs friable soils in open ground with abundant food source such as California ground squirrels.	No Potential. Friable soils required for denning are not present in the Study Area and the site is heavily disturbed within residential community.

	Scientific Name	Common Name	Federal/State Status Global/State Rank CDFW Status	Habitat Preference	Potential to Occur
42.	***Vireo bellii pusillus***	Least Bell's Vireo	FE/CE G5T2/S2 SA	Riparian habitat, near water or dry streambed, <2000 ft. Nests in willows, mesquite, Baccharis.	No Potential. Appropriate riparian habitat is not present in the Study Area.
43.	***Vulpes macrotis mutica***	San Joaquin Kit Fox	FE/CT G4T2/S2 SA	Annual grasslands or grassy open stages with scattered shrubby vegetation. Needs loose textured sandy soil and prey base.	No Potential. Appropriate open grassland habitat is not present and the mapped historic range for kit fox shows no observations in the area beyond 1990 (CDFW 2020).

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? – (e.g., S2? Means rank is more certain than S2S3 but less certain that S2)

CDFW Rank:
WL: Watch List
SSC: Species of Special Concern
FP: Fully Protected
SA: Special Animal

Geotechnical Investigation Report

D

APPENDIX

GEOTECHNICAL INVESTIGATION REPORT
PROPOSED RESIDENCES
296 APPLE AVE (APN 109-082-013-000)
GREENFIELD, CALIFORNIA

July 28, 2021
PROJECT
21-9798

FOR

SHERYL FLORES
PEOPLES SELF HELP HOUSING
3533 EMPLEO STREET
SAN LUIS OBISPO, CA 93401

BY

PACIFIC COAST TESTING
P.O. BOX 6835
SANTA MARIA, CA 93456
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Pacific Coast Testing, Inc.

Pacific Coast Testing, Inc.

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July 28, 2021
Project 21-9798

Sheryl Flores
Peoples Self Help Housing
3533 Empleo Street
San Luis Obispo, CA 93401

Subject: Geotechnical Investigation, Proposed Residences, 296 Apple Avenue (APN 109-082-013-000), Greenfield, California

Dear Sheryl:

Pacific Coast Testing (PCT) is pleased to submit this Geotechnical Investigation Report for the proposed residences at 296 Apple Avenue in Greenfield, California. This report was prepared in accordance with the scope of services presented in our proposal. The report provides geotechnical recommendations for site preparation, foundations, slabs-on-grade, retaining walls, pavement sections etc.

As discussed in the report, the primary concerns from a geotechnical standpoint are the loose condition of the soils in the upper 3 to 4 feet and potential for differential movements. It is therefore important that the building pad areas be overexcavated and that the foundations bear in compacted soils.

Please contact the undersigned if you have any questions concerning the findings or conclusions provided in this report.

Sincerely,

PACIFIC COAST TESTING INC.

R. Church

Ron J. Church
GE #2184

TABLE OF CONTENTS

GEOTECHNICAL INVESTIGATION REPORT
PROPOSED RESIDENCES
296 APPLE AVENUE (APN 109-082-013-000)
GREENFIELD, CALIFORNIA

PROJECT 21-9798

1.0 INTRODUCTION

This report presents the results of our geotechnical investigation for the proposed residences to be located at 296 Apple Avenue (APN 109-082-013-000) in Greenfield, California. A site location map is presented in Figure 1.

The property is located north of Apple Avenue, east of 3rd Street, approximately 2000 feet east of the intersection of Walnut Avenue with Highway 101. Existing residential properties and vacant/agricultural land surround the site. Topographically, the terrain is relatively level with gradients of less than ten (10) percent. Site elevations are around 270 feet above mean sea level. The property covers an area of around 4.55 acres. At the time of our field investigation the boring locations were partially covered with native grasses and weeds. Based on available maps, the property had some agricultural use prior to the mid-1990's and has been vacant since that time. An existing residence is located on the southside of the property.

It is our understanding that the residences will be one and two-story, wood-framed structures with concrete slab-on-grade floors. Footing loads for the proposed residences are presently unavailable. For the purpose of this report, loads on the order of 15 kips (columns) and 1.0 kips per lineal foot (continuous) have been estimated.

The project description is based on a site reconnaissance performed by a Pacific Coast Testing, Inc., engineer and information provided by Peoples Self Help Housing. The topographic plan provided (by Monterey Bay Engineers) forms the basis for the "Site Plan", Figure 2.

In the event that there is change in the nature, design or location of improvements, or if the assumed loads are not consistent with actual design loads, the conclusions and recommendations contained in this report should be reviewed and modified, if required. Evaluations of the soils for hydrocarbons or other chemical properties are beyond the scope of the investigation.

2.0 PURPOSE AND SCOPE

The purpose of this study was to explore and evaluate the surface and subsurface soil conditions at the site and to develop geotechnical information and design criteria for the proposed project. The scope of this study included the following items.

1. A review of available soil and geologic information for this area of Greenfield.

2. A field study consisting of a site reconnaissance and an exploratory boring program to formulate a description of the subsurface conditions.

3. A laboratory testing program performed on representative soil samples collected during our field study.

4. Engineering analysis of the data gathered during our field study, laboratory testing, and literature review. Development of recommendations for site preparation and grading, and geotechnical design criteria for foundations, slab-on-grade construction, retaining walls, pavement design and underground facilities.

5. Preparation of this report summarizing our findings, conclusions, and recommendations regarding the geotechnical aspects of the project site.

3.0 SUBSURFACE SOIL CONDITIONS

Quaternary alluvium materials of the Salinas River has been mapped in the area of the Site (Dibblee, 2006). The alluvial soils are expected to consist of sands and gravels, which extend to unknown depths below the ground surface. Figure 3 shows a geologic map of the area. The near surface materials encountered in the exploratory borings to a depth of 3 to 5 feet consisted of brown gravelly silty sands and gravelly clayey sands. These materials were encountered in a slightly moist to moist state and in a loose to dense condition. The near surface materials were underlain by sandy gravels to a depth of 15 feet. These materials were encountered in a slightly

moist to moist state and in a dense to very dense condition. Based on previous borings in this area of Greenfield, sandy gravels and gravelly sands can be expected to a depth of 50 feet. The near surface gravelly silty sands have very low expansivity. No free ground water was encountered during our field exploration. Based on previous borings and our experience in this area of Greenfield, groundwater depths are greater than 40 feet below existing grades.

A more detailed description of the soils encountered is presented graphically on the "Exploratory Boring Logs," B-1 through B-6, Appendix A. An explanation of the symbols and descriptions used on these logs are presented on the "Soil Classification Chart.

The soil profile described above is generalized; therefore, the reader is advised to consult the boring logs (Appendix A) for soil conditions at specific locations. Care should be exercised in interpolating or extrapolating subsurface conditions between or beyond and borings. On the boring logs we have indicated the soil type, moisture content, grain size, dry density, and the applicable Unified Soil Classification System Symbol.

The locations of our exploratory borings, shown on Site Plan, Figure 2, were approximately determined from features at the site. Hence, accuracy can be implied only to the degree that this method warrants. Surface elevations at boring locations were not determined.

4.0 SEISMIC CONSIDERATIONS

4.1 Seismic Coefficients

Structures should be designed to resist the lateral forces generated by earthquake shaking in accordance with the building code and local design practice. This section presents seismic design parameters for use with the California Building Code (CBC) and ASCE 7-16. The site coordinates and the ASCE 7 Hazard Tool were used to obtain the seismic design criteria. The peak ground acceleration was estimated for a 2 percent probability of occurrence in 50 years using the USGS online deaggregation tool.

Seismic Data

California Building Code Seismic Parameter	Values for Site Class D
Latitude, degrees	36.330000
Longitude, degrees	-121.237000
S_s Seismic Factor	1.500
S_1 Seismic Factor	0.550
Site Class	Sd, Stiff Soil
F_a, Short-Period Site Coefficient (@ 0.2-s Period)	1.200
F_v, Long-Period Site Coefficient (@ 1.0-s Period)	1.750*
S_{MS}, Site Specific Response Parameter for Site Class at 0.2 sec	1.800
S_{M1}, Site Specific Response Parameter for Site Class at 1 sec	0.963
$S_{DS} = 2/3\ S_{MS}$	1.200
$S_{D1} = 2/3\ S_{M1}$	0.642
Peak Ground Acceleration (2% probability in 50 years)	0.686
Likely Magnitude (M)	7.8
*Fv is based on Table 11.4.2 of ASCE 7-16 assuming the fundamental period (T) for the proposed structure is taken to be less than or equal to Ts (S_{D1}/S_{DS}) and Cs is determined by Eq. 12.8.2 (Exception 2 of 11.4.8). If the structure does not meet with this exception, updated values or a design response spectrum can be prepared, upon request.	

4.2 Liquefaction Analysis

Liquefaction is described as the sudden loss of soil shear strength due to a rapid increase of pore water pressures caused by cyclic loading from a seismic event. In simple terms it means that the soil acts more like a fluid than a solid in a liquefiable event. In order for liquefaction to occur, the following are generally needed; granular soils (sand, silty sand and sandy silt), groundwater and low density (very loose to medium dense) conditions. A liquefaction study was not part of our scope for this project; however a preliminary evaluation can be provided based on the results of our soil borings and experience in this area of Greenfield. In general, dense to very dense sandy gravels and gravelly sands were found below a depth 5 feet. As discussed above, similar materials can be expected to a depth of 50 feet. Groundwater is also unlikely to be encountered to a depth of 40 feet. This information indicates that the potential for liquefaction would be in the low category.

4.3 Lateral Spreading

Due to the near level terrain, the potential for lateral spreading displacements in the building pad areas would be negligible.

4.4 Slope Stability

The building pad areas are located in near level terrain with gradients of less than ten (10) percent. There was no visual evidence of overall instability at the site, although, shallow erosion of the silty sands could occur if over-saturated conditions were to occur. However, the potential for slope movements to influence the proposed construction would be negligible.

4.5 Faulting

The San Andreas fault is located approximately 14 miles (22 km) northeast of the site, whereas the closest mapped fault, the Rinconada Fault is located approximately 5 miles (8 km) to the southwest. There are no active or potentially active faults in the direct vicinity of the property. The site is not within a State of California Fault Hazards Zone (Alquist-Priolo). It is our opinion that there is a negligible potential for fault rupture to impact the proposed construction based on review of the published maps. A fault map is provided in Figure 4.

5.0 CONCLUSIONS AND RECOMMENDATIONS

1. The site is suitable for the proposed residences provided the recommendations presented in this report are incorporated into the project plans and specifications.

2. All grading and foundation plans should be reviewed by Pacific Coast Testing Inc.**,** hereinafter described as the Geotechnical Engineer, prior to contract bidding. This review should be performed to determine whether the recommendations contained within this report are incorporated into the project plans and specifications.

3. The Geotechnical Engineer should be notified at least two (2) working days before site clearing or grading operations commence and should be present to observe the stripping of deleterious material and provide consultation to the Grading Contractor in the field.

4. Field observation and testing during the grading operations should be provided by the Geotechnical Engineer so that a decision can be formed regarding the adequacy of the site preparation, the acceptability of fill materials, and the extent to which the earthwork construction and the degree of compaction comply with the project geotechnical specifications. Any work related to grading performed without the full knowledge of, and under direct observation of the Geotechnical Engineer, may render the recommendations of this report invalid.

5.1 Clearing and Stripping

1. All surface and subsurface deleterious materials should be removed from the proposed buildings and driveway areas and disposed of off-site. This includes, but is not limited to tree rootballs, any buried utility lines, loose fills, septic systems, debris, building materials, and any other surface and subsurface structures within proposed building areas. Voids left from site clearing, should be cleaned and backfilled as recommended for structural fill.

2. Once the site has been cleared, the exposed ground surface should be stripped to remove surface vegetation and organic soil. The surface may be disced, rather than stripped, if the organic content of the soil is not more than three percent by weight. If stripping is required, depths should be determined by a member of our staff in the field at the time of stripping. Strippings may be either disposed of off-site or stockpiled for future use in landscape areas if approved by the landscape architect.

5.2 Preparation of Building Pads

1. The intent of these recommendations is to overexcavate and re-compact the near surface soils and support the residences on conventional footings.

2. The native soils in the building pad areas should be excavated to a depth of four (4) feet below lowest existing grade or finish pad grade or two (2) feet below bottom of the deepest footing, whichever is deeper. The geotechnical engineer should observe and approve the bottom of the overexcavated areas prior to the placement of fill. The exposed surface should then be scarified to a depth of 8 inches, moisture conditioned to slightly above optimum moisture and compacted to at least ninety (90) percent of maximum dry density (ASTM D1557-02). The removed materials (see section 5.4) can then be replaced and similarly compacted. The lateral limits of excavation, scarification and fill placement should be at least 5 feet beyond the perimeter building and footing lines. Permanent fill and cut slopes should not exceed 2:1 (horizontal to vertical).

3. If loose or unstable soils are encountered at the bottom of the excavations, these areas should be excavated (18 inches minimum) and a layer of stabilization fabric (Mirafi HP370 or equivalent) and Class II/III Base placed prior to placing fill. The base should be compacted to 90% of ASTM D1557-02.

4. In order to help minimize potential settlement problems associated with structures supported on a non-uniform materials, the soils engineer should be consulted for specific site recommendations during site excavation and grading. In general, all proposed construction should be supported on a uniform thickness of compacted soil.

5. The above grading is based on the strength characteristics of the materials under conditions of normal moisture that would result from rain water and do not take into consideration the additional activating forces applied by seepage from springs or subsurface water. Areas of observed seepage should be provided with subsurface drains to release the hydrostatic pressures.

6. The near-surface soils may become partially or completely saturated during the rainy season. Grading operations during this time period may be difficult since the saturated materials may not be compactable, and they may not support

construction equipment. Consideration should be given to the seasonal limit of the grading operations on the site.

7. All final grades should be provided with a positive drainage gradient away from foundations. Final grades should provide for rapid removal of surface water runoff. Ponding of water should not be allowed on building pads or adjacent to foundations.

5.3 Preparation of Paved Areas

1. After clearing and grubbing, the existing soils should be removed to a depth of at least two (2) feet below the existing ground surface or one (1) foot below the proposed structural section, whichever is deeper. The bottom of the excavation should then be scarified, moisture-conditioned and compacted to at least 90 percent. Native fill materials can then be placed and similarly compacted.

2. The upper 12 inches of subgrade beneath all paved areas should be compacted to at least 95 percent relative compaction. Subgrade soils should not be allowed to dry out or have excessive construction traffic between the time of water conditioning and compaction, and the time of placement of the pavement structural section.

5.4 Structural Fill

1. On-site gravelly silty sands and sandy gravels free of organic and deleterious material are suitable for use as structural fill. These fills should not contain rocks larger than 3 inches in greatest dimension and should have no more than 15 percent larger than 1.5 inches in greatest dimension.

2. Select import (decomposed granite or Class II/III Base) should be free of organic and other deleterious material and should be non-expansive with a plasticity index of 10 or less and a sand equivalent of at least 30. Before delivery to the site, a sample of the proposed import should be tested in our laboratory to determine its suitability for use as structural fill.

3. Structural fill using on-site inorganic soil or approved import should be placed in layers, each not exceeding eight inches in thickness before compaction. On-site inorganic or imported soil should be conditioned with water, or allowed to dry, to produce a soil water content at approximately optimum value and should be compacted to at least 90 percent relative compaction based on ASTM D1557-02.

5.5 Foundations

1. Conventional continuous footings and spread footings may be used for support of the proposed residences. All of the foundation materials should be competent after preparation in accordance with the grading section of this report.

2. The perimeter footings should be at least 15 inches wide with a minimum embedment of 18 inches below pad grade or below adjacent finished grade, whichever is lower. Spread footings should be a minimum of 18 inches square and similarly embedded and tied to the perimeter footings with grade beams (min. 12” wide by 18” deep). The reinforcement for the perimeter footings and grade beams should be designed by the structural engineer; however, a minimum of four (4) No. 4 rebar should be provided, two (2) on the top and two (2) on the bottom with dowels (#3 bars at 18 inches on-center) to tie the footings and grade beams to the slab.

3. An allowable dead plus live load bearing pressure of 2000 psf may be used. Total settlements on the order of 1-inch should be anticipated with differential settlements being 50 percent of this value over 20 feet

4. The above allowable pressures are for support of dead plus live loads and may be increased by one-third for short-term wind and seismic loads.

5. Lateral forces on structures may be resisted by passive pressure acting against the sides of shallow footings and/or friction between the soil and the bottom of the footing. For resistance to lateral loads, a friction factor of 0.35 may be utilized for sliding resistance at the base of the spread footings in undisturbed

native materials or engineered fill. A passive resistance of 350 pcf equivalent fluid weight may be used against the side of shallow footings. If friction and passive pressures are combined, the lesser value should be reduced by 33 percent.

5.6 Slab-On-Grade Construction

1. Concrete slabs-on-grade and flatwork should not be placed directly on unprepared loose fill materials. Preparation of subgrade to receive concrete slabs-on-grade and flatwork should be processed as discussed in the preceding sections of this report.

2. Where concrete slabs-on-grade are to be constructed, the slabs should be underlain by a minimum of 4 inches of clean free-draining material such as clean sand or permeable aggregate complying with Caltrans Standard Specifications 68, Class I, Type A or Type B, to service as a cushion and a capillary break. Clean sand should have less the 3% passing the No. 200 sieve. A 15-mil Stego-type membrane should be placed between the cushion and the slab to provide an effective vapor barrier, and to minimize moisture condensation under the floor covering. It is suggested that a 2-inch thick sand layer be placed on top of the membrane to assist in the curing of the concrete. The sand should be lightly moistened prior to placing concrete.

3. Concrete slabs-on-grade should be a minimum of 4 inches thick and should be reinforced with at least No. 3 reinforcing bars placed at 18 inches on-center both ways at or slightly above the center of the structural section. Reinforcing bars should have a minimum clear cover of 1.5 inches, and hot bars should be cooled prior to placing concrete. The aforementioned reinforcement may be used for anticipated uniform floor loads not exceeding 100 psf. If floor loads greater than 100 psf are anticipated, the slab should be evaluated by a structural engineer

4. All slabs should be poured at a maximum slump of less than 5 inches. Excessive water content is the major cause of concrete cracking. For design of concrete

floors, a modulus of subgrade reaction of k = 100 psi per inch would be applicable to on-site engineered fill soils.

5.7 Retaining Walls

1. Retaining walls should be designed to resist lateral pressures from adjacent soils and surcharge loads applied behind the walls.

Lateral Pressure and Condition (Compacted Fill)		Equivalent Fluid Pressure, pcf	
		Unrestrained Wall	Rigidly Supported Wall
Active Case, Drained	Level-native soils	35	--
	Level-granular backfill	30	--
At-Rest Case, Drained	Level-native soils	--	55
	Level-sand backfill		45
Passive Case, Drained	Level 2:1 Sloping Down	350 125	--
For sloping backfill add 1 pcf for every 2 deg. (Active case) and 1.5 pcf for every 2 deg. (At-rest case)			

2. Isolated retaining wall foundations should extend a minimum depth of 24 inches below lowest adjacent grade. An allowable toe pressure of 1,800 psf is recommended for footings supported on 24 inches of compacted soil. A coefficient of friction of 0.35 may be used between subgrade soil and concrete footings.

3. For retaining walls greater than 6 feet, as measured from the top of the foundation, a seismic horizontal surcharge of $10H^2$ (pounds per linear foot of wall) may be assumed to act on retaining walls. The surcharge will act at a height of 0.33H above the wall base (where H is the height of the wall in feet). This surcharge force shall be added to an active design equivalent fluid pressure of 35 pounds per square foot of depth for the seismic condition.

4. In addition to the lateral soil pressure given above, retaining walls should be designed to support any design live load, such as from vehicle and construction surcharges, etc., to be supported by the wall backfill. If construction vehicles are required to operate within 10 feet of a wall, supplemental pressures will be induced and should be taken into account through design.

5. The above-recommended pressures are based on the assumption that sufficient subsurface drainage will be provided behind the walls to prevent the build-up of hydrostatic pressure. To achieve this, we recommend that a filter material be placed behind all proposed walls. The blanket of filter material should be a minimum of 12 inches thick and should extend from the bottom of the wall to within 12 inches of the ground surface. The top 12 inches should consist of water conditioned, compacted native soil. A 4-inch diameter drain pipe should be installed near the bottom of the filter blanket with perforations facing down. The drain pipe should be underlain by at least 4 inches of filter type material. Adequate gradients should be provided to discharge water that collects behind the retaining wall to an adequately controlled discharge system with suitably projected outlets. The filter material should conform to Class I, Type B permeable material as specified in Section 68 of the California Department of Transportation Standard Specifications, current edition. A typical 1" x #4 concrete coarse aggregate mix approximates this specification.

6. For hydrostatic loading conditions (i.e. no free drainage behind walls), an additional loading of 45 pcf equivalent fluid weight should be added to the above soil pressures. If it is necessary to design retaining structures for submerged conditions, allowed bearing and passive pressures should be reduced by 50 percent. In addition, soil friction beneath the base of the foundations should be neglected.

7. Precautions should be taken to ensure that heavy compaction equipment is not used immediately adjacent to walls, so as to prevent undue pressure against, and movement of, the walls. The use of water-stops/impermeable barriers

should be considered for any basement construction, and for building walls, which retain earth.

5.8 Pavement Design

1. The following table provides recommended pavement sections based on an estimated R-Value of 40 for the near surface gravelly silty sand soils encountered at the site.

RECOMMENDED MINIMUM ASPHALT CONCRETE PAVEMENT SECTIONS DESIGN THICKNESS		
T.I.	**A.C.-in.**	**A.B.-in.**
4.5	2.5	6.0
5.0	2.5	6.0
5.5	3.0	7.0
6.0	3.0	8.0
T.I. =	**Traffic Index**	
A.C. =	**Asphaltic Concrete - must meet specifications for Caltrans Type A Asphalt Concrete**	
A.B. =	**Aggregate Base - must meet specifications for Caltrans Class II Aggregate Base (R-Value = minimum 78)**	

2. R-value samples should be obtained and tested at the completion of rough grading and the pavement sections confirmed or revised. All asphaltic concrete pavement sections and all sections should be crowned for good drainage.

3. All asphalt pavement construction and materials used should conform with Sections 26 and 39 of the latest edition of the Standard Specifications, State of California, Department of Transportation. Aggregate bases and sub-bases should also be compacted to a minimum relative compaction of 95 percent based on ASTM D1557-02.

5.9 Underground Facilities Construction

1. The attention of contractors, particularly the underground contractors, should be drawn to the State of California Construction Safety Orders for "Excavations,

Trenches, Earthwork". Trenches or excavations greater than 5 feet in depth should be shored or sloped back in accordance with OSHA Regulations prior to entry.

2. For purposes of this section of the report, bedding is defined as material placed in a trench up to 1 foot above a utility pipe and backfill is all material placed in the trench above the bedding. Unless concrete bedding is required around utility pipes, free-draining sand should be used as bedding. Sand proposed for use as bedding should be tested in our laboratory to verify its suitability and to measure its compaction characteristics. Sand bedding should be compacted by mechanical means to achieve at least 90 percent relative compaction based on ASTM Test D1557-02.

3. On-site inorganic soil, or approved import, may be used as utility trench backfill. Proper compaction of trench backfill will be necessary under and adjacent to structural fill, building foundations, concrete slabs and vehicle pavements. In these areas, backfill should be conditioned with water (or allowed to dry), to produce a soil water content of about 2 to 3 percent above the optimum value and placed in horizontal layers each not exceeding 8 inches in thickness before compaction. Each layer should be compacted to at least 90 percent relative compaction based on ASTM Test D1557-02. The top lift of trench backfill under vehicle pavements should be compacted to the requirements given in report section 5.3 for vehicle pavement subgrades. Trench walls must be kept moist prior to and during backfill placement.

5.10 Surface and Subsurface Drainage

1. Concentrated surface water runoff within or immediately adjacent to the site should be conveyed in pipes or in lined channels to discharge areas that are relatively level or that are adequately protected against erosion.

2. Water from roof downspouts should be conveyed in pipes that discharge in areas a safe distance away from structures. Surface drainage gradients should be

planned to prevent ponding and promote drainage of surface water away from building foundations, edges of pavements and sidewalks. For soil areas we recommend that a minimum of five (5) percent gradient be maintained.

3. Maintenance of slopes is important to their long-term performance. It is recommended that (where disturbed) slope surfaces be planted with appropriate drought-resistant vegetation as recommended by a landscape architect, and not over-irrigating, a primary source of surficial failures. In addition, an erosion control blanket (Greenfix CF072RR or equivalent) should be placed over the slopes to protect the vegetation while it becomes established. In addition, water should not be allowed to run over the sides of the slopes

4. Careful attention should be paid to erosion protection of soil surfaces adjacent to the edges of roads, curbs and sidewalks, and in other areas where "hard" edges of structures may cause concentrated flow of surface water runoff. Erosion resistant matting such as Miramat, or other similar products, may be considered for lining drainage channels.

5. Subdrains should be placed in established drainage courses and potential seepage areas. The location of subdrains should be determined during grading. The subdrain outlet should extend into a suitable protected area or could be connected to the proposed storm drain system. The outlet pipe should consist of an unperforated pipe the same diameter as the perforated pipe.

5.11 Percolation Testing

1. Three (3) percolation tests were performed at the property. The test boreholes were drilled to a depth of 5 feet and the rates determined be the falling-head method. Gravelly silty sands were encountered at the locations drilled. The results are summarized in the following table. An infiltration rate of 3 inches/hour would be generally applicable for the percolation rates obtained.

Test No.	Depth (feet)	Soil Description	Percolation Rate
P-1	5	Gravelly Silty Sand (SM-GP)	5 min/inch
P-2	5	Gravelly Silty Sand (SM-GP)	14 min/inch
P-3	5	Gravelly Silty Sand (SM-GP)	4 min/inch

5.12 Corrosion

1. To provide corrosion control guidelines, soil samples were obtained for resistivity testing. Testing was performed on a sample obtained from boring B-1. The results are presented on the following table.

Soil Resistivity	
Sample Location	Soil Resistivity (ohm-cm)
B-1 @ 1.5 feet	9800

2. One (1) soil sample was tested to measure ph and the concentration of sulfate and chlorides. The results are presented in the following table. The results indicate that sulfate salt content should not affect normally formulated concrete (Type II Cement). The resistivity and chloride measurements indicate that the potential for corrosion of ferrous pipes is in the mild corrosive range.

Chemical Tests					
Sample Location	Depth	Soil Type	PH	Soluble Chlorides (ppm)	Soluble Sulfates (ppm)
B-2	2’	SM-GP	7.7	40	20

5.13 Geotechnical Observation and Testing

1. Field exploration and site reconnaissance provides only a limited view of the

geotechnical conditions of the site. Substantially more information will be revealed during the excavation and grading phases of the construction. Stripping & clearing of vegetation, overexcavation, scarification, fill and backfill placement and compaction should be reviewed by the geotechnical professional during construction to evaluate if the materials encountered during construction are consistent with those assumed for this report.

2. Special inspection of grading should be provided in accordance with California Building Code Section 1705.6 and Table 1705.6. The special inspector should be under the direction of the engineer.

CBC TABLE 1705.6 REQUIRED VERIFICATION AND INSPECTION OF SOILS		
VERIFICATION AND INSPECTION TASK	**CONTINUOUS DURING TASK LISTED**	**PERIODIC DURING TASK LISTED**
1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity		X
2. Verify excavations are extended to proper depth and have reached proper material		X
3. Perform classification and testing of compacted fill		X
4. Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill	X	
5. Prior to placement of compacted fill, observe subgrade and verify that site has been prepared properly.		X

6.0 LIMITATIONS AND UNIFORMITY OF CONDITIONS

1. It should be noted that it is the responsibility of the owner or his/her representative to notify Pacific Coast Testing Inc. a minimum of 48 hours before any stripping, grading, or foundation excavations can commence at this site.

2. The recommendations of this report are based upon the assumption that the soil conditions do not deviate from those disclosed during our study. Should any variations or undesirable conditions be encountered during grading of the site,

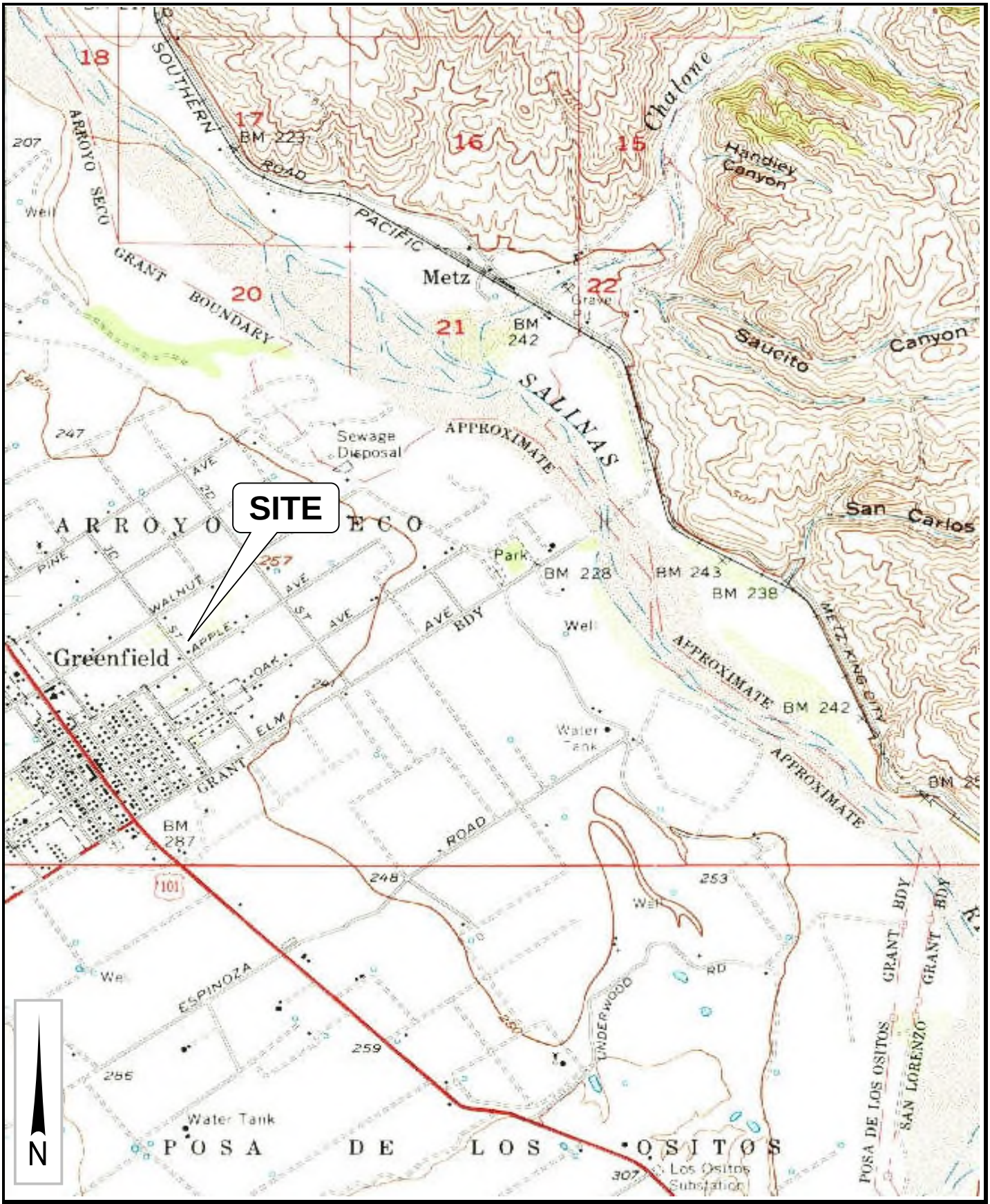
Pacific Coast Testing Inc. will provide supplemental recommendations as dictated by the field conditions.

3. This report is issued with the understanding that it is the responsibility of the owner or his/her representative to ensure that the information and recommendations contained herein are brought to the attention of the architect and engineer for the project and incorporated into the project plans and specifications. The owner or his/her representative is responsible for ensuring that the necessary steps are taken to see that the contractor and subcontractors carry out such recommendations in the field.

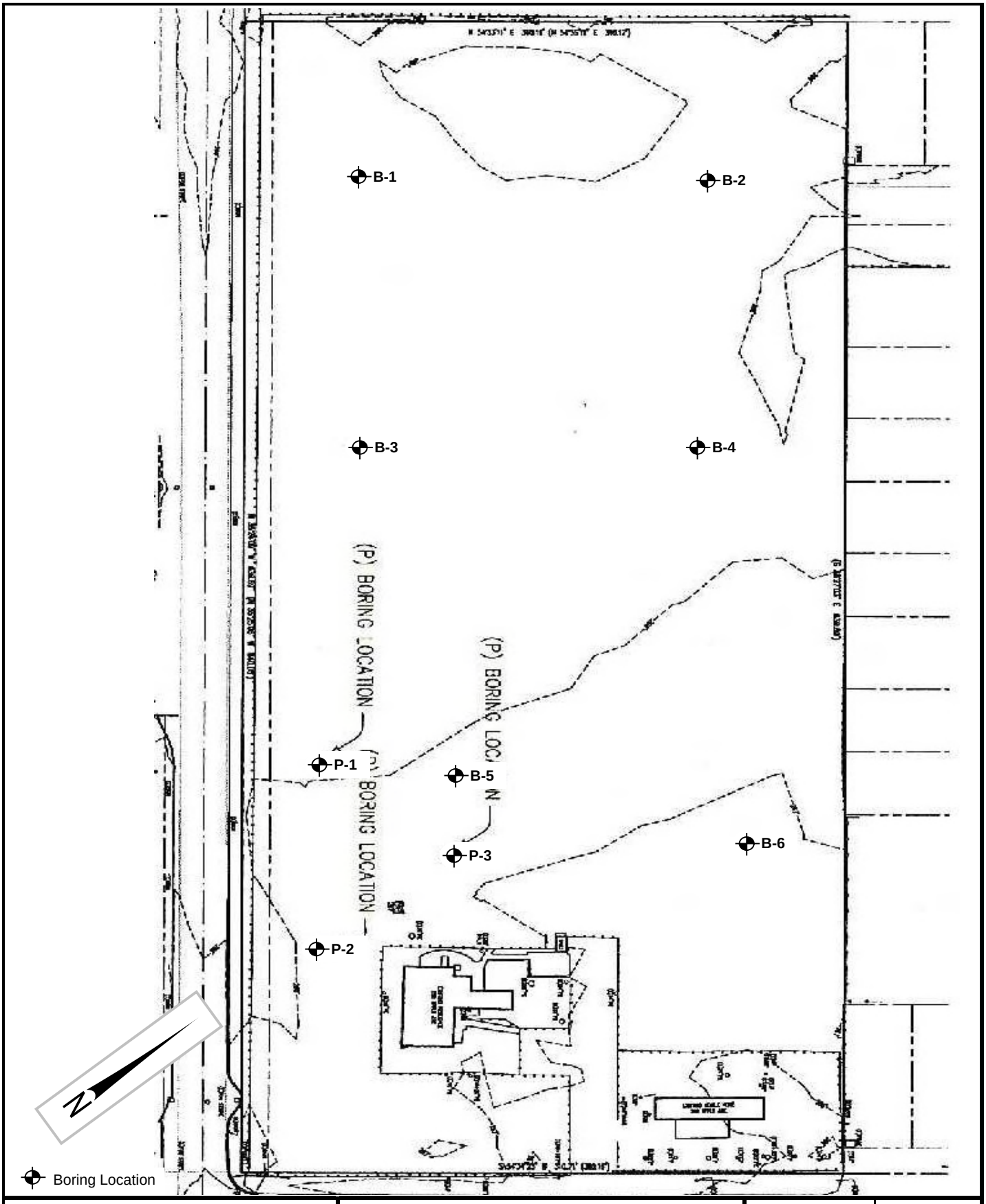
4. As of the present date, the findings of this report are valid for the property studied. With the passage of time, changes in the conditions of a property can occur whether they are due to natural processes or to the works of man on this or adjacent properties. Legislation or the broadening of knowledge may result in changes in applicable standards. Changes outside of our control may find this report to be invalid, wholly or partially. Therefore, this report should not be relied upon after a period of three (3) years without our review nor is it applicable for any properties other than those studied.

5. Validity of the recommendations contained in this report is also dependent upon the prescribed testing and observation program during the site preparation and construction phases. Our firm assumes no responsibility for construction compliance with these design concepts and recommendations unless we have been retained to perform continuous on-site testing and review during all phases of site preparation, grading, and foundation/slab construction. The Geotechnical Engineer should be notified at least two (2) working days before site clearing or grading operations commence to develop a program of quality control.

FIGURES



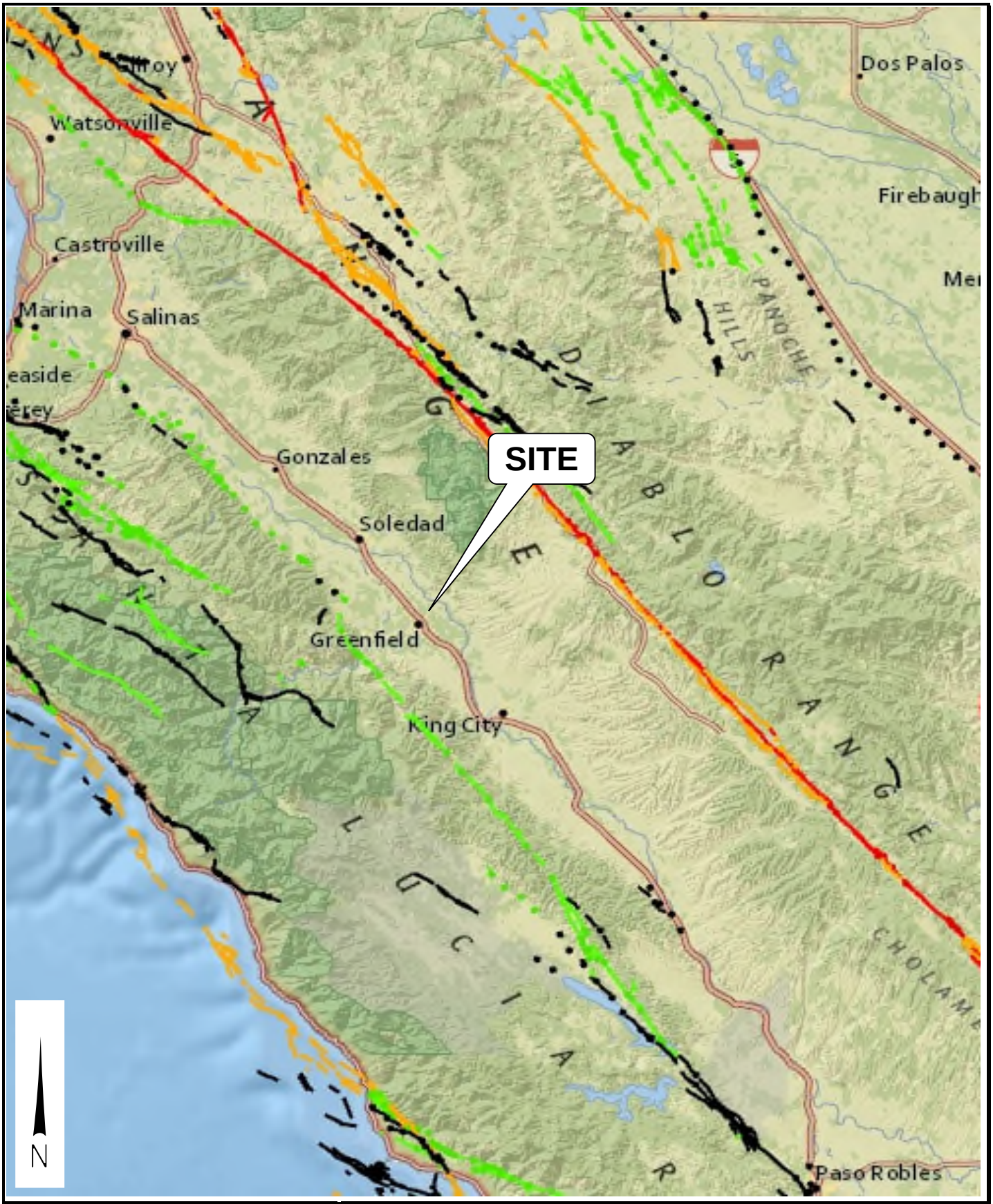
Pacific Coast Testing, Inc.	**SITE MAP** **PROPOSED RESIDENCES** **296 APPLE AVE (APN 109-082-013-000)** **GREENFIELD, CALIFORNIA**	**Project No.**	**Figure No.**
		21-9798	**1**



Pacific Coast Testing, Inc.	SITE PLAN PROPOSED RESIDENCES 296 APPLE AVE (APN 109-082-013-000) GREENFIELD, CALIFORNIA	Project No.	Figure No.
		21-9798	2

Reference - Geologic Map of Paraiso Quadrangle, Dibblee 2006, Qa - Alluvial Gravel, Sand & Silt/Clay, Qoa - Alluvial Terrace Deposits, Qg - Sand & Gravel

Pacific Coast Testing, Inc.	**GEOLOGIC MAP** **PROPOSED RESIDENCES** **296 APPLE AVE (APN 109-082-013-000)** **GREENFIELD, CALIFORNIA**	**Project No.**	**Figure No.**
		21-9798	**3**



Pacific Coast Testing, Inc.	FAULT MAP PROPOSED RESIDENCES 296 APPLE AVE (APN 109-082-013-000) GREENFIELD, CALIFORNIA	Project No.	Figure No.
		21-9798	4

APPENDIX A

Field Investigation
Key to Boring Logs
Boring Logs

FIELD INVESTIGATION

Test Hole Drilling

The field investigation was conducted on June 18, 2021. Six (6) exploratory borings and three (3) percolation borings were drilled at the approximate locations indicated on the Site Plan, Figure 2. The locations of these borings were approximated in the field.

Undisturbed and bulk samples were obtained at various depths during test hole drilling. The undisturbed samples were obtained by driving a 2.4-inch inside diameter sampler into soils. Bulk samples were also obtained during drilling.

Logs of Boring

A continuous log of soils, as encountered in the borings was recorded at the time of the field investigation, by a Staff Engineer. The Exploration Boring Logs are attached.

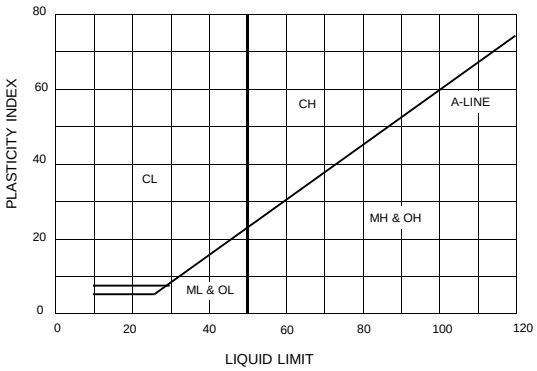
Locations and depth of sampling, in-situ soil dry densities and moisture contents are tabulated in the Boring Logs.

UNIFIED SOIL CLASSIFICATION SYSTEMS

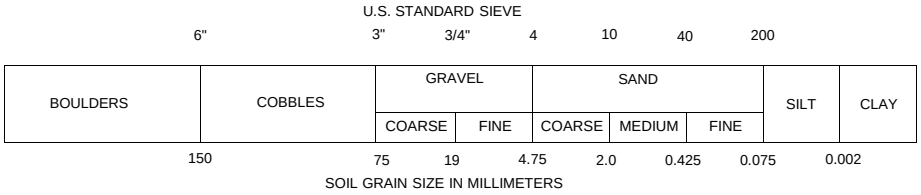
MAJOR DIVISION			SYMBOLS	TYPICAL NAMES
COARSE GRAINED SOILS Over 50% > #200 sieve	GRAVELS Over 50% > #4 sieve	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW	WELL GRADED GRAVELS, GRAVEL-SAND MIXTURES
			GP	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES
		GRAVELS WITH OVER 12% FINES	GM	SILTY GRAVELS, POORLY GRADED GRAVEL-SAND-SILT MIXTURES
			GC	CLAYEY GRAVELS, POORLY GRADED GRAVEL-SAND-CLAY MIXTURES
	SANDS Over 50% < #4 sieve	CLEAN SANDS WITH LITTLE OR NO FINES	SW	WELL GRADED SANDS, GRAVELLY SANDS
			SP	POORLY GRADED SANDS, GRAVELLY SANDS
		SANDS WITH OVER 12% FINES	SM	SILTY SANDS, POORLY GRADED SAND-SILT MIXTURES
			SC	CLAYEY SANDS, POORLY GRADED SAND-CLAY MIXTURES
FINE GRAINED SOILS Over 50% < #200 sieve	SILTS AND CLAYS Liquid limit < 50		ML	INORGANIC SILTS, SILTY OR CLAYEY FINE SANDS, OR CLAYEY SILTS WITH SLIGHT PLASTICITY
			CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY, SANDY, OR SILTY CLAYS, LEAN CLAYS
			OL	ORGANIC CLAYS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS Liquid limit > 50		MH	INORGANIC SILTS , MICACEOUS OR DIATOMACIOUS 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 CLAYS			Pt	PEAT AND OTHER HIGHLY ORGANIC SOILS

PLASTICITY CHART

USED FOR CLASSIFICATION OF FINE GRAINED SOILS



SOIL GRAIN SIZE



SAMPLE DRIVING RECORD

BLOWS PER FOOT	DESCRIPTION
25	25 BLOWS DROVE SAMPLER 12 INCHES, AFTER INITIAL 6 INCHES OF SEATING
50/7"	50 BLOWS DROVE SAMPLER 7 INCHES, AFTER INITIAL 6 INCHES OF SEATING
Ref/3"	50 BLOWS DROVE SAMPLER 3 INCHES DURING OR AFTER INITIAL 6 INCHES OF SEATING

NOTE: TO AVOID DAMAGE TO SAMPLING TOOLS, DRIVING IS LIMITED TO 50 BLOWS PER 6 INCHES DURING OR AFTER SEATING INTERVAL

KEY TO TEST DATA

B	Bag Sample	CONS	Consolidation (ASTM D2435)
	Drive, No Sample Collected	DS	Cons. Drained Direct Shear (ASTM D3080)
	2 1/2" O.D. Mod. California Sampler, Not Tested	PP	Pocket Penetrometer
	2 1/2" O.D. Mod. California Sampler, Tested	GSD	Grain Size Distribution (ASTM D422)
	Standard Penetration Test	CP	Compaction Test (ASTM D1557)
	Sample Attempted with No Recovery	EI	Expansion Index (ASTM D4829)
	Water Level at Time of Drilling	LL	Liquid Limit (in percent)
	Water Level after Drilling	PI	Plasticity Index

RELATIVE DENSITY

SANDS, GRAVELS, AND NON PLASTIC SILTS	BLOWS/FOOT
VERY LOOSE	0 - 4
LOOSE	4 - 10
MEDIUM DENSE	10 - 30
DENSE	30 - 50
VERY DENSE	OVER 50

RELATIVE DENSITY

CLAYS AND PLASTIC SILTS	STRENGTH	BLOWS/FOOT
VERY SOFT	0 - 1/4	0 - 2
SOFT	1/4 - 1/2	2 - 4
FIRM	1/2 - 1	4 - 8
STIFF	1 - 2	8 - 16
VERY STIFF	2 - 4	16 - 32
HARD	OVER 4	OVER 32

Pacific Coast Testing, Inc.

PROJECT NO.:	21-9798	**SOIL CLASSIFICATION CHART AND BORING LOG LEGEND**
DATE DRILLED:	6/18/2021	
PROPOSED RESIDENCES GREENFIELD, CALIFORNIA		FIGURE NO. **A-1**

LOGGED BY: **JM** DRILL RIG: **Simco 2400** BORING NO.: **B-1**

ELEVATION: **270'** BORING DIAMETER (INCH): **5** DATE DRILLED: **18 June 2021**

GROUNDWATER DEPTH (FT):

ELEVATION (FT)	DEPTH (FT)	GRAPHIC LOG	GEOTECHNICAL DESCRIPTION	SOIL TYPE	SAMPLE	CONV. SPT BLOW COUNT	WATER CONTENT (%)	DRY DENSITY (PCF)	LIQUID LIMIT	PLASIT. INDEX	UNC. COMP. STRENGTH (PSF)	COMMENTS AND ADDITIONAL TESTS
269	1		Gravelly Silty Sand: brown, moist, fine to coarse grained, loose	SM-GP								
268	2				B							EI = 0
267	3		dense, increasing gravel			32	7.8					
266	4											
265	5		Sandy Gravel: brown, moist, fine to coarse grained sand, some cobbles, dense to very dense	GP-SP								
264	6				B							
263	7											
262	8											
261	9					52	9.8					
260	10											
259	11											
258	12											
257	13											
256	14					50/7"	9.2					
255	15		Boring terminated at 15 feet									
254	16											
253	17											
252	18											
251	19											
250	20											

EXPLORATORY BORING LOGS

Pacific Coast Testing, Inc.

PROPOSED RESIDENCES
296 APPLE AVE (APN 109-082-013-000)

PROJECT NO.	DATE	FIGURE NO.
21-9798	**July-21**	**A-2**

LOGGED BY: **JM** DRILL RIG: **Simco 2400** BORING NO.: **B-2**

ELEVATION: **270'** BORING DIAMETER (INCH): **5** DATE DRILLED: **18 June 2021**

GROUNDWATER DEPTH (FT):

ELEVATION (FT)	DEPTH (FT)	GRAPHIC LOG	GEOTECHNICAL DESCRIPTION	SOIL TYPE	SAMPLE	CONV. SPT BLOW COUNT	WATER CONTENT (%)	DRY DENSITY (PCF)	LIQUID LIMIT	PLASIT. INDEX	UNC. COMP. STRENGTH (PSF)	COMMENTS AND ADDITIONAL TESTS
269	1		Gravelly Silty Sand: brown, moist, fine to coarse grained, loose	SM-GP								
268	2				B		7.1					
267	3		dense									
266	4		Sandy Gravel: brown, moist, fine to coarse grained sand, some cobbles, very dense	GP-SP		55	6.3					
265	5											
264	6				B							
263	7											
262	8											
261	9					50/2"	6.9					
260	10		Boring terminated at 10 feet									
259	11											
258	12											
257	13											
256	14											
255	15											
254	16											
253	17											
252	18											
251	19											
250	20											

EXPLORATORY BORING LOGS

Pacific Coast Testing, Inc.

PROPOSED RESIDENCES
296 APPLE AVE (APN 109-082-013-000)

PROJECT NO.	DATE	FIGURE NO.
21-9798	**July-21**	**A-3**

LOGGED BY: **JM** DRILL RIG: **Simco 2400** BORING NO.: **B-3**

ELEVATION: **270'** BORING DIAMETER (INCH): **5** DATE DRILLED: **18 June 2021**

GROUNDWATER DEPTH (FT):

ELEVATION (FT)	DEPTH (FT)	GRAPHIC LOG	GEOTECHNICAL DESCRIPTION	SOIL TYPE	SAMPLE	CONV. SPT BLOW COUNT	WATER CONTENT (%)	DRY DENSITY (PCF)	LIQUID LIMIT	PLASIT. INDEX	UNC. COMP. STRENGTH (PSF)	COMMENTS AND ADDITIONAL TESTS
269	1		Gravelly Sand: brown, slightly moist, fine to coarse grained, some silt, loose	SP-GP								
268	2				B		3.3					
267	3		dense									
266	4					43	4.3					
265	5		Sandy Gravel: brown, moist, fine to coarse grained sand, some cobbles, very dense	GP-SP-								
264	6				B							
263	7											
262	8											
261	9					50	5.4					
260	10		Boring terminated at 10 feet									
259	11											
258	12											
257	13											
256	14											
255	15											
254	16											
253	17											
252	18											
251	19											
250	20											

EXPLORATORY BORING LOGS

Pacific Coast Testing, Inc.

PROPOSED RESIDENCES
296 APPLE AVE (APN 109-082-013-000)

PROJECT NO.	DATE	FIGURE NO.
21-9798	**July-21**	**A-4**

LOGGED BY: **JM** DRILL RIG: **Simco 2400** BORING NO.: **B-4**

ELEVATION: **270'** BORING DIAMETER (INCH): **5** DATE DRILLED: **18 June 2021**

GROUNDWATER DEPTH (FT):

ELEVATION (FT)	DEPTH (FT)	GRAPHIC LOG	GEOTECHNICAL DESCRIPTION	SOIL TYPE	SAMPLE	CONV. SPT BLOW COUNT	WATER CONTENT (%)	DRY DENSITY (PCF)	LIQUID LIMIT	PLASIT. INDEX	UNC. COMP. STRENGTH (PSF)	COMMENTS AND ADDITIONAL TESTS
269	1		Gravelly Silty Sand: brown, moist, fine to coarse grained, loose	SM-GP								
268	2				B		5.6					
267	3											
266	4					29	5.9					
265	5		Sandy Gravel: brown, moist, fine to coarse grained sand, some cobbles, very dense	GP								
264	6				B							
263	7											
262	8											
261	9					50/2"	4.7					
260	10		Boring terminated at 10 feet									
259	11											
258	12											
257	13											
256	14											
255	15											
254	16											
253	17											
252	18											
251	19											
250	20											

EXPLORATORY BORING LOGS

Pacific Coast Testing, Inc.

PROPOSED RESIDENCES
296 APPLE AVE (APN 109-082-013-000)

PROJECT NO.	DATE	FIGURE NO.
21-9798	**July-21**	**A-5**

LOGGED BY: **JM** DRILL RIG: **Simco 2400** BORING NO.: **B-5**

ELEVATION: **270'** BORING DIAMETER (INCH): **5** DATE DRILLED: **18 June 2021**

GROUNDWATER DEPTH (FT):

ELEVATION (FT)	DEPTH (FT)	GRAPHIC LOG	GEOTECHNICAL DESCRIPTION	SOIL TYPE	SAMPLE	CONV. SPT BLOW COUNT	WATER CONTENT (%)	DRY DENSITY (PCF)	LIQUID LIMIT	PLASIT. INDEX	UNC. COMP. STRENGTH (PSF)	COMMENTS AND ADDITIONAL TESTS
269	1		Gravelly Clayey Sand: brown, moist, fine to medium grained, loose	SC GP								
268	2				B		5.0					EI = 11
267	3		dense, increasing gravel									
266	4					41	5.3					
265	5		Sandy Gravel: brown, moist, fine to coarse grained sand, some cobbles, dense to very dense	GP								
264	6											
263	7				B							
262	8											
261	9					50/4"	6.1					
260	10		gravelly sand (SP-GP)									
259	11											
258	12											
257	13											
256	14				B							
255	15		Boring terminated at 15 feet									
254	16											
253	17											
252	18											
251	19											
250	20											

EXPLORATORY BORING LOGS

Pacific Coast Testing, Inc.

PROPOSED RESIDENCES
296 APPLE AVE (APN 109-082-013-000)

PROJECT NO.	DATE	FIGURE NO.
21-9798	**July-21**	**A-6**

LOGGED BY: **JM** DRILL RIG: **Simco 2400** BORING NO.: **B-6**

ELEVATION: **270'** BORING DIAMETER (INCH): **5** DATE DRILLED: **18 June 2021**

GROUNDWATER DEPTH (FT):

ELEVATION (FT)	DEPTH (FT)	GRAPHIC LOG	GEOTECHNICAL DESCRIPTION	SOIL TYPE	SAMPLE	CONV. SPT BLOW COUNT	WATER CONTENT (%)	DRY DENSITY (PCF)	LIQUID LIMIT	PLASIT. INDEX	UNC. COMP. STRENGTH (PSF)	COMMENTS AND ADDITIONAL TESTS
269	1		Gravelly Silty Sand: brown, moist, fine to medium grained, loose	SM-GP								
268	2				B		4.8					
267	3											
266	4		cobbles, dense			50/2"	5.9					
265	5		Boring terminated at 5 feet									
264	6											
263	7											
262	8											
261	9											
260	10											
259	11											
258	12											
257	13											
256	14											
255	15											
254	16											
253	17											
252	18											
251	19											
250	20											

EXPLORATORY BORING LOGS

Pacific Coast Testing, Inc.

PROPOSED RESIDENCES
296 APPLE AVE (APN 109-082-013-000)

PROJECT NO.	DATE	FIGURE NO.
21-9798	**July-21**	**A-7**

LOGGED BY: **JM** | DRILL RIG: **Simco 2400** | BORING NO.: **P-1 to 3**

ELEVATION: **270'** | BORING DIAMETER (INCH): **6** | DATE DRILLED: **18 June 2021**

GROUNDWATER DEPTH (FT):

ELEVATION (FT)	DEPTH (FT)	GRAPHIC LOG	GEOTECHNICAL DESCRIPTION	SOIL TYPE	SAMPLE	CONV. SPT BLOW COUNT	WATER CONTENT (%)	DRY DENSITY (PCF)	LIQUID LIMIT	PLASIT. INDEX	UNC. COMP. STRENGTH (PSF)	COMMENTS AND ADDITIONAL TESTS
269	1		Gravelly Silty Sand: brown, slightly moist to moist, fine to medium grained, loose	SM-GP								
268	2				B		3.7					
267	3											
266	4		dense		B		5.5					
265	5		Borings terminated at 5 feet									
264	6											
263	7											
262	8											
261	9											
260	10											
259	11											
258	12											
257	13											
256	14											
255	15											
254	16											
253	17											
252	18											
251	19											
250	20											

EXPLORATORY BORING LOGS

Pacific Coast Testing, Inc.

PROPOSED RESIDENCES
296 APPLE AVE (APN 109-082-013-000)

PROJECT NO.	DATE	FIGURE NO.
21-9798	**July-21**	**A-8**

APPENDIX B

Moisture-Density Tests
Direct Shear Test
R-Value Test
Expansion Index Test

LABORATORY TESTING

Moisture-Density Tests

The field moisture content, as a percentage of the dry weight of the soil, was determined by weighing samples before and after oven drying. Dry densities, in pounds per cubic foot, were also determined for the undisturbed samples. Results of these determinations are shown in the Exploration Drill Hole Logs.

Direct Shear Test

Direct shear tests were performed on undisturbed samples, to determine strength characteristics of the soil. The test specimens were soaked prior to testing. Results of the shear strength tests are attached.

Resistance (R) Value Test

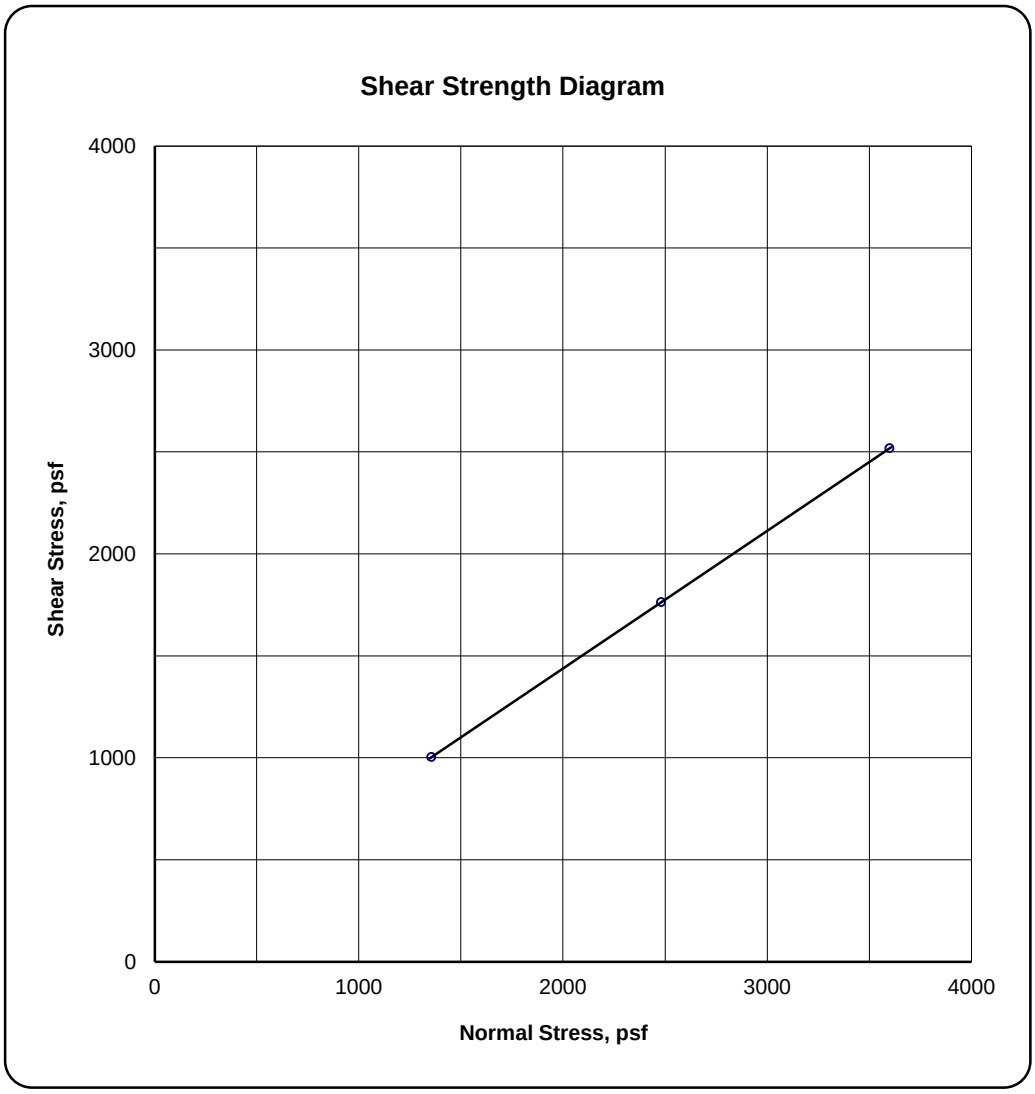
An R-Value test was estimated based on sieve analysis and plasticity on a bulk sample obtained from boring B-1. The results of the tests indicate that the gravelly silty sand soils have an R-Value of 40.

Expansion Index Test

An expansion index of 0 was obtained for the native gravelly silty sands encountered in boring B-1. The test procedure was performed in accordance with ASTM D4829 – Standard Test Method for Expansion Index of Soils.

DIRECT SHEAR TEST

ASTM D3080-11 (Modified for unconsolidated-undrained conditions)



Project:	PROPOSED RESIDENCES	Project No.	21-9798
Sample Location:	B-1 @ 3 Feet	Initial Dry Density (pcf)	101.7
Soil Description:	Gravelly Silty Sand	Initial Moisture (%)	7.8
Sample Type:	○ Remolded ◉ Ring	**Peak Shear Angle** **Cohesion (psf)**	**34** **90**

Acoustical Analysis

E

APPENDIX

ACOUSTICAL ANALYSIS

296 APPLE AVENUE SUBDIVISION
GREENFIELD, CALIFORNIA

WJVA Project No. 22-39

PREPARED FOR

EMC PLANNING
601 ABREGO STREET
MONTEREY, CA 93940

PREPARED BY

WJV ACOUSTICS, INC.
VISALIA, CALIFORNIA

wjv acoustics

DECEMBER 1, 2022

INTRODUCTION

The project site is comprised of Assessor's Parcel Number 109-082-013-000. The People's Self-Help Housing (PSHH) Housing Project is located on a 4.55-acre parcel at 296 Apple Avenue in Greenfield, California. The project site is currently vacant and undeveloped. To the west of the project site across 3rd Street is a park and agricultural land, with single-family residential properties surrounding the site to the south, east and north. The property is currently zoned Multi-Family Residential (R-M) with a residential density of 7 to 15 du/ac.

People's Self-Help Housing (PSHH) proposes to subdivide the property and build 36 detached single-family homes and a detention basin. The project address is 296 Apple Avenue, which is located on the NE corner of 3rd Street and Apple Avenue. The project site is zoned R-M (Multi-Family Residential). Proposed lots would be 3,160+ sf. The one- and two-story homes would range in size from 1,100 to 1,650 sf. Each home would have a 2-car garage as well as space to park two cars in the driveway. Proposed lots are 40 ft to 50 ft wide and 78 ft to 80 ft deep. Garages would be set back 20 ft to allow for cars to be parked in the driveways. Proposed side yards are 5 ft, and proposed rear yards are 10 ft.

The Planned Development component would allow reduced development standards for the Multiple-Family Residential (R-M) Zoning District, including reductions in minimum lot size and minimum lot width, while still resulting in a development that does not exceed the maximum allowed residential density of 15 dwelling units/acre.

This analysis, prepared by WJV Acoustics, Inc. (WJVA), is based upon a site visit and noise measurements conducted on June 28, 2022, project site plan provided by the applicant (Figure 1) and traffic obtained from the project traffic engineer (Associated Traffic Engineers). Any revisions to the analyzed site plan may require a reevaluation of the findings of this 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 typical A-weighted sound levels for common noise sources.

CRITERIA FOR ACCEPTABLE NOISE EXPOSURE

City of Greenfield-

The City of Greenfield Noise Element of the General Plan establishes noise level criteria in terms of the L_{dn} metric. The L_{dn} (Day-Night Average Level) is 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 is therefore calculated based upon *annual average* conditions.

The Noise Element establishes a land use compatibility maximum noise level criterion of 60 dB L_{dn} for exterior transportation noise exposure in outdoor activity areas of new residential developments. The Noise Element also states *"Where it is not possible to reduce noise in outdoor activity areas to 60 dB L_{dn} or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB L_{dn} may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table."* Outdoor activity areas generally include backyards of single-family residences and common use areas and individual patios or balconies of multi-family developments. The intent of the exterior noise level requirement is to provide an acceptable noise environment for outdoor activities and recreation. Table I provides the noise level standards for transportation noise sources applicable to the project.

The Noise Element also requires that interior noise exposure attributable to exterior noise sources not exceed 45 dB L_{dn}. The intent of the interior noise level standard is to provide an acceptable noise environment for indoor communication and sleep.

Table I
Noise Standards for New Uses Affected by Transportation Noise
City of Greenfield Noise Element

New Land Use	Outdoor Activity Area - Ldn	Interior - Ldn/Peak Hour Leq1	Notes
All Residential	60	45	2, 3, 4
Transient Lodging	65	45	5
Hospitals & Nursing Homes	60	45	6
Theaters & Auditoriums	---	35	
Churches, Meeting Halls, Schools, Libraries, etc.	60	40	
Office Buildings	65	45	7
Commercial Buildings	65	50	7
Playgrounds, Parks, etc.	70	---	
Industry	65	50	7

Notes:

1. For traffic noise within the City of Greenfield, Ldn and peak-hour Leq values are estimated to be approximately similar. Interior noise level standards are applied within noise-sensitive areas of the various land uses, with windows and doors in the closed positions.
2. Outdoor activity areas for single-family residential uses are defined as back yards. For large parcels or residences with no clearly defined outdoor activity area, the standard shall be applicable within a 100-foot radius of the residence.
3. For multi-family residential uses, the exterior noise level standard shall be applied at the common outdoor recreation area, such as at pools, play areas or tennis courts. Where such areas are not provided, the standards shall be applied at individual patios and balconies of the development.
4. Where it is not possible to reduce noise in outdoor activity areas to 60 dB Ldn or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB Ldn may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.
5. Outdoor activity areas of transient lodging facilities include swimming pool and picnic areas.
6. Hospitals are often noise generating uses. The exterior noise level standards for hospitals are applicable only at clearly identified areas designated for outdoor relaxation by either hospital staff or patients.
7. Only the exterior spaces of these uses designated for employee or customer relaxation have any degree of sensitivity to noise.

The City of Greenfield General Plan Noise Element also establishes noise level standard for non-transportation (stationary) noise sources. Table II provides the applicable noise level standards for stationary noise sources.

Table II

Noise Standards for New Uses Affected by Non-Transportation Noise
City of Greenfield Noise Element

New Land Use	Outdoor Activity Area - Leq		Interior - Leq	Notes
	Daytime	Nighttime	Day and Night	
All Residential	50	45	35	1, 2
Transient Lodging	55	---	40	3
Hospitals & Nursing Homes	50	45	35	4
Theaters & Auditoriums	---	---	35	
Churches, Meeting Halls, Schools, Libraries, etc.	55	---	40	
Office Buildings	55	---	45	5, 6
Commercial Buildings	55	---	45	5, 6
Playgrounds, Parks, etc.	65	---	---	6
Industry	65	65	50	5

Notes:

8. Outdoor activity areas for single-family residential uses are defined as back yards. For large parcels or residences with no clearly defined outdoor activity area, the standard shall be applicable within a 100-foot radius of the residence.
9. For multi-family residential uses, the exterior noise level standard shall be applied at the common outdoor recreation area, such as at pools, play areas or tennis courts. Where such areas are not provided, the standards shall be applied at individual patios and balconies of the development.
10. Outdoor activity areas of transient lodging facilities include swimming pool and picnic areas, and are not commonly used during nighttime hours.
11. Hospitals are often noise generating uses. The exterior noise level standards for hospitals are applicable only at clearly identified areas designated for outdoor relaxation by either hospital staff or patients.
12. Only the exterior spaces of these uses designated for employee or customer relaxation have any degree of sensitivity to noise.
13. The outdoor activity areas of office, commercial and park uses are not typically utilized during nighttime hours.

General: The Table 5 standards shall be reduced by 5 dB for sounds consisting primarily of speech or music, and for recurring impulsive sounds. If the existing ambient noise level exceeds the standards of Table 5, then the noise level standards shall be increased at 5 dB increments to encompass the ambient.

Additional noise level standards are provided in Table 17.60-1a of the City's Municipal Code. However, the noise standards described above provided in the General Plan Noise Element are slightly more restrictive and are therefore used as a basis for project compliance.

Construction Noise and Vibration-
Section 9.28.030-D of the City of Greenfield Municipal Code provides restrictions associated with residential construction activities. The Municipal Code states the following:

- *Construction Activities: Unless otherwise provided by permit, construction activities shall only be permitted between the hours of seven o'clock (7:00) A.M. and seven o'clock (7:00) P.M. Monday through Friday and between nine o'clock (9:00) A.M. and five o'clock (5:00) P.M. on Saturday and Sunday. Extended construction work hours must at all times be in strict compliance with the applicable permit.*

There are no state or federal standards that specifically address construction vibration. Some guidance is 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

PROJECT SITE NOISE EXPOSURE

The project site is located at the northeast corner of 3rd Street and Apple Avenue, in Greenfield, California. The dominant sources of noise affecting the project site is vehicle traffic along 3rd Street. Additional sources of noise observed during the project site visit include noise associated with agricultural activities, noise from US Highway 101 and occasional aircraft overflights.

Traffic Noise Exposure

Noise exposure from traffic on 3rd Street was calculated for existing and cumulative (future) conditions using the FHWA Traffic Noise Model and traffic data obtained from the project traffic consultant, Associated Traffic Engineers. Additionally, WJVA analyzed noise levels associated with traffic on US 101, using traffic data obtained from Caltrans.

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 June 28, 2022. 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 adjacent to the project site at a distance of approximately 100 feet from the centerline of 3rd Street. The speed limit posted in the project vicinity was 35 mph (miles per hour). The project vicinity and noise monitoring site location are provided as Figure 2. A photograph showing the 3rd Street noise measurement site is provided as Figure 3. It should be noted, traffic volumes along the project site frontage with Apple Avenue are extremely low and a traffic noise calibration measurement was not possible. Additionally, due to the low traffic volumes along Apple Avenue, the project Traffic Study did not provide traffic volumes for Apple Avenue. Traffic along Apple Avenue is not considered to be a significant source of noise within the project site.

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.

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 the comparison are shown in Table V.

TABLE V

COMPARISON OF MEASURED AND PREDICTED (FHWA MODEL) NOISE LEVELS 296 APPLE AVENUE SUBDIVISION, GREENFIELD

	3rd Street
Measurement Start Time	11:40 a.m.
Observed # Autos/Hr.	156
Observed # Medium Trucks/Hr.	24
Observed # Heavy Trucks/Hr.	0
Observed Speed (MPH)	35
Distance, ft. (from center of roadway)	100
L_{eq}, dBA (Measured)	53.5
L_{eq}, dBA (Predicted)	54.4
Difference between Predicted and Measured L_{eq}, dBA	**0.9**

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

From Table V it may be determined that the traffic noise levels predicted by the FHWA Model were 0.9 dB higher than those measured for the conditions observed at the time of the noise measurements for 3rd Street. This is considered to be reasonable agreement with the model and therefore no adjustments to the model are necessary. The slight overprediction of the model when compared to measured noise levels is likely the result of traffic speeds below 35 mph, as there is an existing stop sign at Apple Avenue.

Annual Average Daily Traffic (AADT) data for 3rd Avenue in the project vicinity was obtained from the above-described project traffic study. Truck percentages and the day/night distribution of traffic were estimated by WJVA, based upon site previous studies prepared along similar roadways. A speed limit of 35 mph was assumed for the roadway for existing and future roadway configurations. Table VI summarizes annual average traffic data used to model noise exposure within the project site.

TABLE VI

3rd STREET TRAFFIC NOISE MODELING ASSUMPTIONS
296 APPLE AVENUE SUBDIVISION, GREENFIELD

	3rd Street	
	Existing	Cumulative
Annual Avenue Daily Traffic (AADT)	3,270	3,560
Day/Night Split (%)	90/10	
Assumed Vehicle Speed (mph)	35	
% Medium Trucks (% AADT)	2	
% Heavy Trucks (% AADT)	1	

Sources: Associated Traffic Engineers, Inc.
WJV Acoustics, Inc.

Using data from Table VI, the FHWA Model, annual average traffic noise exposure was calculated for the closest proposed backyards from 3rd Street (approximately 60 feet from the roadway centerline). The calculated noise exposures for existing and cumulative traffic conditions for the closest proposed setbacks to 3rd Street were approximately 58 dB L_{dn} for both traffic scenarios.

WJVA also calculated project site traffic noise exposure related to traffic along US 101, which is located approximately 1,550 feet from the project site. Existing traffic volumes and truck percentages for US 101 in the project vicinity were obtained from Caltrans. Caltrans does not provide any future modeled traffic volumes. Therefore, WJVA referred to a traffic analysis provided for a previous study in Gonzales (City of Gonzales Sphere of Influence Circulation Study, Kimley-Horn, 2019), which analyzed future traffic volumes on US 101. WJVA applied the traffic volume growth rate for US 101 (derived from the Gonzales Circulation Study) to existing US 101 traffic volumes in the vicinity of the Apple Avenue Subdivision project, in Greenfield. Table VII summarizes annual average US 101 traffic data used to model noise exposure within the project site.

TABLE VII

US 101 TRAFFIC NOISE MODELING ASSUMPTIONS
296 APPLE AVENUE SUBDIVISION, GREENFIELD

	US 101	
	Existing	Future
Annual Avenue Daily Traffic (AADT)	29,000	37,990
Day/Night Split (%)	83/17	
Assumed Vehicle Speed (mph)	65	
% Medium Trucks (% AADT)	6.3	
% Heavy Trucks (% AADT)	9.9	

Sources: Caltrans, Kimley-Horn
WJV Acoustics, Inc.

Using data from Table VII, the FHWA Model, annual average traffic noise exposure was calculated for the closest proposed residential lots from US 101 (approximately 1,550 feet from the roadway centerline). The calculated noise exposures for existing and future traffic conditions for the closest proposed setbacks to US 101 were approximately 56 dB L_{dn}, and 58 dB L_{dn}, respectively.

In order to determine the overall project site traffic noise exposure, traffic noise exposure for both 3rd Street and US 101 were combined. The calculated project site noise exposure for combined (3rd Street and US 101) for existing and future/cumulative traffic conditions was calculated to be as follows:

- **Existing: 60 dB L_{dn}**
- **Cumulative/Future: 61 dB L_{dn}**

The future noise exposure at the closest proposed lots to 3rd Street (and US 101) would have a combined cumulative/future noise exposure level of approximately 61 dB L_{dn}. Such levels exceed the City's 60 dB L_{dn} exterior noise level standard, and mitigation measures must be considered. The project proposes to include a 6-foot concrete panel screen wall along the 3rd Street project site frontage. The associated noise level reduction provided by the proposed concrete panel wall is discussed below.

Interior Noise Level Exposure:

The City's interior noise level standard is 45 dB L_{dn}. The worst-case exterior noise exposure for the residential buildings would be 61 dB L_{dn}. This means that the proposed residential construction must be capable of providing a minimum (worst-case scenario) outdoor-to-indoor noise level reduction (NLR) of approximately 16 dB (61-45=16).

A specific analysis of interior noise levels was not performed. However, it may be assumed that residential construction methods complying with current building code requirements will reduce exterior noise levels by a minimum of 10 dB with doors and windows open and 25 dB if windows and doors may remain closed.

NOISE MITIGATION

Exterior Noise Mitigation:

The exterior noise level within the closest proposed residential outdoor activity areas (backyards) to 3rd Street and US 101 would be exposed to an exterior noise exposure of approximately 61 dB L_{dn}, for future traffic conditions. The City of Greenfield Noise Element of the General Plan establishes a 60 dB L_{dn} criterion within outdoor activity areas. As described above, the proposed project design includes a 6-foot concrete panel screen wall along the 3rd Street project site roadway frontage. The noise level reduction provided by the proposed 6-foot concrete wall is discussed below.

A sound wall insertion loss program based on the FHWA Model was used to calculate the insertion loss (noise reduction) provided by the proposed 6-foot concrete panel screen wall. The model calculates the insertion loss of a wall of given height based on the effective height of the noise source, height of the receiver, distance from the receiver to the wall, and distance from the noise source to the wall. The standard assumptions used in the sound wall calculations are effective source heights of 8, 2 and 0 feet above the roadway for heavy trucks, medium trucks and automobiles, respectively. The standard height of a residential receiver is five feet above the ground elevation. It was assumed by WJVA that the building pad elevations at the closest proposed homes to 3rd Street would be approximately the same elevation as the roadway pavement (existing conditions).

Based upon the above-described assumptions and method of analysis, the noise level insertion loss value for the proposed concrete wall was calculated. The calculations indicated that the proposed 6-foot concrete panel screen wall would reduce traffic noise exposure within individual backyards by approximately 6 dB (3rd Street traffic noise exposure), resulting in a projected future exposure of approximately 55 dB L_{dn}. Such levels do not exceed the City's 60 dB L_{dn} exterior nose level standard.

Interior Noise Mitigation:

The proposed 6-foot sound wall along 3rd Street would provide exterior noise mitigation for first-floor construction only, but would not provide acoustic shielding at second-floor receiver locations. The closest proposed homes to 3rd Street (and US 101) would include one single-story home (Lot 6) and four two-story homes (Lot 7, Lot 14, Lot 15 and Lot 20). The two-story homes would provide additional acoustic shielding (noise attenuation) to the proposed homes located to the east. Furthermore, the homes located directly east of Lot 6 are all single-family construction. Therefore, proposed homes on Lot 7, Lot 14, Lot 15 and Lot 20 must include air conditioning or mechanical ventilation, so that windows and doors can remain closed for sound insulation purposes. Exterior noise levels at all other proposed homes will be sufficiently attenuated by the proposed 6-foot wall and/or the two-story construction homes located to their east.

CONSTRUCTION NOISE AND VIBRATION

Construction Noise-

Construction noise would occur at various locations within the project site through the build-out period. Construction activities could occur at distances of 50 feet or less from existing residential land uses. Table VIII provides typical construction-related noise levels at distances of 25 feet, 50 feet, and 100 feet.

TABLE VIII

TYPICAL CONSTRUCTION EQUIPMENT MAXIMUM NOISE LEVELS, dBA

Type of Equipment	25 Ft.	50 Ft.	100 Ft.
Concrete Saw	96	90	84
Crane	87	81	75
Excavator	87	81	75
Front End Loader	85	79	73
Jackhammer	95	89	83
Paver	83	77	71
Pneumatic Tools	91	85	79
Dozer	87	81	76
Rollers	86	80	74
Trucks	92	86	80
Pumps	86	80	74
Scrapers	93	87	81
Portable Generators	87	81	74
Backhoe	92	86	80
Grader	92	86	80

Source: FHWA

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

Noise impacts associated with construction activities typically depend on the noise levels generated by the type of equipment in use, the duration of usage of the equipment and the distance at which the equipment is used in respect to nearby sensitive receptors. Noise impacts typically occur when construction activities occur beyond the limited allowable hours of construction.

Construction noise is typically not 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. In this case, all project construction activity must be confined to the hours of 7:00 a.m. to 7:00 p.m., Monday through Friday and between 9:00 a.m. to 5:00 p.m. on Saturday and Sunday. Construction noise impacts could result in annoyance or sleep disruption for nearby residents if nighttime operations were to occur or if equipment is not properly muffled or maintained.

Vibration-

Vibration from demolition and 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. Typical vibration levels at distances of 25 feet, 100 feet and 300 feet are summarized by Table IX. These levels would not be expected to exceed any significant threshold levels for annoyance or damage, as provided above in Table III and Table IV.

TABLE IX

TYPICAL VIBRATION LEVELS DURING CONSTRUCTION

	PPV (in/sec)		
Equipment	**@ 25´**	**@ 100´**	**@ 300´**
Bulldozer (Large)	0.089	0.019	0.006
Bulldozer (Small)	0.003	0.0006	0.0002
Loaded Truck	0.076	0.017	0.005
Jackhammer	0.035	0.008	0.002
Vibratory Roller	0.210	0.046	0.013
Caisson Drilling	0.089	0.019	0.006

Source: *Caltrans*

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 (if such activities were to occur). Such vibrations would not be expected to be felt at the closest off-site sensitive uses.

CONCLUSIONS AND RECOMMENDATIONS

The project site is exposed to traffic noise from 3rd Street and U.S. Route 101. WJVA's analysis of the project indicates that the project will comply with all applicable City of Greenfield exterior and interior noise level standards provided the following mitigation measure is incorporated into project design:

- Proposed homes on Lot 7, Lot 14, Lot 15 and Lot 20 must include air conditioning or mechanical ventilation, so that windows and doors can remain closed for sound insulation purposes.

The conclusions and recommendations of this acoustical analysis are based upon the best information known to WJV Acoustics, Inc. (WJVA) at the time the analysis was prepared concerning the proposed project site, roadway configurations, traffic volumes and vehicle speeds. Any significant changes to these factors may require revisions to the findings of this report. Additionally, any significant future changes in motor vehicle technology, noise regulations or other factors beyond WJVA's control may result in long-term noise results different from those described by this analysis.

Respectfully submitted,

Walter J. Van Groningen
President

WJV:wjv

FIGURE 1: PROJECT SITE PLAN

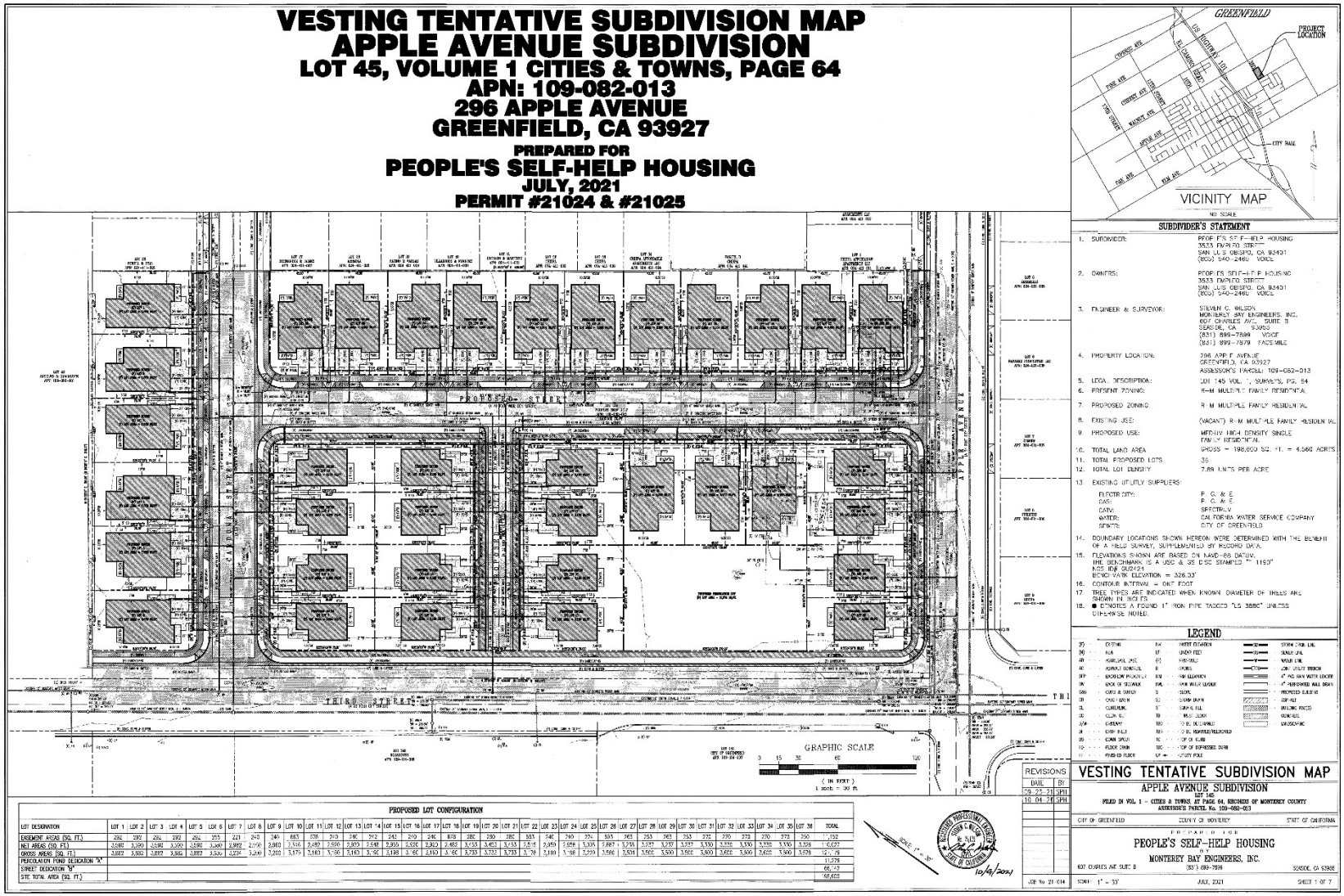


FIGURE 2: PROJECT SITE VICINITY AND NOISE MONITORING SITE LOCATIONS

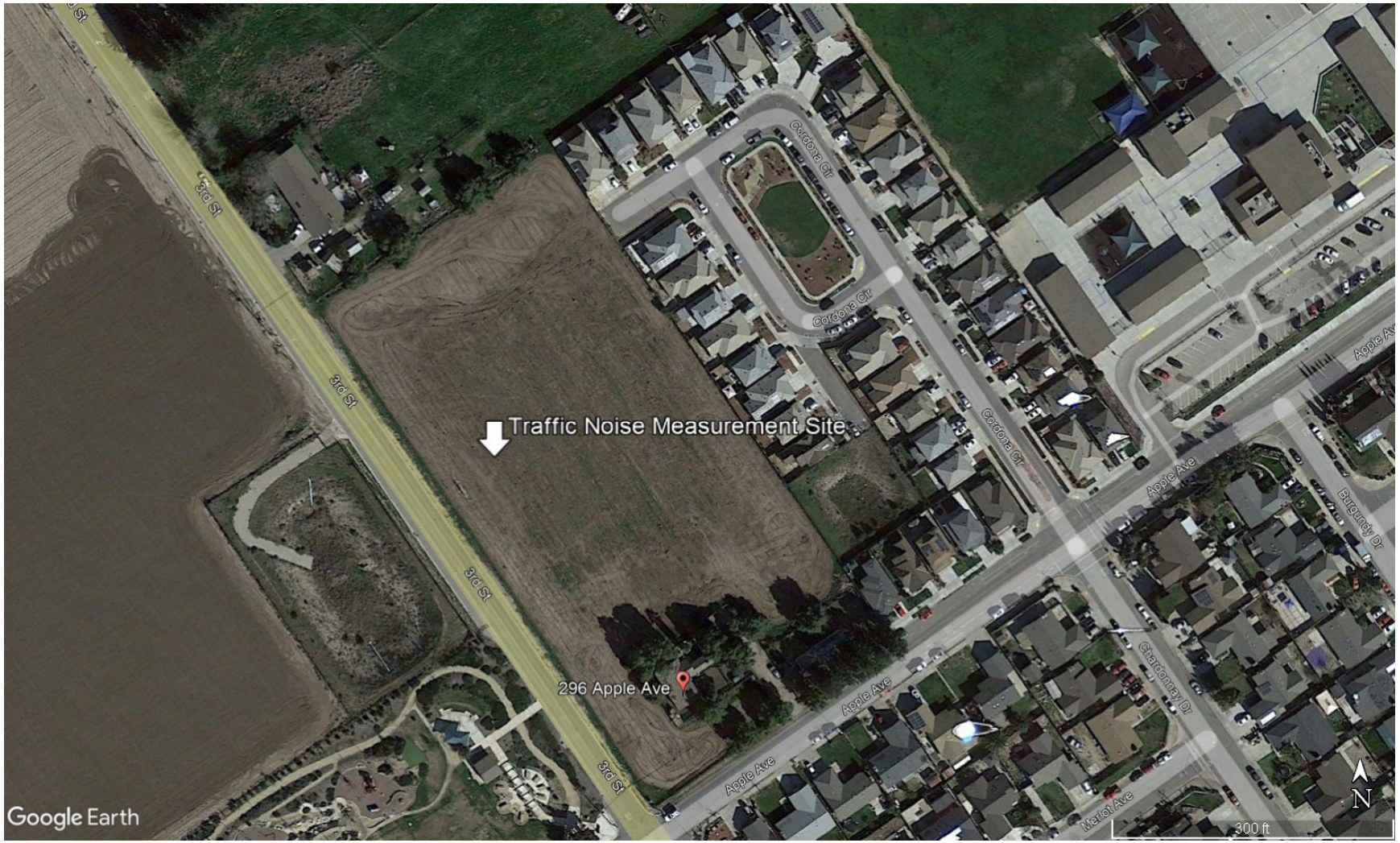


FIGURE 3: TRAFFIC NOISE MEASUREMENT LOCATION

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.

A-2

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.

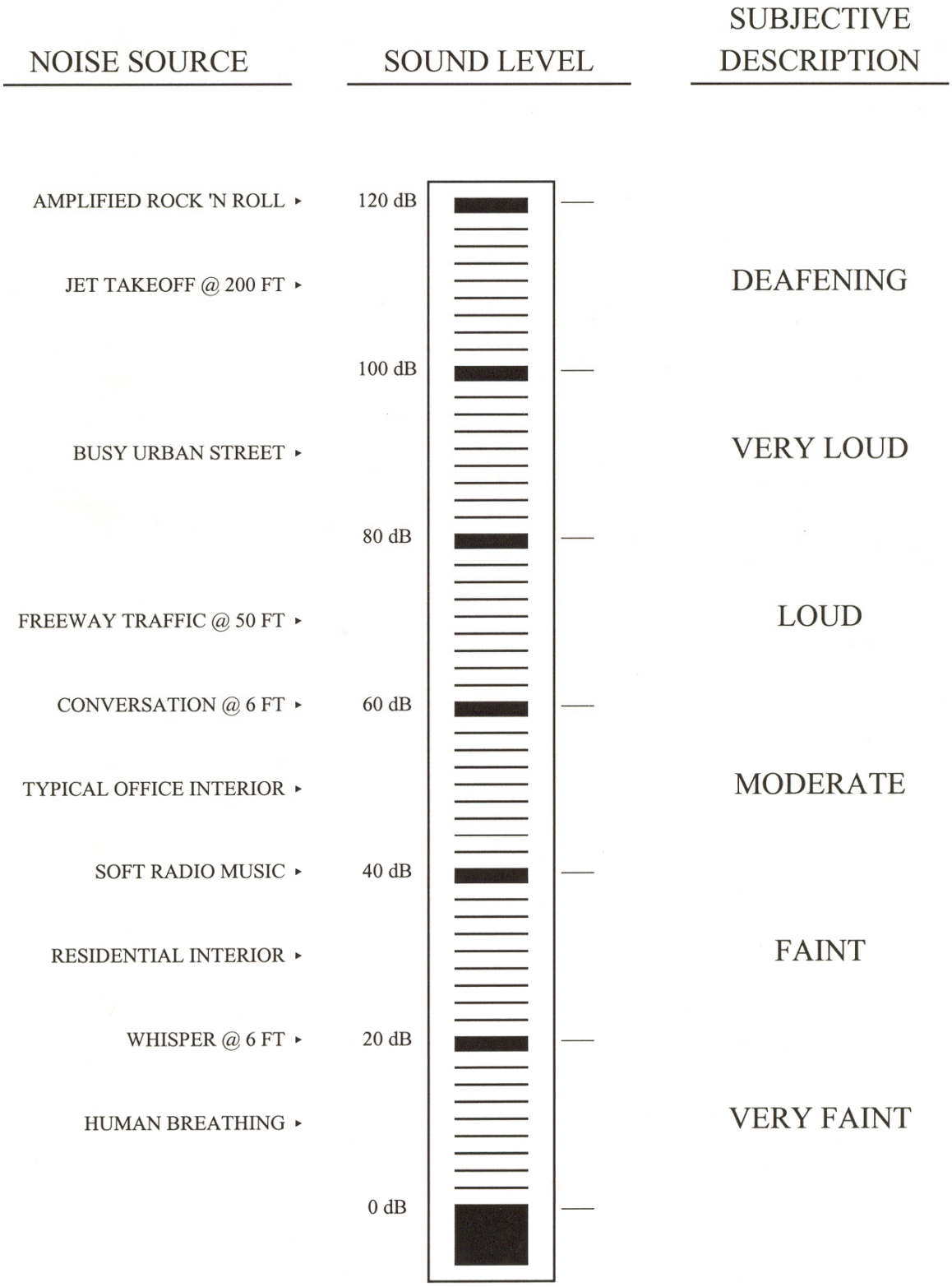
NOISE LEVEL REDUCTION (NLR): The noise reduction between indoor and outdoor environments or between two rooms that is the numerical difference, in decibels, of the average sound pressure levels in those areas or rooms. A measurement of Anoise level reduction@ combines the effect of the transmission loss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



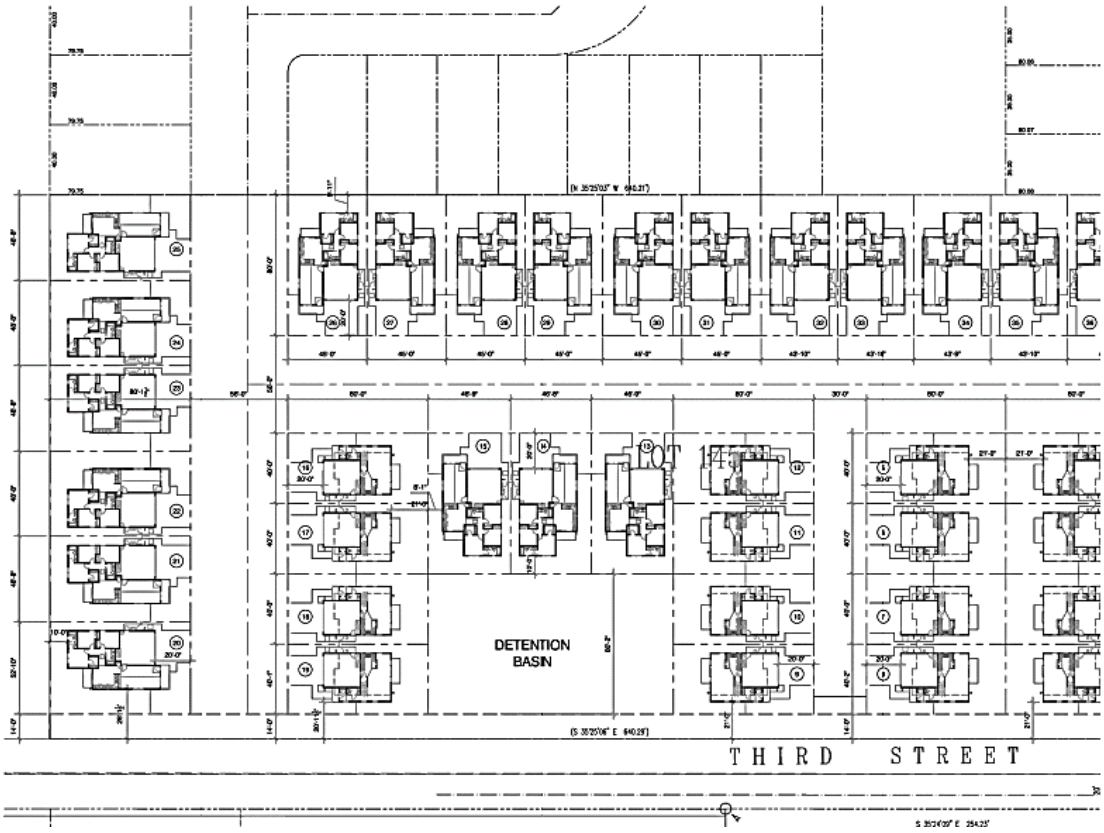
Traffic and Circulation Study

F

APPENDIX

296 APPLE AVENUE RESIDENTIAL PROJECT
CITY OF GREENFIELD, CALIFORNIA

TRAFFIC AND CIRCULATION STUDY



July 6, 2021 **ATE #21040**

People's Self Help Housing
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San Luis Obispo, CA 93401

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Scott A. Schell

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Sheryl Flores
People's Self Help Housing
Delivered Via Email: sherylf@pshhc.org

TRAFFIC AND CIRCULATION STUDY
FOR THE 296 APPLE AVENUE RESIDENTIAL PROJECT, CITY OF GREENFIELD

Associated Transportation Engineers (ATE) has prepared the following traffic and circulation study for the 296 Apple Avenue Residential Project, proposed in the City of Greenfield. It is understood that the study will be submitted to the City for environmental review.

We appreciate the opportunity to assist you with the project.

Associated Transportation Engineers

Scott A. Schell
Principal Transportation Planner

CONTENTS

TABLES

FIGURES

INTRODUCTION

The following report addresses the traffic and circulation issues for the 296 Apple Avenue Project (the "Project") proposed in the City of Greenfield. The report evaluates existing and future traffic operations within the Project study area to determine the Project's consistency with the City's General Plan level of service policies. The transportation facilities analyzed in the study were determined based on input provided by City staff. An evaluation of the Project's potential CEQA impacts is also provided based on the new Vehicle Miles Travelled (VMT) requirements adopted under Senate Bill 743.

PROJECT DESCRIPTION

The Project is proposed on the northeast corner of the 3rd Street/Apple Avenue intersection on the east side of US 101 in the City of Greenfield. Figure 1 shows the location of the Project site within the City. The Project is proposing to construct 36 affordable single-family residential units. Figure 2 shows the Project site plan. As shown, access is proposed via one roadway connection to 3rd Street and one roadway connection to Apple Avenue.

EXISTING CONDITIONS

Street Network

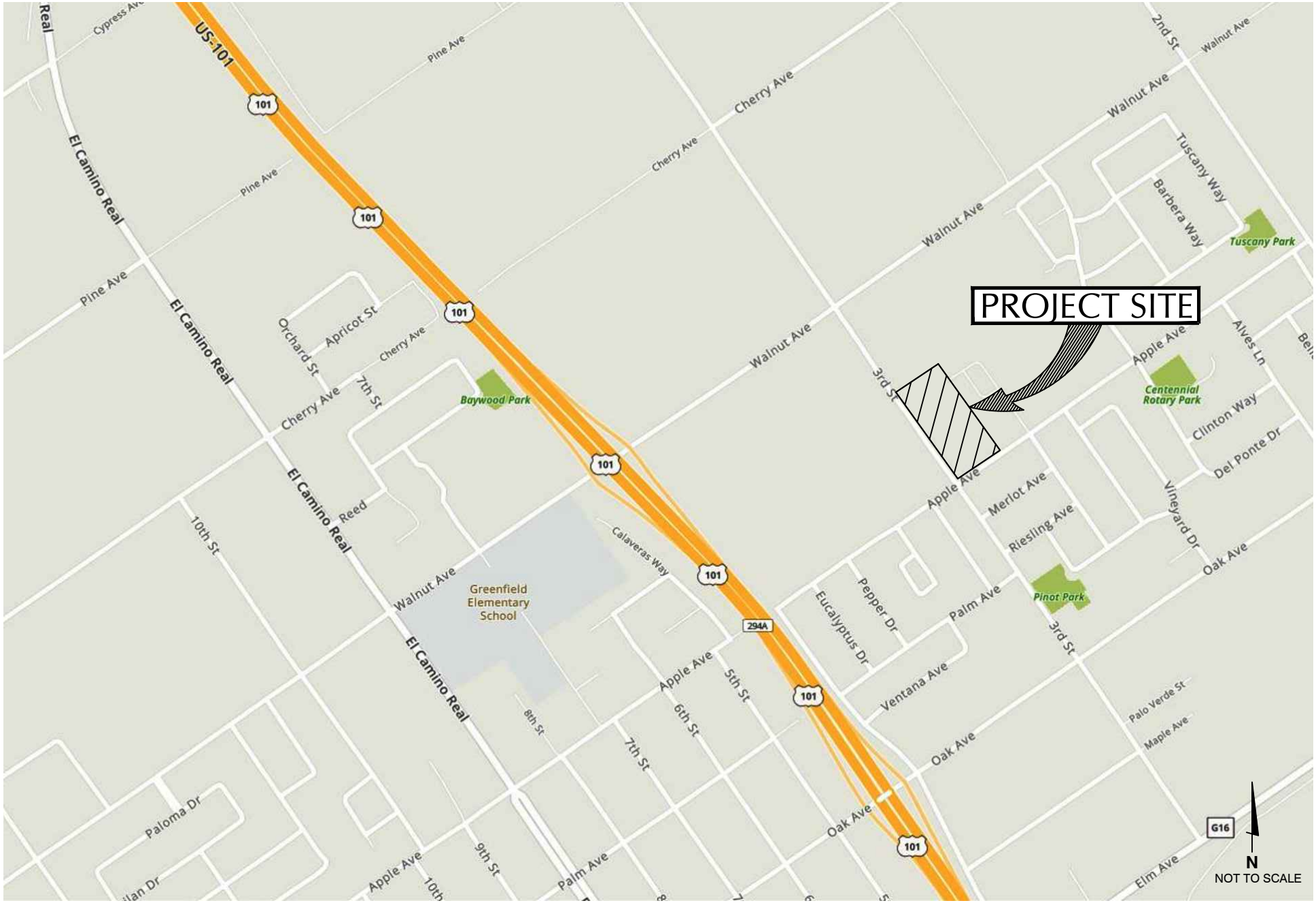
The Project site is served by a network of highways, arterial, collector, and local streets. Figure 3 illustrates the study-area street network, including the traffic controls and lane geometries at the key study-area intersections identified for analysis by the City. The following text provides a brief discussion of the existing street network.

US 101, located west of the Project site, is a north-south freeway that connects Greenfield with Soledad to the north and King City to the south. US 101 is a 4-lane freeway within the Greenfield area.

Walnut Avenue, located north of the Project site, is a 2-lane east-west roadway that serves the central portion of the City. Walnut Avenue also provides direct access to/from US 101 via a full-access tight-diamond interchange. Walnut Avenue extends to 14th Street west of US 101 and to 2nd east of US 101.

3rd Street, located along the Project's western frontage, is a 2-lane north-south collector street that parallels the eastside of US 101. 3rd Street extends from north of Walnut Avenue to Pine Avenue on the south. The Project would take access from 3rd Street via a single connection located near the north side of the site. This east-west road would also connect to the existing residential street (Cardona Circle) that serves the neighborhood located immediately east of the Project site (see Figure 2 – Project Site Plan).

Apple Avenue, located along the Project's southern frontage, is a 2-lane east-west collector street that extends from 4th Street just east of US 101 to 2nd Street. The Project site would access Apple Avenue via a single connection (see Figure 2 – Project Site Plan).



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PROJECT SITE LOCATION

FIGURE 1

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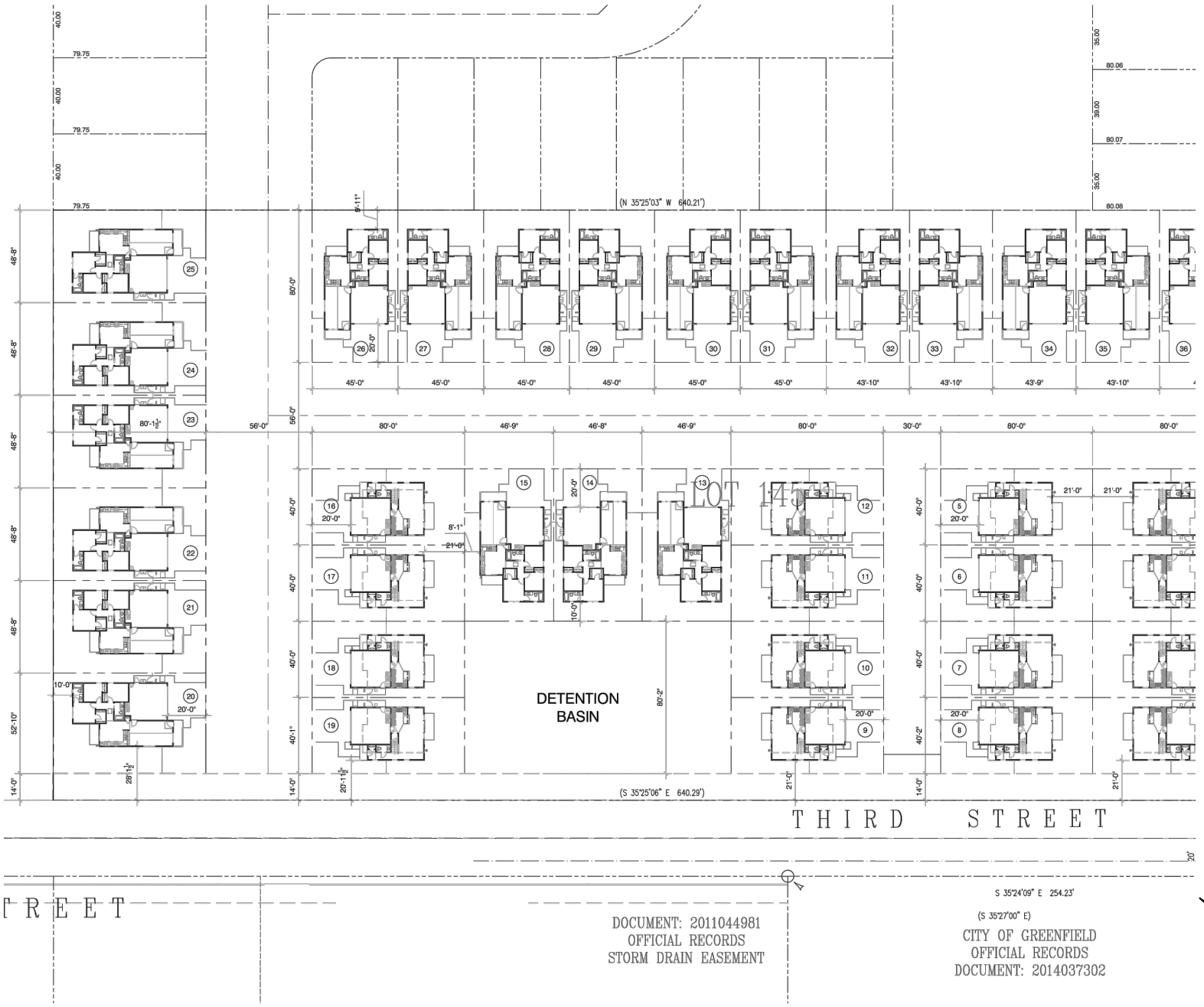

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PROJECT SITE PLAN

FIGURE 2

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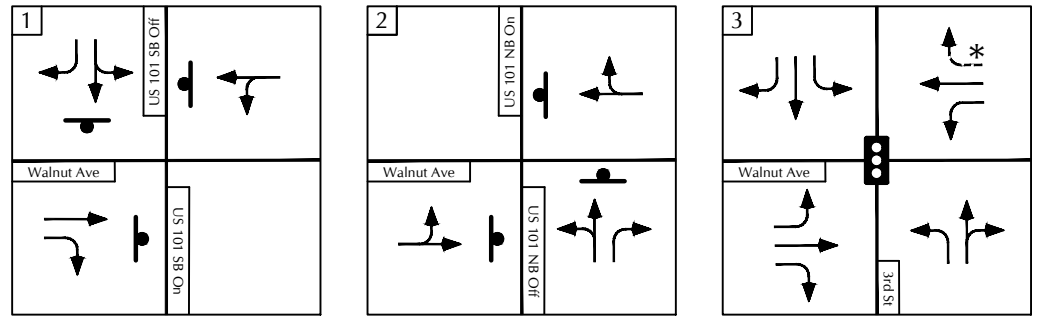

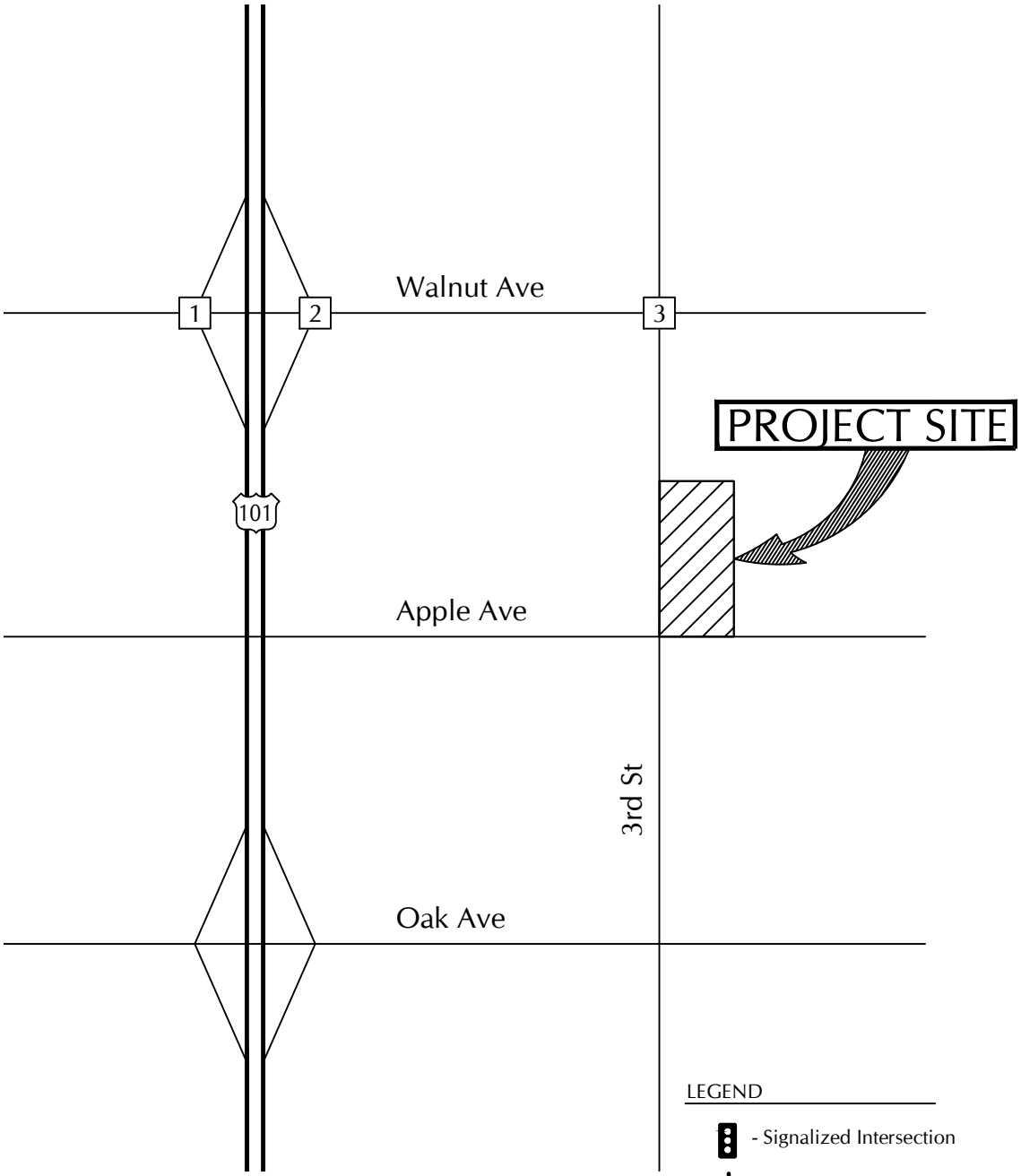

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EXISTING STREET NETWORK

FIGURE 3

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Intersection Operations

"Levels of Service" (LOS) A through F are used to rate intersection operations, with LOS A indicating very good operation and LOS F indicating poor operation (more complete definitions are contained in the Technical Appendix for reference). Because traffic flows are constrained at intersections in developed communities, detailed traffic flow analyses focus on the operating conditions of critical intersections during peak travel periods. Existing AM and PM peak hour traffic counts were collected at the key intersections identified for analysis in May 2021 (count data is contained in the Technical Appendix for reference). The AM peak hour is defined as the highest one hour of traffic flow counted between 7:00 AM and 9:00 AM, and the PM peak hour is defined as the highest one hour of traffic flow counted between 4:00 PM and 6:00 PM. Figure 4 presents the existing AM and PM peak hour traffic volumes for the study-area intersections.

Levels of service were calculated for the key intersections using the operations methodologies outlined in the Highway Capacity Manual (HCM)[1], which determines the levels of service based on the average seconds of delay per vehicle. Existing levels of service for the study-area intersections are listed in Table 1.

Table 1
Existing Levels of Service

Intersection	Control	AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS
Walnut Avenue/US 101 SB Ramps	All-Way Stop	11.2 Sec.	LOS B	16.9 Sec.	LOS C
Walnut Avenue/US 101 NB Ramps	All-Way Stop	12.2 Sec.	LOS B	15.5 Sec.	LOS C
Walnut Avenue/3rd Street	Signal	13.4 Sec.	LOS B	11.7 Sec.	LOS B

LOS based on average delay per vehicle in seconds pursuant to HCM.

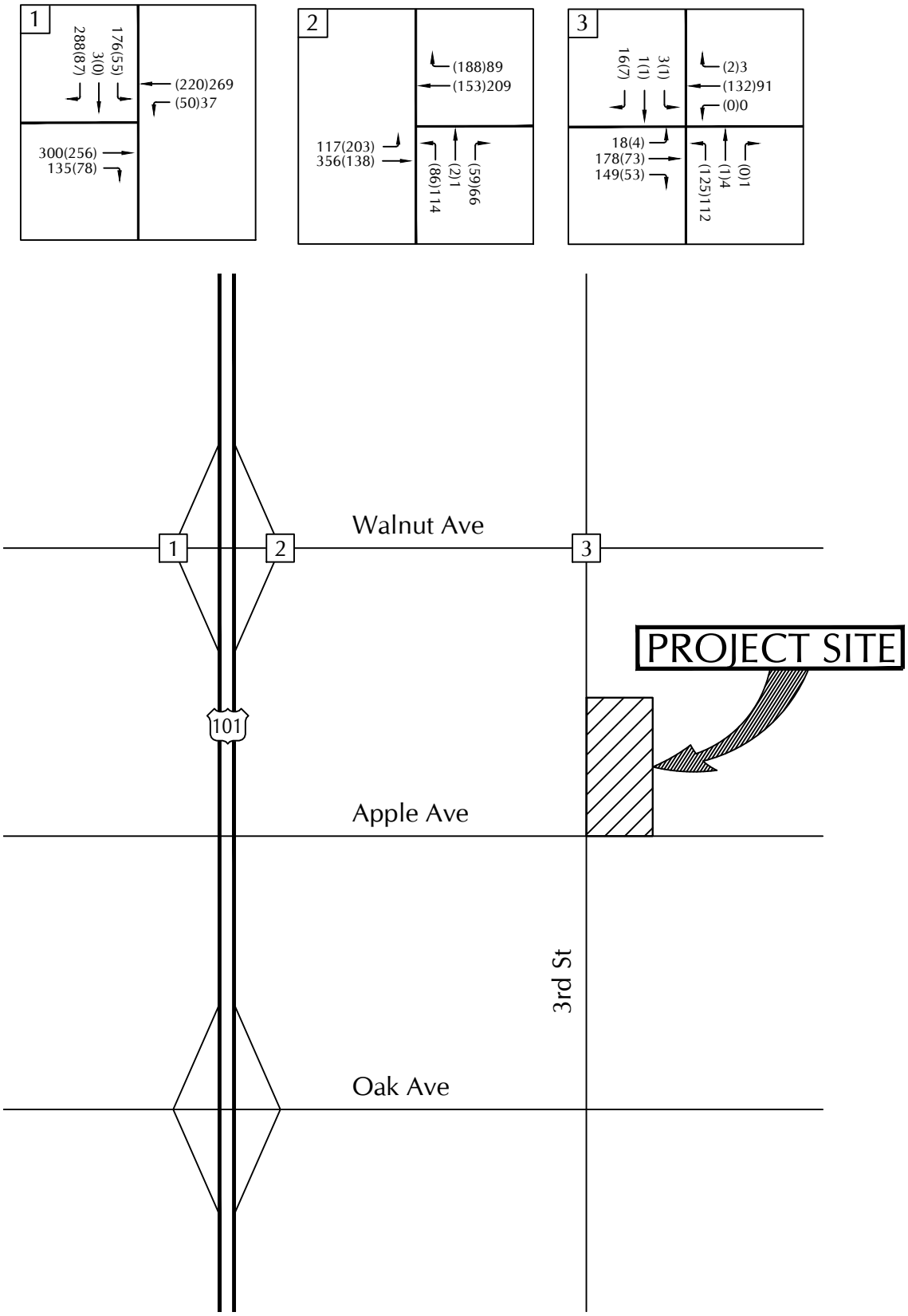
The data presented in Table 1 show that the study-area intersections currently operate at LOS B during the AM peak hour and LOS B-C during the PM peak hour – which meet the City's LOS D operating standard (see below - City of Greenfield LOS Policy).

CITY OF GREENFIELD LOS POLICY

Policy 3.2.3 of the City of Greenfield General Plan (GP) 2005-2025 Circulation Element states, "*Strive to maintain Level of Service C as the minimum acceptable service standard for intersections and roadways during peak periods and accept an LOS D only when unavoidable and at identified locations.*"

Walnut Avenue from the US 101 interchange to 3rd Street, and 3rd Street north of Cherry Avenue, are City roadway segments classified as, "LOS D only when unavoidable and at identified locations". Note that the US 101/Walnut Avenue interchange improvements Project Study Report (PSR, Caltrans approved in February 2010) indicates that the Walnut

[1] Highway Capacity Manual, Transportation Research Board, 2016.



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EXISTING TRAFFIC VOLUMES

FIGURE 4

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Avenue ramp intersection design improvements are based on peak hour LOS "D" threshold operations. The City's adopted General Plan Traffic Study (dated March 2005) designates LOS "C" and LOS "D" as the acceptable LOS threshold for practically all study roadways and intersections, respectively, under City GP Buildout conditions. Based on the above-listed policies and precedents, peak hour LOS "D" standard is generally regarded as the minimum acceptable threshold for all study intersections evaluated in this traffic study.

EXISTING + PROJECT ANALYSIS

Project Trip Generation

Trip generation estimates were calculated for the Project using rates presented in the Institute of Transportation Engineers (ITE) Trip Generation manual.[2] The ITE rates for Single Family Detached Housing (Land Use #210) were applied in the trip generation calculations. Table 2 shows the trip generation estimates developed for the Project (a detailed calculation worksheet is contained in the Technical Appendix for reference).

Table 2
Project Trip Generation

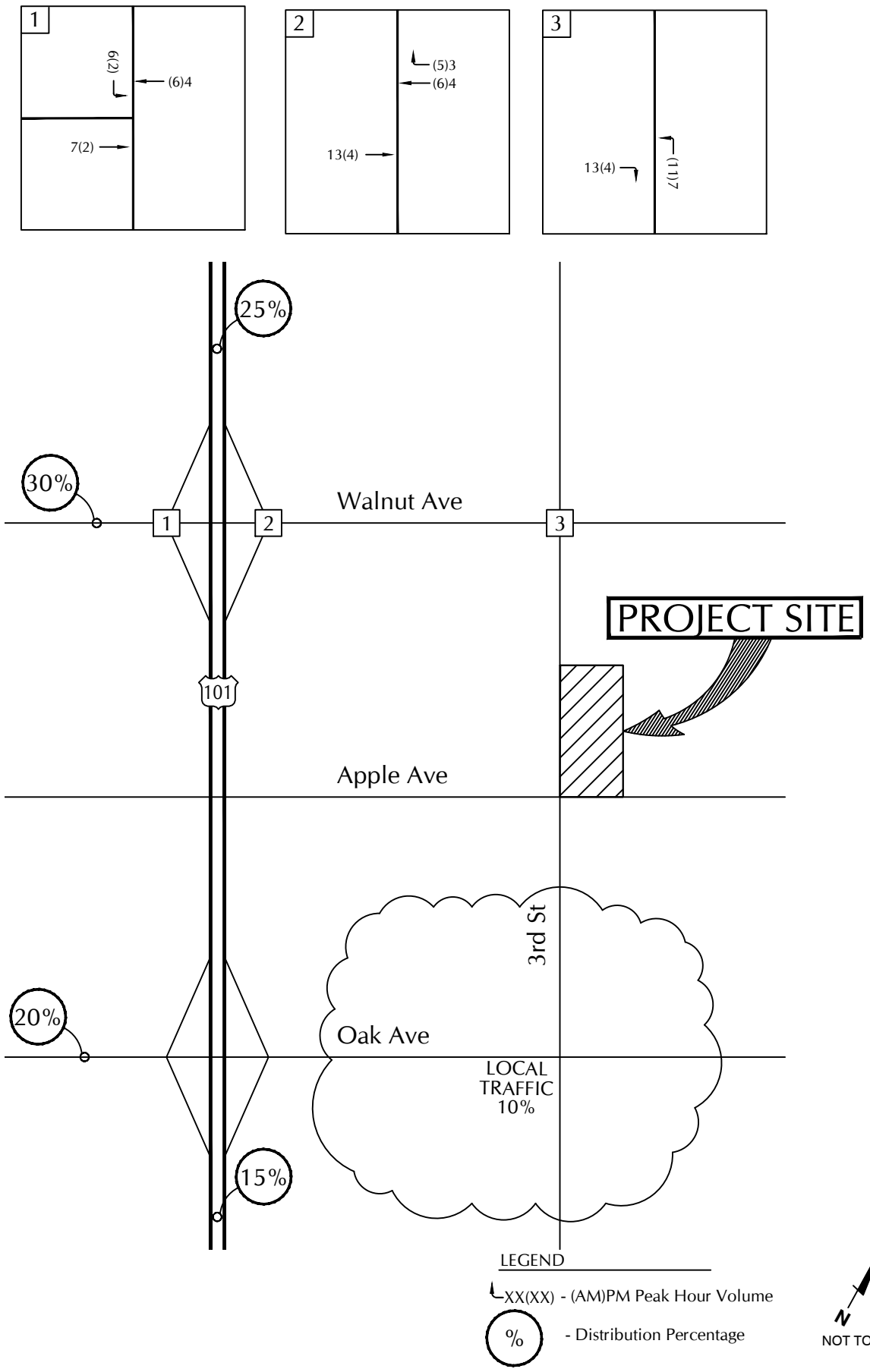
Land Use	Size	Average Daily Trips		AM Peak Hour Trips		PM Peak Hour Trips	
		Rate	Trips	Rate	Trips	Rate	Trips
Single Family Residential	36 DUs	9.44	340	0.74	27	0.99	36

As shown in Table 2, the Project is forecast to generate 340 average daily trips (ADT), with 27 trips occurring during the AM peak hour and 36 trips occurring during the PM peak hour.

Project Trip Distribution

Trip distribution percentages were developed for the Project based on existing traffic patterns in the study area, traffic studies prepared for other development projects in the area, and consideration of the land use patterns in the Greenfield area. Table 3 presents the trip distribution pattern developed for the Project. Figure 5 illustrates the trip distribution and assignment of Project traffic at the study-area intersections.

[2] Trip Generation Manual, Institute of Transportation Engineers, 10th Edition, 2017.



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PROJECT TRIP DISTRIBUTION AND ASSIGNMENT

FIGURE 5

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Table 3
Project Trip Distribution

Origin/Destination	Direction	Distribution %
US 101	North	25%
US 101	South	15%
Walnut Ave w/o US 101	West	30%
Oak Ave w/o US 101 Route	West	20%
Local Area s/o Site	South	10%
Total		**100%**

Existing + Project Intersection Operations

Levels of service were calculated for the study-area intersections assuming the Existing + Project traffic volumes shown on Figure 6. Tables 4 and 5 compare the Existing and Existing + Project levels of service and identify locations that are forecast to exceed the City's LOS D standard.

Table 4
Existing + Project Levels of Service – AM Peak Hour

Intersection	Delay / LOS		Project Added	
	Existing	Existing + Project	Trips	Exceed LOS D Standard?
Walnut Avenue/US 101 SB Ramps	11.2 Sec./LOS B	11.3 Sec./LOS B	10	No
Walnut Avenue/US 101 NB Ramps	12.2 Sec./LOS B	12.4 Sec./LOS B	15	No
Walnut Avenue/3rd Street	13.4 Sec./LOS B	13.6 Sec./LOS B	15	No

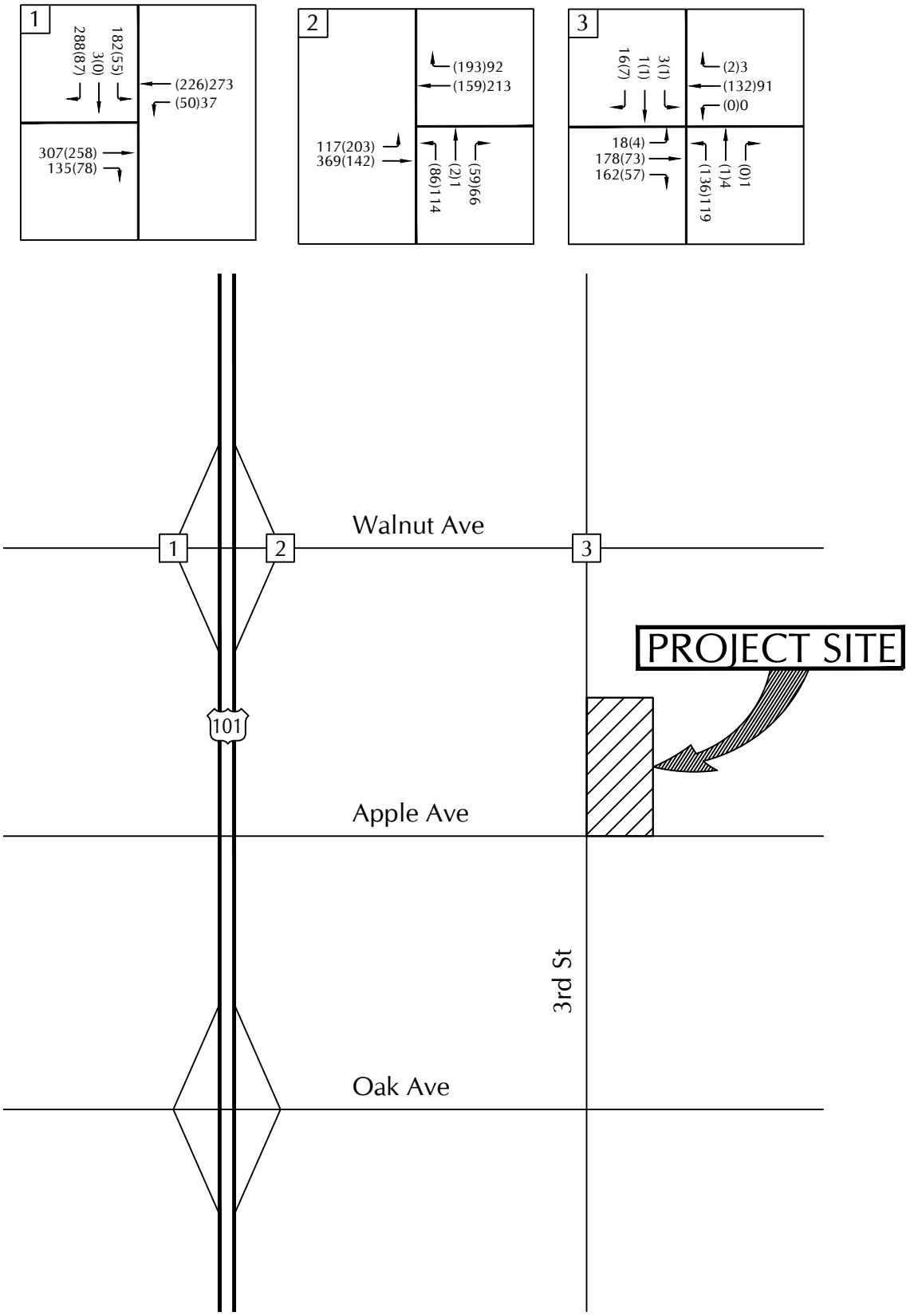
LOS based on average delay per vehicle in seconds pursuant to HCM.

Table 5
Existing + Project Levels of Service – PM Peak Hour

Intersection	Delay / LOS		Project Added	
	Existing	Existing + Project	Trips	Exceed LOS D Standard?
Walnut Avenue/US 101 SB Ramps	16.9 Sec./LOS C	17.4 Sec./LOS C	17	No
Walnut Avenue/US 101 NB Ramps	15.5 Sec./LOS C	16.1 Sec./LOS C	20	No
Walnut Avenue/3rd Street	11.7 Sec./LOS B	11.8 Sec./LOS B	20	No

LOS based on average delay per vehicle in seconds pursuant to HCM.

As shown in Tables 4 and 5, the study-area intersections are forecast to continue to operate at LOS B during the AM peak hour and LOS B-C during the PM peak hour with Existing + Project traffic – which meet the City's LOS D operating standard. Thus, the Project would be consistent with the City's adopted level of service standards.



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EXISTING + PROJECT TRAFFIC VOLUMES

FIGURE 6

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CUMULATIVE ANALYSIS

Traffic Forecasts

Cumulative conditions were forecast assuming traffic generated by the approved and pending development projects located in the Project study-area (see Technical Appendix for list of cumulative projects). Trip generation estimates were developed for cumulative projects using the rates presented in the ITE Trip Generation Manual (calculation worksheets contained in the Technical Appendix). The cumulative traffic was then assigned to the study-area street network based on the location of each project, existing traffic patterns observed in the study-area as well as a general knowledge of the population, employment, and commercial centers in area. Cumulative traffic forecasts are shown in Figure 7 and Cumulative + Project forecasts are shown in Figure 8.

Cumulative Intersection Operations

Tables 6 and 7 compare the Cumulative and Cumulative + Project levels of service for the study-area intersections and identify locations that are forecast to exceed the City's LOS D standard.

Table 6
Cumulative + Project Levels of Service – AM Peak Hour

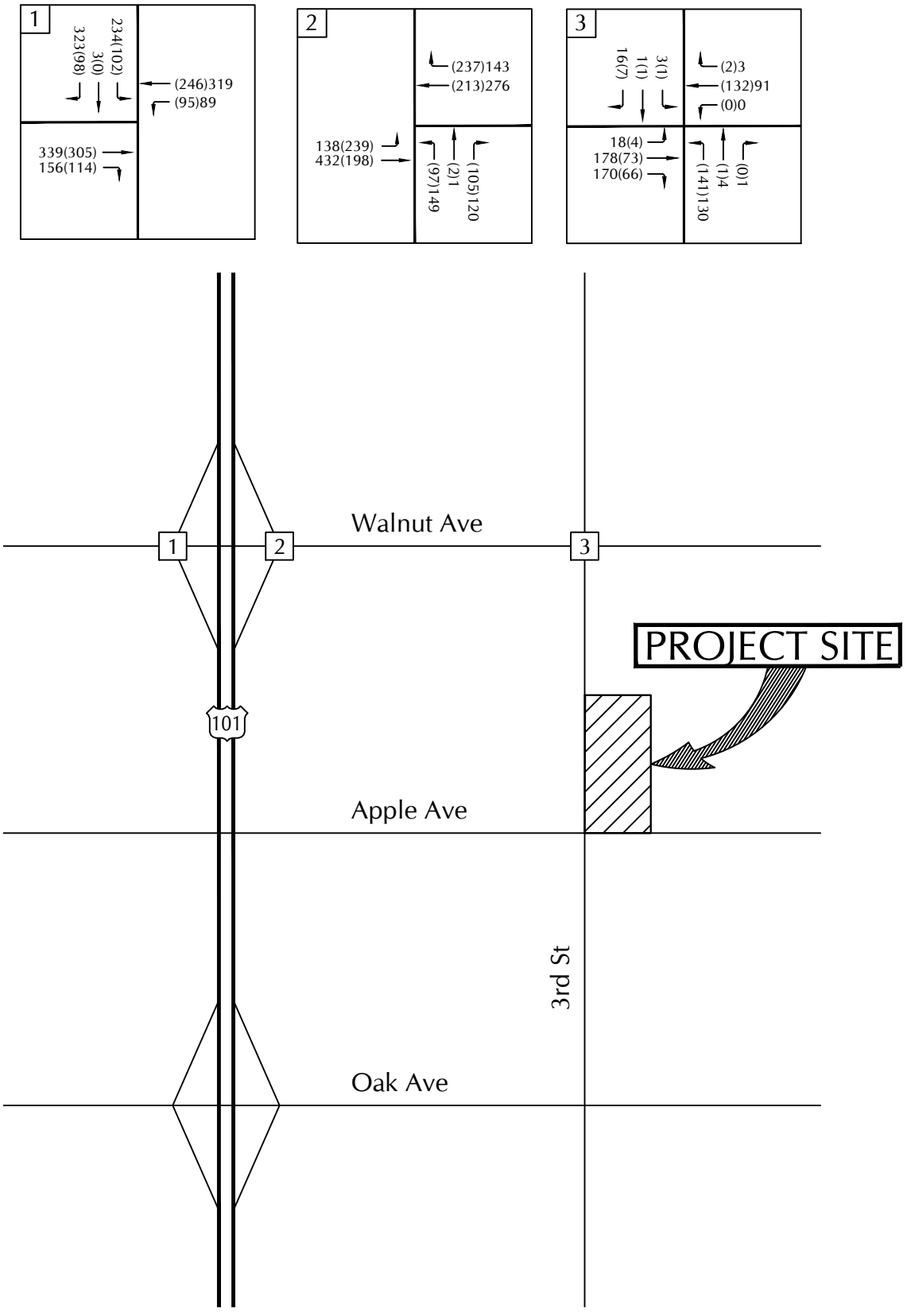
Intersection	Delay / LOS		Project Added	
	Cumulative	Cumulative + Project	Trips	Exceed LOS D Standard?
Walnut Avenue/US 101 SB Ramps	14.2 Sec./LOS B	14.5 Sec./LOS B	10	No
Walnut Avenue/US 101 NB Ramps	19.0 Sec./LOS C	19.7 Sec./LOS C	15	No
Walnut Avenue/3rd Street	13.7 Sec./LOS B	14.3 Sec./LOS B	15	No

LOS based on average delay per vehicle in seconds pursuant to HCM.

Table 7
Cumulative + Project Levels of Service – PM Peak Hour

Intersection	Delay / LOS		Project Added	
	Cumulative	Cumulative + Project	Trips	Exceed LOS D Standard?
Walnut Avenue/US 101 SB Ramps	28.2 Sec./LOS D	29.4 Sec./LOS D	17	No
Walnut Avenue/US 101 NB Ramps	31.0 Sec./LOS D	34.0 Sec./LOS D	20	No
Walnut Avenue/3rd Street	12.1 Sec./LOS B	12.3 Sec./LOS B	20	No

LOS based on average delay per vehicle in seconds pursuant to HCM.



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CUMULATIVE TRAFFIC VOLUMES

FIGURE 7

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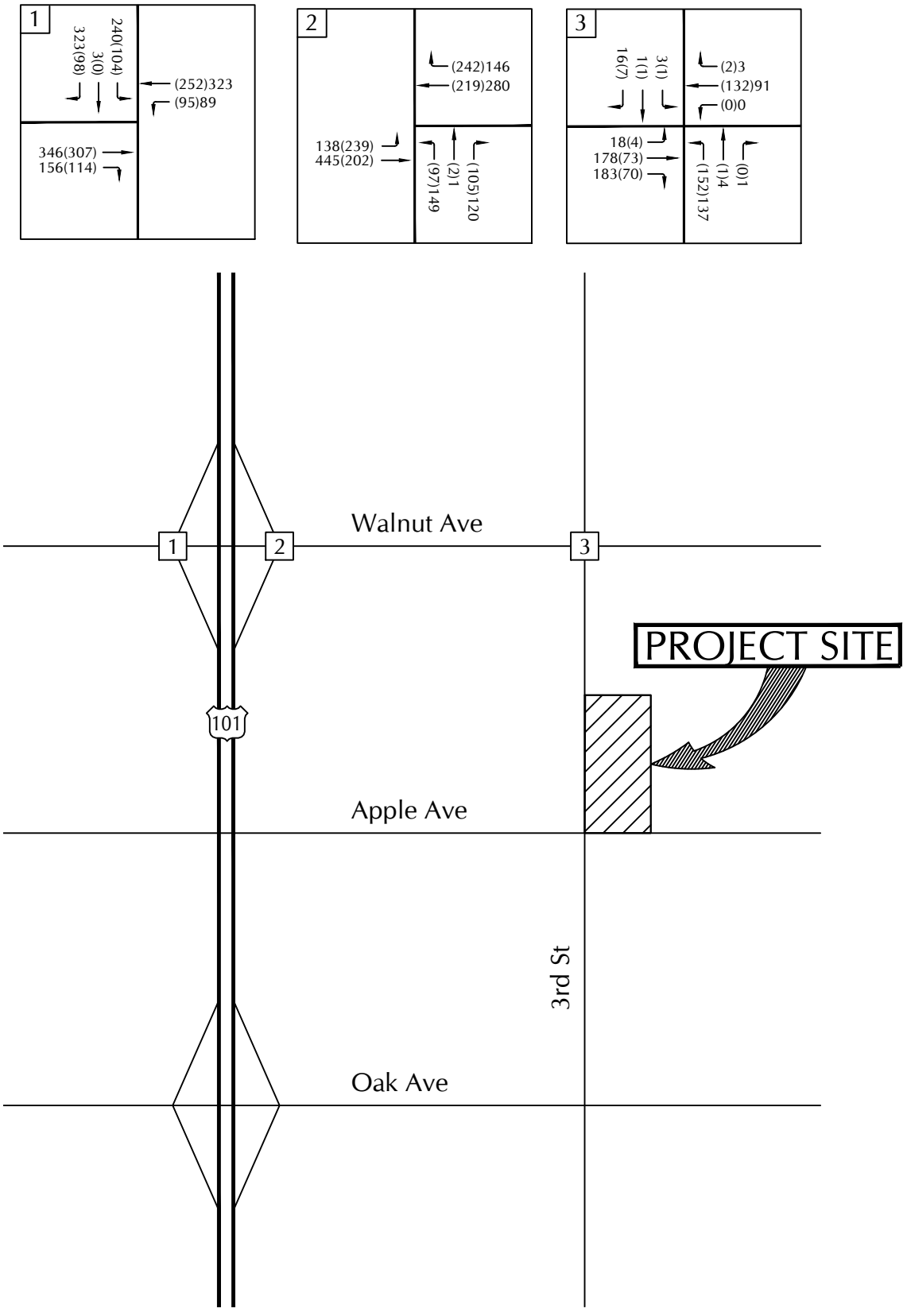

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CUMULATIVE + PROJECT TRAFFIC VOLUMES

FIGURE 8

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As shown in Tables 6 and 7, the study-area intersections are forecast to operate at LOS D or better during the AM and PM peak hours with Cumulative and Cumulative + Project traffic, which meets the City's LOS D standard. Thus, the Project would be consistent with the City's adopted level of service standards under cumulative conditions.

SITE ACCESS

Access to the Project site is proposed via one roadway connection to 3rd Street and one roadway connection to Apple Avenue (see Figure 2 – Project Site Plan). The new roadway connection to 3rd Street would serve the Project site and connects to the existing roadway that serves the residential neighborhood immediately east of the Project site. The new roadway connection to Apple Avenue would serve the Project site as well as connect to the new east-west roadway near the northern end of the Project site, thereby providing secondary access points for the neighborhood. The new connections on 3rd Street and Apple Avenue are located on segments that are relatively flat and straight, thus providing adequate sight distances for traffic entering and exiting the Project site. Based on the Project's traffic generation (see Table 2), the Project would generate relatively low traffic volumes (less than 40 per hours during the AM & PM peak periods) and the driveways are forecast to operate at LOS A-B.

GENERAL PLAN BUILDOUT

City staff requested an analysis of General Plan Buildout traffic conditions, including full development of the Walnut Avenue Commercial Area Specific Plan, in order to determine the effects of the 296 Apple Avenue Residential Project at the US 101/Walnut Avenue interchange.

The General Plan Buildout traffic forecasts contained in the Walnut Avenue Commercial Area Specific Plan Transportation Impact Study were used for the analysis.[3] The Walnut Avenue Specific Plan encompasses about 62.6 acres that is generally bounded by Cherry Avenue to the north, 3rd Street to the east, Apple Avenue to the south, and US 101 freeway to the west. The Specific Plan was developed and approved in order to change the existing zoning to allow for the Specific Plan's proposed lane uses. The City participated in the process by completing the Specific Plan and EIR documents, since the Regional Development Agency (RDA) bond funding was approved by City Council for constructing substantial offsite infrastructure improvements to Walnut Avenue and 3rd Street in order to support development of the Specific Plan.

As outlined in the planning documents, the Specific Plan area includes up to 445,000 SF of retail commercial floor space, a 130,270 SF neighborhood park, and 220 high-density residential dwelling units. The Specific Plan is anticipated to generate about 18,903 daily trips (after accounting for trip internalization/interaction between the commercial and residential portions). The Specific Plan commercial uses are forecast to attract a significant portion of trips from the US 101 mainline that are considered "diverted-linked" trips but will use the US 101/Walnut Avenue interchange. Regional freeway access to/from the SP site would be primarily obtained via the US 101/Walnut Avenue interchange and the US

[3] Walnut Avenue Commercial Area Specific Plan Transportation Impact Study, Wood Rodgers, 2013.

101/Oak Avenue interchange. Local access for the Specific Plan would primarily be obtained from Walnut Avenue, 3rd Street, and Apple Avenue.

With the proposed SP project anticipated to begin and complete its first development phase by Year 2015, Year 2035 was regarded as a reasonable 20-year future planning horizon for Specific Plan traffic analysis. Table 8 lists the Year 2035 levels of service (full buildout of the City's General Plan plus full buildout of the Specific Plan) for the key intersections identified for analysis for the 296 Apple Avenue Residential Project. These level of service forecasts include the improvements that were planned under the Specific Plan (i.e., reconstruction of the US 101/Walnut Avenue interchange with signalized intersections and additional lanes at the Walnut Avenue/3rd Street intersection).

Table 8
Year 2035 Levels of Service

Intersection	Control	AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS
Walnut Avenue/US 101 SB Ramps	Signal	16.8 Sec.	LOS B	22.5 Sec.	LOS C
Walnut Avenue/US 101 NB Ramps	Signal	12.3 Sec.	LOS B	16.5 Sec.	LOS B
Walnut Avenue/3rd Street	Signal	43.0 Sec.	LOS D	44.8 Sec.	LOS D

Source: Walnut Avenue Commercial Area Specific Plan Transportation Impact Study. Levels of service assumed planned improvements.

As shown in Table 8, the US 101/Walnut Avenue interchange is forecast to operate at LOS B during the AM peak hour and LOS B-C during the PM peak hour with Year 2035 traffic. The Walnut Avenue/3rd street intersection is forecast to operate at LOS D during the AM and PM peak hours with Year 2035 traffic. These levels of service meet the City's LOS D operating standard.

Since the 2035 forecasts include full buildout of the City's General Plan, they include development of the 296 Apple Avenue Residential Project site. The preceding analyses found that the 296 Apple Avenue Residential Project would have a minor effect on vehicle delays and would not change the levels of service at the US 101/Walnut Avenue interchange (see Tables 4 and 5).

As noted in the traffic study prepared for the Walnut Avenue Commercial Area Specific Plan, Caltrans was supportive of the all-way stop controls at the tightly-spaced ramp terminal intersections which are now in place at the US 101/Walnut Avenue interchange – and currently operate at LOS B during the AM peak period and LOS B-C during the PM peak period. The Walnut Avenue Commercial Area Specific Plan also forecast that the interim improvements would adequately accommodate traffic demands for at least 10 years from the start of the land developments within the Specific Plan based on proposed phasing of the Specific Plan. At this time, very little development has occurred within the Specific Plan area.

Ultimately, the interchange will need to be upgraded with the preferred alternative configuration developed through the Caltrans planning processes. Caltrans previously prepared a Project Study Report (PSR) and Project Report (PR) for the interchange improvements. The Caltrans planning studies found that a 5-lane overcrossing with traffic signal controlling the on- and off-ramp intersections would be required to accommodate the future traffic generated by full buildout of the City's General Plan plus full buildout of the Specific Plan. The City's 20-year Traffic Improvement Fee Program (TIFP) includes the costs of the future interchange improvements, which the 296 Apple Avenue Residential Project would be required to contribute to in order to offset its incremental impact to the interchange.

VEHICLE MILES TRAVELED ANALYSIS

Recent legislation, Senate Bill 743, is moving away from the Level of Service (LOS) metric to a Vehicle Miles Travelled (VMT) metric to evaluate whether a project results in a significant traffic impact. Cities and counties were required to implement Senate Bill 743 by July 1, 2020. It is anticipated that LOS will still remain as a policy consistency issue for the City, though not as an impact metric under CEQA environmental review.

Per the State's Natural Resource Agency Updated Guidelines for the Implementation of the CEQA adopted in 2018, VMT has been designated as the most appropriate measure of transportation impacts. VMT refers to the amount and distance of automobile travel attributable to a project. Other relevant considerations may include the effects of the project on transit and non-motorized travel. For land use projects, vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. The City has not yet adopted VMT thresholds of significance.

CEQA Guidelines. The California Governor's Office of Planning and Research (OPR) published a Technical Advisory on Transportation that includes recommendations regarding assessment of VMT, thresholds of significance, and mitigation measures. The Technical Advisory provides screening tools to determine when a project may have a significant VMT impact, as follows:

> "Many agencies use "screening thresholds" to quickly identify when a project should be expected to cause a less-than-significant impact without conducting a detailed study. (See e.g., CEQA Guidelines, §§ 15063(c)(3)(C), 15128, and Appendix G.) As explained below, this technical advisory suggests that lead agencies may screen out VMT impacts using project size, maps, transit availability, and provision of affordable housing.
>
> *Presumption of Less Than Significant Impact for Affordable Residential Development*
>
> Adding affordable housing to infill locations generally improves jobs-housing match, in turn shortening commutes and reducing VMT. Further, "… low-wage workers in particular would be more likely to choose a residential location close to their workplace, if one is available." In areas where existing jobs-housing match is closer to optimal, low income housing nevertheless generates less VMT than market-rate

housing. Therefore, a project consisting of a high percentage of affordable housing may be a basis for the lead agency to find a less-than-significant impact on VMT. Evidence supports a presumption of less than significant impact for a 100% affordable residential development (or the residential component of a mixed-use development) in infill locations. Lead agencies may develop their own presumption of less than significant impact for residential projects (or residential portions of mixed-use projects) containing a particular amount of affordable housing, based on local circumstances and evidence. Furthermore, a project which includes any affordable residential units may factor the effect of the affordability on VMT into the assessment of VMT generated by those units."

The OPR Technical Advisory states that affordable housing generates lower VMT than market rate housing. Affordable housing units are homes that are set aside for very low income and low income households. Providing affordable housing in infill areas can shorten commutes by providing housing closer to where people work, thereby reducing the amount of travel in the area. Thus, OPR presumes that affordable housing units have a less than significant impact on VMT, absent substantial evidence to the contrary, and do not require further VMT analysis. The City may apply screening to projects containing all (100 percent) affordable housing units. If a project contains affordable housing along with other land uses, the non-affordable housing uses need to meet at least one of the other screening criteria presented in this chapter to avoid further VMT analysis.

All of the Project's residential units would be affordable. Thus, the Project would be eligible for a finding of less than significant based on the adopted State thresholds.

RECOMMENDED IMPROVEMENTS

The traffic analysis found that the study-area intersections are forecast to operate in the LOS B-C range with Existing + Project and Cumulative + Project traffic. Thus, improvements to the study-area street network are not required since the forecasts meet the City's LOS D standard. The 296 Apple Avenue Residential Project would be required to contribute to the City's Traffic Improvement Fee Program (TIFP) to offset its incremental impact to the City's street network, including the improvements programmed for the US 101/Walnut Avenue interchange.

● ● ●

REFERENCES AND PERSONS CONTACTED

Associated Transportation Engineers

Richard L. Pool, PE, President
Scott A. Schell, Principal Transportation Planner
Dan Dawson, Supervising Transportation Planner
Glenn Manaois, Traffic Engineer I

References

Highway Capacity Manual, Transportation Research Board, 2016.

Highway Design Manual, Chapter 400, California Department of Transportation, Updated July 2020.

Trip Generation, Institute of Transportation Engineers, 10th Edition, 2017.

Walnut Avenue Commercial Area Specific Plan Transportation Impact Study, Wood Rodgers, 2013.

Persons Contacted

Doug Pike, City of Greenfield (Contract Engineer)
Sheryl Flores, People's Self Help Housing
Shaveta Sharma, People's Self Help Housing

TECHNICAL APPENDIX

CONTENTS:

LEVEL OF SERVICE DEFINITIONS

Signalized Intersection Level of Service Definitions

LOS	Delay[a]	V/C Ratio	Definition
A	< 10.0	< 0.60	Progression is extremely favorable. Most vehicles arrive during the green phase. Many vehicles do not stop at all.
B	10.1 - 20.0	0.61 - 0.70	Good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of delay.
C	20.1 - 35.0	0.71 - 0.80	Only fair progression, longer cycle lengths, or both, result in higher cycle lengths. Cycle lengths may fail to serve queued vehicles, and overflow occurs. Number of vehicles stopped is significant, though many still pass through intersection without stopping.
D	35.1 - 55.0	0.81 - 0.90	Congestion becomes more noticeable. Unfavorable progression, long cycle lengths and high v/c ratios result in longer delays. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	55.1 - 80.0	0.91 - 1.00	High delay values indicate poor progression, long cycle lengths and high v/c ratios. Individual cycle failures are frequent
F	> 80.0	> 1.00	Considered unacceptable for most drivers, this level occurs when arrival flow rates exceed the capacity of lane groups, resulting in many individual cycle failures. Poor progression and long cycle lengths may also contribute to high delay levels.

[a] Average control delay per vehicle in seconds.

Unsignalized Intersection Level of Service Definitions

The HCM[1] uses *control delay* to determine the level of service at unsignalized intersections. Control delay is the difference between the travel time actually experienced at the control device and the travel time that would occur in the absence of the traffic control device. Control delay includes deceleration from free flow speed, queue move-up time, stopped delay and acceleration back to free flow speed.

LOS	Control Delay Seconds per Vehicle
A	< 10.0
B	10.1 - 15.0
C	15.1 - 25.0
D	25.1 - 35.0
E	35.1 - 50.0
F	> 50.0

[1] Highway Capacity Manual, National Research Board, 2000

INTERSECTION TURNING MOVEMENT COUNTS

Prepared by National Data & Surveying Services

US 101 SB Ramps & Walnut Ave

Peak Hour Turning Movement Count

ID: 21-080087-003
City: Greenfield

Day: Thursday
Date: 5/13/2021

PEAK HOURS

AM	07:15 AM - 08:15 AM
NOON	NONE
PM	04:15 PM - 05:15 PM

COUNT PERIODS

AM	6:00 AM - 09:00 AM
NOON	NONE
PM	4:00 PM - 06:00 PM

SOUTHBOUND — US 101 SB Ramps

AM	87	0	55	0	0	AM
NOON	0	0	0	0	0	NOON
PM	288	3	176	0	0	PM

EASTBOUND — Walnut Ave

AM	NOON	PM	
307	0	557	⇦
0	0	0	↩ 0
0	0	0	↱ 0
256	0	300	→ 0
78	0	135	↴ 0
AM	NOON	PM	

WESTBOUND — Walnut Ave

PM	NOON	AM	
0	0	0	↰ 0
269	0	220	← 0
37	0	50	↶ 0
0	0	0	↩ 0
476	0	311	⇨
PM	NOON	AM	

CONTROL

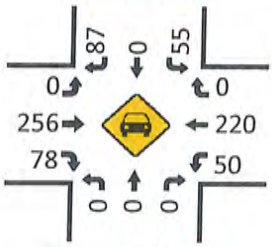
3-Way Stop(SB/EB/WB)

TEV	746 AM	0 NOON	1208 PM
PHF	0.92		0.92

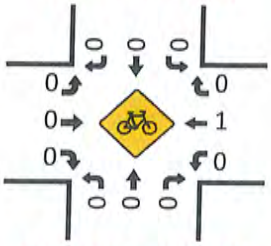
NORTHBOUND — US 101 SB Ramps

PM	175	0	0	0	0	PM
NOON	0	0	0	0	0	NOON
AM	128	0	0	0	0	AM

Totals (AM)



Total Bikes (AM)



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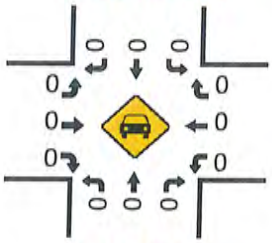

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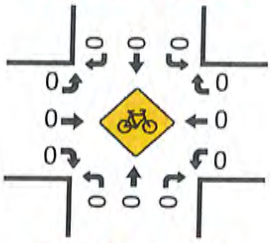

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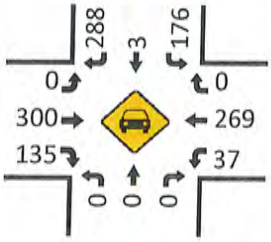
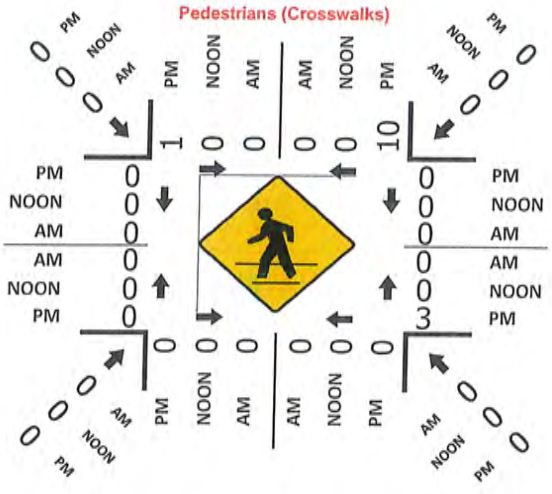
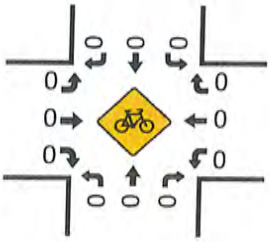


Pedestrians (Crosswalks)



Total Bikes (PM)



Prepared by National Data & Surveying Services

US 101 NB Ramps & Walnut Ave

Peak Hour Turning Movement Count

ID: 21-080087-002
City: Greenfield

Day: Thursday
Date: 5/13/2021

	PEAK HOURS	COUNT PERIODS
AM	07:00 AM - 08:00 AM	6:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:00 PM - 05:00 PM	4:00 PM - 06:00 PM

CONTROL: 3-Way Stop(NB/EB/WB)

	AM	NOON	PM
TEV	829	0	952
PHF	0.90		0.94

SOUTHBOUND – US 101 NB Ramps

	Right	Thru	Left	U-Turn	Departing
AM	0	0	0	0	393
NOON	0	0	0	0	0
PM	0	0	0	0	207
Bikes	0	0	0	0	

EASTBOUND – Walnut Ave

	AM	NOON	PM	Bikes
Departing	239	0	323	
U-Turn	0	0	0	0
Left	203	0	117	0
Thru	138	0	356	0
Right	0	0	0	0

WESTBOUND – Walnut Ave

	PM	NOON	AM	Bikes
Left	89	0	188	0
Thru	209	0	153	0
Right	0	0	0	0
U-Turn	0	0	0	0
Departing	422	0	197	

NORTHBOUND – US 101 NB Ramps

	Departing	U-Turn	Left	Thru	Right
PM	0	0	114	1	66
NOON	0	0	0	0	0
AM	0	0	86	2	59
Bikes		0	0	0	0

Totals (AM)

SB: U 0, Left 0, Thru 0, Right 0
EB: Left 203, Thru 138, Right 0
WB: Left 188, Thru 153, Right 0
NB: Left 86, Thru 2, Right 59

Totals (NOON)

SB: 0, 0, 0, 0
EB: 0, 0, 0
WB: 0, 0, 0
NB: 0, 0, 0

Totals (PM)

SB: 0, 0, 0, 0
EB: Left 117, Thru 356, Right 0
WB: Left 89, Thru 209, Right 0
NB: Left 114, Thru 1, Right 66

Total Bikes (AM)

SB: 0, 0, 0
EB: Left 0, Thru 1, Right 0
WB: 0, 0, 0
NB: 0, 0, 0

Total Bikes (NOON)

SB: 0, 0, 0
EB: 0, 0, 0
WB: 0, 0, 0
NB: 0, 0, 0

Total Bikes (PM)

SB: 0, 0, 0
EB: 0, 0, 0
WB: 0, 0, 0
NB: 0, 0, 0

Pedestrians (Crosswalks)

Crosswalk	Direction	AM	NOON	PM
North	Eastbound	0	0	0
North	Westbound	0	0	1
West	Southbound	0	0	1
West	Northbound	0	0	8
East	Southbound	0	0	0
East	Northbound	0	0	0
South	Eastbound	0	0	2
South	Westbound	0	0	11
NW diagonal		0	0	0
NE diagonal		0	0	0
SW diagonal		0	0	0
SE diagonal		0	0	0

Prepared by National Data & Surveying Services

3rd St & Walnut Ave

Peak Hour Turning Movement Count

ID: 21-080087-001
City: Greenfield

Day: Thursday
Date: 5/13/2021

PEAK HOURS
07:15 AM - 08:15 AM
NONE
04:00 PM - 05:00 PM

COUNT PERIODS
6:00 AM - 09:00 AM
NONE
4:00 PM - 06:00 PM

SOUTHBOUND (3rd St)

AM	7	1	1	0	7	AM
NOON	0	0	0	0	0	NOON
PM	16	1	3	0	25	PM

EASTBOUND (Walnut Ave)

AM	NOON	PM	
264	0	219	⇦
0	0	0	↶ 0
4	0	18	↱ 0
73	0	178	→ 0
53	0	149	↳ 0

WESTBOUND (Walnut Ave)

PM	NOON	AM	
3	0	2	0 ↱
91	0	132	0 ←
0	0	0	0 ↰
0	0	0	0 ↶
182	0	74	⇨

NORTHBOUND (3rd St)

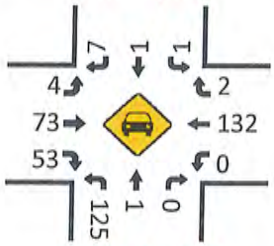
PM	150	0	112	4	1	PM
NOON	0	0	0	0	0	NOON
AM	54	0	125	1	0	AM

CONTROL

Signalized

TEV	399 AM	0 NOON	576 PM
PHF	0.94		0.95

Totals (AM)



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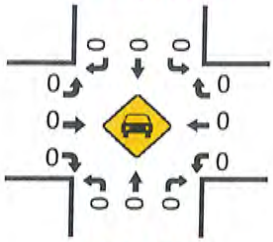
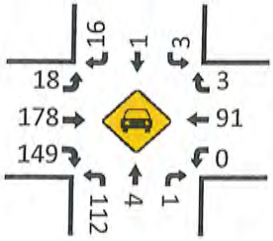
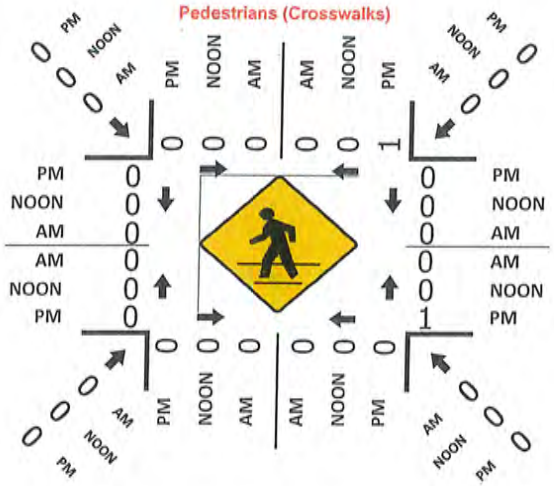


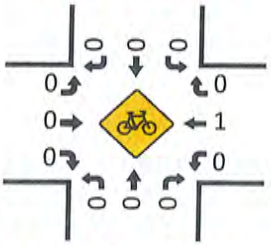
Totals (PM)



Pedestrians (Crosswalks)



Total Bikes (AM)



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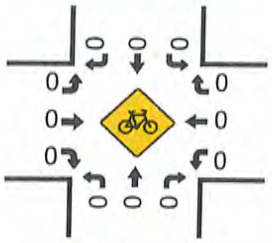
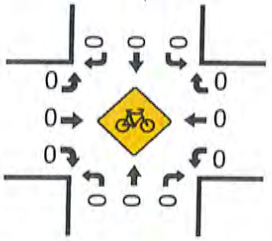


Total Bikes (PM)



CUMULATIVE PROJECT INFORMATION

City of Greenfield

Permit Report

5/1/2019 - 5/1/2021

Permit Date	Project Description Summary	Primary Applicant	Applicant Email	Project Type	Parcel #	Parcel Address
3/22/2021	CUP - MD FARMS	Applicant	ALLEN@MDFARMS.ORG	Commercial Cannabis	109521040000	36 FOURTH ST
3/4/2021	Sign Permit for Cricket Wireless	Designer	ruben66@yahoo.com		024103022000	23 S EL CAMINO REAL
3/1/2021	Pre-Application for 37 SFH				109082013000	296 APPLE AVE
1/21/2021	Element 7 Greenfield LLC		robert@e7ca.com	Commercial Cannabis	109131009000	40597 CHERRY AVE
11/30/2020	Walnut Travel Center	Applicant	pali2200@yahoo.com	New Gas station	109114003000	Walnut Ave-The Vines
11/16/2020	CUP for Regulatory Permit Application			Commercial Cannabis	109144007000	710 EL CAMINO REAL
10/19/2020	Walnut Grove Apartments Phase I			New multi-family project	109171005000	1064 WALNUT AVE
8/6/2019	DEPOSIT ACCOUNT-818 Tyler Townhomes	Property Owner	eric@ldtrealty.com	Mullt-family residential	024281037000	818 Tyler Avenue
5/1/2020	Design Review/New SFD on vacant lot zoned R-L	Applicant	coatsconsulting@gmail.com	Five lot SFR subdivions	024072005000	OAK TERRACE-LOT 2
3/20/2020	Avila Farmworker Housing		Mike@avilaconst.com	Mullt-family residential	109113003000	525 3rd st
2/26/2020	Mira Monte Subdivision	Property Owner	deborahrich@comcast.net		109232001000	39653 13TH ST
7/12/2019	Develope Mixed Use Project Commercial/Residential	Architect	david@djelliott.net		024151011000	4th & Palm Avenue
2/12/2020	Walnut Grove Apartments-143 unit multi-family residential project Phase II and III	Applicant	jlingo@icdemail.com	Mullt-family residential	109171005000	1064 WALNUT AVE

Associated Transportation Engineers
Approved Projects - Trip Generation Worksheet

SKYWAY BUSINESS PARK PROJECT - APPROVED PROJECT LIST (#21041)															
Project # / Land Use		Size		AM Peak						PM Peak					
				Rate	Trips	In %	Trips	Out %	Trips	Rate	Trips	In %	Trips	Out %	Trips
2	SIGN PERMIT(a)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3	296 Apple Avenue(b)	37	SFDU	0.74	27	25%	7	75%	20	0.99	37	63%	23	37%	14
5	Walnut Travel Center(c)	3,000	SF	75.99	228	51%	116	12%	112	88.35	265	51%	135	49%	130
7	Walnut Grove Apartments - Phase I(d)	143	MFDU	0.46	66	23%	15	77%	51	0.56	80	63%	50	37%	30
9	Oak View Terrace Lot 2(b)	5	SFDU	0.74	4	25%	1	75%	3	0.99	5	63%	3	37%	2
10	525 3rd Street - Farm Workers Housing(d)	112	MFDU	0.46	52	23%	12	77%	40	0.56	63	63%	40	37%	23
13	Walnut Grove Apartments - Phase II & III(d)	143	MFDU	0.46	66	23%	15	77%	51	0.56	80	63%	50	37%	30

(a) Application for new signs. No new day-to-day traffic.

(b) Trip generation rate derived from ITE Trip Generation Manual - Single-Family Detached Housing (ITE #210).

(c) Trip generation rate derived from ITE Trip Generation Manual - Gasoline/Service Statioin with Convenience Market (ITE #945).

(d) Trip generation rate derived from ITE Trip Generation Manual - Multifamily Housing (Low Rise) (ITE #220).

INTERSECTION LEVEL OF SERVICE CALCULATION WORKSHEETS

Reference 1 - US 101 SB Ramps/Walnut Avenue
Reference 2 - US 101 NB Ramps/Walnut Avenue
Reference 3 - 3rd Street/Walnut Avenue

Intersection	
Intersection Delay, s/veh	11.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱		↰↑						↰↑	↱
Traffic Vol, veh/h	0	256	78	50	220	0	0	0	0	55	0	87
Future Vol, veh/h	0	256	78	50	220	0	0	0	0	55	0	87
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	0	278	85	54	239	0	0	0	0	60	0	95
Number of Lanes	0	1	1	0	1	0	0	0	0	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	2	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	2
HCM Control Delay	10.7	12.7	9.5
HCM LOS	B	B	A

Lane	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	0%	19%	100%	0%
Vol Thru, %	100%	0%	81%	0%	0%
Vol Right, %	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	256	78	270	55	87
LT Vol	0	0	50	55	0
Through Vol	256	0	220	0	0
RT Vol	0	78	0	0	87
Lane Flow Rate	278	85	293	60	95
Geometry Grp	7	7	6	7	7
Degree of Util (X)	0.406	0.107	0.441	0.11	0.142
Departure Headway (Hd)	5.256	4.55	5.409	6.612	5.398
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	682	782	663	539	658
Service Time	3.021	2.315	3.476	4.395	3.181
HCM Lane V/C Ratio	0.408	0.109	0.442	0.111	0.144
HCM Control Delay	11.6	7.9	12.7	10.2	9.1
HCM Lane LOS	B	A	B	B	A
HCM 95th-tile Q	2	0.4	2.3	0.4	0.5

Intersection	
Intersection Delay, s/veh	11.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱		↰↑						↰	↱
Traffic Vol, veh/h	0	258	78	50	226	0	0	0	0	57	0	87
Future Vol, veh/h	0	258	78	50	226	0	0	0	0	57	0	87
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	0	280	85	54	246	0	0	0	0	62	0	95
Number of Lanes	0	1	1	0	1	0	0	0	0	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	2	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	2
HCM Control Delay	10.8	12.9	9.6
HCM LOS	B	B	A

Lane	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	0%	18%	100%	0%
Vol Thru, %	100%	0%	82%	0%	0%
Vol Right, %	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	258	78	276	57	87
LT Vol	0	0	50	57	0
Through Vol	258	0	226	0	0
RT Vol	0	78	0	0	87
Lane Flow Rate	280	85	300	62	95
Geometry Grp	7	7	6	7	7
Degree of Util (X)	0.411	0.108	0.452	0.114	0.142
Departure Headway (Hd)	5.273	4.568	5.421	6.633	5.419
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	679	778	660	537	655
Service Time	3.037	2.331	3.488	4.422	3.207
HCM Lane V/C Ratio	0.412	0.109	0.455	0.115	0.145
HCM Control Delay	11.7	7.9	12.9	10.3	9.1
HCM Lane LOS	B	A	B	B	A
HCM 95th-tile Q	2	0.4	2.4	0.4	0.5

Intersection	
Intersection Delay, s/veh	14.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱		↰↑						↰↑	↱
Traffic Vol, veh/h	0	305	114	95	246	0	0	0	0	102	0	98
Future Vol, veh/h	0	305	114	95	246	0	0	0	0	102	0	98
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	0	332	124	103	267	0	0	0	0	111	0	107
Number of Lanes	0	1	1	0	1	0	0	0	0	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	2	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	2
HCM Control Delay	13	17.5	10.9
HCM LOS	B	C	B

Lane	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	0%	28%	100%	0%
Vol Thru, %	100%	0%	72%	0%	0%
Vol Right, %	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	305	114	341	102	98
LT Vol	0	0	95	102	0
Through Vol	305	0	246	0	0
RT Vol	0	114	0	0	98
Lane Flow Rate	332	124	371	111	107
Geometry Grp	7	7	6	7	7
Degree of Util (X)	0.526	0.172	0.604	0.22	0.176
Departure Headway (Hd)	5.711	5.003	5.87	7.159	5.939
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	633	717	615	502	604
Service Time	3.439	2.73	3.897	4.897	3.676
HCM Lane V/C Ratio	0.524	0.173	0.603	0.221	0.177
HCM Control Delay	14.6	8.8	17.5	11.9	9.9
HCM Lane LOS	B	A	C	B	A
HCM 95th-tile Q	3.1	0.6	4	0.8	0.6

Intersection	
Intersection Delay, s/veh	14.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱		↰↑						↰↑	↱
Traffic Vol, veh/h	0	307	114	95	252	0	0	0	0	104	0	98
Future Vol, veh/h	0	307	114	95	252	0	0	0	0	104	0	98
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	0	334	124	103	274	0	0	0	0	113	0	107
Number of Lanes	0	1	1	0	1	0	0	0	0	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	2	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	2
HCM Control Delay	13.2	18	11
HCM LOS	B	C	B

Lane	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	0%	27%	100%	0%
Vol Thru, %	100%	0%	73%	0%	0%
Vol Right, %	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	307	114	347	104	98
LT Vol	0	0	95	104	0
Through Vol	307	0	252	0	0
RT Vol	0	114	0	0	98
Lane Flow Rate	334	124	377	113	107
Geometry Grp	7	7	6	7	7
Degree of Util (X)	0.531	0.173	0.617	0.226	0.177
Departure Headway (Hd)	5.733	5.024	5.885	7.186	5.965
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	631	714	615	500	601
Service Time	3.464	2.754	3.914	4.924	3.703
HCM Lane V/C Ratio	0.529	0.174	0.613	0.226	0.178
HCM Control Delay	14.8	8.8	18	12	10
HCM Lane LOS	B	A	C	B	A
HCM 95th-tile Q	3.1	0.6	4.2	0.9	0.6

Intersection	
Intersection Delay, s/veh	16.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱		↰↑						↰↑	↱
Traffic Vol, veh/h	0	300	135	37	269	0	0	0	0	176	3	288
Future Vol, veh/h	0	300	135	37	269	0	0	0	0	176	3	288
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	0	326	147	40	292	0	0	0	0	191	3	313
Number of Lanes	0	1	1	0	1	0	0	0	0	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	2	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	2
HCM Control Delay	16.3	20.2	15.3
HCM LOS	C	C	C

Lane	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	0%	12%	98%	0%
Vol Thru, %	100%	0%	88%	2%	0%
Vol Right, %	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	300	135	306	179	288
LT Vol	0	0	37	176	0
Through Vol	300	0	269	3	0
RT Vol	0	135	0	0	288
Lane Flow Rate	326	147	333	195	313
Geometry Grp	7	7	6	7	7
Degree of Util (X)	0.6	0.241	0.62	0.395	0.53
Departure Headway (Hd)	6.625	5.911	6.713	7.306	6.093
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	541	605	536	490	589
Service Time	4.394	3.68	4.779	5.074	3.86
HCM Lane V/C Ratio	0.603	0.243	0.621	0.398	0.531
HCM Control Delay	18.9	10.6	20.2	14.8	15.6
HCM Lane LOS	C	B	C	B	C
HCM 95th-tile Q	3.9	0.9	4.2	1.9	3.1

Intersection	
Intersection Delay, s/veh	17.4
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱		↰↑						↰↑	↱
Traffic Vol, veh/h	0	307	135	37	273	0	0	0	0	182	3	288
Future Vol, veh/h	0	307	135	37	273	0	0	0	0	182	3	288
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	0	334	147	40	297	0	0	0	0	198	3	313
Number of Lanes	0	1	1	0	1	0	0	0	0	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	2	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	2
HCM Control Delay	16.9	20.8	15.6
HCM LOS	C	C	C

Lane	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	0%	12%	98%	0%
Vol Thru, %	100%	0%	88%	2%	0%
Vol Right, %	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	307	135	310	185	288
LT Vol	0	0	37	182	0
Through Vol	307	0	273	3	0
RT Vol	0	135	0	0	288
Lane Flow Rate	334	147	337	201	313
Geometry Grp	7	7	6	7	7
Degree of Util (X)	0.617	0.242	0.632	0.41	0.533
Departure Headway (Hd)	6.66	5.946	6.747	7.344	6.13
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	541	600	532	489	585
Service Time	4.431	3.717	4.814	5.114	3.899
HCM Lane V/C Ratio	0.617	0.245	0.633	0.411	0.535
HCM Control Delay	19.7	10.6	20.8	15.2	15.8
HCM Lane LOS	C	B	C	C	C
HCM 95th-tile Q	4.2	0.9	4.4	2	3.1

Intersection	
Intersection Delay, s/veh	28.2
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱		↰↑						↰↑	↱
Traffic Vol, veh/h	0	339	156	89	319	0	0	0	0	234	3	323
Future Vol, veh/h	0	339	156	89	319	0	0	0	0	234	3	323
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	0	368	170	97	347	0	0	0	0	254	3	351
Number of Lanes	0	1	1	0	1	0	0	0	0	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	2	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	2
HCM Control Delay	23.7	43.7	21
HCM LOS	C	E	C

Lane	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	0%	22%	99%	0%
Vol Thru, %	100%	0%	78%	1%	0%
Vol Right, %	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	339	156	408	237	323
LT Vol	0	0	89	234	0
Through Vol	339	0	319	3	0
RT Vol	0	156	0	0	323
Lane Flow Rate	368	170	443	258	351
Geometry Grp	7	7	6	7	7
Degree of Util (X)	0.75	0.311	0.882	0.569	0.656
Departure Headway (Hd)	7.327	6.607	7.273	7.956	6.731
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	494	546	501	456	541
Service Time	5.047	4.328	5.273	5.656	4.431
HCM Lane V/C Ratio	0.745	0.311	0.884	0.566	0.649
HCM Control Delay	28.9	12.3	43.7	20.6	21.3
HCM Lane LOS	D	B	E	C	C
HCM 95th-tile Q	6.4	1.3	9.7	3.5	4.7

Intersection	
Intersection Delay, s/veh	29.4
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱		↰						↰	↱
Traffic Vol, veh/h	0	346	156	89	323	0	0	0	0	240	3	323
Future Vol, veh/h	0	346	156	89	323	0	0	0	0	240	3	323
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	0	376	170	97	351	0	0	0	0	261	3	351
Number of Lanes	0	1	1	0	1	0	0	0	0	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	2	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	2
HCM Control Delay	24.9	45.9	21.5
HCM LOS	C	E	C

Lane	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	0%	22%	99%	0%
Vol Thru, %	100%	0%	78%	1%	0%
Vol Right, %	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	346	156	412	243	323
LT Vol	0	0	89	240	0
Through Vol	346	0	323	3	0
RT Vol	0	156	0	0	323
Lane Flow Rate	376	170	448	264	351
Geometry Grp	7	7	6	7	7
Degree of Util (X)	0.769	0.313	0.895	0.586	0.66
Departure Headway (Hd)	7.363	6.643	7.307	7.993	6.768
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	493	543	502	454	537
Service Time	5.083	4.363	5.307	5.693	4.468
HCM Lane V/C Ratio	0.763	0.313	0.892	0.581	0.654
HCM Control Delay	30.6	12.4	45.9	21.4	21.6
HCM Lane LOS	D	B	E	C	C
HCM 95th-tile Q	6.8	1.3	10	3.7	4.8

Intersection	
Intersection Delay, s/veh	12.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	203	138	0	0	153	188	86	2	59	0	0	0
Future Vol, veh/h	203	138	0	0	153	188	86	2	59	0	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	226	153	0	0	170	209	96	2	66	0	0	0
Number of Lanes	0	1	0	0	1	0	0	1	1	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	1
HCM Control Delay	13.4	11.8	10.3
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1
Vol Left, %	98%	0%	60%	0%
Vol Thru, %	2%	0%	40%	45%
Vol Right, %	0%	100%	0%	55%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	88	59	341	341
LT Vol	86	0	203	0
Through Vol	2	0	138	153
RT Vol	0	59	0	188
Lane Flow Rate	98	66	379	379
Geometry Grp	7	7	2	2
Degree of Util (X)	0.185	0.102	0.521	0.478
Departure Headway (Hd)	6.821	5.614	4.95	4.54
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	529	642	720	784
Service Time	4.521	3.314	3.033	2.62
HCM Lane V/C Ratio	0.185	0.103	0.526	0.483
HCM Control Delay	11.1	9	13.4	11.8
HCM Lane LOS	B	A	B	B
HCM 95th-tile Q	0.7	0.3	3	2.6

Intersection	
Intersection Delay, s/veh	12.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	203	142	0	0	159	193	86	2	59	0	0	0
Future Vol, veh/h	203	142	0	0	159	193	86	2	59	0	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	226	158	0	0	177	214	96	2	66	0	0	0
Number of Lanes	0	1	0	0	1	0	0	1	1	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	1
HCM Control Delay	13.6	12.1	10.3
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1
Vol Left, %	98%	0%	59%	0%
Vol Thru, %	2%	0%	41%	45%
Vol Right, %	0%	100%	0%	55%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	88	59	345	352
LT Vol	86	0	203	0
Through Vol	2	0	142	159
RT Vol	0	59	0	193
Lane Flow Rate	98	66	383	391
Geometry Grp	7	7	2	2
Degree of Util (X)	0.186	0.103	0.529	0.495
Departure Headway (Hd)	6.862	5.654	4.965	4.552
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	526	638	717	782
Service Time	4.562	3.354	3.051	2.633
HCM Lane V/C Ratio	0.186	0.103	0.534	0.5
HCM Control Delay	11.1	9	13.6	12.1
HCM Lane LOS	B	A	B	B
HCM 95th-tile Q	0.7	0.3	3.1	2.8

Intersection	
Intersection Delay, s/veh	19
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	239	198	0	0	213	237	97	2	105	0	0	0
Future Vol, veh/h	239	198	0	0	213	237	97	2	105	0	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	266	220	0	0	237	263	108	2	117	0	0	0
Number of Lanes	0	1	0	0	1	0	0	1	1	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	1
HCM Control Delay	22.2	19.2	11.5
HCM LOS	C	C	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1
Vol Left, %	98%	0%	55%	0%
Vol Thru, %	2%	0%	45%	47%
Vol Right, %	0%	100%	0%	53%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	99	105	437	450
LT Vol	97	0	239	0
Through Vol	2	0	198	213
RT Vol	0	105	0	237
Lane Flow Rate	110	117	486	500
Geometry Grp	7	7	2	2
Degree of Util (X)	0.228	0.202	0.736	0.702
Departure Headway (Hd)	7.448	6.232	5.457	5.057
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	482	574	660	715
Service Time	5.204	3.988	3.5	3.103
HCM Lane V/C Ratio	0.228	0.204	0.736	0.699
HCM Control Delay	12.4	10.6	22.2	19.2
HCM Lane LOS	B	B	C	C
HCM 95th-tile Q	0.9	0.7	6.4	5.8

Intersection	
Intersection Delay, s/veh	19.7
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	239	202	0	0	219	242	97	2	105	0	0	0
Future Vol, veh/h	239	202	0	0	219	242	97	2	105	0	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	266	224	0	0	243	269	108	2	117	0	0	0
Number of Lanes	0	1	0	0	1	0	0	1	1	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	1
HCM Control Delay	22.9	20.2	11.5
HCM LOS	C	C	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1
Vol Left, %	98%	0%	54%	0%
Vol Thru, %	2%	0%	46%	48%
Vol Right, %	0%	100%	0%	52%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	99	105	441	461
LT Vol	97	0	239	0
Through Vol	2	0	202	219
RT Vol	0	105	0	242
Lane Flow Rate	110	117	490	512
Geometry Grp	7	7	2	2
Degree of Util (X)	0.229	0.203	0.745	0.722
Departure Headway (Hd)	7.488	6.272	5.477	5.071
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	479	571	661	712
Service Time	5.247	4.03	3.523	3.116
HCM Lane V/C Ratio	0.23	0.205	0.741	0.719
HCM Control Delay	12.5	10.6	22.9	20.2
HCM Lane LOS	B	B	C	C
HCM 95th-tile Q	0.9	0.8	6.6	6.2

Intersection	
Intersection Delay, s/veh	15.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	117	356	0	0	209	89	114	1	66	0	0	0
Future Vol, veh/h	117	356	0	0	209	89	114	1	66	0	0	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	124	379	0	0	222	95	121	1	70	0	0	0
Number of Lanes	0	1	0	0	1	0	0	1	1	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	1
HCM Control Delay	19.3	12.1	11
HCM LOS	C	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1
Vol Left, %	99%	0%	25%	0%
Vol Thru, %	1%	0%	75%	70%
Vol Right, %	0%	100%	0%	30%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	115	66	473	298
LT Vol	114	0	117	0
Through Vol	1	0	356	209
RT Vol	0	66	0	89
Lane Flow Rate	122	70	503	317
Geometry Grp	7	7	2	2
Degree of Util (X)	0.239	0.114	0.707	0.445
Departure Headway (Hd)	7.045	5.828	5.055	5.05
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	510	614	720	713
Service Time	4.785	3.568	3.055	3.08
HCM Lane V/C Ratio	0.239	0.114	0.699	0.445
HCM Control Delay	12	9.3	19.3	12.1
HCM Lane LOS	B	A	C	B
HCM 95th-tile Q	0.9	0.4	5.9	2.3

Intersection	
Intersection Delay, s/veh	16.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	117	369	0	0	213	92	114	1	66	0	0	0
Future Vol, veh/h	117	369	0	0	213	92	114	1	66	0	0	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	124	393	0	0	227	98	121	1	70	0	0	0
Number of Lanes	0	1	0	0	1	0	0	1	1	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	1
HCM Control Delay	20.4	12.3	11.1
HCM LOS	C	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1
Vol Left, %	99%	0%	24%	0%
Vol Thru, %	1%	0%	76%	70%
Vol Right, %	0%	100%	0%	30%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	115	66	486	305
LT Vol	114	0	117	0
Through Vol	1	0	369	213
RT Vol	0	66	0	92
Lane Flow Rate	122	70	517	324
Geometry Grp	7	7	2	2
Degree of Util (X)	0.241	0.115	0.728	0.457
Departure Headway (Hd)	7.094	5.877	5.071	5.073
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	506	609	719	711
Service Time	4.837	3.62	3.071	3.105
HCM Lane V/C Ratio	0.241	0.115	0.719	0.456
HCM Control Delay	12.1	9.4	20.4	12.3
HCM Lane LOS	B	A	C	B
HCM 95th-tile Q	0.9	0.4	6.4	2.4

Intersection	
Intersection Delay, s/veh	31
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	138	432	0	0	276	143	149	1	120	0	0	0
Future Vol, veh/h	138	432	0	0	276	143	149	1	120	0	0	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	147	460	0	0	294	152	159	1	128	0	0	0
Number of Lanes	0	1	0	0	1	0	0	1	1	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	1
HCM Control Delay	47.2	20.6	13.1
HCM LOS	E	C	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1
Vol Left, %	99%	0%	24%	0%
Vol Thru, %	1%	0%	76%	66%
Vol Right, %	0%	100%	0%	34%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	150	120	570	419
LT Vol	149	0	138	0
Through Vol	1	0	432	276
RT Vol	0	120	0	143
Lane Flow Rate	160	128	606	446
Geometry Grp	7	7	2	2
Degree of Util (X)	0.343	0.231	0.946	0.695
Departure Headway (Hd)	7.735	6.509	5.618	5.617
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	463	549	643	637
Service Time	5.515	4.288	3.682	3.689
HCM Lane V/C Ratio	0.346	0.233	0.942	0.7
HCM Control Delay	14.5	11.3	47.2	20.6
HCM Lane LOS	B	B	E	C
HCM 95th-tile Q	1.5	0.9	13	5.6

Intersection	
Intersection Delay, s/veh	34
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	138	445	0	0	280	146	149	1	120	0	0	0
Future Vol, veh/h	138	445	0	0	280	146	149	1	120	0	0	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	147	473	0	0	298	155	159	1	128	0	0	0
Number of Lanes	0	1	0	0	1	0	0	1	1	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	1
HCM Control Delay	52.7	21.5	13.2
HCM LOS	F	C	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1
Vol Left, %	99%	0%	24%	0%
Vol Thru, %	1%	0%	76%	66%
Vol Right, %	0%	100%	0%	34%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	150	120	583	426
LT Vol	149	0	138	0
Through Vol	1	0	445	280
RT Vol	0	120	0	146
Lane Flow Rate	160	128	620	453
Geometry Grp	7	7	2	2
Degree of Util (X)	0.345	0.233	0.972	0.711
Departure Headway (Hd)	7.788	6.562	5.64	5.649
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	460	544	639	634
Service Time	5.575	4.347	3.704	3.723
HCM Lane V/C Ratio	0.348	0.235	0.97	0.715
HCM Control Delay	14.7	11.4	52.7	21.5
HCM Lane LOS	B	B	F	C
HCM 95th-tile Q	1.5	0.9	14.1	5.9

EXISTING AM PEAK HOUR
3: 3RD STREET & WALNUT AVENUE

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	73	53	0	132	2	125	1	0	1	1	7
Future Volume (veh/h)	4	73	53	0	132	2	125	1	0	1	1	7
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	4	78	56	0	140	2	133	1	0	1	1	7
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	10	553	469	6	273	231	196	503	0	6	300	255
Arrive On Green	0.01	0.30	0.30	0.00	0.15	0.15	0.11	0.27	0.00	0.00	0.16	0.16
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	1870	0	1781	1870	1585
Grp Volume(v), veh/h	4	78	56	0	140	2	133	1	0	1	1	7
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	0	1781	1870	1585
Q Serve(g_s), s	0.1	1.0	0.8	0.0	2.2	0.0	2.2	0.0	0.0	0.0	0.0	0.1
Cycle Q Clear(g_c), s	0.1	1.0	0.8	0.0	2.2	0.0	2.2	0.0	0.0	0.0	0.0	0.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	10	553	469	6	273	231	196	503	0	6	300	255
V/C Ratio(X)	0.41	0.14	0.12	0.00	0.51	0.01	0.68	0.00	0.00	0.17	0.00	0.03
Avail Cap(c_a), veh/h	286	1082	917	286	1082	917	338	1142	0	286	1088	922
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	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.4	8.1	8.0	0.0	12.3	11.4	13.3	8.3	0.0	15.5	11.0	11.0
Incr Delay (d2), s/veh	25.5	0.1	0.1	0.0	1.5	0.0	4.1	0.0	0.0	13.9	0.0	0.0
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	0.1	0.3	0.2	0.0	0.8	0.0	0.9	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.9	8.2	8.1	0.0	13.8	11.4	17.4	8.3	0.0	29.4	11.0	11.1
LnGrp LOS	D	A	A	A	B	B	B	A	A	C	B	B
Approach Vol, veh/h		138			142			134			9	
Approach Delay, s/veh		9.1			13.7			17.4			13.1	
Approach LOS		A			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.5	12.9	0.0	13.7	7.9	9.5	4.7	9.0
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	5.0	19.0	5.0	18.0	5.9	18.1	5.0	18.0
Max Q Clear Time (g_c+I1), s	2.0	2.0	0.0	3.0	4.2	2.1	2.1	4.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	13.4
HCM 6th LOS	B

EXISTING + PROJECT AM PEAK HOUR
3: 3RD STREET & WALNUT AVENUE

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	73	57	0	132	2	136	1	0	1	1	7
Future Volume (veh/h)	4	73	57	0	132	2	136	1	0	1	1	7
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	4	78	61	0	140	2	145	1	0	1	1	7
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	10	552	467	6	273	231	204	510	0	6	299	253
Arrive On Green	0.01	0.29	0.29	0.00	0.15	0.15	0.11	0.27	0.00	0.00	0.16	0.16
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	1870	0	1781	1870	1585
Grp Volume(v), veh/h	4	78	61	0	140	2	145	1	0	1	1	7
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	0	1781	1870	1585
Q Serve(g_s), s	0.1	1.0	0.9	0.0	2.2	0.0	2.5	0.0	0.0	0.0	0.0	0.1
Cycle Q Clear(g_c), s	0.1	1.0	0.9	0.0	2.2	0.0	2.5	0.0	0.0	0.0	0.0	0.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	10	552	467	6	273	231	204	510	0	6	299	253
V/C Ratio(X)	0.41	0.14	0.13	0.00	0.51	0.01	0.71	0.00	0.00	0.18	0.00	0.03
Avail Cap(c_a), veh/h	284	1075	911	284	1075	911	336	1135	0	284	1081	916
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	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.5	8.1	8.1	0.0	12.4	11.4	13.4	8.3	0.0	15.6	11.1	11.1
Incr Delay (d2), s/veh	25.5	0.1	0.1	0.0	1.5	0.0	4.5	0.0	0.0	14.1	0.0	0.0
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	0.1	0.3	0.2	0.0	0.8	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.0	8.2	8.2	0.0	13.8	11.5	17.9	8.3	0.0	29.7	11.1	11.2
LnGrp LOS	D	A	A	A	B	B	B	A	A	C	B	B
Approach Vol, veh/h		143			142			146			9	
Approach Delay, s/veh		9.1			13.8			17.8			13.2	
Approach LOS		A			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.5	13.0	0.0	13.7	8.1	9.5	4.7	9.1
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	5.0	19.0	5.0	18.0	5.9	18.1	5.0	18.0
Max Q Clear Time (g_c+I1), s	2.0	2.0	0.0	3.0	4.5	2.1	2.1	4.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	13.6
HCM 6th LOS	B

CUMULATIVE AM PEAK HOUR
3: 3RD STREET & WALNUT AVENUE

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	73	66	0	132	2	141	1	0	1	1	7
Future Volume (veh/h)	4	73	66	0	132	2	141	1	0	1	1	7
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	4	78	70	0	140	2	150	1	0	1	1	7
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	10	552	468	6	274	232	207	512	0	6	298	252
Arrive On Green	0.01	0.30	0.30	0.00	0.15	0.15	0.12	0.27	0.00	0.00	0.16	0.16
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	1870	0	1781	1870	1585
Grp Volume(v), veh/h	4	78	70	0	140	2	150	1	0	1	1	7
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	0	1781	1870	1585
Q Serve(g_s), s	0.1	1.0	1.0	0.0	2.2	0.0	2.6	0.0	0.0	0.0	0.0	0.1
Cycle Q Clear(g_c), s	0.1	1.0	1.0	0.0	2.2	0.0	2.6	0.0	0.0	0.0	0.0	0.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	10	552	468	6	274	232	207	512	0	6	298	252
V/C Ratio(X)	0.41	0.14	0.15	0.00	0.51	0.01	0.72	0.00	0.00	0.18	0.00	0.03
Avail Cap(c_a), veh/h	283	1071	908	283	1071	908	340	1131	0	283	1071	908
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	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.6	8.1	8.2	0.0	12.4	11.5	13.4	8.3	0.0	15.6	11.1	11.2
Incr Delay (d2), s/veh	25.5	0.1	0.1	0.0	1.5	0.0	4.8	0.0	0.0	14.2	0.0	0.0
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	0.1	0.3	0.3	0.0	0.8	0.0	1.1	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.1	8.3	8.3	0.0	13.8	11.5	18.2	8.3	0.0	29.8	11.1	11.2
LnGrp LOS	D	A	A	A	B	B	B	A	A	C	B	B
Approach Vol, veh/h		152			142			151			9	
Approach Delay, s/veh		9.1			13.8			18.1			13.3	
Approach LOS		A			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.5	13.1	0.0	13.8	8.1	9.5	4.7	9.1
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	5.0	19.0	5.0	18.0	6.0	18.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	2.0	2.0	0.0	3.0	4.6	2.1	2.1	4.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.5	0.1	0.0	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	13.7
HCM 6th LOS	B

CUMULATIVE + PROJECT AM PEAK HOUR
3: 3RD STREET & WALNUT AVENUE

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	73	70	0	132	2	152	1	0	1	1	7
Future Volume (veh/h)	4	73	70	0	132	2	152	1	0	1	1	7
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	4	78	74	0	140	2	162	1	0	1	1	7
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	10	550	466	6	274	232	214	518	0	6	296	251
Arrive On Green	0.01	0.29	0.29	0.00	0.15	0.15	0.12	0.28	0.00	0.00	0.16	0.16
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	1870	0	1781	1870	1585
Grp Volume(v), veh/h	4	78	74	0	140	2	162	1	0	1	1	7
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	0	1781	1870	1585
Q Serve(g_s), s	0.1	1.0	1.1	0.0	2.2	0.0	2.8	0.0	0.0	0.0	0.0	0.1
Cycle Q Clear(g_c), s	0.1	1.0	1.1	0.0	2.2	0.0	2.8	0.0	0.0	0.0	0.0	0.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	10	550	466	6	274	232	214	518	0	6	296	251
V/C Ratio(X)	0.41	0.14	0.16	0.00	0.51	0.01	0.76	0.00	0.00	0.18	0.00	0.03
Avail Cap(c_a), veh/h	282	1066	903	282	1066	903	310	1125	0	282	1095	928
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	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.7	8.2	8.3	0.0	12.4	11.5	13.5	8.3	0.0	15.7	11.2	11.2
Incr Delay (d2), s/veh	25.5	0.1	0.2	0.0	1.5	0.0	6.2	0.0	0.0	14.3	0.0	0.0
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	0.1	0.3	0.3	0.0	0.8	0.0	1.2	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.1	8.3	8.4	0.0	13.9	11.5	19.7	8.3	0.0	30.0	11.2	11.3
LnGrp LOS	D	A	A	A	B	B	B	A	A	C	B	B
Approach Vol, veh/h		156			142			163			9	
Approach Delay, s/veh		9.2			13.9			19.6			13.4	
Approach LOS		A			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.5	13.2	0.0	13.8	8.3	9.5	4.7	9.1
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	5.0	19.0	5.0	18.0	5.5	18.5	5.0	18.0
Max Q Clear Time (g_c+I1), s	2.0	2.0	0.0	3.1	4.8	2.1	2.1	4.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	14.3
HCM 6th LOS	B

EXISTING PM PEAK HOUR
3: 3RD STREET & WALNUT AVENUE

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	178	149	0	91	3	112	4	1	3	1	16
Future Volume (veh/h)	18	178	149	0	91	3	112	4	1	3	1	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	19	187	157	0	96	3	118	4	1	3	1	17
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	43	596	505	6	287	243	181	367	92	7	293	248
Arrive On Green	0.02	0.32	0.32	0.00	0.15	0.15	0.10	0.25	0.25	0.00	0.16	0.16
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	1444	361	1781	1870	1585
Grp Volume(v), veh/h	19	187	157	0	96	3	118	0	5	3	1	17
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	0	1805	1781	1870	1585
Q Serve(g_s), s	0.3	2.4	2.4	0.0	1.5	0.1	2.0	0.0	0.1	0.1	0.0	0.3
Cycle Q Clear(g_c), s	0.3	2.4	2.4	0.0	1.5	0.1	2.0	0.0	0.1	0.1	0.0	0.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	43	596	505	6	287	243	181	0	459	7	293	248
V/C Ratio(X)	0.44	0.31	0.31	0.00	0.33	0.01	0.65	0.00	0.01	0.41	0.00	0.07
Avail Cap(c_a), veh/h	279	1055	894	279	1055	894	307	0	1075	279	1084	919
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	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.4	8.2	8.2	0.0	12.1	11.5	13.8	0.0	8.9	15.9	11.4	11.5
Incr Delay (d2), s/veh	6.9	0.3	0.3	0.0	0.7	0.0	3.9	0.0	0.0	32.8	0.0	0.1
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	0.2	0.7	0.6	0.0	0.5	0.0	0.8	0.0	0.0	0.1	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.2	8.5	8.6	0.0	12.7	11.5	17.7	0.0	8.9	48.6	11.4	11.6
LnGrp LOS	C	A	A	A	B	B	B	A	A	D	B	B
Approach Vol, veh/h		363			99			123			21	
Approach Delay, s/veh		9.3			12.7			17.4			16.9	
Approach LOS		A			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.6	12.6	0.0	14.7	7.7	9.5	5.3	9.4
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	5.0	19.0	5.0	18.0	5.5	18.5	5.0	18.0
Max Q Clear Time (g_c+I1), s	2.1	2.1	0.0	4.4	4.0	2.3	2.3	3.5
Green Ext Time (p_c), s	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	11.7
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	178	162	0	91	3	119	4	1	3	1	16
Future Volume (veh/h)	18	178	162	0	91	3	119	4	1	3	1	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	19	187	171	0	96	3	125	4	1	3	1	17
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	43	595	504	6	287	243	187	371	93	7	292	247
Arrive On Green	0.02	0.32	0.32	0.00	0.15	0.15	0.10	0.26	0.26	0.00	0.16	0.16
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	1444	361	1781	1870	1585
Grp Volume(v), veh/h	19	187	171	0	96	3	125	0	5	3	1	17
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	0	1805	1781	1870	1585
Q Serve(g_s), s	0.3	2.4	2.6	0.0	1.5	0.1	2.2	0.0	0.1	0.1	0.0	0.3
Cycle Q Clear(g_c), s	0.3	2.4	2.6	0.0	1.5	0.1	2.2	0.0	0.1	0.1	0.0	0.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	43	595	504	6	287	243	187	0	463	7	292	247
V/C Ratio(X)	0.44	0.31	0.34	0.00	0.33	0.01	0.67	0.00	0.01	0.41	0.00	0.07
Avail Cap(c_a), veh/h	278	1050	890	278	1050	890	311	0	1070	278	1074	910
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	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.4	8.3	8.4	0.0	12.1	11.5	13.8	0.0	8.9	15.9	11.4	11.5
Incr Delay (d2), s/veh	6.9	0.3	0.4	0.0	0.7	0.0	4.1	0.0	0.0	32.8	0.0	0.1
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	0.2	0.7	0.7	0.0	0.5	0.0	0.9	0.0	0.0	0.1	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.3	8.6	8.7	0.0	12.8	11.5	17.9	0.0	8.9	48.7	11.4	11.7
LnGrp LOS	C	A	A	A	B	B	B	A	A	D	B	B
Approach Vol, veh/h		377			99			130			21	
Approach Delay, s/veh		9.3			12.8			17.6			16.9	
Approach LOS		A			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.6	12.7	0.0	14.7	7.9	9.5	5.3	9.4
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	5.0	19.0	5.0	18.0	5.6	18.4	5.0	18.0
Max Q Clear Time (g_c+I1), s	2.1	2.1	0.0	4.6	4.2	2.3	2.3	3.5
Green Ext Time (p_c), s	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	11.8
HCM 6th LOS	B

CUMULATIVE PM PEAK HOUR
3: 3RD STREET & WALNUT AVENUE

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	178	170	0	91	3	130	4	1	3	1	16
Future Volume (veh/h)	18	178	170	0	91	3	130	4	1	3	1	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	19	187	179	0	96	3	137	4	1	3	1	17
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	43	592	502	6	286	242	195	376	94	7	290	246
Arrive On Green	0.02	0.32	0.32	0.00	0.15	0.15	0.11	0.26	0.26	0.00	0.16	0.16
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	1444	361	1781	1870	1585
Grp Volume(v), veh/h	19	187	179	0	96	3	137	0	5	3	1	17
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	0	1805	1781	1870	1585
Q Serve(g_s), s	0.3	2.4	2.8	0.0	1.5	0.1	2.4	0.0	0.1	0.1	0.0	0.3
Cycle Q Clear(g_c), s	0.3	2.4	2.8	0.0	1.5	0.1	2.4	0.0	0.1	0.1	0.0	0.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	43	592	502	6	286	242	195	0	470	7	290	246
V/C Ratio(X)	0.44	0.32	0.36	0.00	0.34	0.01	0.70	0.00	0.01	0.41	0.00	0.07
Avail Cap(c_a), veh/h	276	1044	885	276	1044	885	332	0	1064	276	1044	885
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	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.5	8.4	8.5	0.0	12.2	11.6	13.8	0.0	8.8	16.0	11.5	11.6
Incr Delay (d2), s/veh	6.9	0.3	0.4	0.0	0.7	0.0	4.5	0.0	0.0	32.8	0.0	0.1
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	0.2	0.7	0.7	0.0	0.5	0.0	1.0	0.0	0.0	0.1	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.4	8.7	8.9	0.0	12.9	11.6	18.4	0.0	8.8	48.8	11.5	11.7
LnGrp LOS	C	A	A	A	B	B	B	A	A	D	B	B
Approach Vol, veh/h		385			99			142			21	
Approach Delay, s/veh		9.5			12.8			18.0			17.0	
Approach LOS		A			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.6	12.9	0.0	14.7	8.0	9.5	5.3	9.4
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	5.0	19.0	5.0	18.0	6.0	18.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	2.1	2.1	0.0	4.8	4.4	2.3	2.3	3.5
Green Ext Time (p_c), s	0.0	0.0	0.0	1.4	0.1	0.0	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	12.1
HCM 6th LOS	B

CUMULATIVE + PROJECT PM PEAK HOUR
3: 3RD STREET & WALNUT AVENUE

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	178	183	0	91	3	137	4	1	3	1	16
Future Volume (veh/h)	18	178	183	0	91	3	137	4	1	3	1	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	19	187	193	0	96	3	144	4	1	3	1	17
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	43	591	501	6	285	242	200	379	95	7	289	245
Arrive On Green	0.02	0.32	0.32	0.00	0.15	0.15	0.11	0.26	0.26	0.00	0.15	0.15
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	1444	361	1781	1870	1585
Grp Volume(v), veh/h	19	187	193	0	96	3	144	0	5	3	1	17
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	0	1805	1781	1870	1585
Q Serve(g_s), s	0.3	2.5	3.1	0.0	1.5	0.1	2.5	0.0	0.1	0.1	0.0	0.3
Cycle Q Clear(g_c), s	0.3	2.5	3.1	0.0	1.5	0.1	2.5	0.0	0.1	0.1	0.0	0.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	43	591	501	6	285	242	200	0	474	7	289	245
V/C Ratio(X)	0.44	0.32	0.39	0.00	0.34	0.01	0.72	0.00	0.01	0.41	0.00	0.07
Avail Cap(c_a), veh/h	275	1041	882	275	1041	882	330	0	1060	275	1041	882
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	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.6	8.4	8.6	0.0	12.2	11.6	13.9	0.0	8.8	16.1	11.6	11.7
Incr Delay (d2), s/veh	6.9	0.3	0.5	0.0	0.7	0.0	4.8	0.0	0.0	32.8	0.0	0.1
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	0.2	0.7	0.8	0.0	0.5	0.0	1.1	0.0	0.0	0.1	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.4	8.7	9.1	0.0	12.9	11.7	18.7	0.0	8.8	48.9	11.6	11.8
LnGrp LOS	C	A	A	A	B	B	B	A	A	D	B	B
Approach Vol, veh/h		399			99			149			21	
Approach Delay, s/veh		9.6			12.9			18.4			17.1	
Approach LOS		A			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.6	13.0	0.0	14.7	8.1	9.5	5.3	9.4
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	5.0	19.0	5.0	18.0	6.0	18.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	2.1	2.1	0.0	5.1	4.5	2.3	2.3	3.5
Green Ext Time (p_c), s	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	12.3
HCM 6th LOS	B