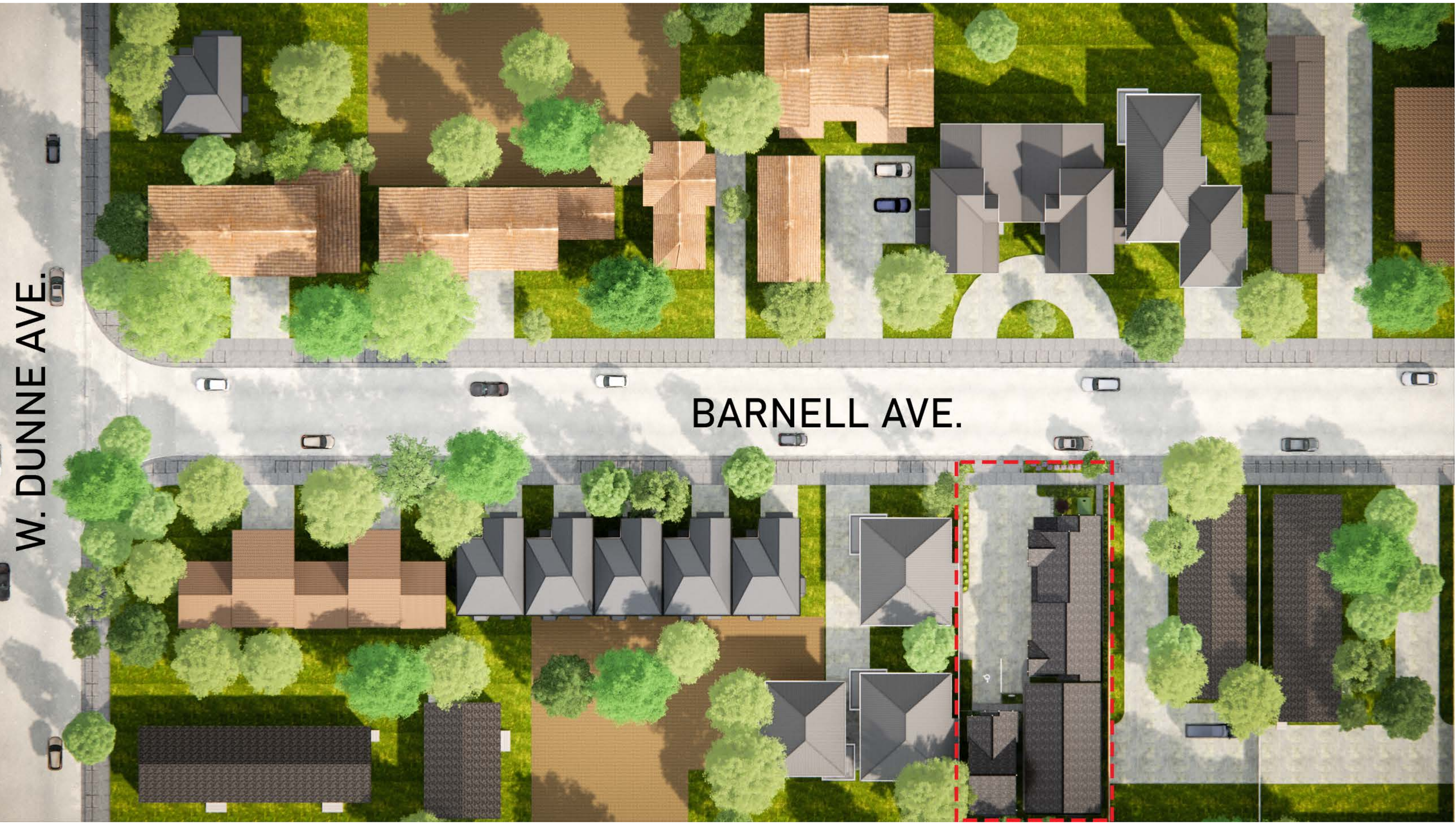
L J C O M M O N S



LJ COMMONS SITE VIEW

L J C O M M O N S

A New Four Plex, Single Phase Development W/ 2 detached A.D.U.'S

Barnell Avenue
Morgan Hill, California – 95037
County of Santa Clara

Owners & Project Consultants:

PROJECT OWNER:	HAREN PROPERTIES, LLC c/o GABRIEL CONNERS 17045 HILL ROAD MORGAN HILL, CALIFORNIA - 95037
PROJECT ARCHITECT:	SUN DIALOG CORP. 405 TENNANT STATION #558 MORGAN HILL, CALIFORNIA - 95037 (408).612.1600
STRUCTURAL ENGINEER:	IDS ENGINEERING 6280 LAS POSITAS BLVD. PLEASANTON, CALIFORNIA - 94588 (925).399.7000
SOILS ENGINEER:	EARTH SYSTEMS PACIFIC 500 PARK CENTER DRIVE, SUITE #1 HOLLISTER, CALIFORNIA - 95023 (831).637.2133 FILE NO.: 305624-001
CIVIL ENGINEER:	WILLIAM J. McCLINTOCK - RCE24883 16075 VINEYARD BLVD. MORGAN HILL, CALIFORNIA - 95037 (408).779.7381
ENERGY COMPLIANCE:	QUALITY BUILT 633 SOUTH ANDREWS - SUITE #204 FORT LAUDERDALE, FLORIDA - 33301 (619).380.0310
LANDSCAPE ARCHITECT:	KAREN AITKEN & ASSOCIATES 8262 RANCHO REAL GILROY, CALIFORNIA - 95020 408.842.0245
ELECTRICAL, MECHANICAL & PLUMBING ENGINEER:	I & D ENGINEERING 1610 BLOSSOM HILL ROAD #6A SAN JOSE, CALIFORNIA - 95124 (408).489.9133

Project Development Data:

SITE DEVELOPMENT DATA:

A.P.N.	767-12-012
PROPERTY ADDRESS:	BARNELL AVENUE MORGAN HILL, CALIFORNIA - 95037
OCCUPANCY GROUP:	R2/U
CONSTRUCTION TYPE:	VB
LOT SIZE:	9,036.447 SQUARE FEET (.2 ACRES)
LAND USE / GENERAL PLAN:	
ZONING:	RAM
NUMBER OF STORIES:	2 STORY

LOT SIZE:	9,036.447 SQUARE FEET (100%)
BUILDING COVERAGE:	3,253.000 SQUARE FEET (36%)
IMPERVIOUS PAVEMENT AREA:	2,584.000 SQUARE FEET
IMPERVIOUS CONCRETE WALKWAY AREA:	507.000 SQUARE FEET
TOTAL IMPERVIOUS AREA:	6,541.000 SQUARE FEET
TOTAL LANDSCAPE AREA (INCLUDING PRIVATE YARDS):	2,495.000 SQUARE FEET
TOTAL BUILDING AREA:	6,796.000 SQUARE FEET

*NOTE: 2 OR MORE SEPERATE BUILDINGS ON THE SAME BUILDING SITE SHALL BE CONSIDERED AS A PORTION OF ONE BUILDING PER C.B.C. 705.3.
ALLOWABLE BUILDING AREA IS 7,000 SQUARE FEET PER TABLE 506.2

BUILDING DEVELOPMENT DATA:

BUILDING "A":

DWELLING UNIT "1":	
1ST FLOOR CONDITIONED LIVING AREA:	612.833 SQUARE FEET
2ND FLOOR CONDITIONED LIVING AREA:	625.056 SQUARE FEET
TOTAL CONDITIONED LIVING AREA:	1,237.889 SQUARE FEET

BUILDING "B":

DWELLING UNIT "2":	
1ST FLOOR CONDITIONED LIVING AREA:	437.000 SQUARE FEET
2ND FLOOR CONDITIONED LIVING AREA:	429.833 SQUARE FEET
TOTAL CONDITIONED LIVING AREA:	866.833 SQUARE FEET
DWELLING UNIT "3":	
1ST FLOOR CONDITIONED LIVING AREA:	437.000 SQUARE FEET
2ND FLOOR CONDITIONED LIVING AREA:	429.833 SQUARE FEET
TOTAL CONDITIONED LIVING AREA:	866.833 SQUARE FEET
DWELLING UNIT "4" (A.D.A UNIT):	
1ST FLOOR CONDITIONED LIVING AREA:	437.000 SQUARE FEET
2ND FLOOR CONDITIONED LIVING AREA:	429.833 SQUARE FEET
TOTAL CONDITIONED LIVING AREA:	866.833 SQUARE FEET
DWELLING UNIT A.D.U. #1:	
TOTAL CONDITIONED LIVING AREA:	747.000 SQUARE FEET
DWELLING UNIT A.D.U. #2:	
TOTAL CONDITIONED LIVING AREA:	704.000 SQUARE FEET

5 CAR GARAGE UNCONDITIONED AREA:

GARAGE UNIT #1 AREA:	261.333 SQUARE FEET
GARAGE UNIT #2 AREA:	253.167 SQUARE FEET
GARAGE UNIT #3 AREA:	261.778 SQUARE FEET
GARAGE UNIT #4 (A.D.A.) AREA:	382.500 SQUARE FEET
GARAGE UNIT #1 (A.D.U.) AREA:	262.222 SQUARE FEET
UNCONDITIONED STAIR WELL / MECH. AREA:	85.750 SQUARE FEET
TOTAL GARAGE UNCONDITIONED AREA:	1,506.750 SQUARE FEET

Code Data:

APPLICABLE CODES:
ASCE 7-10 AMERICAN SOCIETY OF CIVIL ENTINEERS (ASCE)
ACI 318-14 AMERICAN CONCRETE INSTITUTE (ACI)
CALIFORNIA BUILDING CODE - 2022 EDITION (C.B.C.)
CALIFORNIA RESIDENTAIL CODE - 2022 EDITION (C.R.C.)
CALIFORNIA MECHANICAL CODE - 2022 EDITION (C.M.C.)
CALIFORNIA PLUMBING CODE - 2022 EDITION (C.P.C.)
CALIFORNIA ELECTRICAL CODE - 2022 EDITION (C.E.C.)
CALIFORNIA FIRE CODE - 2019 EDITION (C.F.C.)
CALIFORNIA GREEN CODE - 2022 EDITION (C.G.C.)
CALIFORNIA ENERGY CODE - 2022 EDITION (C.E.C.)
CALIFORNIA GREEN BUILDING STANDARDS CODE - 2022 EDITION (C.G.C.)
"ALONG WITH ANY OTHER LOCAL AND STATE LAWS AND REGULATIONS"

General Notes:

1. THESE DWELLING UNITS ARE DESIGNED TO COMPLY WITH THE CALIFORNIA CODE OF REGULATIONS TITLE #24. SHOULD CONDITIONS DEVELOPE NOT COVERED BY THE CONTRACT DOCUMENTS WHERE IN THE FINISHED WORK WILL NOT COMPLY WITH SAID TITLE #24 C.C.R., A CHANGE ORDER DETAILING AND SPECIFING THE REQUIRED WORK SHALL BE SUBMITTED TO AND APPROVED BY THE OWNER AND DESIGN PROFESSIONALS BEFORE PROCEEDING WITH THE REQUIRED WORK. THE GENERAL CONTRACTOR SHALL MAINTAIN AT THE JOB SITE ONE COPY OF PART 1 OF THE TITLE #24 C.C.R.
2. ALL DIMENSIONS ARE TO FACE OF STUD, FACE OF MASONRY, CENTERLINE OF COLUMN OR OTHER GRID POINT, AND CENTERLINE OF THE DOOR OR OTHER SCHEDULED OPENING UNLESS OTHERWISE NOTED.
3. COORDINATION:
   A. THE CONTRACTOR SHALL COORDINATE LAYOUT DIMENSIONS INDICATED ON THE CONSULTANTS DRAWINGS WITH THOSE INDICATED ON THE WORKING DRAWINGS. ALL DISCREPANCIES SHALL BE REPORTED TO THE DESIGNER BEFORE PROCEEDING WITH THE WORK.
   B. SEE WORKING DRAWINGS FOR LAYOUT DIMENSIONS, ELEVATIONS, DEPRESSIONS IN SLAB, OPENINGS IN WALLS AND ROOF, ROOF SLOPES, CRICKETS AND ROOF DRAINS.
   C. IN THE EVENT CERTAIN FEATURES OF THE CONSTRUCTION ARE NOT FULLY SHOWN ON THE CONSTRUCTION DOCUMENTS, THEN THEIR CONSTRUCTION SHALL BE OF THE SAME CHARACTER AS FOR SIMILAR CONDITIONS THAT ARE SHOWN.
   D. THE CONTRACTOR SHALL VERIFY ALL ELECTRICAL, MECHANICAL, TELEPHONE AND SECURITY REQUIREMENTS BEFORE CONSTRUCTION BEGINS.
   E. THE CONTRACTOR SHALL COORDINATE THE LOCATIONS OF LIGHTS, AIR OUTLET AND INLET REGISTERS, FIRE SPRINKLER HEADS, SMOKE DETECTORS, ET.AL, AS MAY BE REQUIRED PRIOR TO THE COMMENCEMENT OF ANY AND ALL CONSTRUCTION.
4. ALL DIMENSIONS, ELEVATIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED ON THE PROJECT SITE BY THE CONTRACTOR AND EACH TRADE BEFORE WORK BEGINS. ERRORS, OMISSIONS AND DISCREPANCIES SHALLE BROUGHT TO THE DESIGNERS ATTENTION BEFORE CONSTRUCTION BEGINS.
5. ALL ITEMS ARE NEW UNLESS SPECIFICALLY INDICATED OR NOTED AS EXISTING.
6. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND NOTIFY THE PROJECT DESIGNER OF ALL EXCEPTIONS PRIOR TO PROCEEDING WITH THE WORK.
7. GRADING PLANS, DRAINAGE IMPROVEMENTS, ROAD AND ACCESS REQUIREMENTS, AND ENVIRONMENTAL HEALTH CONSIDERATIONS SHALL COMPLY WITH LOCAL ORDINANCES.
8. PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, TRANSPORTATION, UTILITIES & OTHER SERVICES AND REGULATED TASKS NECESSARY FOR THE EXECUTION OF THE CONSTRUCTION AS REQUIRED BY THE CONTRACT DOCUMENTS.
9. THE CONTRACTOR SHALL ASSUME SOLE & COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS & COMPLY WITH SAFETY. REGULATIONS AND RESTRICTIONS AS REQUIRED FOR WORKER AND PEDESTRIAN PROTECTION DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT. THE CONTRACTOR SHALL PROVIDE TO THE OWNER AND PROJECT DESIGNER A LOCATION MAP SHOWING STAGING AREA FOR MATERIALS AND EQUIPMENT. (AS MAY BE REQUIRED)
10. ALL SHOP WELDING IS TO BE DONE IN A CERTIFIED, LICENSED SHOP. ALL FIELD WELDING SHALL BE DONE ONLY BY A LICENSED WELDER.
11. ALL WORK SHALL BE PERFORMED IN CONFORMANCE WITH ALL LOCAL, COUNTY, STATE AND FEDERAL CODES, LAWS, ORDINANCES AND REGULATIONS APPLICABLE. NOTHING IN THE CONTRACT DOCUMENTS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES, LAWS, ORDINANCES AND REGULATIONS.
12. FIRE BLOCKING SHALL BE PROVIDED IN ALL CONCEALED SPACES ACCORDING TO C.R.C. SECT. 301.11, DRAFTSTOPS TO BE PROVIDED PER SECT. C.R.C. 302.12.
13. PENETRATIONS GREATER THAN 4" DIA. THROUGH RATED WALLS AND FLOORS SHALL BE PROTECTED PER C.R.C. SECT. R302.5. DWELLING / GARAGE SEPERATION SHALL BE PROVIDED PER C.R.C. TABLE R302.6.
14. STRUCTURAL MEMBERS SHALL BE PROTECTED AS REQUIRED BY C.R.C. TABLE R302.1(1) & R302.1(2) FOR FIRE CONSTRUCTION.
15. THE LOCAL FIRE AUTHORITY SHALL BE CONSULTED IN REGARDS TO FIRE PROTECTION DURING CONSTRUCTION AND STORAGE OF CONSTRUCTION MATERIALS.
16. SEPERATE PLAN REVIEW AND PERMIT ARE REQUIRED FOR MANUFACTURED ROOF TRUSSES. SEE STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
17. ALL WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF GARY MOORE & ASSOCIATES PRIOR TO COMMENCEMENT OF ANY AND ALL WORK.
18. THE GENERAL CONTRACTOR IN CONJUNCTION W/ OFWNERS AND SUB-CONTRACTORS IS TO VERIFY LOCATION OF ALL UTILITIES AND EXISTING CONDITIONS AT THE JOB SITE PRIOR TO BIDDING AND COMMENCEMENT OF CONSTRUCTION.
19. THE BUILDER SHALL PROVIDE THE BUILDING OWNER A LIST OF THE ENERGY-SAVING CONSERVATION DEVICES, MATERIALS AND COMPONENTS INSTALLED IN THE BUILDING AND INSTRUCTIONS ON HOW TO USE THEM EFFECIENTLY. SUCH FEATURES INCLUDE HEATING, COOLING, WATER HEATING AND LIGHTING SYSTEMS AS WELL AS INSULATION, WEATHERSTRIPPING, WINDOW SHADES AND THERMAL MASS MATERIALS.
20. THE OWNER AND PRIME CONTRACTOR ARE RESPONSIBLE FOR MAINTAINING PROJECT SITE ACCESS AND NEIGHBORHOOD ACCESS FOR EMERGENCIEY VEHICLES AND LOCAL RESIDENTS. IN ADDITION, NO CONSTRUCTION EQUIPMENT, MATERIALS, SUPPLIES NOR RELATED ITEMS MAY BE STORED IN THE PUBLIC RIGHT-OF-WAY OF A CITY-MAINTAINED ROAD, WITHOUT FIRST APPROVAL BY THE CITY OF MORGAN HILL PUBLIC WORKS DEPARTMENT.
21. ANY CHANGES IN THE FIELD THAT IMPACT THE GREEN FEATURES SHALL BE REVIEWED BY THE GREEN RATER TO INSURE THAT CERTIFICATION AND POINT REQUIREMENT WILL STILL BE MET. FINAL CERTIFICATION WILL BE BASED ON EQUIVALENT AS-BUILT POINTS ACHIEVED AND THEY ARE NOT NECESSARILY AS THOSE ORIGINALLY CHOSEN TIN THE PERMITTED BUILDING PLAN SETS.
22. PROVIDE A GREEN POINT RATED OR LEED CERTIFICATE TO THE COUNTY PRIOR TO CALLING FOR FINAL INSPECTION.
23. THIS PROJECT IS TO BE FITTED WITH A RESIDENTIAL FIRE SPRINKLER SYSTEM CONFORMING TO THE CURRNETLY ADOPTED NPFA 130. SPRINKLING IS TO BE INCLUSIVE OF THE GARAGE AND CRAWL SPACES GREATER THEN 50 SQUARE FEET WITH A 5 FOOT CLEARANCE AND AT ALL GARAGE AND ATTIC SPACES THAT CONTAIN FUEL FIRED APPLIANCES. PLEASE NOTE THAT AUTOMATIC FIRE SPRINKLERS ARE REQUIRED PER C.R.C. R313.2.
24. NOTE: UNDERGROUND FIRE SERVICE SHALL BE SUBMITTED FOR UNDER A SEPERATE PERMIT AS A DEFERRED SUBMITTAL.

HOUSING:

1. THE APPLICANT SHALL ENTER INTO AN INCLUSIONARY AFFORDABLE HOUSING AGREEMENT PREPARED BY THE CITY ATTORNEY, APPROVED BY THE CITY MANAGER, AND RECORDED AGAINST THE PROPERTY UPON WHICH THE RESIDENTIAL PROJECT WILL BE DEVELOPED.
2. THE INCLUSIONARY AFFORDABLE HOUSING AGREEMENT SHALL PROVIDE THAT THE APPLICANT SHALL BE REQUIRED TO REIMBURSE THE CITY FOR ITS ATTORNEYS' FEES INCURRED IN CONNECTION WITH THE PREPARATION OF THE INCLUSIONARY HOUSING AGREEMENT. IN ADDITION, FOR-SALE PROJECTS, THE INCLUSIONARY HOUSING AGREEMENT SHALL PROVIDE THAT THE APPLICANT SHALL BE REQUIRED TO PAY TO THE CITY OR THE CITY'S DESIGNATED PROGRAM ADMINISTRATOR, THE CITY'S FEES ASSOCIATED WITH THE INITIAL SALE OF THE INCLUSIONARY UNITS TO ELIGIBLE HOUSEHOLDS. (MHMC 14.04.050).

PUBLIC WORKS:

1. GRADING PERMIT MUST BE APPROVED.
2. ENCROACHMENT PERMIT MUST BE ISSUED.

Morgan Hill Municipal Code:

NOTE: THIS PROJECT SHALL COMPLY WITH THE CITY OF MORGAN HILL MUNICIPAL CODE (MHMC) INCLUDING BUT NOT LIMITED TO REGULATIONS AND STANDARDS AS SET BELOW:

- MHMC 15.65 - SUSTAINABLE BUILDING REGULATIONS
- MHMC 15.62 - ELECTRIC VEHICLE CHARGING INFRASTRUCTURE
- MHMC 15.40 - BUILDING SECURITY
- MHMC 15.38 - WAGE THEFT PREVENTIONS
- MHMC 18.148 - WATER CONSERVATION
- MHMC 15.63 - PROHIBITION OF NATURAL GAS INFRASTRUCTURE IN NEW BUILDINGS

NOTE: THIS PROJECT SHALL BE DESIGNED TO COMPLY WITH THE EDITION OF THE CALIFORNIA CODES OF REGULATIONS AS AMENDED BY THE MORGAN HILL MUNICIPAL CODE (MHMC) TITLE 15 THAT IS IN EFFECT AT TIME OF BUILDING PERMIT APPLICATION SUBMITTAL. THIS PROJECT SHALL COMPLY WITH THE CURRENT CALIFORNIA BUILDING AND RESIDENTIAL CODES LISTED 2022.

Deferred Submittals / Site Inspections:

1. THIS HOME IS TO BE FITTED WITH A RESIDENTIAL FIRE SPRINKLER SYSTEM CONFORMING TO THE CURRENTLY ADOPTED NFPA 130. SPRINKLING IS TO BE INCLUSIVE OF THE GARAGE AND CRAWL SPACES GREATER THEN 50 SQUARE FEET WITH 5 FEET CLEARANCE, AND AT ALL GARAGE AND ATTIC SPACES THAT CONTAIN FUEL FIRED APPLIANCES. PLEASE NOTE THAT AUTOMATIC FIRE SPRINKLERS ARE REQUIRED PER C.R.C. R313.2. SUBMITTAL OF FIRE SUPRESSION PLANS ARE TO BE DEFERRED AND SUBMITTED UNDER SEPERATE PERMIT.
2. ANY AND ALL TRUSS DESIGN, CALCS AND SHOP DRAWINGS ARE TO BE DEFERRED SUBMITTALS, AND SHALL ABE REVIEWED AND APPROVED BY THE PROJECT ENGINEER PRIOR TO SUBMITTING FOR THE APPROVAL FROM THE CITY OF MORGAN HILL BUILDING AND INSPECTION OFFICE
3. SPECIAL INSPECTION: FORM WORK FOR CONCRETE SHALL BE REVIEWED AND SIGNED-OFF BY THE STRUCTURAL ENGINEER PRIOR TO THE PLACEMENT OF THE CONCRETE.
4. THE SOILS ENGINEER SHALL REVIEW THE FOUNDATION DESIGN AND PROVIDE A LETTER OF COMPLIANCE TO THE CITY OF MORGAN HILL BUILDING DEPARTMENT NOTING FOUNDATION REVIEW AND APPROVAL(C.B.C. 107.3.4.2.) THE SOILS ENGINEER IS TO ALSO PROVIDE A SPECIAL INSPECTION FOR FOUNDATION DESIGN INSTALLATION AT THE JOB SITE.
5. THE STAIR AND BALCONY HANDRAILS AND RAILING ASSEMBLY'S ARE TO BE SUBMITTED BY AND PROVIDED BY THE STAIR HANDRAIL AND BALCONY MANUFACTURE FOR APPROVAL UNDER A DEFERRED SUBMITTAL.
6. THE SOLAR PANEL DESIGN AND INSTALLATION IS TO BE PROVIDED BY THE CONTRACTED SUB-CONTRACTOR AND IS TO BE SUBMITTED FOR APPROVAL UNDER A DEFERRED SUBMITTAL.
7. COMMON FENCING WITH ADJOINING DEVELOPMENTS IS TO BE A DEFERRED SUBMITTAL

Project Description:

THE PURPOSE OF THESE DESIGN DOCUMENTS IS TO CONSTRUCT A 4 UNIT "FOURPLEX" WITH 2 DETACHED A.D.U. UNITS SET ABOVE THE DETACHED 5 CAR COVERED PARKING GARAGE. THE DWELLING UNITS ARE TO BE 2 STORY IN HEIGHT, RANGING IN SIZE FROM 867 SQUARE FEET LIVING AREA TO 1,238 SQUARE FEET LIVING AREA. WITH UNIT "4" BEING DESIGNATED AND DEVELOPED IN SUCH A MANNER SO AS TO CONFORM TO C.B.C. CHAPTER 11A. EACH UNIT IS TO HAVE 2 TO 3 BEDROOMS AND 1.5 TO 2.5 BATHROOMS BOTH A.D.U. UNITS ARE TO BE SET ABOVE THE COMMON 5 CAR GARAGE WITH A.D.U. UNIT #1 HAVING 747 SQUARE FEET W/ 2 BEDROOMS AND 2 BATHROOMS. A.D.U. UNIT #2 IS TO BE 704 SQUARE FEET W/ 2 BEDROOMS AND 1 BATHROOM.
AS NOTED, BOTH A.D.U. UNITS ARE SET ABOVE A 5 CAR GARAGE WITH ONE GARAGE UNIT BEING DESIGNED TO CONFORM TO C.B.C. CHAPTER 11A HOUSING ACCESSIBILITY HAVING AN INTERIOR CLEAR SPACE OF 15'-0" X 20'-0". THE 4 STANDARD GARAGE UNITS SHALL HAVE AN INTERIOR CLEAR DIMENSION OF 10'-0" X 20'-0".

Parking Requirements:

BASED ON MORGAN HILL CITY CODE SECTION 18.72.030

UNIT	BEDROOMS	REQUIRED COVERED PARKING	REQUIRED UNCOVERED PARKING	ACCESSIBLE PARKING
UNIT 1	3	1	.05	
UNIT 2	2	1	.05	
UNIT 3	2	1	.05	
UNIT 4 A.D.A. ACCESSABLE	2	1	.05	
GUEST PARKING (1 PER 3 UNITS, SECTION 18.72.030. C AND D.4)			1	
ADU #1	2		1	
ADU #2	2		1	
PARKING REDUCTION BONUS FOR PROJECT IS WITHIN .5 MILES OF PUBLIC TRANSIT (SECTION 18.84.050.G.a)			-2	
TOTAL REQUIRED PARKING		4	3	
TOTAL PARKING PROVIDED		5	3	
UNCOVERED ACCESSIBLE PARKING				1
COVERED ACCESSIBLE PARKING				1
GENERAL NOTES:				
BOTH A.D.U'S (#5 & #6) ARE SET ABOVE DETACHED GARAGE UNITS (BLDG. "C")				

Drawing Index:

COVER 1	STREET SCAPE RENDERING
COVER 2	SITE DEVELOPMENT RENDERING
T.1	TITLE / COVER SHEET GENERAL NOTES & CONDITIONS
T.2	FINISH SCHEDULES
T.3	FINISH SCHEDULES & DOOR / WINDOW ELEVATIONS
C.O.A. 1	SECURITY CONDITONS OF APPROVAL

CIVIL SITE DEVELOPMENT PLAN:

C1	SITE DEVELOPMENT PLAN / NOTES
C2	PRELIMINARY GRADING PLAN
C3	PRELIMINARY GRADING CROSS-SECTIONS
C4	PRELIMINARY UTILITY PLAN
C5	PRELIMINARY STORM DWATER CONTROL PLAN
BPFCB	BLUE PRINT FOR A CLEAN BAY

TITLE #24 ENERGY COMPLIANCE & CALGREEN MANDATORY MEASURES

CG-1	CALGREEN MANDATORY MEASURES
CG-2	CALGREEN MANDATORY MEASURES
CG-3	GREEN POINT RATED CHECK LIST

1. T24-ADU #1 - 1	TITLE #24 ENERGY COMPLIANCE
2. T24-ADU #1 - 2	TITLE #24 ENERGY COMPLIANCE
3. T24-ADU #1 - 3	TITLE #24 ENERGY COMPLIANCE
4. T24-ADU #2 - 1	TITLE #24 ENERGY COMPLIANCE
5. T24-ADU #2 - 2	TITLE #24 ENERGY COMPLIANCE
6. T24-ADU #2 - 3	TITLE #24 ENERGY COMPLIANCE
7. T24-UNIT "1" - 1	TITLE #24 ENERGY COMPLIANCE
8. T24-UNIT "1" - 2	TITLE #24 ENERGY COMPLIANCE
9. T24-UNIT "1" - 3	TITLE #24 ENERGY COMPLIANCE
10. T24-UNIT "2" - 1	TITLE #24 ENERGY COMPLIANCE
11. T24-UNIT "2" - 2	TITLE #24 ENERGY COMPLIANCE
12. T24-UNIT "2" - 3	TITLE #24 ENERGY COMPLIANCE
13. T24-UNIT "3" - 1	TITLE #24 ENERGY COMPLIANCE
14. T24-UNIT "3" - 2	TITLE #24 ENERGY COMPLIANCE
15. T24-UNIT "3" - 3	TITLE #24 ENERGY COMPLIANCE
16. T24-UNIT "4" - 1	TITLE #24 ENERGY COMPLIANCE
17. T24-UNIT "4" - 2	TITLE #24 ENERGY COMPLIANCE
18. T24-UNIT "4" - 3	TITLE #24 ENERGY COMPLIANCE

DESIGN DOCUMENTS:

A.S.0	ARCHITECTURAL SITE DEVELOPMENT PLAN & NOTES
A.0.0	BUILDINGS "A", "B" & "C" 1ST LEVEL FLOOR PLAN (NOTES AND TAGS ONLY)
A.0.1	BUILDINGS "A", "B" & "C" 1ST LEVEL FLOOR PLAN (DIMENSIONS ONLY)
A.1	BUILDINGS "A", "B" & "C" 2ND LEVEL FLOOR PLAN (NOTES & TAGS ONLY)
A.1.1	BUILDINGS "A", "B" & "C" 2ND LEVEL FLOOR PLAN (DIMENSIONS ONLY)
CVR.A	BUILDING "A" COLORED EXTERIOR ELEVATIONS AND MATERIAL FINISH TYPES AND COLORS
A.2	BUILDING "A" EXTERIOR ELEVATIONS
CVR.B	BUILDING "B" COLORED EXTERIOR ELEVATIONS AND MATERIAL FINISH TYPES AND COLORS
A.3	BUILDING "B" EXTERIOR ELEVATIONS
CVR.C	BUILDING "C" COLORED EXTERIOR ELEVATIONS AND MATERIAL FINISH TYPES AND COLORS
A.4	BUILDING "C" EXTERIOR ELEVAITONS
A.4.1	BUILDING "C" EXTERIOR ELEVATIONS
A.5	CROSS-SECTIONAL ELEVATIONS
A.6	ROOF PLAN, MISC. NOTES & DETAILS
A.6.1	BUILDINGS "A", "B" & "C" 1ST LEVEL FLOOR FINISH PLAN
A.7	BUILDINGS "A", "B" & "C" 2ND LEVEL FLOOR FINISH PLAN MISC. NOTES & DETAILS
D.0	BUILDINGS "A", "B" & "C" 1ST AND 2ND FLOOR REFLECTED CEILING PLAN& NOTES
D.0.1	BUILDING "A" EXTERIOR ELEVATIONS (DETAIL TAGS ONLY) & MISC. FRAMING DETAILS
D.0.2	BUILDING "B" EXTERIOR ELEVATIONS (DETAIL TAGS ONLY)
D.1	BUILDING "C" EXTERIOR ELEVATIONS (DETAIL TAGS ONLY)
D.2	MISC. FRAMING DETAILS
E.0	A.D.A. DETAILS, NOTES, 1/2 BATH FLOOR PLAN & MISC. FIREWALL FRAMING DETAILS
E.0.1	BUILDINGS "A", "B" & "C" 1ST FLOOR EXTERIOR LIGHTING PLAN & MISC. NOTES
E.1	BUILDINGS "A", "B" & "C" EXTERIOR LIGHT PLAN & MISC. NOTES
E.2	BUILDINGS "A", "B" & "C" 1ST FLOOR ELECTRICAL, MECHANICAL PLAN & MISC. NOTES
E.3	BUILDINGS "A", "B" & "C" 2ND FLOOR ELECTRICAL, MECHANICAL PLAN & MISC. NOTES
	MISC. ELECTRICAL / MECHANICAL NOTES & DETAILS

PHOTOMETRIC DOCUMENTS:

SHEET 1	OFF-SITE PHOTOMETRIC PLAN PROPOSED PHOTOMETRIC PLAN
SHEET 2	STREET LIGHTING GENERAL NOTES & DETAILS
SL1	STREET LIGHTING GENERAL NOTES & DETAILS
SL2	STREET LIGHTING GENERAL NOTES & DETAILS
SL3	STREET LIGHTING GENERAL NOTES & DETAILS

ELECTRICAL PLANS:

E0-1	SYMBOLS, ABBREVIATIONS, GENERAL NOTES & CONTROL DIAGRAM
E2-1	1ST FLOOR PLAN - PANEL LOCATIONS
E2-2	2ND FLOOR PLAN - PANEL LOCATIONS
E3-1	SINGLE LINE DIAGRAM AND LOAD CALCULATIONS

PLUMBING PLANS:

P0-1	SYMBOLS, ABBREVIATIONS AND GENERAL NOTES
P1-1	1ST FLOOR PLAN - HOT & COLD WATER PIPING
P1-2	2ND FLOOR PLAN - HOT & COLD WATER PIPING
P2-1	1ST FLOOR PLAN - SEWER & VENT PIPING
P2-2	2ND FLOOR PLAN - SEWER & VENT PIPING
P3-1	DETAILS
P4-1	PLUMBING CALCULATIONS UNIT #1
P4-2	PLUMBING CALCULATIONS UNIT #2
P4-3	PLUMBING CALCULATIONS UNIT #3
P4-4	PLUMBING CALCULATIONS UNIT #4
P4-5	PLUMBING CALCULATIONS A.D.U. #1
P4-6	PLUMBING CALCULATIONS A.D.U. #2

MECHANICAL PLANS:

M0.1	SYMBOLS, LEGEND, GENERAL NOTES & EQUIPMENT SCHEDULE
M0.2	EQUIPMENT SCHEDULE
M1.1	1ST FLOOR PLAN - HVAC
M1.2	2ND FLOOR PLAN - HVAC
M2.1	MISC. DETAILS

JOINT TRENCH PLANS:

JT1	JOINT TRENCH COMPOSITE TITLE SHEET
JT2	JOINT TRENCH GENERAL NOTES AND DETAILS
JT3	JOINT TRENCH DETAILS
JT4	JOINT TRENCH SECTIONS & DETAILS
JT5	JOINT TRENCH COMPOSITE SITE PLAN

LANDSCAPE PLANS:

L-0	LANDSCAPE COVER SHEET
L-1	LANDSCAPE PLANTING PLAN
L-2	LIGHTING & MATERIALS PLAN
L-3	IRRIGATION PLAN
L-4	IRRIGATION DETAILS

SUN DIALOG CORP.
409 TENNANT STA#558
MORGAN HILL, CA 95037
PHONE 408-612-1600

LICENSED ARCHITECT
DONGMEI SUN
No. C 30,083
RENEWAL 5-31-25
STATE OF CALIFORNIA

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DRAWING:
Title Sheet, Site Plan, Location Map & Misc. Notes

PROJECT:
Haren Properties, LLC
Gabriel Connors
4 Plex – Barnell Ave.
Morgan Hill, Calif.
County of Santa Clara

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REVISIONS:

DATE: DECEMBER 30, 2023

SCALE: AS NOTED

DRAWN BY: G.E. MOORE

PROJ. MGR. MEI SUN

0.22-BARNELL

DRAWING: **T.1**

FINISH SCHEDULES

individual unit room finish schedule:

ROOM	FLOOR FINISH: CARPET W/ PAD	FLOOR FINISH: TRAVERTINE TILE W/ 1/4" GROUT JOINT	FLOOR FINISH: RANDOM WIDTH AND LENGTH VINYL SIMULATED WOOD FLOORING - SELECTION BY OWNER	FLOOR FINISH: SEALED CONCRETE DECK	FLOOR FINISH: SHEET VINYL FLOORING W/ 6DF CORONADO BASE BY KELLY-MOORE PAINTS - SEE SHEETS A4.4 & A4.6	BASE BOARD: KELCHER NO.6 BASEBOARD W/ PAINT FINISH - SEE SHEETS A4.4 & A4.6	BASE BOARD: COVED SH. VIN.	BASE BOARD: MDF FOR EQUAL BASE	WALL FINISH: 1/2" GYP. WALL BOARD W/ TAPE & TROWEL FINISH	WALL FINISH: 1/2" GYP. WALL BOARD W/ SMOOTH TAPE & TROWEL FINISH - STIPPLE FINISH	WALL FINISH: 5/8" TYPE 'X' GYP. WALLBD W/ APPLY & TROWEL TEXT. FINISH	WALL FINISH: 5/8" TYPE 'X' GYP. WALLBD W/ SMOOTH TAPE / WASHABLE FINISH	CEILING FINISH: 1/2" GYP. WALL BOARD W/ TAPE & TROWEL FINISH	CEILING FINISH: 1/2" GYP. WALL BOARD W/ TAPE & TROWEL FINISH - STIPPLE FINISH	CEILING FINISH: 5/8" TYPE 'X' GYP. WALLBD W/ APPLY & TROWEL TEXT. FINISH	CEILING FINISH: 5/8" TYPE 'X' GYP. WALLBD W/ SMOOTH TAPE / WASHABLE FINISH	CEILING TYPE: W/ EXPOSED COUFFERED CEILING W/ EXPOSED BEAM & MOULDING TRIM	CEILING TYPE: 2 PC. CROWN MOULDING	CEILING TYPE: VAULTED / COUFFERED CEILING	CEILING TYPE: COUFFERED FINISH CEILING NO CROWN MOULDING OR TRIM	CEIL'G HGT.
UNIT "1": 1ST FLOOR:																								
FRONT ENTRY (FOYER)	●					●			●				●				●							9'-0"
1/2 BATHROOM		●				●				●				●				●						8'-0"
ENTRY HALL		●				●			●				●				●							8'-0"
KITCHEN		●				●				●				●				●						8'-0"
GREAT ROOM		●				●			●				●				●							9'-0"
ENTRY CLOSET		●				●					●				●									VARIES
STAIR WELL		●				●			●				●				●							VARIES
2ND FLOOR																								
STAIR LANDING & HALLWAY		●				●			●				●				●							9'-0"
LAUNDRY CLOSET		●				●				●				●				●						9'-0"
BEDROOM #1		●				●			●				●				●							9'-0"
BEDROOM #1 CLOSET		●				●					●				●									9'-0"
BEDROOM #2		●				●			●				●				●							9'-0"
BEDROOM #2 CLOSET		●				●					●				●									9'-0"
BEDROOM #3		●				●			●				●				●							9'-0"
BEDROOM #3 CLOSET		●				●					●				●									9'-0"
BATHROOM #1		●				●				●				●				●						9'-0"
BATHROOM #2		●				●				●				●				●						9'-0"
UNIT "2": 1ST FLOOR																								
FRONT ENTRY	●					●			●				●				●							8'-0"
1/2 BATHROOM		●				●				●				●				●						8'-0"
KITCHEN		●				●				●				●				●						8'-0"
ENTRY CLOSET		●				●					●				●									VARIES
GREAT ROOM		●				●			●				●				●							9'-0"
STAIR WELL / CASE		●				●			●				●				●							VARIES
2ND FLOOR																								
LANDING / HALLWAY		●				●			●				●				●							9'-0"
BEDROOM #1		●				●			●				●				●							9'-0"
BEDROOM #1 CLOSET		●				●					●				●									9'-0"
BEDROOM #2		●				●			●				●				●							9'-0"
BEDROOM #2 CLOSET		●				●					●				●									9'-0"
LAUNDRY CLOSET		●				●				●				●				●						9'-0"
BATHROOM #1		●				●				●				●				●						8'-0"
UNIT "3": 1ST FLOOR																								
FRONT ENTRY	●					●			●				●				●							8'-0"
1/2 BATHROOM		●				●				●				●				●						8'-0"
KITCHEN		●				●				●				●				●						8'-0"
ENTRY CLOSET		●				●			●				●				●							VARIES
GREAT ROOM		●				●			●				●				●							9'-0"
STAIR WELL / CASE		●				●			●				●				●							VARIES
2ND FLOOR																								
LANDING / HALLWAY		●				●			●				●				●							9'-0"
BEDROOM #1		●				●			●				●				●							9'-0"
BEDROOM #1 CLOSET		●				●					●				●									9'-0"
BEDROOM #2		●				●			●				●				●							9'-0"
BEDROOM #2 CLOSET		●				●					●				●									9'-0"
LAUNDRY CLOSET		●				●				●				●				●						9'-0"
BATHROOM #1		●				●				●				●				●						8'-0"
UNIT "4" - B.M.R. (A.D.A.): 1ST FLOOR																								
FRONT ENTRY		●				●			●				●				●							8'-0"
1/2 BATHRM. (A.D.A.)		●				●				●				●				●						8'-0"
KITCHEN (A.D.A.)		●				●				●				●				●						8'-0"
ENTRY CLOSET		●				●			●				●				●							VARIES
GREAT ROOM		●				●			●				●				●							9'-0"
STAIR WELL / CASE		●				●			●				●				●							VARIES
2ND FLOOR																								
LANDING / HALLWAY		●				●			●				●				●							9'-0"
BEDROOM #1		●				●			●				●				●							9'-0"
BEDROOM #1 CLOSET		●				●					●				●									9'-0"
BEDROOM #2		●				●			●				●				●							9'-0"
BEDROOM #2 CLOSET		●				●					●				●									9'-0"
LAUNDRY CLOSET		●				●				●				●				●						9'-0"
BATHROOM #1		●				●				●				●				●						8'-0"

a.d.u. #1 room finish schedule

ROOM	FLOOR FINISH: CARPET W/ PAD	FLOOR FINISH: TRAVERTINE TILE W/ 1/4" GROUT JOINT	FLOOR FINISH: RANDOM WIDTH AND LENGTH VINYL SIMULATED WOOD FLOORING - SELECTION BY OWNER	FLOOR FINISH: SEALED CONCRETE DECK	FLOOR FINISH: SHEET VINYL FLOORING W/ 6DF CORONADO BASE BY KELLY-MOORE PAINTS - SEE SHEETS A4.4 & A4.6	BASE BOARD: KELCHER NO.6 BASEBOARD W/ PAINT FINISH - SEE SHEETS A4.4 & A4.6	BASE BOARD: COVED SHEET VINYL	BASE BOARD: MDF FOR EQUAL BASE	WALL FINISH: 1/2" GYP. WALL BOARD W/ TAPE & TROWEL FINISH	WALL FINISH: 1/2" GYP. WALL BOARD W/ SMOOTH TAPE & TROWEL FINISH - STIPPLE FINISH	WALL FINISH: 5/8" TYPE 'X' GYP. WALLBD W/ APPLY & TROWEL TEXT. FINISH	WALL FINISH: 5/8" TYPE 'X' GYP. WALLBD W/ SMOOTH TAPE / WASHABLE FINISH	CEILING FINISH: 1/2" GYP. WALL BOARD W/ TAPE & TROWEL FINISH	CEILING FINISH: 1/2" GYP. WALL BOARD W/ TAPE & TROWEL FINISH - STIPPLE FINISH	CEILING FINISH: 5/8" TYPE 'X' GYP. WALLBD W/ APPLY & TROWEL TEXT. FINISH	CEILING FINISH: 5/8" TYPE 'X' GYP. WALLBD W/ SMOOTH TAPE / WASHABLE FINISH	CEILING TYPE: W/ EXPOSED COUFFERED CEILING W/ EXPOSED BEAM & MOULDING TRIM	CEILING TYPE: 2 PC. CROWN MOULDING	CEILING TYPE: VAULTED / COUFFERED CEILING	CEILING TYPE: COUFFERED FINISH CEILING NO CROWN MOULDING OR TRIM	CEIL'G HGT.
A.D.U. #1																								
LIVING ROOM		●				●			●				●				●							8'-0"
HALLWAY		●				●			●				●				●							8'-0"
KITCHEN		●				●				●				●				●						8'-0"
MECHANICAL		●				●					●				●									8'-0"
BEDROOM #1		●				●			●				●				●							8'-0"
BEDROOM #1 CLOSET		●				●					●				●									8'-0"
BEDROOM #2		●				●			●				●				●							8'-0"
BEDROOM #2 CLOSET		●				●					●				●									8'-0"
BATHROOM #1		●				●				●				●				●						8'-0"
BATHROOM #2		●				●				●				●				●						8'-0"

a.d.u. #2 room finish schedule

ROOM	FLOOR FINISH: CARPET W/ PAD	FLOOR FINISH: TRAVERTINE TILE W/ 1/4" GROUT JOINT	FLOOR FINISH: RANDOM WIDTH AND LENGTH VINYL SIMULATED WOOD FLOORING - SELECTION BY OWNER	FLOOR FINISH: SEALED CONCRETE DECK	FLOOR FINISH: SHEET VINYL FLOORING W/ 6DF CORONADO BASE BY KELLY-MOORE PAINTS - SEE SHEETS A4.4 & A4.6	BASE BOARD: KELCHER NO.6 BASEBOARD W/ PAINT FINISH - SEE SHEETS A4.4 & A4.6	BASE BOARD: COVED SHEET VINYL	BASE BOARD: MDF FOR EQUAL BASE	WALL FINISH: 1/2" GYP. WALL BOARD W/ TAPE & TROWEL FINISH	WALL FINISH: 1/2" GYP. WALL BOARD W/ SMOOTH TAPE & TROWEL FINISH - STIPPLE FINISH	WALL FINISH: 5/8" TYPE 'X' GYP. WALLBD W/ APPLY & TROWEL TEXT. FINISH	WALL FINISH: 5/8" TYPE 'X' GYP. WALLBD W/ SMOOTH TAPE / WASHABLE FINISH	CEILING FINISH: 1/2" GYP. WALL BOARD W/ TAPE & TROWEL FINISH	CEILING FINISH: 1/2" GYP. WALL BOARD W/ TAPE & TROWEL FINISH - STIPPLE FINISH	CEILING FINISH: 5/8" TYPE 'X' GYP. WALLBD W/ APPLY & TROWEL TEXT. FINISH	CEILING FINISH: 5/8" TYPE 'X' GYP. WALLBD W/ SMOOTH TAPE / WASHABLE FINISH	CEILING TYPE: W/ EXPOSED COUFFERED CEILING W/ EXPOSED BEAM & MOULDING TRIM	CEILING TYPE: 2 PC. CROWN MOULDING	CEILING TYPE: VAULTED / COUFFERED CEILING	CEILING TYPE: COUFFERED FINISH CEILING NO CROWN MOULDING OR TRIM	CEIL'G HGT.
A.D.U. #2																								
LIVING ROOM		●				●			●				●				●							8'-0"
HALLWAY		●				●			●				●				●							8'-0"
KITCHEN		●				●				●				●				●						8'-0"
MECHANICAL		●				●					●				●									8'-0"
BEDROOM #1		●				●			●				●				●							8'-0"
BEDROOM #1 CLOSET		●				●					●				●									8'-0"
BEDROOM #2		●				●			●				●				●							8'-0"
BEDROOM #2 CLOSET		●				●					●				●									8'-0"
BATHROOM #1		●				●				●				●				●						8'-0"
																								8'-0"
GARAGE, MECHANICAL & STORAGE ROOMS:																								
GARAGE #1				●		N/A				●				●				●						9'-4"
GARAGE #2				●		N/A				●				●				●						9'-4"
GARAGE #3				●		N/A				●				●				●						9'-4"
GARAGE #4				●		N/A				●				●				●						9'-4"
GARAGE #5				●		N/A				●				●				●						9'-4"
MECHANICAL & STORAGE:				●		N/A				●				●				●						9'-4"

natural light,, ventilation schedule & calculations:

UNIT AND ROOM TITLE	ROOM AREA	AREA OF NATURAL LIGHT REQUIRED:	AREA OF NATURAL LIGHT PROVIDED:	AREA OF NATURAL VENTING REQD.:	AREA OF NATURAL VENTING PROVIDED:	GENERAL REMARKS:
UNIT "A":						
FRONT ENTRY (FOYER)	6.667 SQ.FT.	N/A	N/A	N/A	N/A	
1/2 BATHROOM	21.333 SQ.FT.	N/A	N/A	N/A	N/A	THIS BATHROOM IS TO HAVE "ON DEMAND" EXHAUST FAN
ENTRY HALL	35.000 SQ.FT.	N/A	N/A	N/A	N/A	
KITCHEN	98.000 SQ.FT.	N/A	10.500 SQ.FT.	N/A	5.250 SQ. FT.	
GREAT ROOM	322.00 SQ.FT.	8% OF ROOM AREA = 25.760 SQ.FT.	94.92 SQ.FT.	4% OF ROOM AREA = 12.880 SQ.FT.	47.460 SQ.FT.	
ENTRY CLOSET	38.111 SQ.FT.	N/A	N/A	N/A	N/A	
STAIR WELL	41.083 SQ.FT.	N/A	N/A	N/A	N/A	
STAIR LANDING & HALLWAY	65.337 SQ.FT.	N/A	15.00 SQ. FT.	N/A	7.50 SQ. FT.	
LAUNDRY CLOSET	65.337 SQ.FT.	N/A	N/A	N/A	N/A	THIS ROOM IS TO HAVE "ON-DEMAND" CEIL. EXAUST FAN
BEDROOM #1	109.889 SQ.FT.	8% OF ROOM AREA = 8.791 SQ.FT.	30.000 SQ.FT.	4% OF ROOM AREA = 4.396 SQ.FT.	15.000 SQ.FT.	
BEDROOM #1 CLOSET	9.6675 SQ.FT.	N/A	N/A	N/A	N/A	
BEDROOM #2	93.333 SQ.FT.	8% OF ROOM AREA = 7.467 SQ.FT.	15.000 SQ.FT.	4% OF ROOM AREA = 3.733 SQ.FT.	7.500 SQ.FT.	
BEDROOM #2 CLOSET	9.000 SQ.FT.	N/A	N/A	N/A	N/A	
BEDROOM #3	126.667 SQ.FT.	8% OF ROOM AREA = 10.133 SQ.FT.	30.000 SQ.FT.	4% OF ROOM AREA = 5.066 SQ.FT.	15.000 SQ.FT.	
BEDROOM #3 CLOSET	15.000 SQ.FT.	N/A	N/A	N/A	N/A	
BATHROOM #1	40.417 SQ.FT.	N/A	8.000 SQ.FT.	N/A	4.000 SQ.FT.	THIS BATHROOM IS TO HAVE "ON DEMAND" EXHAUST FAN
BATHROOM #2	46.667 SQ.FT.	N/A	4.000 SQ.FT.	N/A	2.000 SQ.FT.	THIS BATHROOM IS TO HAVE "ON DEMAND" EXHAUST FAN

UNIT "B":	ROOM AREA	AREA OF NATURAL LIGHT REQUIRED:	AREA OF NATURAL LIGHT PROVIDED:	AREA OF NATURAL VENTING REQD.:	AREA OF NATURAL VENTING PROVIDED:	GENERAL REMARKS:
FRONT ENTRY & HALL	31.500 SQ.FT.	N/A	N/A	N/A	N/A	
1/2 BATHROOM	21.333 SQ.FT.	N/A	N/A	N/A	N/A	THIS BATHROOM IS TO HAVE "ON DEMAND" EXHAUST FAN
KITCHEN	82.500 SQ.FT.	N/A	10.500 SQ.FT.	N/A	5.250 SQ. FT.	
GREAT ROOM	205.000 SQ.FT.	8% OF ROOM AREA = 16.400 SQ.FT.	78.92 SQ.FT.	4% OF ROOM AREA = 8.200 SQ.FT.	39.960 SQ.FT.	
ENTRY CLOSET	30.667 SQ.FT.	N/A	N/A	N/A	N/A	
STAIR WELL	25.000 SQ.FT.	N/A	N/A	N/A	N/A	
STAIR LANDING & HALLWAY	37.403 SQ.FT.	N/A	N/A	N/A	N/A	
LAUNDRY CLOSET	26.667 SQ.FT.	N/A	N/A	N/A	N/A	THIS ROOM IS TO HAVE "ON-DEMAND" CEIL. EXAUST FAN
BEDROOM #1	96.444 SQ.FT.	8% OF ROOM AREA = 7.716 SQ.FT.	30.000 SQ.FT.	4% OF ROOM AREA = 3.858 SQ.FT.	15.000 SQ.FT.	
BEDROOM #1 CLOSET	109.889 SQ.FT.	N/A	N/A	N/A	N/A	
BEDROOM #2	132.167 SQ.FT.	8% OF ROOM AREA = 10.573 SQ.FT.	15.000 SQ.FT.	4% OF ROOM AREA = 5.286 SQ.FT.	7.500 SQ.FT.	
BEDROOM #2 CLOSET	93.333 SQ.FT.	N/A	N/A	N/A	N/A	
BATHROOM #1	9.000 SQ.FT.	N/A	4.000 SQ.FT.	N/A	2.000 SQ.FT.	THIS BATHROOM IS TO HAVE "ON DEMAND" EXHAUST FAN

UNIT "C":	ROOM AREA	AREA OF NATURAL LIGHT REQUIRED:	AREA OF NATURAL LIGHT PROVIDED:	AREA OF NATURAL VENTING REQD.:	AREA OF NATURAL VENTING PROVIDED:	GENERAL REMARKS:
FRONT ENTRY & HALL	31.500 SQ.FT.	N/A	N/A	N/A	N/A	
1/2 BATHROOM	21.333 SQ.FT.	N/A	N/A	N/A	N/A	THIS BATHROOM IS TO HAVE "ON DEMAND" EXHAUST FAN
KITCHEN	82.500 SQ.FT.	N/A	10.500 SQ.FT.	N/A	5.250 SQ. FT.	
GREAT ROOM	205.000 SQ.FT.	8% OF ROOM AREA = 16.400 SQ.FT.	39.96 SQ.FT.	4% OF ROOM AREA = 8.200 SQ.FT.	19.980 SQ.FT.	
ENTRY CLOSET	30.667 SQ.FT.	N/A	N/A	N/A	N/A	
STAIR WELL	25.000 SQ.FT.	N/A	N/A	N/A	N/A	
STAIR LANDING & HALLWAY	37.403 SQ.FT.	N/A	N/A	N/A	N/A	
LAUNDRY CLOSET	26.667 SQ.FT.	N/A	N/A	N/A	N/A	THIS ROOM IS TO HAVE "ON-DEMAND" CEIL. EXAUST FAN
BEDROOM #1	96.444 SQ.FT.	8% OF ROOM AREA = 7.716 SQ.FT.	15.000 SQ.FT.	4% OF ROOM AREA = 3.858 SQ.FT.	7.500 SQ.FT.	
BEDROOM #1 CLOSET	109.889 SQ.FT.	N/A	N/A	N/A	N/A	
BEDROOM #2	132.167 SQ.FT.	8% OF ROOM AREA = 10.573 SQ.FT.	15.000 SQ.FT.	4% OF ROOM AREA = 5.286 SQ.FT.	7.500 SQ.FT.	
BEDROOM #2 CLOSET	93.333 SQ.FT.	N/A	N/A	N/A	N/A	
BATHROOM #1	9.000 SQ.FT.	N/A	N/A	N/A	N/A	THIS BATHROOM IS TO HAVE "ON DEMAND" EXHAUST FAN

UNIT AND ROOM TITLE	ROOM AREA	AREA OF NATURAL LIGHT REQUIRED:	AREA OF NATURAL LIGHT PROVIDED:	AREA OF NATURAL VENTING REQD.:	AREA OF NATURAL VENTING PROVIDED:	GENERAL REMARKS:
UNIT "DA":						
FRONT ENTRY & HALL	31.500 SQ.FT.	N/A	N/A	N/A	N/A	
1/2 BATHROOM	21.333 SQ.FT.	N/A	N/A	N/A	N/A	THIS BATHROOM IS TO HAVE "ON DEMAND" EXHAUST FAN
KITCHEN	82.500 SQ.FT.	N/A	10.500 SQ.FT.	N/A	5.250 SQ. FT.	
GREAT ROOM	205.000 SQ.FT.	8% OF ROOM AREA = 16.400 SQ.FT.	39.96 SQ.FT.	4% OF ROOM AREA = 8.200 SQ.FT.	19.980 SQ.FT.	
ENTRY CLOSET	30.667 SQ.FT.	N/A	N/A	N/A	N/A	
STAIR WELL	25.000 SQ.FT.	N/A	N/A	N/A	N/A	
STAIR LANDING & HALLWAY	37.403 SQ.FT.	N/A	N/A	N/A	N/A	
LAUNDRY CLOSET	26.667 SQ.FT.	N/A	N/A	N/A	N/A	THIS ROOM IS TO HAVE "ON-DEMAND" CEIL. EXAUST FAN
BEDROOM #1	96.444 SQ.FT.	8% OF ROOM AREA = 7.716 SQ.FT.	15.000 SQ.FT.	4% OF ROOM AREA = 3.858 SQ.FT.	7.500 SQ.FT.	
BEDROOM #1 CLOSET	109.889 SQ.FT.	N/A	N/A	N/A	N/A	
BEDROOM #2	132.167 SQ.FT.	8% OF ROOM AREA = 10.573 SQ.FT.	15.000 SQ.FT.	4% OF ROOM AREA = 5.286 SQ.FT.	7.500 SQ.FT.	
BEDROOM #2 CLOSET	93.333 SQ.FT.	N/A	N/A	N/A	N/A	
BATHROOM #1	9.000 SQ.FT.	N/A	N/A	N/A	N/A	THIS BATHROOM IS TO HAVE "ON DEMAND" EXHAUST FAN

UNIT AND ROOM TITLE	ROOM AREA	AREA OF NATURAL LIGHT REQUIRED:	AREA OF NATURAL LIGHT PROVIDED:	AREA OF NATURAL VENTING REQD.:	AREA OF NATURAL VENTING PROVIDED:	GENERAL REMARKS:
UNIT "5A" - A.D.U. #1:						
LIVING ROOM	197.667 SQ.FT.	8% OF ROOM AREA = 15.813 SQ.FT.	30.000 SQ.FT.	4% OF ROOM AREA = 7.906 SQ.FT.	15.000 SQ.FT.	
KITCHEN	98.336 SQ.FT.	N/A	10.500 SQ.FT.	N/A	5.250 SQ.FT.	
PANTRY / LAUNDRY	54.893 SQ.FT.	N/A	N/A	N/A	N/A	THIS ROOM IS TO HAVE "ON-DEMAND" CEIL. EXAUST FAN
HALLWAY	76.278 SQ.FT.	N/A	N/A	N/A	N/A	
BATHROOM #1	40.000 SQ.FT.	N/A	4.000 SQ.FT.	N/A	2.000 SQ.FT.	THIS BATHROOM IS TO HAVE "ON DEMAND" EXHAUST FAN
BATHROOM #2	40.000 SQ.FT.	N/A	4.000 SQ.FT.	N/A	2.000 SQ.FT.	THIS BATHROOM IS TO HAVE "ON DEMAND" EXHAUST FAN
BEDROOM #1	108.000 SQ.FT.	8% OF ROOM AREA = 8.640 SQ.FT.	30.000 SQ.FT.	4% OF ROOM AREA = 4.320 SQ.FT.	15.000 SQ.FT.	
BEDROOM #1 CLOSET	11.333 SQ.FT.	N/A	N/A	N/A	N/A	
BEDROOM #2	126.844 SQ.FT.	8% OF ROOM AREA = 10.155 SQ.FT.	30.000 SQ.FT.	4% OF ROOM AREA = 5.077 SQ.FT.	15.000 SQ.FT.	
BEDROOM #2 CLOSET	9.6675 SQ.FT.	N/A	N/A	N/A	N/A	

UNIT AND ROOM TITLE	ROOM AREA	AREA OF NATURAL LIGHT REQUIRED:	AREA OF NATURAL LIGHT PROVIDED:	AREA OF NATURAL VENTING REQD.:	AREA OF NATURAL VENTING PROVIDED:	GENERAL REMARKS:
UNIT "6A" - A.D.U. #2:						
LIVING ROOM	197.667 SQ.FT.	8% OF ROOM AREA = 15.813 SQ.FT.	30.000 SQ.FT.	4% OF ROOM AREA = 7.906 SQ.FT.	15.000 SQ.FT.	
KITCHEN	98.336 SQ.FT.	N/A	10.500 SQ.FT.	N/A	5.250 SQ.FT.	
PANTRY / LAUNDRY	54.893 SQ.FT.	N/A	N/A	N/A	N/A	THIS ROOM IS TO HAVE "ON-DEMAND" CEIL. EXAUST FAN
HALLWAY	76.278 SQ.FT.	N/A	N/A	N/A	N/A	
BATHROOM #1	40.000 SQ.FT.	N/A	4.000 SQ.FT.	N/A	2.000 SQ.FT.	THIS BATHROOM IS TO HAVE "ON DEMAND" EXHAUST FAN
BEDROOM #1	108.000 SQ.FT.	8% OF ROOM AREA = 8.640 SQ.FT.	30.000 SQ.FT.	4% OF ROOM AREA = 4.320 SQ.FT.	15.000 SQ.FT.	
BEDROOM #1 CLOSET	11.333 SQ.FT.	8% OF ROOM AREA = 8.640 SQ.FT.	30.000 SQ.FT.	4% OF ROOM AREA = 4.320 SQ.FT.	15.000 SQ.FT.	
BEDROOM #2 CLOSET	126.844 SQ.FT.	8% OF ROOM AREA = 10.155 SQ.FT.	30.000 SQ.FT.	4% OF ROOM AREA = 5.077 SQ.FT.	15.000 SQ.FT.	
BEDROOM #2 CLOSET	9.6675 SQ.FT.	N/A	N/A	N/A	N/A	

UNIT AND ROOM TITLE	ROOM AREA	AREA OF NATURAL LIGHT REQUIRED:	AREA OF NATURAL LIGHT PROVIDED:	AREA OF NATURAL VENTING REQD.:	AREA OF NATURAL VENTING PROVIDED:	GENERAL REMARKS:
GARAGE UNIT #1	215.000 SQ.FT.	N/A	30.000 SQ.FT.	N/A	15.000 SQ.FT.	
GARAGE UNIT #2	215.000 SQ.FT.	N/A	N/A	N/A	N/A	
GARAGE UNIT #3	215.000 SQ.FT.	N/A	N/A	N/A	N/A	
GARAGE UNIT #4	215.000 SQ.FT.	N/A	N/A	N/A	N/A	
GARAGE UNIT #5	215.000 SQ.FT.	N/A	N/A	N/A	N/A	
MECHANICAL & STORAGE RM.	130.333 SQ.FT.	N/A	N/A	N/A	N/A	

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LICENSED ARCHITECT
DONGME! SUN
No. C 30,083
RENEWAL 5-31-25
STATE OF CALIFORNIA

NOT VALID WITHOUT A WET SIGNATURE

DRAWING:
Door, Window & Misc.
Finish Schedules

PROJECT:
Haren Properties, LLC
Gabriel Connors
4 Plex - Barnell Ave.
Morgan Hill, Calif.
County of Santa Clara

BARNELL AVENUE FOUR PLEX

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DATE: DECEMBER 30, 2023

SCALE: AS NOTED

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BARNELL

DRAWING: T.2

FINISH SCHEDULES

door schedule:

SYM.	SIZE	DESCRIPTION (NOTE: DOORS AS SPECIFIED ARE FOR BID PURPOSES ONLY. ACTUAL DOOR SELECTION IS TO BE DIRECTED BY THE HOME OWNER.	THK	REMARKS	QTY.
A	3'-0" X 6'-8"	JELD-WEN (OR EQUAL) - SOLID CORE, 6 PANEL METAL ENTRY DOOR W/ EMBOSSED WOOD GRAIN FACE - PRIMED AND READY FOR PAINT	1 3/4"	SOLID CORE FRONT ENTRY DOOR W/ PRIMED AND READY FOR PAINT PRE-HUNG AND DRILLED - READY FOR DOOR HARDWARE	4
A1	2'-8" X 6'-8"	JELD-WEN (OR EQUAL) - SOLID CORE, 6 PANEL METAL ENTRY DOOR W/ EMBOSSED WOOD GRAIN FACE - PRIMED AND READY FOR PAINT	1 3/4"	SOLID CORE FRONT ENTRY DOOR W/ PRIMED AND READY FOR PAINT PRE-HUNG AND DRILLED - READY FOR DOOR HARDWARE	2
AA	3'-0" X 6'-8"	OWNER / CONTRACTOR SELECTED - SOLID CORE, MASONITE "COLONIST" W/ RAISED PANEL AND EMBOSSED WOOD GRAIN	1 3/8"	SOLID CORE DOOR, PRIMED AND READY FOR PAINT PRE-HUNG AND DRILLED - READY FOR DOOR HARDWARE	1
B		THIS LETTER NOT USED			
C	3'-0" X 6'-8"	OPEN LOUVERE SOLID CORE METAL DOOR AS SUPPLIED BY TRUDOOR (OR EQUAL) W/ APPROVED G.I. BUG SCREEN.	1 3/8"	SOLID CORE METAL OPEN LOUVERED DOOR, PRE-HUNG, PRIMED AND READY FOR DOOR HARDWARE W/ APPROVED G.I. BUG SCREEN	1
D	2'-4" X 6'-8"	OPEN LOUVERE SOLID CORE METAL DOOR AS SUPPLIED BY TRUDOOR (OR EQUAL) W/ APPROVED G.I. BUG SCREEN	1 3/8"	SOLID CORE METAL OPEN LOUVERED DOOR, PRE-HUNG, PRIMED AND READY FOR DOOR HARDWARE W/ APPROVED G.I. BUG SCREEN	4
E		THIS LETTER NOT USED			1
F	2'-6" X 6'-8"	OWNER / CONTRACTOR SELECTED - SOLID CORE, MASONITE "COLONIST" W/ RAISED PANEL AND EMBOSSED WOOD GRAIN	1 3/8"	SOLID CORE MASONITE COLONIST (PRE-HUNG AND PRIMED)	13
G	2'-4" X 6'-8"	OWNER / CONTRACTOR SELECTED - SOLID CORE, MASONITE "COLONIST" W/ RAISED PANEL AND EMBOSSED WOOD GRAIN	1 3/8"	SOLID CORE MASONITE COLONIST (PRE-HUNG AND PRIMED)	15
H	2'-6" X 6'-8"	JELD-WEN (OR EQUAL) - SOLID CORE, OPEN LOUVER INTERIOR DOOR W/ WOOD GRAIN EMBOSSED FINISH - PRIMED FOR PAINT	1 3/8"	SOLID CORE OPEN LOUVER INTERIOR DOOR W/ WOOD GRAIN FINISH, PRIMED AND READY FOR PAINT, PRE-HUNG AND READY FOR DOOR HARDWARE	5
I	PAIR 2'-6" X 6'-8" BI-FOLD CLOSET DOOR	JELD-WEN (OR EQUAL) - SOLID CORE, OPEN LOUVER INTERIOR DOOR W/ WOOD GRAIN EMBOSSED FACE - PRIMED FOR PAINT	1 3/8"	SOLID CORE OPEN LOUVER INTERIOR DOOR W/ WOOD GRAIN FINISH, PRIMED AND READY FOR PAINT, PRE-HUNG AND READY FOR DOOR HARDWARE	1 PAIR
J	PAIR 2'-0" X 6'-8" BI-PASS CLOSET DOOR	OWNER / CONTRACTOR SELECTED - SOLID CORE, MASONITE "COLONIST" W/ RAISED PANEL AND EMBOSSED WOOD GRAIN	1 3/8"	SOLID CORE MASONITE COLONIST BY-PASS CLOSET DOOR ASSEMBLY PRE-HUNG, PRIMED AND READY FOR DOOR HARDWARE	5 PAIR
K	PAIR 2'-0" X 6'-8" BI-FOLD CLOSET DOOR	OWNER / CONTRACTOR SELECTED - SOLID CORE, MASONITE "COLONIST" W/ RAISED PANEL AND EMBOSSED WOOD GRAIN	1 3/8"	SOLID CORE MASONITE COLONIST BY-FOLD CLOSET DOOR ASSEMBLY PRE-HUNG, PRIMED AND READY FOR DOOR HARDWARE	4 PAIR
L	PAIR 2'-6" X 6'-8" BI-PASS CLOSET DOOR	OWNER / CONTRACTOR SELECTED - SOLID CORE, MASONITE "COLONIST" W/ RAISED PANEL AND EMBOSSED WOOD GRAIN	1 3/4"	SOLID CORE MASONITE COLONIST BY-PASS CLOSET DOOR ASSEMBLY PRE-HUNG, PRIMED AND READY FOR DOOR HARDWARE	3 PAIR
M	8'-0" X 8'-0"	CLOPAY (OR EQUAL) SECTIONAL OVERHEAD GARAGE DOOR W/ FIXED WINDOW	-----	INSULATED RAISED PANEL METAL GARAGE DOOR W/ WOOD GRAIN FIN.	5
M1	3'-0" X 6'-8"	JELD-WEN (OR EQUAL) STEEL EXTERIOR DOOR: 1/2 VIEW, 4 LITE 2 - PANEL, PRIMED AND READY FOR PAINT	1 3/8"	SOLID CORE DOOR W/ 4 LITE WINDOW - TEMPERED - PRIMED AND READY FOR PAINT, PRE-HUNG AND DRILLED - READY FOR DOOR HARDWARE	5
N	2'-0" X 6'-8"	OWNER / CONTRACTOR SELECTED - SOLID CORE, MASONITE "COLONIST" W/ RAISED PANEL AND EMBOSSED WOOD GRAIN	1 3/8"	SOLID CORE MASONITE COLONIST (PRE-HUNG AND PRIMED)	2

door hardware schedule:

SYM.	DESCRIPTION	MANUFACTURER & MODEL	FINISH	REMARKS
1	KEYED ENTRY LOCK W/ SEPERATE KEYED DEADBOLT LATCH	QUICK SET (OR EQUAL) SELECTION BY HOME OWNER	COLOR SELECTION BY OWNER	KEYED ENTRY LOCK W/ SEPERATE KEYED DEADBOLT
2	KEYED ALIKE ENTRY	QUICK SET (OR EQUAL) SELECTION BY HOME OWNER	COLOR SELECTION BY OWNER	KEYED ALIKE ENTRY DOOR
3	PRIVACY LATCH	QUICK SET (OR EQUAL) SELECTION BY HOME OWNER	COLOR SELECTION BY OWNER	
4	PASSAGE LATCH	QUICK SET (OR EQUAL) SELECTION BY HOME OWNER	COLOR SELECTION BY OWNER	
5	CLOSET LATCH / FINGER PULL	QUICK SET (OR EQUAL) SELECTION BY HOME OWNER	COLOR SELECTION BY OWNER	BI-PASS CLOSET HARDWARE ASSEMBLY
6	BI-FOLD CLOSET LATCH ASSEMBLY	QUICK SET (OR EQUAL) SELECTION BY HOME OWNER	COLOR SELECTION BY OWNER	BI-FOLD CLOSET HARDWARE ASSEMBLY
7	GARAGE DOOR OPENER	CLOPAY FURNISHED GARAGE DOOR HARDWARE (SELECTION COLOR AND PATTERN SELECTION BY OWNER)	COLOR SELECTION BY OWNER	

window schedule:

SYM.	SIZE	DESCRIPTION	%OPEN	REMARKS	QTY.
1	3'-0" X 5'-0"	MILGARD TUSCAN "V400" SERIES	50%	5 LITE SINGLE HUNG	14
2	3'-0" X 3'-4"	MILGARD TUSCAN "V400" SERIES	50%	3 LITE SINGLE HUNG	5
3	2'-0" X 2'-0"	MILGARD TUSCAN "V400" SERIES	50%	3 LITE - TEMPERED SINGLE HUNG	8
4	6'-0" X 6'-8"	MILGARD TUSCAN "V400" SERIES	50%	2 LITE - TEMPERED SLIDING PATIO DOOR	6
5	2'-6" X 5'-0"	MILGARD TUSCAN "V400" SERIES	50%	5 LITE SINGLE HUNG	12

plumbing trim schedule:

FIXTURE	LOCATION	MANUFACTURER & MODEL	MATERIAL	COLOR	REMARKS
LAV. FAUCET ASSEMBLY	ALL UNIT BATHROOMS	DELTA (OR EQUAL)	BY OWNER	BY OWNER	8" SPREAD W/ WATER FLOW RESTRICTOR
TOILET HANDLES	ALL UNIT BATHROOMS	DELTA (OR EQUAL)	BY OWNER	BY OWNER	
TUB, SHR HANDLE & FILLER ASSEMBLY	ALL UNIT BATHROOMS	DELTA (OR EQUAL)	BY OWNER	BY OWNER	SINGLE HANDLE FAUCET, WALL MOUNT W/ WATER FLOW RESTRICTOR
SINGLE COMP. SINK FAU. ASSEMBLY	KITCHEN	DELTA (OR EQUAL)	BY OWNER	BY OWNER	DECK MOUNT GOOSE NECK FAUCET W/ WATER FLOW RESTRICTOR

plumbing fixture schedule:

FIXTURE	LOCATION	MANUFACTURER & MODEL	MATERIAL	COLOR	REMARKS
TOILETS	ALL UNIT BATHROOMS	KOHLER (OR EQUAL)	VITROUS CHINA	WHITE	W/ MAXIMUM FLUSH CAPACITY OF 1.28 GALLONS
BATHROOM SINKS	ALL UNIT BATHROOMS	INTRIGAL MOLD CULTURED ONYX (OR EQUAL)	CULTURED ONYX	WHITE	INTERIGAL MOLD CULTURED ONYX
PEDISTAL SINK	ALL UNIT 1/2 BATHRMS.	SELECTION BY OWNER	EN. CAST IRON (OR EQUAL)	WHITE	DECK MOUNT
TUB / SHOWER UNIT	ALL UNIT BATHROOMS	SELECTION BY OWNER	EN. CAST IRON (OR EQUAL)	WHITE	W/ NON-SLIP TUB DECK AND TILE SET TO CEIL'G AT ALL TUB WALLS
SINGLE COMPART. KITCHEN SINK	KITCHEN	KOHLER (OR EQUAL)	S/S	S/S	W/ FARM HOUSE APRON

appliance schedule:

FIXTURE	LOCATION	MANUFACTURER & MODEL	MATERIAL	COLOR	REMARKS
4 BURNER RANGE W/ OVEN BELOW	KITCHEN	G.E. (OR EQUAL)	N/A	BY OWNER	ELECTRIC 4 BURNER RANGE W/ SELF-CLEANING CONV. OVEN BELOW
CONT. FEED DISPOSAL UNIT	KITCHEN	IN-SINK-ER-ATOR	N/A	BY OWNER	1/3 H.P. DISPOSAL UNIT (CONTINUOUS FEED)
REFRIGERATOR / FREEZER	KITCHEN	G.E. (OR EQUAL)	N/A	BY OWNER	FREE STANDING UNIT W/ ICE & WATER DISPENSER (OPTION)
DISHWASHER	KITCHEN	G.E. (OR EQUAL)	N/A	BY OWNER	ENERGY EFFICIANT
ELECTRIC WATER HEATER	ALL UNIT MECH. CLOSETS	A.O. SMITH (OR EQUAL)	N/A	BY OWNER	80 GAL. ELECTRIC WATER HEATER SET W/ APPROVED SIESMIC STRAPS

door & window general notes:

DOOR GENERAL NOTES:

FIRE DOORS: ALL EXTERIOR ACCESS DOORS SHALL COMPLY WITH I.C.B. AND LOCAL CODES FOR EXTERIOR DOOR ASSEMBLIES.

A. THE EXTERIOR SURFACE OR CLADDING SHALL BE OF NON-COMBUSTIBLE OR IGNITION RESISTANT MATERIAL.
B. SHALL BE CONSTRUCTED OF SOLID CORE WOOD THAT COMPLY WITH THE FOLLOWING REQUIREMENTS:
   i. STILES AND RAILS SHALL NOT BE LESS THAN 1 3/8 INCHES THICK.
   ii. RAISED PANELS SHALL NOT BE LESS THEN 1 1/4 INCHES THICK, EXCEPT FOR THE EXTERIOR PERIMETER OF THE RAISED PANEL THAT MAY TAPER TO A TONGUE NOT LESS THEN 3/8 INCH THICK.
C. SHALL HAVE A FIRE-RESISTANCE RATING OF NOT LESS THAN 30 MINUTES WHEN TESTED ACCORDING TO NFPA 252.
D. SHALL BE TESTED TO MEET THE PERFORMANCE REQUIREMENTS OF SFM STANDARD 12-8A-1.

DOOR HARDWARE:
ALL INTERIOR AND EXTERIOR DOORS ARE TO BE PRE-HUNG AND READY FOR DOOR HARDWARE. ALL DOOR CASINGS ARE TO BE SUPPLIED BY THE DOOR MANUFACTURE AND ARE TO BE PRIMED AND READY FOR PAINT.

1. ALL EXTERIOR SWINGING DOORS AND GARAGE / HOUSE COMMON DOORS SHALL HAVE THE FOLLOWING:
   A. DOOR JAMBS SHALL HAVE SOLID BACKING WITH NO VOIDS BETWEEN THE STRIKE SIDE OF THE JAMB AND THE FRAME OPENING WITH A VERTICAL DISTANCE OF 6 INCHES.
   B. DOORS SHALL BE EQUIPPED WITH A SINGLE CYLINDER DEAD BOLT LOCK.
2. ALL DOORS ARE TO BE PRE-HUNG & DRILLED TO ACCEPT DOOR HARDWARE.
3. ALL DOOR THRESHOLDS ARE TO BE BRONZE ANODIZED ALUMINUM (UNLESS OTHERWISED NOTED) HANDICAP ACCESSABLE (OPTIONAL STAIN GRADE OAK OR MAPLE ENTRY DOOR THRESHOLD). (PEMPKO OR EQUAL)
4. ALL BY-PASS CLOSET DOORS ARE TO BE SET W/ KENNA-FRAME BY-PASS CLOSED DOOR FRAMES - SIZED TO WEIGHT. (SEE MANUFACTURE SPECIFICATIONS).
5. ALL DOORS ARE TO BE FITTED W/ PEMPKO (OR EQUAL) DOOR SHOES AND WEATHER STRIPPING.
6. ONE-HOUR OCCUPANCY SEPERATION BETWEEN THE HOUSE AND GARAGE, THE DOOR MUST BE SELF-CLOSING, TIGHT-FITTING SOLID WOOD DOOR 2 INCH IN THICKNESS, OR A SELF-CLOSING TIGHT-FITTING DOOR HAVING A FIRE-PROTECTION RATING OF NOT LESS THEN 20 MINUTES.
7. ALL EXIT DOORS SHALL BE OPRENABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT.
8. NOTE IF THE EGRESS WINDOWS ARE SET WITH A DUEL LATCH THE LATCHES SHALL BE INTER-CONNECTED AND THE LATCHES UNLOCKED BY A SINGLE MOTION FROM THE LOWEST OPENING AND CLOSING DEVICE.
9. FLOOR ELEVATION, THERE SHALL BE A FLOOR OR LANDING ON EACH SIDE OF A DOOR. SUCH FLOOR OR LANDING SHALL BE LEVEL EXCEPT FOR THE EXTERIOR LANDINGS, WHICH ARE PERMITTED TO HAVE A SLOPE TO NOT EXCEED 0.25 VERTICAL INCHES HORIZONTAL. LANDINGS ARE TO BE LEVEL AND A MINIMUM WITH LANDING ELEVATION DIFFERENCE AT 7.50" MAXIMUM (0.75 MAXIMUM DOOR SWINGS OVER THE LANDING.

EXCEPTIONS:

1. DOORS SERVING INDIVITUAL DWELLING UNITS IN GROUP R-2 AND R-3 WHERE THE FOLLOWING APPLY:
   A) A DOOR IS PERMITTED TO OPEN AT THE TOP STEP OF AN INTERIOR FLIGHT OF STAIRS, PROVIDED THE DOOR DOES NOT SWING OVER THE TOP STEP.
   B) SCREEN DOORS AND STORM DOORS ARE PERMITTED TO SWING OVER STAIRS OR LANDINGS.
2. EXTERIOR DOORS AS PROVIDED FOR IN C.R.C. 311.2 AND WHICH ARE NOT ON THE ACCESSABLE ROUTE.
3. IN GROUP R-3 OCCUPANCIES NOT REQUIRED TO BE ADAPTABLE OR ACCESSIBLE, C.R.C. 311.3.2 SHALL BE ENFORCED. THAT THE LANDING AT THE EXTERIOR DOORWAY SHALL NOT BE MORE THAN 7.75 INCHES (197 MM) BELOW THE TOP OF THE THRESHOLD, PROVIDED THE DOOR, OTHER THAN AN EXTERIOR STORM OR SCREEN DOOR DOES NOT SWING OVER THE LANDING.
4. VARIATIONS IN ELEVATIONS DUE TO DIFFERENCES IN FINISH MATERIALS, BUT NOT MORRE THAN 0.5 INCH (12.7MM).

WINDOW GENERAL NOTES:

PROVIDE SAFETY GLAZING IN THE FOLLOWING HAZARDOUS LOCATIONS SUBJECT OT HUMAN IMPACT,

A) GLAZING IN SHOWER AND BATHTUB DOORS AND ENCLOSURES.
B) GLAZING IN ANY PORTION OF A BUILDING WALL ENCLOSING COMPARTMENTS FOR HOT TUBS, WHIRLPOOLS, SAUNAS, STEAM ROOMS, BATHTUBS AND SHOWERS WHERE THE BOTTOM EXPOSED EDGE OF GLAZING IS LESS THAN 60 INCHES ABOVE A STANDING SURFACE AND DRAIN INLET.
C) GLAZING IN FIXED OR OPERABLE PANELS ADJACENT TO A DOOR WHERE THE NEAREST EXPOSED EDGE OF THE GLAZING IS WITHIN A 24 INCH ARC OF EITHER VERTICAL EDGE OF THE DOOR IN A CLOSED POSITION AND WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 60 INCHES ABOVE THE WALKING SURFACE.
D) OTHER GLAZING THAT MEETS ALL OF THE FOLLOWING CONDITIONS:
   EXPOSED AREA OF AN INDIVIDUAL PANE GREATER THAN 9 SQUARE FEE; EXPOSED BOTTOM EDGE LESS THAN 18 INCHES ABOVE THE FLOOR; EXPOSED TOP EDGE GREATER THAN 36 INCHES ABOVE THE FLOOR; ONE OR MORE WALKING SURFACES WITHIN 36 INCHES HORIZONTALLY OF THE PLANE OF THE GLAZING.

EXTERIOR WINDOW COLOR FINISH IS TO BE SELECTED BY THE HOME OWNER. THE GENERAL CONTRACTOR IN CONJUNCTION WITH BOTH THE HOME OWNER AND THE WINDOW PROVIDER IS TO VERIFY ALL EXTERIOR WINDOW COLORS AND CONSTRUCTION MATERIALS WITH THE HOME OWNER PRIOR TO THE ORDERING AND WINDOW INSTALLATION.

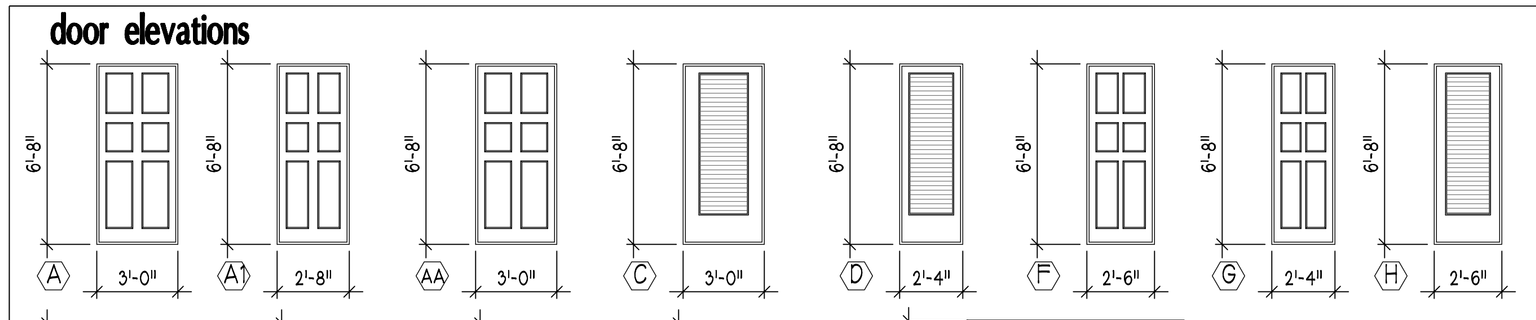
EXTERIOR WINDOWS AND EXTERIOR GLAZED DOOR ASSEMBLIES:

EVERY SLEEPING ROOM SHALL BE PROVIDED WITH AN EMERGENCY EGRESS WINDOW OR DOOR PER C.R.C. SECT. R310 AND AS LISTED BELOW:

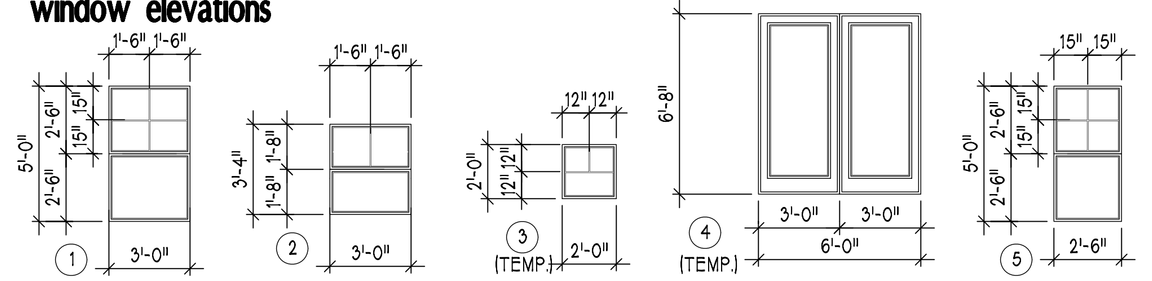
A) MINIMUM NET CLEAR OPENING OF 5.7 SQUARE FEET.
B) MINIMUM NET CLEAR OPENING HEIGHT OF 24 INCHES.
C) MINIMUM NET CLEAR OPENING WIDITH OF 20 INCHES.
D) A FINISHED WINDOW HEIGHT OF 44 INCHES MAXIMUM FROM WINDOW SILL GLAZING TO COMMON FINISH FLOOR.

door & window elevations:

door elevations



window elevations



BARNELL AVENUE FOUR PLEX

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DRAWING:
Door, Window & Misc. Finish Schedules

PROJECT:
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DATE: DECEMBER 30, 2023

SCALE: AS NOTED

DRAWN BY: G.E. MOORE

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DRAWING: T.3

BUILDING SECURITY: ARTICLE I - GENERAL PROVISIONS AND ADMINISTRATION

15.40.010 - PURPOSE.

THE PURPOSE OF THE PROVISIONS OF THIS CHAPTER IS TO PROTECT THE GENERAL HEALTH, SAFETY AND WELLFARE OF THE PUBLIC AND THE PROTECTION OF PERSONS AND PROPERTY BY PROVIDING MINIMUM REQUIREMENTS TO SAFEGUARD PROPERTY AGAINST BURGLARY AND OTHER UNLAWFUL TRESPASSES. THE MINIMUM REQUIREMENTS WILL ACHIEVE THIS PURPOSE BY REGULATING AND CONTROLING THE DESIGN, CONSTRUCTION AND QUALITY OF MATERIALS AND EQUIPMENT AS THEY RELATE TO SECURITY OF ALL BUILDINGS AND STRUCTURES CONSTRUCTED AFTER THE EFFECTIVE DATE OF THE ORDINANCE CODIFIED IN THIS CHAPTER OR REMODELED WITHIN THE BOUNDARIES OF THE CITY AS REQUIRED IN SECTIONS 14050 AND 14051 OF THE CALIFORNIA PENAL CODE RELATING TO BUILDING SECURITY. [ORD. 1861 N.S./11 [PART], 2007: ORD: 481 N.S. [PART], 1979, ORD. NO. 2095 N.S., / 2, 11-20-2013)

15.40.020 - DEFINITIONS.

FOR THE PURPOSE OF THIS CHAPTER, CERTAIN TERMS ARE DEFINED AS FOLLOWS:

1. "ACTIVE DOOR" MEANS WHEN TWO DOORS ARE INSTALLED AS A PAIR, THE ACTIVE DOOR IS THE ONE WHICH MUST BE OPENED FIRST.
2. "ANTI-SHIM DEVICE." SOME SPRING BOLTS HAVE THIS ADDED FEATURE TO PREVENT THE SPRING BOLT FROM BEING DEPRESSED WHEN THE DOOR IS CLOSED BY SLIPPING OR SHIMMYING. THIS DEVICE IS NORMALLY ADJACENT TO THE BOLT AND IS DEPRESSED BY THE STRIKE WHEN THE DOOR IS CLOSED.
3. "ARMORED STRIKE" MEANS A METAL STRIKE PLATE BACKED UP BY STEEL, DESIGNED TO PREVENT JAMB PEELING, MORTISED INTO DOOR JAMB TO RETAIN THE BOLT.
4. "AUXILLARY LOCKING DEVICE" MEANS A SECONDARY LOCKING SYSTEM ADDED TO THE PRIMARY LOCING SYSTEM TO PROVIDE ADDITIONAL SECURITY.
5. "BOLT" MEANS A METAL BAR WHICH, WHEN ACTUATED, IS PROJECTED (OR "THROWN") EITHER HORIZONTALLY OR VERTICALLY INTO A RETAINING MEMBER, SUCH AS A STRIKE PLATE, TO PREVENT A DOOR OR WINDOW FROM MOVING OR OPENING.
6. "BURGLARY-RESISTANT GLAZING" MEANS THOSE MATERIALS AS DEFINED IN THE UNDERWRITERS LABORATORY BULLETIN 972.
7. "CBC" MEANS THE CALIFORNIA BUILDING CODE. THE CBC IS DEDICATED TO THE DEVELOPMENT OF BUILDING CONSTRUCTION AND SAFTEY TO THE PUBLIC BY UNIFORMITY IN THE BUILDING LAWS. THE CODE IS FOUNDED ON BROAD-BASE PERFORMANCE PRINCIPLES THAT MAKE POSSIBLE THE USE OF NEW MATERIALS AND CONSTRUCTION SYSTEMS.
8. "COMMERCIAL BUILDING" MEANS A BUILDING, OR PORTION THEREOF, USED FOR A PURPOSE OTHER THAN A DWELLING.
9. "CYLINDER" MEANS THE SUBASSEMBLY OF A LOCC CONTAINING THE CYLINDER CORE, TUMBLER MECHANISM AND THE KEYWAY.
10. "CYLINDER GUARD" MEANS A FREE-TURNING SOLID METAL PROTECTIVE DEVICE USED TO ENCOMPASS THE CYLINDER OF A LOCK RENDERING IT LESS VULNERABLE TO WRENCHING AND TWISTING ATTACKS.
11. "DEAD BOLT" MEANS A METAL BOLT WHICH CANNOT BE MOVED WHEN THE DOOR IS LOCKED, AND MUST BE KEY OPERABLE AND KEY, THUMBTURN OR LEVER OPERABLE FROM THE INTERIOR. THE BOLT MUST PROJECT A MINIMUM OF ONE INCH FROM THE EDGE OF THE DOOR AND MUST CONTAIN A CYLINDER GUARD ON THE EXTERIOR SIDE WHEN THE CYLINDER IS EXPOSED.
12. "DEADLATCH" OR "DEADLOCKING LATCH" MEANS A SPRING-ACTIVATED LATCH BOLT HAVING A BEVELED END AND INCORPORATING A PLUNGER WHICH, WHEN DEPRESSED, AUTOMATICALLY LOCKS THE PROJECTED LATCH BOLT AGAINST RETURN BY END PRESSURE.
13. "DOOR" MEANS A HINGED, SLIDING OR OTHER MECHANICALLY OPERATED BARRIER WHICH MAY BE OPENED AND CLOSED TO ALLOW OR PREVENT ENTRANCE OR EGRESS TO A BUILDING OR STRUCTURE.
14. "DOOR STOP" MEANS A PROJECTION ALONG THE TOP AND SIDES OF A DOOR JAMB WHICH CHECKS THE DOOR'S SWINGING ACTION.
15. "DOUBLE-CYLINDER DEAD BOLT" MEANS A DEAD BOLT LOCK WHICH CAN BE ACTIVATED ONLY BY A KEY ON BOTH THE INTERIOR AND EXTERIOR.
16. "DWELLING" MEANS A BUILDING OR PORTION THEREOF DESIGNED EXCLUSIVIELY FOR RESIDENTIAL OCCUPANCY, INCLUDING SINGLE-FAMILY AND MULTI-FAMILY DWELLINGS.
17. "EXIST INDICATOR" MEANS A DEVICE WHICH SHOWS "OPEN" OR "LOCKED" CONDITION OF EXIT DOOR LOCK.
18. "FLUSHBOLT" MEANS A MANUAL, KEY-OPERATED OR TURN-OPERATED METAL BOLTF NORMALLY USED ON INACTIVE DORRS AND ATTACHED TO THE TOP AND BOTTOM OF THE DOOR, ENGAGING IN THE HEAD AND THRESHOLD OF THE FRAME.
19. "HASP" MEANS A FASTING DEVICE CONSISTING OF A LOOP AND SLOTTED HINGE PLATE.
20. "JAMB" MEANS THE VERTICAL MEMEBERS OF A DOOR FRAME TO WHICH THE DOOR IS SECURED.
21. "MULTIFAMILY DWELLING" MEANS A BUILDING OR PORTION THEREOF DESIGNED FOR OCCUPANCY BY TWO OR MORE FAMILIES LIVING INDEPENDENTLY OF EACH OTHER, INCLUDING HOTELS, MOTELS, APARTMENTS, DUPLEXES AND TOWNHOMES.
22. "PADLOCK" MEANS A LOCKING DEVICE WITH A HARDENED STEEL SHACKLE, LOCKING HEEL AND TOE, WITH MINIMUM FIVE PIN-TUMBLER OPERGATION, WITH NON-REMOVABLE KEY WHEN IN AN UNLOCKED POSITION.
23. "PANIC HARDWARE" MEANS A LATCHING DEVICE ON A DOOR ASEMBLY FOR USE WHEN EMERGENCY EGRESS IS REQUIRED DUE TO FIRE OR OTHER THREAT TO LIFE SAFTEY, DEVICES DESIGNED SO THAT THEY WILL FACILITATE THE SAFE EGRESS OF PEOPLE IN CASE OF AN EMERGENCY WHEN IS APPLIED TO THE RELEASING DEVICE IN THE DIRECTION OF EXIT TRAVEL.
24. "SINGLE-CYLINDER DEAD BOLT" MEANS A DEAD BOLT LOCK WHICH IS ACTIVATED FROM THE OUTSIDE BY A KEY AND FROM THE INSIDE OF A KNOB, THUMB-TURN, LEVER OR SIMILAR MECHANISM.
25. "SOLID-CORE DOOR" MEANS A DOOR COMPOSED OF SOLID WOOD OR COMPOSED OF COMPRESSED WOOD EQUAL IN STRENGTH TO SOLID WOOD CONSTRUCTION.
26. "STRIKE" MEANS A METAL PLATE ATTACHED TO OR MORTISED INTO A DOOR OR DOOR JAMB TO RECEIVE AND TO HOLD A PROJECTED LATCH BOLT AND/OR DEAD BOLT IN ORDER TO SECURE THE DOOR TO THE JAMB.
27. "UL LISTED" MEANS TESTED AND LISTED BY UNERWRITERS LABORATORY, INC.
[ORD. 1861 N.S. / 11 [PART], 2007: ORD. 491 N.S. [PART], 1979; ORD. NO. 2000 N.S. / 10, 1-26-201; ORD. NO. 2095 N.S. / 2, 11-20-201

15.40.030 - ADMINISTRATION AND ENFORCEMENT - SCOPE

THE PROVISIONS SET FORTH IN THIS CHAPTER SHALL BE ADMINISTERED AND ENFORCED BY THE BUILDING OFFICIAL OR AUTHORIZED AGENT AND SHALL APPLY TO THE REGULATION AND CONTROL OF THE DESIGN, CONSTRUCTION AND QUALITY OF MATERIALS AND EQUIPMENT AS THEY RELATE TO THE SECURITY OF ALL BUILDINGS AND STRUCTURES CONSTRUCTED OR REMODELED IN THE CITY AFTER THE EFFECTIVE DATE OF THE ORDINANCE CODIFIED IN THIS CHAPTER. BUILDINGS AND STRUCTURES CONSTRUCTED WITHIN INDUSTRIAL PARKS, BUSINESS PARKS AND PLANNED UNIT DEVELOPMENTS (M-P AND PUD ZONES) ARE EXEMPT FROM THE PROVISIONS OF THIS CHAPTER EXCEPT THAT DEVELOPERS OF SUCH PROJECTS SHALL MEET WITH THE POLICE DEPARTMENTS CRIME PREVENTION UNIT AND THE BUILDING OFFICIAL TO DEVELOP APPROPRIATE SECURITY MEASURES.
[ORD. 1861 N.S. / 11 [PART], 2007: ORD. 615 N.S., 1983: ORD. 491 N.S. [PART], 1979; ORD. NO. 2000 N.S., / 10, 1-26-2011; ORD. NO 209

15.40.040 - APPLICABILITY AND COMPLIANCE.

A. THE PROVISIONS OF THIS CHAPTER SHALL APPLY TO NEW CONSTRUCTION AND TO BUILDINGS OR STRUCTURES TO WHICH ADDITIONS OR ALTERATIONS ARE MADE EXCEPT AS SPECIFICALLY PROVIDED BY THIS CHAPTER.
B. EXISTING MULTIFAMILY DWELLING UNITS WHICH ARE CONVERTED TO PRIVATELY OWNED FAMILY UNITS (CONDOMINIUMS) SHALL COMPLY WITH THE PROVISIONS OF ARTICAL II OF THIS CHAPTER.
C. ANY EXISTING STRUCTURE WHICH CONVERTS FROM ITS ORIGINAL OCCUPANCY GROUP, AS DESIGNATED IN THE CALIFORNIA BUILDING CODE, SHALL COMPLY WITH THE PROVISIONS OF THIS CHAPTER.
[ORD. 1861 N.S. / 11 [PART], 2007: ORD. 491 N.S. [PART], 1979; ORD. NO. 2000 N.S., / 10, 1-26-2011; ORD. NO. 2085 N.S., / 2, 11-20-2013]

15.40.050 - EXEMPTIONS

ANY BUILDING AS DEFINED IN THE CBC AND TITLE 19 OF THE CALIFORNIA ADMINISTRATIVE CODE, REQUIRING SPECIAL TYPE RELEASING LATCHING OR LOCKING DEVICES, OTHER THAN DESCRIBED IN THIS CHAPTER, SHALL BE EXEMPT FROM THE PROVISIONS OF THIS CHAPTER RELATING TO LOCKING DEVICES OF INTERIOR AND/OR EXTERIOR DOORS. THIS SECTION IS INTENDED TO PREVENT CONFUSION AS TO REQUIREMENTS FOR WHAT IS KNOW AS "PANIC HARDWARE."
[ORD. 1861 N.S. / 11 [PART], 2007: ORD. 491 N.S. [PART], 1979; ORD. NO. 2095 N.S., / 2, 11-20-2013)

15.40.060 - RESPONSIBILITY FOR COMPLIANCE.

THE APPLICANT SHALL BE RESPONSIBLE FOR COMPLIANCE WITH THE PROVISIONS SET FORTH IN THIS CHAPTER.

[ORD. 1861 N.S. / 11 [PART], 2007: ORD. 491 N.S. [PART], 1979; ORD. NO. 2095 N.S., / 2, 11-20-2013)

15.40.070 - ALTERNATE MATERIALS AND METHODS OF CONSTRUCTION.

A. THE PROVISIONS OF THIS CHAPTER ARE NOT INTENDED TO PREVENET THE USE OF ANY MATERIAL OR METHOD OF CONSTRUCTION NOT SPECIFICALLY PRESCRIBED BY THIS CHAPTER PROVIDED ANY SUCH ALTERNATE HAS BEEN APPROVED BY THE ENFORCING AUTHORITY, NOR IS IT THE INTENTION OF THIS CHAPTER TO EXCLUDE ANY SOUND METHOD OF STRUCTURAL DESIGN OR ANALYSIS NOT SPECIFICALLY PROVIDED FOR IN THIS CHAPTER. MATERIALS, METHODS OF CONSTRUCTION, OR STRUCTURAL DESIGN LIMITATIONS PROVIDED FOR IN THIS CHAPTER ARE TO BE USED UNLESS AN EXCEPTION IS GRANTED BY THE ENFORCING AUTHORITY.

B. THE ENFORCING AUTHORITY MAY APPROVE ANY SUCH ALTERNATE PROVIDED THEY FIND THE PROPOSED DESIGN TO BE SATISFACTORY AND THE MATERIAL AND METHOD OF WORK IS, FOR THE PURPOSE INTENDED, AT LEAST EQUIVALENT TO THAT PRESCRIBED IN THIS CHAPTER IN QUALITY, STRENGTH, EFFECTIVENESS, BURGLARY RESISTANCE, DURABILITY AND SAFETY.
[ORD. 1861 N.S. / 11 [PART], 2007: ORD. 491 N.S. [PART], 1979; ORD. NO. 2095 N.S., / 2, 11-20-2013)

15.40.080 - KEYS AND LOCKS FOR TRACTS OR COMMERCIAL DEVELOPMENTS.

UPON OCCUPANCY BY THE OWNER OR PROPRIETOR, EACH SINGLE UNIT IN A TRACT OR COMMERCIAL DEVELOPMENT, CONSTRUCTED UNDER THE SAME GENERAL PLAN, SHALL HAVE LOCKS USING COMBINATIONS WHICH ARE INTERCHANGE-FREE FROM LOCKS USED IN ALL OTHER SEPERATE DEWELLINGS, PROPRIERTORSHIPS OR SIMILAR DISTINCT OCCUPANCIES.
[ORD. 1861 N.S. / 11 [PART], 2007: ORD. 491 N.S. [PART], 1979; ORD. NO. 2095 N.S., / 2, 11-20-2013)

15.40.090 - METHOD OF ENFORCEMENT, APPEALS AND VARIANCES.

METHODS OF THE ENFORCEMENT, APPEAL AND THE GRANT OF VARIEANCES UNDER THIS CHAPTER SHGALL BE THOSE SET FORTH WITHIN THE MUNICIPAL CODE OF THE CITY.

[ORD. 1861 N.S. / 11 [PART], 2007: ORD. 491 N.S. [PART], 1979; ORD. NO. 2095 N.S., / 2, 11-20-2013)

15.40.100 - CHAPTER PROVISIONS NOT EXCLUSIVE - LIFE SAFETY FACTOR.

NONE OF THE PROVISIONS SET FORTH IN THIS CHAPTER SHALL SUPERSEDE ANY LOCAL, STATE OR FEDERAL LAWS, REGULATIONS OR CODES DEALING WITH THE LIFE SAFETY FACTOR. ENCORCMENT OF THESE PROVISIONS SHALL BE IN CO-OPERATION WITH THE LOCAL FIRE AUTHORITY TO AVOID CONFLICT WITH FIRE LAWS. NO PORTION OF THIS CHAPTER SHALL SUPERSEDE ANY LOCAL, STATE OR FEDRAL LAW, REGULATION OR CODES DEALING WITH LIFE SAFETY FACTORS.

[ORD. 1861 N.S. / 11 [PART], 2007: ORD. 491 N.S. [PART], 1979; ORD. NO. 2095 N.S., / 2, 11-20-2013)

15.40.110 - RIGHT OF ENTRY.

THE ENFORCING AUTHORITY SHALL HAVE THE RIGHT, AND IS HEREBY AUTHORIZED AND EMPOWERED, TO ENTER OR GO ON OR ABOUT ANY BUILDING OR PREMISES BETWEEN EIGHT A.M. AND FIVE P.M. FOR THE PURPOSE OF INSPECTING THE PHYSICAL SECURITY OF SUCH BUILDINGS OR PREMISES, OR FOR ANY OTHER PURPOSES CONSISTENT WITH THIS CHAPTER. THE ENFORCING AUTHORITY SHALL BE GIVEN ACCESS TO ANY AREA OF THE BUILDING OR PREMISES UPON ORAL NOTIFICATION TO THE

APPROVAL CERTIVIFATE NO ---------- CONDITIONS OF APPROVAL- STANDARD CONDITIONS - APPLICATION NO:

15.40.110 - RIGHT OF ENTRY. (cont.)

RESPONSIBLE PERSON, AND UPON EXHIBITING SUITABLE EVIDENCE OF THEIR IDENTITY AND AUTHORITY, PROVIDED, HOWEVER THAT EXCEPT IN AN EMERGENCY SITUATION, AN INSPECTION WARRENT ISSUED PURSUANT TO TITLE 13, PART 3 OF THE CODE OF CIVIL PROCEDURES (SECTIONS 1522.50 TO 1522.57, INCLUSIVE) SHALL FIRST BE SECURED WITH ENTRY OR ACCESS THERETO IS REFUSED, IT IS UNLAWFUL TO REFUSE TO ADMIT SUCH MEMBER WHEN AN INSPECITON WARRANT IS NOT REQUIRED.

[ORD. 1861 N.S. / 11 [PART], 2007: ORD. 491 N.S. [PART], 1979]
[ORD. 2095 N.S., / 2, 11-20-2013; ORD. NO. 2276 N.S., / 60, 5-2-2018]

15.40.120 - APPEALS.

IN ORDER TO PREVENT OR LESSEN THE UNNECESSARY HARDSHIP OR PRACTICAL DIFFICULTIES IN EXCEPTIONAL CASES FWHER IT IS DIFFICULT OR IMPOSSIBLE TO COMPLY WITH THE STRICT LETTER OF THIS CHAPTER, THE OWNER OF HIS DESIGNEATED AGENT SHALL HAVE THE OPTION TO APPLY FOR AN EXEMPTION FROM ANY PROVISION OF THIS CHAPTER TO THE CITY COUNCIL. THE CITY COUNCIL SHALL EXCERCISE ITS POWERS ON THESE MATTERS IN SUCH A WAY THAT THE PUBLIC WELFARE IS SECURED AND SUBSTANTIAL JUSTICCE DONE MOST NEARLY IN ACCORD WITH THE INTENT AND PURPOSE OF THIS CHAPTER.

[ORD. 1861 N.S. / 11 [PART], 2007: ORD. 491 N.S. [PART], 1979; ORD. NO. 2095 N.S., / 2, 11-20-2013)

15.40.130 - VIOLATION.

IT IS UNLAWFUL FOR ANY PERSON, FIRM OR CORPORATION TO ERECT, CONSTRUCT, ENLARGE, ALTER, MOVE, IMPROVE, CONVERT OR DEMOLISH, EQUIP, USE, OCCUPY OR MAINTAIN ANY BUILDING OR STRUCTURE IN THE CITY, OR CAUSE THOSE THINGS TO BE DONE, CONTRARY TO OR IN VIOLATION OF ANY OF THE PROVISIONS OF THIS CHAPTER.
[ORD. NO. 2276 N.S., / 60, 5-2-2018]
EDITORS NOTE - ORD. NO. 2276 N.S., / 60, ADOPTED MAY 2, 2018, AMENDED / 15.40.130 IN ITS ENTIRETY TO READ AS HFREIN SET OUT. FORMER / 15.40.130 PERTAINED TO VIOLATION - PENALTY AND DERIVED FROM ORD. 491 N.S. [PART], ADOPTED IN 1979; AND ORD. NO. 2095 B,S,M . 2M ADIOTED BIV, 20M 2013,

ARTICLE II - SINGLE-FAMILY DWELLINGS

15.40.140 - APPLICABILITY.

MINIMUM STANDARDS FOR DOORS, WINDOWS, GARAGE DOORS AND HOUSE NUMBERS IN SINGLE-FAMILY DEWLLINGS ARE AS SET FORTH IN SECTIONS 15.40.150 TO 15.40.210.
[ORD. 1861 N.S. / 11 [PART], 2007: ORD. 491 N.S. [PART], 1979; ORD. NO. 2095 N.S., / 2, 11-20-2013)

15.40.150 - HOUSE NUMBERS.

A. ALL RESIDENTIAL DWELLINGS SHALL DISPLAY A STREET NUMBER IN A PROMINENT LOCATION ON THE STREET SIDE OF THE RESIDENCE IN SUCH A POSITION THAT THE NUMBER IS EASILY VISIBLE TO APPROACHING EMERGENCY VEHICLES. THE NUMERALS SHALL BE NO LESS THAN FOUR INCHCES IN HEIGHT AND SHALL BE OF A CONTRASTING COLOR TO THE BACKGROUND TO WHICH THEY ARE ATTACHED.
B. HOMES WHOSE ADDRESS NUMBERS ARE NOT CLEARLY VISIBLE FROM FIFTY FEET OF THE ROADWAY SURFACE OR THE FRONT OF THE HOUSE IS BELOW OR ABOVE GRADE LEVEL OR THE FRONT OF THE HOUSE IS BLOCKED BY LANDSCAPING OR IN ANY OTHER WAY THEIR IMMEDIATE OBSERVATION IS BLOCKED, SHALL BE MARKED AT THE STREET ENTRANCE TO THE HOUSE AND ON THE HOUSE ITS SELF SO AS TO MAKE THE HOUSE IMMEDIATELY IDENTIFIABLE.

[ORD. 1861 N.S. / 11 [PART], 2007: ORD. 491 N.S. [PART], 1979; ORD. NO. 2095 N.S., / 2, 11-20-2013)

15.40.160 - EXTERIOR DOORS.

A. EXTERIOR DOORS AND DOORS LEADING FROM THE GARAGE AREA INTO THE DWELLING UNIT SHALL BE OF SOLID CORE CONSTRUCTION A MINIMUM THICKNESS OF ONE AND THREE-FOURTHS INCHES, OR WITH PANELS NOT LESS THAN FIVE-SIXTEENTHS-INCH THICK.
B. ALL EXTERIOR DOORS FOR SINGLE-FAMILY DWELLINGS SHALL HAVE A SINGLE-CYLINDER OR DOUBLE-CYLINDER DEAD BOLT LOCK. THE BOLT SHALL HAVE A MINIMUM THROW OF AT LEAST ONE INCH AND BE CONSTRUCTED SO AS TO REPEL CUTTING TOOL ATTACK. (IT MAY BE DESIRED TO HAVE DEAD BOLT LOCKS CONSTRUCTED SO ASS TO PREVENT THE KEY FROM BEING REMOVED FROM THE INTERIOR CYLINDER WHEN THE BOLT IS PROJECTED.) A DUAL LOCKING MECHANISM CONSTRUCTED SO THAT BOTH DEAD BOLT AND LATCH CAN BE RETRACTED BY A SINGLE ACTION OF THE INSIDE DOOR KNOB, OR LEVER, MAY BE SUBSTITUTED .(PROVIDED IT MEETS ALL OTHER SPECIFICATIONS FOR LOCKING DEVICES.
C. DOORS-LEADING FROM ENCLOSED GARAGE AREAS INTO SINGLE-FAMILLY DWELLINGS SHALL BE EQUIPPED WITH A SINGLE-CYLINDER OR DOUBLE-CYLINDER DEAD BOLT LOCK. ALTERNATE DEVICES EQUALLY RESISTANT TO ILLEGAL ENTRY MAY BE SUBSTITUTED SUBJECT TO PRIOR APPROVAL OF THE BUILDING OFFICIAL OR HIS AUTHORIZED AGENT.
D. EXCEPT WHERE CLEAR VISION PANELS ARE INSTALLED, ALL FRONT EXTERIOR DOORS SHALL BE EQUIPPED WITH A WIDE-ANGLE (ONE HUNDRED-EIGHTY-DEGREE) DOOR VIEWER.
E. OPENINGS FOR DELIVERY OF MAIL WILL BE ALLOWED AND THOSE OPENINGS SHALL BE NO LARGER THAN TWENTY-FOUR SQUARE INCHES. THE OPENING ITSELF SHALL BE NO HIGHER THAN ONE AND ONE-HALF INCHES AND SHALL BE SO CONSTRUCTED TO PROHIBIT ACCESS TO THE INTERIOR DOOR KNOB.
F. EXTERIOR DOORS SWINGING OUT SHALL HAVE NONREMOVABLE HINGES WITH STUDS.
G. EXTERIOR DOORS SWINGING IN SHALL HAVE RABBITED JAMBS.
H. JAMBS FOR ALL DOORS SHALL BE CONSTRUCTED OR PROTECTED SO AS TO PREVENT VIOLATION OF THE STRIKE. JAMBS MUST INCLUDE MINIMUM TWO-AND-ONE-HALF-INCH SOLID CONSTRUCTION AROUND THE STRIKE AREA.
I. GLAZING IN EXTERIOR DOORS OR WITHIN FORTY INCHES OF ANY LOCKING MECHANISM SHALL BE OF FULLY TEMPERED GLASS OR RATED BURGLARY RESISTANT GLAZING, EXEPT WHEN DOUBLE-CYLINDER DEAD BOLT LOCKS ARE INSTALLED.
J. ON DOUBLE DOORS, THE ACTIVE LEAF SHALL BE EQUIPPED WITH A SINGLE-CYLINDER OR DOUBLE-CYLINDER DEAD BOLT LOCK. THE BOLT SHALL HAVE A MINIMUM PROJECTION OF ONE INCH AND BE CONSTRUCTED SO AS TO REPEL CUTTING TOOL ATTACK.
K. THE INACTIVE LEAF OF DOUBLE DOORS SHALL BE EQUIPPED WITH METAL FLUSH BOLTS HAVING A MINIMUM THROW OF FIVE-EIGHTHS INCH INTO THE HEAD AND THRESHOLD OF THE DOOR FRAME.
(ORD. 1861 N.S. / 11 [PART], 2007: ORD. 491 N.S. [PART], 1979, ORD. NO. 2095 N.S., / 2, 11-20-2013)

SLIDING PATIO DOORS OPENING ONTO PATIOS OR BALCONIES WHICH ARE OTHERWISE ACCESSIBLE FROM THE OUTSIDE:

A. IT WILL BE PERMISSABLE FOR SINGLE SLIDING PATIO DOORS TO HAVE THE MOVEABLE SECTION OF THE DOOR SLIDE ON THE OUTSIDE AS WELL AS THE INSIDE OF THE DOOR, ALTHOUGH BOTH SHALL BE PROVIDED WITH PINS OR SLIDING DOOR LOCKS THAT WILL RENDER THE DOOR INCAPABLE OF BEING REMOVED. DOORS SHALL COMPLY WITH TESTS AS SET FORTH IN SECTION 15.40.020.
B. SLIDING DOORS SHALL BE EQUIPPED WITH A VERTICAL-BOLT-TYPE LOCK WHICH USES A HOOK-TYPE BOLT TO GRIP THE DOOR AND FRAME TOGETHER. MOUNTING SCREWS FOR THE LOCK SHALL BE INACCESSIBLE FROM THE OUTSIDE. LOCK BOLTS SHALL BE HARDENED STEEL OR HAVE HARDENED STEEL INSERTS AND SHALL BE CAPABLE OF WITHSTANDING FORCE OF EIGHT HUNDERED POUNDS APPLIED IN ANY DIRECTION. SLIDING DOORS SHALL COMPLY WITH TESTS AS SET FORTH IN SECTION 15.40.020.
C. DOUBLE SLIDING PATIO DOORS MUST BE LOCKED AT THE MEETING RAIL AND MEET THE LOCKING REQUIREMENTS OF SUB-SECTION "B" OF THIS SECTION.

(ORD. 1861 N.S. / 11 [PART], 2007: ORD. 491 N.S. [PART], 1979)
(ORD. NO. 2095 N.S., / 2, 11L-20L-2013; ORD. NO. 2221 N.S., / 5, 11-2-2016)

15.40.180 - WINDOWS - SECURITY REQUIRED WHEN.

A. A WINDOW, SKYLIGHT, OR OTHER LIGHT FORMING A PART OF THE ENCLOSURE OF A DWELLING UNIT SHALL BE CONSTRUCTED, INSTALLED, AND SECURED AS SET FORTH IN SECTION 15.40.190, WHEN SUCH WINDOW, SKYLIGHT, OR LIGHT IS NOT MORE THAN TWELVE FEET VERTICALLY AND SIX FEET HORIZONTALLY OF A STREET, HIGHWAY, YARD, COURT, PASSAGEWAY, CORRIDOR BALCONY, PATIO, BREEZEWAY, OR ANY PORTION OF THE BUILDING WHICH IS AVAILABLE FOR USE BY THE PUBLIC OR OTHER TENNANTS OR SIMILAR AREA. A WINDOW ENCLOSING A PRIVATE GARAGE WITH AN INTERIOR DOOR LEADING TO A DWELLING UNIT SHALL ALSO COMPLY WITH SECTION 15.40.180.

(ORD. 1861 N.S. / 11 [PART], 2007: ORD. 491 N.S. [PART], 1979)
(ORD. NO. 2095 N.S., / 2, 11L-20L-2013; ORD. NO. 2221 N.S., / 5, 11-2-2016)

15.40.190 - WINDOWS - PROTECTION METHODS.

A. WINDOWS SHALL BE SO CONSTRUCTED THAT WHEN THE WINDOW IS LOCKED IT CANNOT BE LIFTED FROM THE FRAME.
B. WINDOW LOCKING DEVICES SHALL BE CAPABLE OF WITH STANDING FORCE OF THREE HUNDERED POUNDS APPLIED IN ANY DIRECTION (SLIDING WINDOWS SHALL COMPLY WITH TESTS AS SET FORTH IN SECTION 15.40.020.
C. LOUVERED GLASS WINDOWS SHALL NOT BE USED.
(ORD. 1861 N.S., / 11 [PART], 2007: ORD. 491 N.S. [PART], 1979; ORD. NO 2095 N.S., / 2, 11-20-2013)

15.40.200 - GARAGE DOORS.

ALL GARAGE DOORS SHALL BE SECURED AS FOLLOWS:

A. OVERHEAD GARAGE DOORS SHALL NOT HAVE BOTTOM VENTS EXCEPT THOSE DOORS HAVING DOUBLE-LOUVERED OR SHIELDED VENTS OR APPROVED ALTERNATE DEVICES TO PROTECT THE LOCKING MECHANISMS.
B. MANUALLY OPERATED GARAGE DOORS SHALL BE PROVIDED WITH SLIDE BOLTS OR ANY OTHER LOCKING DEVICE THAT WILL PROHIBIT THE GARAGE DOOR FROM BEING FORCED OPEN FROM EITHER SIDE.
(ORD. 1861 N.S., / 11 [PART], 2007: ORD. 491 N.S. [PART], 1979; ORD. NO 2095 N.S., / 2, 11-20-2013)

15.40.210 - ALTERNATIVES.

NOTHING CONTAINED IN THIS ARTICLE SHALL BE DEEMED TO PROHIBIT THE USE OF ALTERNATE MATERIALS, SECONDARY LOCK DEVICES AND MEASURES WHEN SUCH ALTERNATE PROVISIONS ARE DEEMED BY THE BUILDING OFFICIAL AS PROVIDING EQUIVALENT EQUIVALENT SECURITY WHEN BASED ON RECOMMENDATIONS OF THE CRIME PRVENTION UNIT OF THE POLICE DEPARTMENT.

(ORD. 1861 N.S., / 11 [PART], 2007: ORD. 491 N.S. [PART], 1979; ORD. NO 2095 N.S., / 2, 11-20-2013)

ARTICAL III - NONRESIDENTIAL BUILDINGS

15.40.220 - APPLICABILITY.

MINIMUM STANDARDS FOR DOORS, WINDOWS, TRANSOMS AND AWNING WINDOWS, ROOF OPENINGS, ADDRESS NUMBERS AND OPEN PARKING LOTS IN NON-RESIDENTIAL BUILDINGS SET OUT IN SECTIONS 15.40.230 THROUGH 15.40.320.

(ORD. 1861 N.S., / 11 [PART], 2007: ORD. 491 N.S. [PART], 1979; ORD. NO 2095 N.S., / 2, 11-20-2013)

15.40.230 - ADDRESS NUMBERS.

A. THE ADDRESS NUMBER OF EVERY COMMERCIAL BUILDING SHALL BE ILLUMINATED DURING THE HOURS OF DARKNESS SO THAT IT WILL BE EASILY VISIBLE FROM THE STREET. THE NUMERALS IN THESE NUMBERS SHALL BE NO LESS THAN SIX INCHES IN HEIGHT AND BE OF A COLOR CONTRASTING TO THE BACKGROUND. IN ADDITION, ANY BUSINESS WHICH AFFORDS VEHICULAR ACCESS TO THE REAR THROUGH ANY DRIVEWAY, ALLYWAY OR PARKING LOT SHALL ALSO DISPLAY THE SAME NUMBERS ON THE BUILDING.

B. ALL EXTERIOR COMMERCIAL DOORS, DURING THE HOURS OF DARKNESS, SHALL BE ILLUMINATED WITH A MINIMUM OF ONE FOOT-CANDLE OF LIGHT. ALL EXTERIOR BULBS SHALL BE PROTECTED BY VANDALISM-RESISTANT COVERS.

(ORD. 1861 N.S., / 11 [PART], 2007: ORD. 491 N.S. [PART], 1979; ORD. NO 2095 N.S., / 2, 11-20-2013)

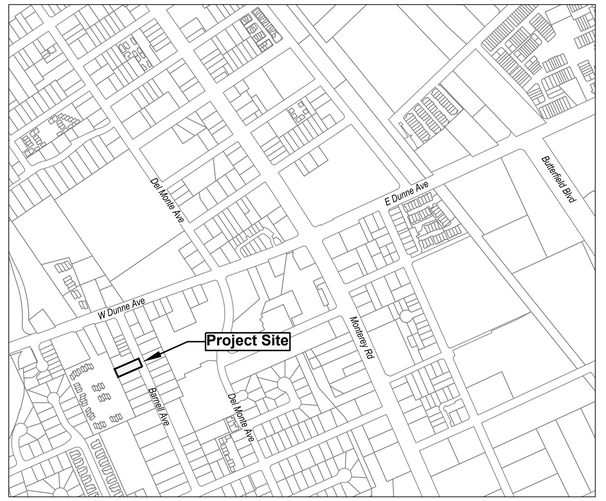
15.40.240 - DOORS.

ALL EXTERIOR DOORS SHALL BE SECURED AS FOLLOWS:

A. A SINGLE DOOR SHALL BE EQUIPPED WITH A SINGLE-CYLINDER OR DOUBLE-CYLINDER DEAD BOLT. THE BOLT SHALL HAVE A MINIMUM PROJECTION OF ONE INCH AND BE CONSTRUCTED SO AS TO REPEL CUTTING TOOL ATTACK. A HOOK OR EXPANDING BOLT CAN BE USED PROVIDING IT HAS A THROW OF THREE-FOURTHS INCH, DEPENDING ON TYPE OF OCCUPANCY.

THE PROVISIONS OF THE PRECEDING PARAGRAPH DO NOT APPLY WHERE (1) PANIC HARDWARE IS REQUIRED, OR (2) AN EQUIVALENT DEVICE APPROVED BY THE ENFORCING AUTHORITY.
ON DOUBLE DOORS, THE ACTIVE LEAF SHALL BE SECURED WITH THE TYPE OF LOCK REQUIRED FOR SINGLE DOORS IN SUBSECTION A OF THIS SECTION. THE INACTIVE LEAF OF A DOUBLE DOOR SHALL BE EQUIPPED WITH METAL FLUSH BOLTS HAVING A MINIMUM THROW OF FIVE-EIGHTHS INCH INTO THE HEAD AND THRESHOLD OF THE DOOR THRESHOLD.
C. ANY SINGLE OR PAIR OF DOORS REQUIRING LOCKING AT THE BOTTOM OR TOP RAIL SHALL HAVE LOCKS WITH A MINIMUM FIVE-EIGTHS INCH THROW AT TOP AND BOTTOM RAILS.
D. EXTERIOR SLIDING COMMERCIAL ENTRANCES SHALL BE SECURED AS SET OUT IN SUBSECTIONS A AND B OF THIS SECTION WITH SPECIAL ATTENTION GIVEN TO SAFETY REGULATIONS. SLIDING DOORS SHALL MEET WITH THE FIRE CODE IF FOR EXIT PURPOSES.
E. ROLLING OVERHEAD DOORS, SOLID OVERHEAD SWINGING, SLIDING OR ACCORDION-TYPE GARAGE DOORS SHALL BE SECURED WITH A CYLINDER LOCK ON THE INSIDE AND/OR PADLOCKS ON BOTH SIDES OF THE DOOR WHEN NOT OTHERWISE CONTROLED OR LOCKED BY ELECTRIC POWER OPERATION.
F. METAL ACCORDION GRATE OR GRILL-TYPE DOORS SHALL BE EQUIPPED WITH METAL GUIDE TRACKS ON TOP AND BOTTOM, AND A CYLINDER LOCK AND/OR PADLOCK. THE BOTTOM TRACK SHALL BE SO DEWSIGNED THAT THE DOOR CANNOT BE LIFTED FROM THE TRACK WHEN THE DOOR IS IN A LOCKED POSITION.
G. OUTSIDE HINGES ON ALL EXTERIOR DOORS SHALL BE PROVIDED WITH NONREMOVABLE PINS WHEN USING PIN-TYPE HINGES.
H. EXCEPT WHEN DOUBLE-CYLINDER DEAD BOLTS ARE UTILIZED, THE GLASS PANELS ADJACENT TO DOOR FRAMES OR WITHIN FORTY INCHES OF ANY DOOR LOCKING MECHANISM SHALL BE CONSTRUCTED OR PROTECTED AS FOLLOWS:
   1. FULLY TEMPERED GLASS OR RATED BURGLARY-RESISTANT GLAZING; OR
   2. IRON OR STEEL GRILLS OF AT LEAST ONE-EIGHTH-INCH MATERIAL WITH A MINIMUM TWO-INCH MESH SECURED

Vicinity Map



SCALE: 1"=10'

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Morgan Hill, CA 95037
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billm@mhengineering.com

Project Information:

APN:	767-12-012
Present Use:	Residential
Proposed Use:	Residential
Present Zoning:	Residential Attached Low Density (RAL 3,500 or RAL 3,000)
Proposed Zoning:	Residential Attached Low Density (RAL 3,500 or RAL 3,000)
Sanitary Sewer:	City of Morgan Hill
Gas and Electric:	PG&E
Water:	City of Morga Hill
Telephone:	Verizon
Existing Improvements:	As Shown
Area:	9,036 sf.

Building Area.....3395 sf
Pavement Area.....2358 sf
Sidewalk Area.....1563 sf
Patio Area.....164 sf
Landscape Area.....2167 sf

Total.....9647 sf
Total Impervious.....7480 sf
Requires Tier 1 (Site Design) and Tier 2 (Treatment)

Building Coverage	
Unit	**Unit Size**
"A"	1,236 SF.
"B"	867 SF.
"C"	867 SF.
"D"	867 SF.
A.D.U.	998 SF.

Sheet Index	
#	**Sheet Title**
1	Site Development Plan
2	Preliminary Grading Plan
3	Preliminary Grading Cross Sections
4	Preliminary Utility Plan
5	Preliminary Storm Water Control Plan

LJ Commons

Site Development Plan

Lands of Murray - APN 767-12-012

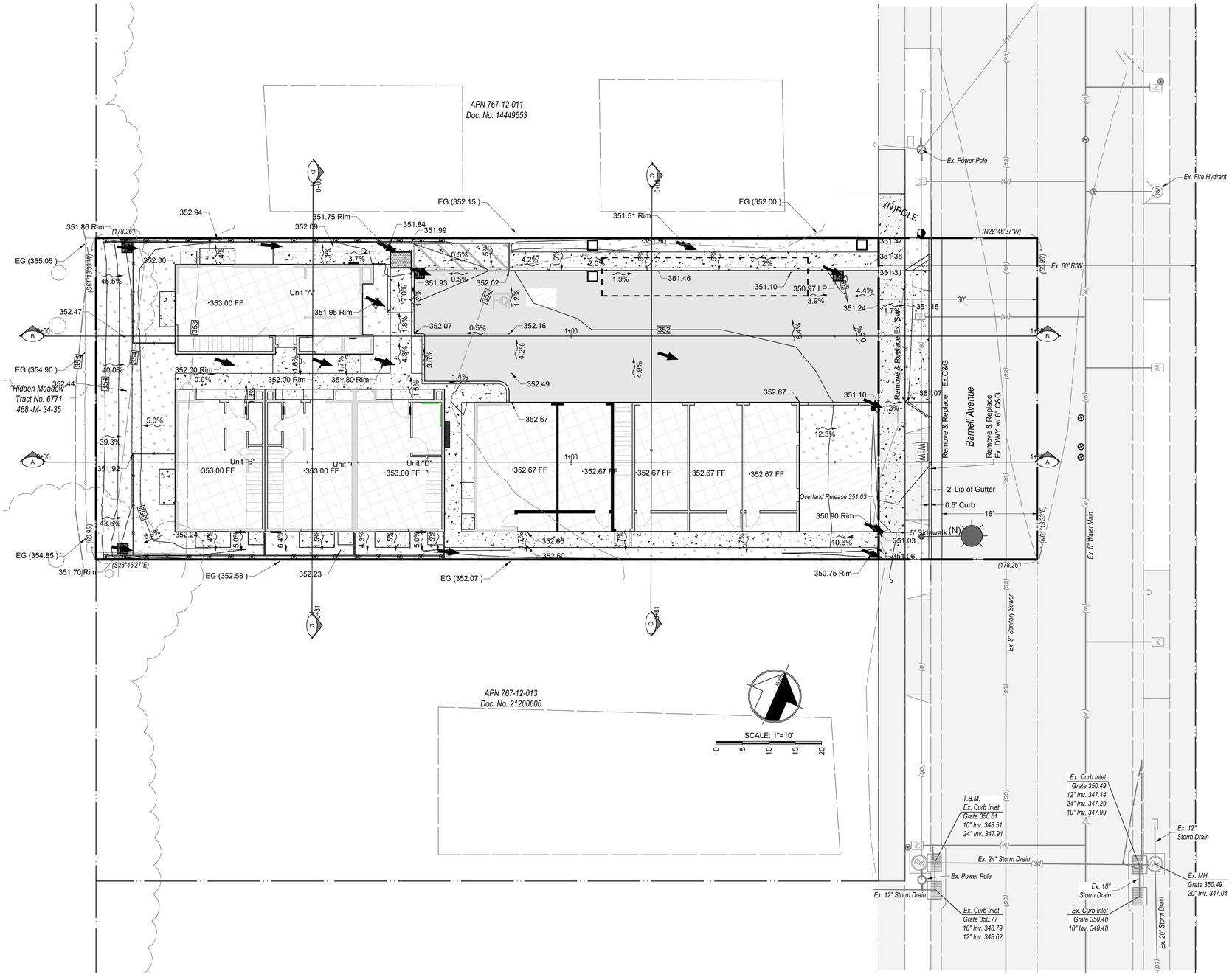
MH engineering Co.
16075 Vineyard Boulevard
Morgan Hill, CA 95037

DATE: 12/20/2023
SCALE: 1" = 10'
DRAWN BY: KOH
CHECKED BY: WJM

JOB NO. 222100

SHEET C1
OF 05

Plotted: 12/20/2023 1:11 PM By: Kevin O'Hanlon
File: N:\Projects\2022\222100 LJ Commons\Engineering\Site Plan\222100 SDP1.dwg Xrefs: 222100 Topo.dwg, 222100 Boundary.dwg, 222100 Title Block.dwg



Legend

Asphalt

Portland Cement Concrete

Landscape

Direction of Overland Release

Grading Quantities

Cut.....346 c.y.
Fill.....135 c.y.
Off Haul...211 c.y.

1. TEMPORARY BENCH MARK- BASED ON A CITY APPROVED BENCHMARK AS SHOWN ON THESE PLANS. TEMPORARY BENCH MARK IS THE Top of Curb Elevation at the catch basin located at the southeasterly corner of APN 767-12-13 **Elev.=350.61** as shown on this Sheet C2.

12/20/2023 2:47pm
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WILLIAM J. McCLINTOCK
No. 24893
EXP 12-31-2023
STATE OF CALIFORNIA
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MH engineering Co.
Morgan Hill, CA 95037
16075 Vineyard Boulevard

LJ Commons

Preliminary Grading Plan

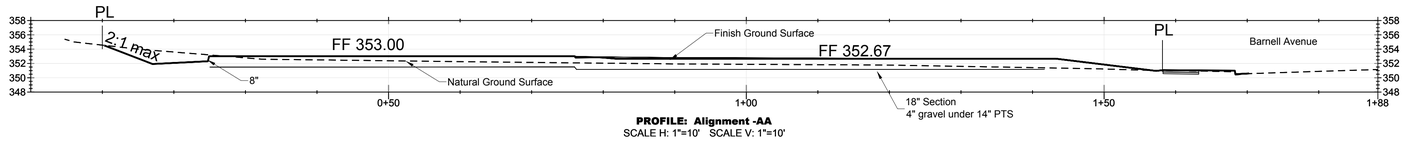
Lands of Murray - APN 767-12-012

DATE: 12/20/2023
SCALE: 1" = 10'
DRAWN BY: KOH
CHECKED BY: WJM

JOB NO. 222100

SHEET C2
OF 05

Plotted: 20 DEC 2023 2:47pm By: Kevin Hyde Last Saved: 20 DEC 2023 2:47pm By: Kevin Hyde File Name: 222100-2023-12-20 Preliminary Grading Plan.dwg



PROFILE: Alignment -AA
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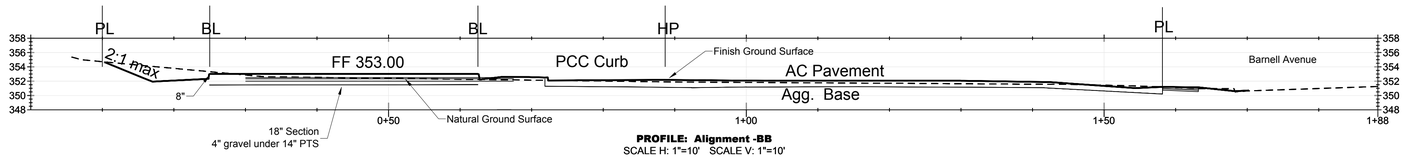

PROFILE: Alignment -BB
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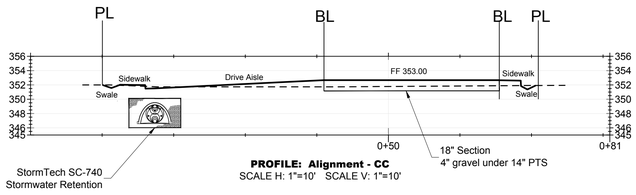

PROFILE: Alignment - CC
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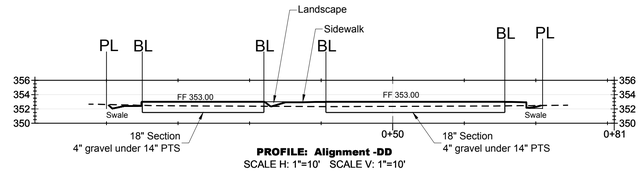

PROFILE: Alignment -DD
SCALE H: 1"=10' SCALE V: 1"=10'

Broadband Standards

CITY OF MORGAN HILL

For Broadband connectivity, a project is required to install conduits in all the public rights-of-way fronting the project site to accommodate multiple broadband providers. The following standards apply:

A. Design Plans

1. The project is required to submit design plans to include an engineering plan and profile of each street showing the location of existing underground utilities in the proposed path of the broadband conduit installation.
2. The design plans shall also include the approximate locations and dimensions for surface restoration.

B. Broadband Conduit

1. Provide a minimum of two (2) conduits each with at least two pull cables. At least one conduit shall remain empty and reserved for use by a potential future broadband service provider.
2. Each conduit shall be a 4" diameter PVC pipe, non-pressure type but has adequate stiffness for direct burial usage without encasement in concrete. The type of pipe shall be consistent with industry standards and be orange in color.
3. Broadband system designers shall field-verify the locations of existing utilities and surface features along and adjacent to the proposed conduit alignment.
4. The preferred horizontal conduit alignment is at centerline of sidewalk or as approved by the City Engineer.
   a. For conduits allowed in the street: Locate new conduit 3' from face of curb. Conduits shall be located parallel to the street centerline, where practicable, and shall not meander along the street. Street crossings shall be perpendicular to the street centerline.
5. Horizontal Clearance:
   a. Minimum 1' horizontal clearance from new conduit to other existing utilities, excluding water mains, gas lines, and electric lines.

   b. Minimum 3' horizontal clearance from new conduit to existing water main.
   c. The applicant is responsible for checking with owners of adjacent non-City utilities (ex. gas and electric lines) to verify their required horizontal separation requirements.
6. All conduits shall be installed underground using directional boring method or open trench.
   a. For Directional Bore Design
      i. Plans shall include a layout plan and profile sheets for directional bores. All existing utilities must be shown to scale on the plan and profile views.
      ii. Vertical Clearance: Provide 3' minimum vertical clearance from all utilities. This includes minor services, such as water services and sewer laterals. For deep crossings, provide a minimum of 5' clearance from utilities and structures. The applicant is responsible for checking with owners of adjacent non-City utilities (ex. gas and electric lines) to verify their required vertical separation requirements.
      iii. Boring and Receiving Pits: Show the length, width, depth, and location of the boring and receiving pits on the plans and profiles. The pits are to be located to minimize the construction impact to the adjacent properties and streets. Pits should not be in front of existing driveways, restaurants, bus stops, fire hydrants, and within street intersections.
      iv. Conflicts with Trees: If trees are in the way of the directional bore, the conduit shall be bored 8' to 12' underneath the tree roots rather than around the tree.
   b. For Trench Design
      i. For open-trench construction in the street: Conduit shall have a minimum cover of 36" above the top of the conduit and allow at least 6" between the top of the conduit and the bottom of the street structural pavement section.
      ii. For a trench outside the street section: Conduit shall have a minimum cover of 30".
      iii. Open trenches deeper than 60" must comply with Cal/OSHA standards, requiring protective systems, such as shoring.

      iv. Vertical Clearance: Provide 12" minimum vertical clearance from all other utility lines and services, including other telecommunication lines.
7. Tracer Wire: The conduits shall be installed with a tracer wire.
   a. Install tracer wire in the trench or bore with all underground conduits. Ensure the tracer wire provides end-to-end electrical continuity for electronically locating the underground conduit system.
   b. In a trenching operation, install the tracer wire no more than 3" above the conduit.
   c. In a boring operation, install the tracer wire in an encasement.
8. Identification Tape: A 6" wide, orange magnetically detectable identification tape shall be installed 12 inches above the entire length of the conduit route. The tape shall be continuously imprinted with "BROADBAND CONDUIT".

C. Pullboxes

1. Indicate locations of all pullboxes, other service boxes and manholes on the design plans.
2. Pullboxes shall be a No. 8 pullbox per City of Morgan Hill Standard E-6.
3. Pullboxes and splice boxes shall be located within the park strip/planter strip or at the back of sidewalk unless the City Engineer approves an alternative location.
4. The maximum distance between any two pull boxes shall not exceed 1,200 feet. Within the 1,200-feet distance, provide pullboxes at locations wherever the cumulative change of direction of the conduit exceeds 180 degrees.
5. The minimum bending radius for conduit shall be 3 feet.
6. Pullboxes shall be located a minimum of 12 inches from all structures.

D. Manholes

1. A detail of the manhole must be shown on the plans.
2. Manholes for broadband conduit shall not be allowed in the street unless an exception is granted by the City Engineer.

3. Manholes allowed to be in the street must have cast iron frames and covers.
4. Manholes that are in sidewalks shall have a concrete polymer frame and cover that matches the color and texture of the sidewalk.
5. Manholes shall not be placed within a driveway approach or within the curb return at intersections.
6. All manholes must be rated for a minimum H-20 wheel load.
7. The name "BROADBAND" shall be permanently cast into or engraved on the manhole covers.

E. Related Work

Refer to the City's Design Standards and Standard Details for Construction for pavement materials, trench limits of restoration, backfill for boring, and backfill for trenching.

12/20/2023 4:24pm
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WILLIAM J. McCLINTOCK
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signature shall be provided upon approval

MH engineering Co.
16075 Vineyard Boulevard
Morgan Hill, CA 95037

LJ Commons

Preliminary Grading Cross Sections

Lands of Murray - APN 767-12-012

DATE: 12/20/2023
SCALE: As Shown
DRAWN BY: KOH
CHECKED BY: WJM

JOB NO. 222100

SHEET C3
OF 05

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Xref: 222100_BORDER

12/20/2023 2:46pm
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APN 767-12-011
Doc. No. 14449553

APN 767-12-013
Doc. No. 21200606

"Hidden Meadow"
Tract No. 6771
468 -M- 34-35

(178.26)
(S51°13'33"W)
(S28°46'27"E)
(60.95)
(N28°46'27"W)
(60.95)
(N61°13'33"E)
(178.26)

Ex. Sidewalk
Ex. Power Pole
PG&E Service
(N) POLE
Ex. Fire Hydrant
Ex. 60' R/W
30'
10' PSE
Ex. 1" Meter To Be Removed
Ex. 1" Servive to be abandoned at main
Barnell Avenue

Stormwater Infiltration Chamber
FVT 5S
Unit "A"
1" Water Meter
(4) 1" Sch. 80 PVC Water Services (Private)
Private 6" PVC Sewer Main S=1%
4" PVC Sewer Lateral (Typ.) S=2%
SS Test MH
6" PVC Sewer Main S=2%
3) 3" PVC
4" Fire Service
4" Dia. Manifold
1" Dia. Irrigation
Individual 1" Water Meters
Individual 1" Water Meters
Unit "B"
Unit "C"
Unit "D"
Transformer
(N)
18'
Ex. 6" Water Main
Ex. 8" Sanitary Sewer
Ex. Curb Inlet
Grate 350.61
10" Inv. 348.51
24" Inv. 347.91
Ex. Curb Inlet
Grate 350.49
12" Inv. 347.14
24" Inv. 347.29
10" Inv. 347.99
Ex. 12" Storm Drain
Ex. 24" Storm Drain
Ex. Power Pole
Ex. MH
Grate 350.49
20" Inv. 347.04
Ex. 10" Storm Drain
Ex. 12" Storm Drain
Ex. Curb Inlet
Grate 350.77
10" Inv. 348.79
12" Inv. 348.62
Ex. Curb Inlet
Grate 350.48
10" Inv. 348.48
Ex. 20" Storm Drain

SCALE: 1"=10'
0 5 10 15 20

LJ Commons

Preliminary Utility Plan

Lands of Murray - APN 767-12-012

MH engineering Co.
Morgan Hill, CA 95037
16075 Vineyard Boulevard

DATE: 12/20/2023
SCALE: 1" = 10'
DRAWN BY: KOH
CHECKED BY: WJM

JOB NO. 222100

SHEET C4
OF 05

Plotted: 20 DEC 2023 2:46pm By: Kevin Hughes
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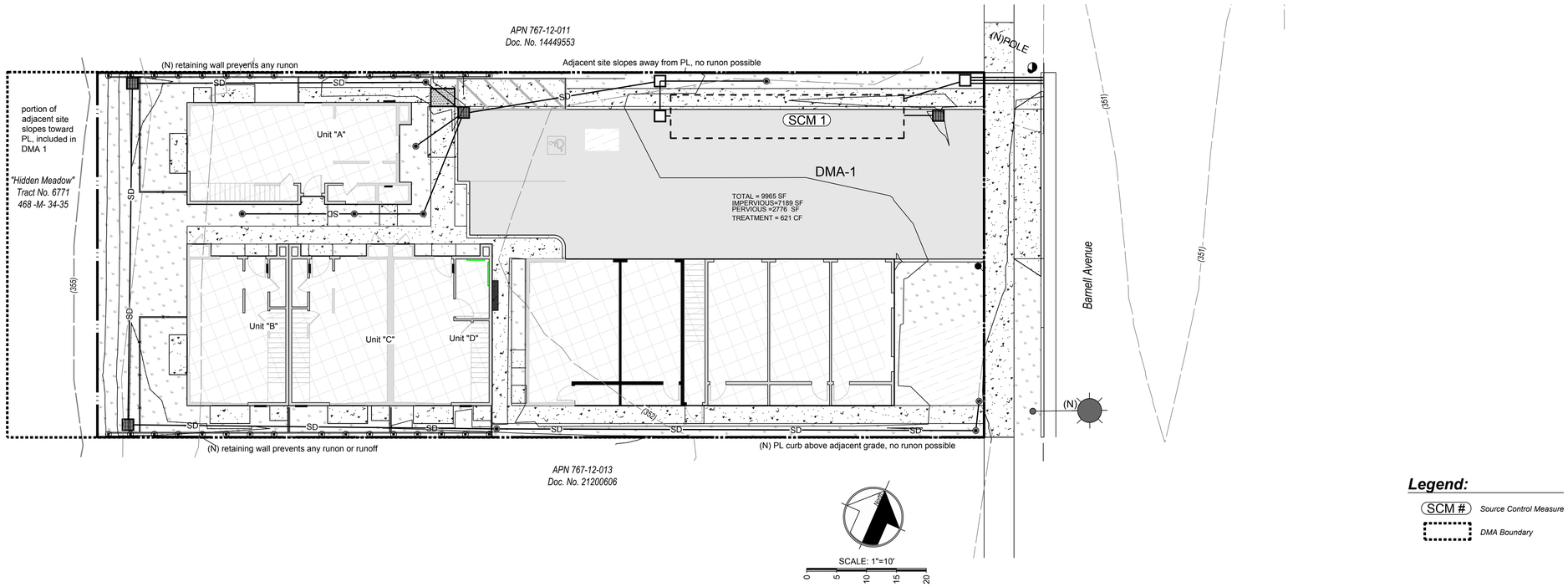
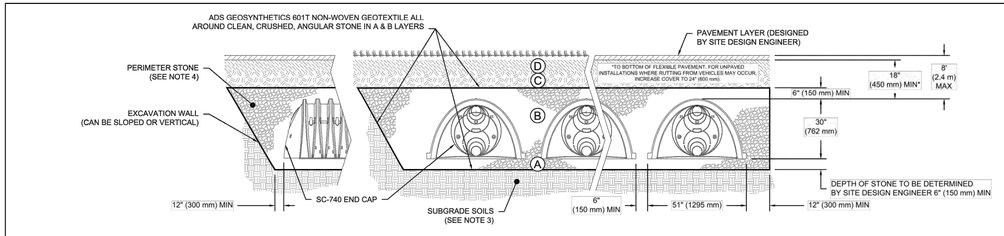


Legend:

SCM # — *Source Control Measure*

DMA Boundary

ADS StormTech Chamber System



NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 550 LBS/FT/%, AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

12/20/2023 2:12pm
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No. 24893
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LJ Commons

MH engineering Co.
Morgan Hill, CA 95037
16075 Vineyard Boulevard

Preliminary Stormwater Control Plan

Lands of Murray - APN 767-12-012

DATE: 12/20/2023
SCALE: 1" = 10'
DRAWN BY: KOH
CHECKED BY: WJM

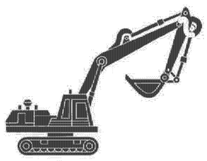
JOB NO. 222100

SHEET C5
OF 05

Plotted: 20-DEC-23 14:12 By: Kevin O'Hanlon
X:\Projects\222100 LJ Commons\Engineering\Civil\Exhibits\222100 SCM Plan.dwg, Stormwater Control Plan Reg, 12/20/2023 2:11:51 PM, Kevin O'Hanlon

Heavy Equipment Operation

Best Management Practices for the Construction Industry



Best Management Practices for the

- Vehicle and equipment operators
- Site supervisors
- General contractors
- Home builders
- Developers

Doing the Job Right

Site Planning and Preventive Vehicle Maintenance

- ❑ Maintain all vehicles and heavy equipment. Inspect frequently for and repair leaks.
- ❑ Perform major maintenance, repair jobs, and vehicle and equipment washing off site where cleanup is easier.
- ❑ If you must drain and replace motor oil, radiator coolant, or other fluids on site, use drip pans or drop cloths to catch drips and spills. Collect all spent fluids, store in separate containers, and properly dispose as hazardous waste (recycle whenever possible).
- ❑ Do not use diesel oil to lubricate equipment parts, or clean equipment. Use only water for any onsite cleaning.
- ❑ Cover exposed fifth wheel hitches and other oily or greasy equipment during rain events.

Storm water Pollution from Heavy Equipment on Construction Sites

Poorly maintained vehicles and heavy equipment that leak fuel, oil, antifreeze or other fluids on the construction site are common sources of storm drain pollution. Prevent spills and leaks by isolating equipment from runoff channels, and by watching for leaks and other maintenance problems. Remove construction equipment from the site as soon as possible

Spill Cleanup

- ❑ Clean up spills immediately when they happen.
- ❑ Never hose down "dirty" pavement or impermeable surfaces where fluids have spilled. Use dry cleanup methods (absorbent materials, cat litter, and/or rags) whenever possible and properly dispose of absorbent materials.
- ❑ Sweep up spilled dry materials immediately. Never attempt to "wash them away" with water, or bury them.
- ❑ Use as little water as possible for dust control. Ensure water used doesn't leave silt or discharge to storm drains.
- ❑ Clean up spills on dirt areas by digging up and properly disposing of contaminated soil.
- ❑ Report significant spills to the appropriate local spill response agencies immediately.
- ❑ If the spill poses a significant hazard to human health and safety, property or the environment, you must also report it to the State Office of Emergency Services.

Roadwork and Paving

Best Management Practices for the Construction Industry

Best Management Practices for the

- Road crews
- Driveway/sidewalk/parking lot construction crews
- Seal coat contractors
- Operators of grading equipment, paving machines, dump trucks, concrete mixers
- Construction inspectors
- General contractors
- Home builders
- Developers

Doing The Job Right

General Business Practices

- ❑ Develop and implement erosion/sediment control plans for roadway embankments.
- ❑ Schedule excavation and grading work during dry weather.
- ❑ Check for and repair leaking equipment.
- ❑ Perform major equipment repairs at designated areas in your maintenance yard, where cleanup is easier. Avoid performing equipment repairs at construction sites.
- ❑ When refueling or when vehicle/equipment maintenance must be done on site, designate a location away from storm drains and creeks.
- ❑ Do not use diesel oil to lubricate equipment parts or clean equipment.
- ❑ Recycle used oil, concrete, broken asphalt, etc. whenever possible; or dispose of properly.

During Construction

- ❑ Avoid paving and seal coating in wet weather, or when rain is forecast, to prevent fresh materials from contacting stormwater runoff.
- ❑ Cover and seal catch basins and manholes when applying seal coat, slurry seal, fog seal, or similar materials.
- ❑ Protect drainage ways by using earth dikes, sand bags, or other controls to divert or trap and filter runoff.

Storm Drain Pollution from Roadwork

Road paving, surfacing, and pavement removal happen right in the street, where there are numerous opportunities for asphalt, saw-cut slurry, or excavated material to illegally enter storm drains. Extra planning is required to store and dispose of materials properly and guard against pollution of storm drains, creeks, and the Bay.

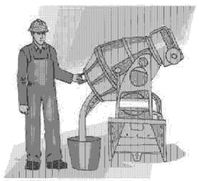
- ❑ Never wash excess material from exposed- aggregate concrete or similar treatments into a street or storm drain. Collect and recycle, or dispose to dirt area.
- ❑ Cover stockpiles (asphalt, sand, etc.) and other construction materials with plastic tarps. Protect from rainfall and prevent runoff with temporary roofs or plastic sheets and berms.
- ❑ Park paving machines over drip pans or absorbent material (cloth, rags, etc.) to catch drips when not in use.
- ❑ Clean up all spills and leaks using "dry" methods (with absorbent materials and/or rags), or dig up, remove, and properly dispose of contaminated soil.
- ❑ Collect and recycle or appropriately dispose of excess abrasive gravel or sand.
- ❑ Avoid over-application by water trucks for dust control.

Asphalt/Concrete Removal

- ❑ Avoid creating excess dust when breaking asphalt or concrete.
- ❑ After breaking up old pavement, be sure to remove all chunks and pieces. Make sure broken pavement does not come in contact with rainfall or runoff.
- ❑ When making saw cuts, use as little water as possible. Shovel or vacuum saw-cut slurry and remove from the site. Cover or protect storm drain inlets during saw-cutting. Sweep up, and properly dispose of, all residues.
- ❑ Sweep, never hose down streets to clean up tracked dirt. Use a street sweeper or vacuum truck. Do not dump vacuumed liquor in storm drains.

Fresh Concrete and Mortar Application

Best Management Practices for the Construction Industry



Best Management Practices for the

- Masons and bricklayers
- Sidewalk construction crews
- Patio construction workers
- Construction inspectors
- General contractors
- Home builders
- Developers
- Concrete delivery/pumping workers

Doing The Job Right

General Business Practices

- ❑ Wash out concrete mixers only in designated wash-out areas in your yard, away from storm drains and waterways, where the water will flow into a temporary waste pit in a dirt area. Let water percolate through soil and dispose of settled, hardened concrete as garbage. Whenever possible, recycle washout by pumping back into mixers for reuse.
- ❑ Wash out chutes onto dirt areas at site that do not flow to streets or drains.
- ❑ Always store both dry and wet materials under cover, protected from rainfall and runoff and away from storm drains or waterways. Protect dry materials from wind.
- ❑ Secure bags of cement after they are open. Be sure to keep wind-blown cement powder away from streets, gutters, storm drains, rainfall, and runoff.
- ❑ Do not use diesel fuel as a lubricant on concrete forms, tools, or trailers.

Storm Drain Pollution from Fresh Concrete and Mortar Applications

Fresh concrete and cement-related mortars that wash into lakes, streams, or estuaries are toxic to fish and the aquatic environment. Disposing of these materials to the storm drains or creeks can block storm drains, causes serious problems, and is prohibited by law.

During Construction

- ❑ Don't mix up more fresh concrete or cement than you will use in a two-hour period.
- ❑ Set up and operate small mixers on tarps or heavy plastic drop cloths.
- ❑ When cleaning up after driveway or sidewalk construction, wash fines onto dirt areas, not down the driveway or into the street or storm drain.
- ❑ Protect applications of fresh concrete and mortar from rainfall and runoff until the material has dried.
- ❑ Wash down exposed aggregate concrete only when the wash water can (1) flow onto a dirt area; (2) drain onto a bermed surface from which it can be pumped and disposed of properly; or (3) be vacuumed from a catchment created by blocking a storm drain inlet. If necessary, divert runoff with temporary berms. Make sure runoff does not reach gutters or storm drains.
- ❑ When breaking up pavement, be sure to pick up all the pieces and dispose of properly. Recycle large chunks of broken concrete at a landfill.
- ❑ Never bury waste material. Dispose of small amounts of excess dry concrete, grout, and mortar in the trash.
- ❑ Never dispose of washout into the street, storm drains, drainage ditches, or streams.

Preventing Pollution: It's Up to Us

In the Santa Clara Valley, storm drains transport water directly to local creeks and San Francisco Bay without treatment. Storm water pollution is a serious problem for wildlife dependent on our waterways and for the people who live near polluted streams or bay lands. Some common sources of this pollution include spilled oil, fuel, and fluids from vehicles and heavy equipment; construction debris; sediment created by erosion; landscaping runoff containing pesticides or weed killers; and materials such as used motor oil, antifreeze, and paint products that people pour or spill into a street or storm drain.

Thirteen valley municipalities have joined together with Santa Clara County and the Santa Clara Valley Water District to educate local residents and businesses and fight storm water pollution. TO comply with this program, contractors most comply with the practices described this drawing sheet.

Spill Response Agencies

DIAL 9-1-1

State Office of Emergency Services Warning Center (24 hours): **800-852-7550**

Santa Clara County Environmental Health Services: (408) 299-6930

Local Pollution Control Agencies

County of Santa Clara Pollution Prevention Program: (408) 441-1195

County of Santa Clara Integrated Waste Management Program: (408) 441-1198

County of Santa Clara District Attorney Environmental Crimes Hotline: (408) 299-TIPS

Santa Clara County Recycling Hotline: 1-800-533-8414

Santa Clara Valley Water District: (408) 265-2600

Santa Clara Valley Water District Pollution Hotline: 1-888-510-5151

Regional Water Quality Control Board San Francisco Bay Region: (510) 622-2300

Palo Alto Regional Water Quality Control Plant: (650) 329-2598
Serving East Palo Alto Sanitary District, Los Altos, Los Altos Hills, Mountain View, Palo Alto, Stanford

Landscaping, Gardening, and Pool Maintenance

Best Management Practices for the Construction Industry

Best Management Practices for the

- Landscapers
- Gardeners
- Swimming pool/spa service and repair workers
- General contractors
- Home builders
- Developers
- Homeowners

Doing The Right Job

General Business Practices

- ❑ Protect stockpiles and landscaping materials from wind and rain by storing them under tarps or secured plastic sheeting.
- ❑ Store pesticides, fertilizers, and other chemicals indoors or in a shed or storage cabinet.
- ❑ Schedule grading and excavation projects during dry weather.
- ❑ Use temporary check dams or ditches to divert runoff away from storm drains.
- ❑ Protect storm drains with sandbags or other sediment controls.
- ❑ Re-vegetation is an excellent form of erosion control for any site

Landscaping/Garden Maintenance

- ❑ Use pesticides sparingly, according to instructions on the label. Rinse empty containers, and use rinse water as product. Dispose of rinsed, empty containers in the trash. Dispose of unused pesticides as hazardous waste.
- ❑ Collect lawn and garden clippings, pruning waste, and tree trimmings. Chip if necessary, and compost.
- ❑ In communities with curbside pick-up of yard waste, place clippings and pruning waste at the curb in approved bags or containers. Or, take to a landfill that composts yard waste. No curbside pickup of yard waste is available for commercial properties.

Storm Drain Pollution From Landscaping and Swimming Pool Maintenance

Many landscaping activities expose soils and increase the likelihood that earth and garden chemicals will run off into the storm drains during irrigation or when it rains. Swimming pool water containing chlorine and copper-based algaecides should never be discharged to storm drains. These chemicals are toxic to aquatic life.

- ❑ Do not blow or rake leaves, etc. into the street, or place yard waste in gutters or on dirt shoulders, unless you are piling them for recycling (allowed by San Jose and unincorporated County only). Sweep up any leaves, litter or residue in gutters or on street.
- ❑ In San Jose, leave yard waste for curbside recycling pickup in piles in the street, 18 inches from the curb and completely out of the flow line to any storm drain.

Pool/Fountain/Spa Maintenance

Draining Pools Or Spas

When it's time to drain a pool, spa, or fountain, please be sure to call your local wastewater treatment plant before you start for further guidance on flow rate restrictions, backflow prevention, and handling special cleaning waste (such as acid wash). Discharge flows shall not exceed 100 gallon per minute.

- ❑ Never discharge pool or spa water to a street or storm drain; discharge to a sanitary sewer cleanout.
- ❑ If possible, when emptying a pool or spa, let chlorine dissipate for a few days and then recycle/reuse water by draining it gradually onto a landscaped area.
- ❑ Do not use copper-based algaecides. Control algae with chlorine or other alternatives, such as sodium bromide.

Filter Cleaning

- ❑ Never clean a filter in the street or near a storm drain. Rinse cartridge and diatomaceous earth filters onto a dirt area, and spade filter residue into soil. Dispose of spent diatomaceous earth in the garbage.
- ❑ If there is no suitable dirt area, call your local wastewater treatment plant for instructions on discharging filter backwash or rinse water to the sanitary sewer.

Painting and Application of Solvents and Adhesives

Best Management Practices for the Construction Industry

Best Management Practices for the

- Homeowners
- Painters
- Paperhangers
- Plasterers
- Graphic artists
- Dry wall crews
- Floor covering installers
- General contractors
- Home builders
- Developers

Doing The Job Right

Handling Paint Products

- ❑ **Keep all liquid paint products and wastes away from the gutter, street, and storm drains.** Liquid residues from paints, thinners, solvents, glues, and cleaning fluids are hazardous wastes and must be disposed of at a hazardous waste collection facility (contact your local stormwater program listed on the back of this brochure).
- ❑ When thoroughly dry, empty paint cans, used brushes, rags, and drop cloths may be disposed of as garbage in a sanitary landfill. Empty, dry paint cans also may be recycled as metal.
- ❑ Wash water from painted buildings constructed before 1978 can contain high amounts of lead, even if paint chips are not present. Before you begin stripping paint or cleaning pre-1978 building exteriors with water under high pressure, test paint for lead by taking paint scrapings to a local laboratory. See Yellow Pages for a state-certified laboratory.
- ❑ If there is loose paint on the building, or if the paint tests positive for lead, block storm drains. Check with the wastewater treatment plant to determine whether you may discharge water to the sanitary sewer, or if you must send it offsite for disposal as hazardous waste.

Storm Drain Pollution from Paints, Solvents, and Adhesives

All paints, solvents, and adhesives contain chemicals that are harmful to wildlife in local creeks, San Francisco Bay, and the Pacific Ocean Toxic chemicals may come from liquid or solid products or from cleaning residues or rags. Paint material and wastes, adhesives and cleaning fluids should be recycled when possible, or disposed of properly to prevent these materials from flowing into storm drains and watercourses.

Painting Cleanup

- ❑ **Never clean brushes or rinse paint containers into a street, gutter, storm drain, French drain, or stream.**
- ❑ For **water-based paints**, paint out brushes to the extent possible, and rinse into a drain that goes to the sanitary sewer. Never pour paint down a storm drain.
- ❑ For **oil-based paints**, paint out brushes to the extent possible and clean with thinner or solvent in a proper container. Filter and reuse thinners and solvents. Dispose of excess liquids and residue as hazardous waste.

Paint Removal

- ❑ Paint chips and dust from non-hazardous dry stripping and sand blasting may be swept up or collected in plastic drop cloths and disposed of as trash.
- ❑ Chemical paint stripping residue and chips and dust from marine paints or paints containing lead, mercury or tributyl tin must be disposed of as hazardous wastes. Lead based paint removal requires a state-certified contractor.
- ❑ When stripping or cleaning building exteriors with high-pressure water, block storm drains. Direct wash water onto a dirt area and spade into soil. Or, check with the wastewater treatment authority to find out if you can collect (mop or vacuum) building cleaning water and dispose to the sanitary sewer. Sampling of the water may be required to assist the wastewater treatment authority in making its decision.

Recycle/Reuse Leftover Paints Whenever Possible

- ❑ Recycle or donate excess **water-based (latex) paint**, or return to supplier.
- ❑ Reuse leftover **oil-based paint**. Dispose of non-recyclable thinners, sludge and unwanted paint, as hazardous waste.
- ❑ Unopened cans of paint may be able to be returned to the paint vendor. Check with the vendor regarding its "buy-back" policy.

Municipal Code Requirements

Municipal Code Chapter 10.08.390 Non-storm water discharges

A. Unlawful discharges. It shall be unlawful to discharge any domestic waste or industrial waste into storm drains, gutters, creeks, or San Francisco Bay. Unlawful discharges to storm drains shall include, but not be limited to, discharge from toilets; sinks; industrial processes; cooling systems; boilers; fabric cleaning; equipment cleaning; vehicle cleaning; construction activities, including, but not limited to, painting, paving, concrete placement, saw cutting and grading; swimming pools; spas; and fountains, unless specifically permitted by a discharge permit or unless exempted pursuant to guidelines published by the superintendent.

B. Threatened discharges. It shall be unlawful to cause hazardous materials, domestic waste, or industrial waste to be deposited in such a manner or location as to constitute a threatened discharge into storm drains, gutters, creeks or San Francisco Bay. A "threatened discharge" is a condition creating a substantial probability of harm, when the probability and potential extent of harm make it reasonably necessary to take immediate action to prevent, reduce or mitigate damages to persons, property or natural resources. Domestic or industrial wastes that are no longer contained in a pipe, tank or other container are considered to be threatened discharges unless they are actively being cleaned up.

Municipal Code Section 10.08.430 Requirements for construction operations.

A. A spill response plan for hazardous waste, hazardous materials and uncontained construction materials shall be prepared and available at the construction sites for all projects where the proposed construction site is equal to or greater than one acre of disturbed soil and for any other projects for which the city engineer determines is necessary to protect surface waters. Preparation of the plan shall be in accordance with guidelines published by the city engineer.

B. A storm water pollution prevention plan shall be prepared and available at the construction sites for all projects greater than one acre of disturbed soil and for any other projects for which the city engineer determines that a storm water management plan is necessary to protect surface waters. Preparation of the plan shall be in accordance with guidelines published by the city engineer.

C. Prior approval shall be obtained from the city engineer or designee to discharge water pumped from construction sites to the storm drain. The city engineer or designee may require gravity settling and filtration upon a determination that either or both would improve the water quality of the discharge. Contaminated groundwater or water that exceeds state or federal requirements for discharge to navigable waters may not be discharged to the storm drain. Such water may be discharged to the sewer, provided that the requirements of Section 10.08.240 are met and the approval of the superintendent is obtained prior to discharge.

D. No cleanup of construction debris from the streets shall result in the discharge of water to the storm drain system; nor shall any construction debris be deposited or allowed to be deposited in the storm drain system. (Prior code § 5-5.643)

Criminal and judicial penalties can be assessed for non-compliance.

General Construction And Site Supervision

Best Management Practices For Construction

Best Management Practices for the

- General contractors
- Site supervisors
- Inspectors
- Home builders
- Developers

Storm Drain Pollution from Construction Activities

Construction sites are common sources of storm water pollution. Materials and wastes that blow or wash into a storm drain, gutter, or street have a direct impact on local creeks and the Bay.

As a contractor, or site supervisor, owner or operator of a site, you may be responsible for any environmental damage caused by your subcontractors or employees.

Doing The Job Right

General Principals

- ❑ Keep an orderly site and ensure good housekeeping practices are used.
- ❑ Maintain equipment properly.
- ❑ Cover materials when they are not in use.
- ❑ Keep materials away from streets, storm drains and drainage channels.
- ❑ Ensure dust control water doesn't leave site or discharge to storm drains.

Advance Planning To Prevent Pollution

- ❑ Schedule excavation and grading activities for dry weather periods. To reduce soil erosion, plant temporary vegetation or place other erosion controls before rain begins. Use the *Erosion and Sediment Control Manual*, available from the Regional Water Quality Control Board, as a reference.
- ❑ Control the amount of runoff crossing your site (especially during excavation) by using berms or temporary or permanent drainage ditches to divert water flow around the site. Reduce storm water runoff velocities by constructing temporary check dams or berms where appropriate.
- ❑ Train your employees and subcontractors. Make these best management practices available to everyone who works on the construction site. Inform subcontractors about the storm water requirements and their own responsibilities.

Good Housekeeping Practices

- ❑ Designate one area of the site for auto parking, vehicle refueling, and routine equipment maintenance. The designated area should be well away from streams or storm drain inlets, bermed if necessary. Make major repairs off site.
- ❑ Keep materials out of the rain – prevent runoff contamination at the source. Cover exposed piles of soil or construction materials with plastic sheeting or temporary roofs. Before it rains, sweep and remove materials from surfaces that drain to storm drains, creeks, or channels.
- ❑ Keep pollutants off exposed surfaces. Place trashcans and recycling receptacles around the site to minimize litter.
- ❑ Clean up leaks, drips and other spills immediately so they do not contaminate soil or groundwater or leave residue on paved surfaces. Use dry cleanup methods whenever possible. If you must use water, use just enough to keep the dust down.
- ❑ Cover and maintain dumpsters. Check frequently for leaks. Place dumpsters under roofs or cover with tarps or plastic sheeting secured around the outside of the dumpster. Never clean out a dumpster by hosing it down on the construction site.
- ❑ Set portable toilets away from storm drains. Make sure portable toilets are in good working order. Check frequently for leaks.

Materials/Waste Handling

- ❑ Practice Source Reduction -- minimize waste when you order materials. Order only the amount you need to finish the job.
- ❑ Use recyclable materials whenever possible. Arrange for pick-up of recyclable materials such as concrete, asphalt, scrap metal, solvents, degreasers, cleared vegetation, paper, rocks, and vehicle maintenance materials such as used oil, antifreeze, batteries, and tires.
- ❑ Dispose of all wastes properly. Many construction materials and wastes, including solvents, water-based paints, vehicle fluids, broken asphalt and concrete, wood, and cleared vegetation can be recycled. Materials that cannot be recycled must be taken to an appropriate landfill or disposed of as hazardous waste. Never bury waste materials or leave them in the street or near a creek or stream bed.

Permits

- ❑ In addition to local building permits, you will need to obtain coverage under the State's General Construction Activity Storm water Permit if your construction site disturbs one acre or more. Obtain information from the Regional Water Quality Control Board.

Earth-Moving And Dewatering Activities

Best Management Practices for the Construction Industry

Best Management Practices for the

- Bulldozer, back hoe, and grading machine operators
- Dump truck drivers
- Site supervisors
- General contractors
- Home builders
- Developers

Doing The Job Right

General Business Practices

- ❑ Schedule excavation and grading work during dry weather.
- ❑ Perform major equipment repairs away from the job site.
- ❑ When refueling or vehicle/equipment maintenance must be done on site, designate a location away from storm drains.
- ❑ Do not use diesel oil to lubricate equipment parts, or clean equipment.

Practices During Construction

- ❑ Remove existing vegetation only when absolutely necessary. Plant *temporary* vegetation for erosion control on slopes or where construction is not immediately planned.
- ❑ Protect down slope drainage courses, streams, and storm drains with wattles, or temporary drainage swales. Use check dams or ditches to divert runoff around excavations. Refer to the Regional Water Quality Control Board's *Erosion and Sediment Control Field Manual* for proper erosion and sediment control measures.

Storm Drain Pollution from Earth-Moving Activities and Dewatering

Soil excavation and grading operations loosen large amounts of soil that can flow or blow into storm drains when handled improperly. Sediments in runoff can clog storm drains, smother aquatic life, and destroy habitats in creeks and the Bay. Effective erosion control practices reduce the amount of runoff crossing a site and slow the flow with check dams or roughened ground surfaces.

Contaminated groundwater is a common problem in the Santa Clara Valley. Depending on soil types and site history, groundwater pumped from construction sites may be contaminated with toxics (such as oil or solvents) or laden with sediments. Any of these pollutants can harm wildlife in creeks or the Bay, or interfere with wastewater treatment plant operation.

Discharging sediment-laden water from a dewatering site into any water of the state without treatment is prohibited.

- ❑ Cover stockpiles and excavated soil with secured tarps or plastic sheeting.

Dewatering Operations

1. Check for Toxic Pollutants

- ❑ Check for odors, discoloration, or an oily sheen on groundwater.
- ❑ Call your local wastewater treatment agency and ask whether the groundwater must be tested.
- ❑ If contamination is suspected, have the water tested by a certified laboratory.
- ❑ Depending on the test results, you may be allowed to discharge pumped groundwater to the storm drain (if no sediments present) or sanitary sewer. OR, you may be required to collect and haul pumped groundwater offsite for treatment and disposal at an appropriate treatment facility.

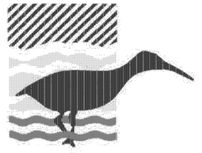
2. Check for Sediment Levels

- ❑ If the water is clear, the pumping time is less than 24 hours, and the flow rate is less than 20 gallons per minute, you may pump water to the street or storm drain.
- ❑ If the pumping time is more than 24 hours and the flow rate greater than 20 gpm, call your local wastewater treatment plant for guidance.
- ❑ If the water is not clear, solids must be filtered or settled out by pumping to a settling tank prior to discharge. Options for filtering include:
  - Pumping through a perforated pipe sunk part way into a small pit filled with gravel;
  - Pumping from a bucket placed below water level using a submersible pump;
  - Pumping through a filtering device such as a swimming pool filter or filter fabric wrapped around end of suction pipe.
- ❑ When discharging to a storm drain, protect the inlet using a barrier of burlap bags filled with drain rock, or cover inlet with filter fabric anchored under the grate. OR pump water through a grassy swale prior to discharge.

Blueprint for a Clean Bay

Remember: The property owner and the contractor share ultimate responsibility for the activities that occur on a construction site. You may be held responsible for any environmental damage caused by your subcontractors or employees.

Best Management Practices for the Construction Industry



2022 CALIFORNIA GREEN BUILDING STANDARDS CODE
RESIDENTIAL MANDATORY MEASURES, SHEET 1 (January 2023)

Y = YES
N/A = NOT APPLICABLE
RESPON. PARTY = RESPONSIBLE PARTY (ie: ARCHITECT, ENGINEER, OWNER, CONTRACTOR, INSPECTOR ETC.)

CHAPTER 3
GREEN BUILDING
SECTION 301 GENERAL

301.1 SCOPE. Buildings shall be designed to include the green building measures specified as mandatory in the application checklists contained in this code. Voluntary green building measures are also included in the application checklists and may be included in the design and construction of structures covered by this code, but are not required unless adopted by a city, county, or city and county as specified in Section 101.7.

301.1.1 Additions and alterations. [HCD] The mandatory provisions of Chapter 4 shall be applied to additions or alterations of existing residential buildings where the addition or alteration increases the building's conditioned area, volume, or size. The requirements shall apply only to and/or within the specific area of the addition or alteration.

The mandatory provision of Section 4.106.4.2 may apply to additions or alterations of existing parking facilities or the addition of new parking facilities serving existing multifamily buildings. See Section 4.106.4.3 for application.

Note: Repairs including, but not limited to, resurfacing, restriping and repairing or maintaining existing lighting fixtures are not considered alterations for the purpose of this section.

Note: On and after January 1, 2014, residential buildings undergoing permitted alterations, additions, or improvements shall replace noncompliant plumbing fixtures with water-conserving plumbing fixtures. Plumbing fixture replacement is required prior to issuance of a certificate of final completion, certificate of occupancy or final permit approval by the local building department. See Civil Code Section 1101.1, et seq., for the definition of a noncompliant plumbing fixture, types of residential buildings affected and other important enactment dates.

301.2 LOW-RISE AND HIGH-RISE RESIDENTIAL BUILDINGS. [HCD] The provisions of individual sections of CALGreen may apply to either low-rise residential buildings high-rise residential buildings, or both. Individual sections will be designated by banners to indicate where the section applies specifically to low-rise only (LR) or high-rise only (HR). When the section applies to both low-rise and high-rise buildings, no banner will be used.

SECTION 302 MIXED OCCUPANCY BUILDINGS

302.1 MIXED OCCUPANCY BUILDINGS. In mixed occupancy buildings, each portion of a building shall comply with the specific green building measures applicable to each specific occupancy.

Exceptions:
1. [HCD] Accessory structures and accessory occupancies serving residential buildings shall comply with Chapter 4 and Appendix A4, as applicable.
2. [HCD] For purposes of *CALGreen*, live/work units, complying with Section 419 of the *California Building Code*, shall not be considered mixed occupancies. Live/Work units shall comply with Chapter 4 and Appendix A4, as applicable.

DIVISION 4.1 PLANNING AND DESIGN

ABBREVIATION DEFINITIONS:

HCD	Department of Housing and Community Development
BSC	California Building Standards Commission
DSA-SS	Division of the State Architect, Structural Safety
OSHPD	Office of Statewide Health Planning and Development
LR	Low Rise
HR	High Rise
AA	Additions and Alterations
N	New

CHAPTER 4
RESIDENTIAL MANDATORY MEASURES

SECTION 4.102 DEFINITIONS

4.102.1 DEFINITIONS
The following terms are defined in Chapter 2 *(and are included here for reference)*

FRENCH DRAIN. A trench, hole or other depressed area loosely filled with rock, gravel, fragments of brick or similar pervious material used to collect or channel drainage or runoff water.

WATTLES. Wattles are used to reduce sediment in runoff. Wattles are often constructed of natural plant materials such as hay, straw or similar material shaped in the form of tubes and placed on a downflow slope. Wattles are also used for perimeter and inlet controls.

4.106 SITE DEVELOPMENT

4.106.1 GENERAL. Preservation and use of available natural resources shall be accomplished through evaluation and careful planning to minimize negative effects on the site and adjacent areas. Preservation of slopes, management of storm water drainage and erosion controls shall comply with this section.

4.106.2 STORM WATER DRAINAGE AND RETENTION DURING CONSTRUCTION. Projects which disturb less than one acre of soil and are not part of a larger common plan of development which in total disturbs one acre or more, shall manage storm water drainage during construction. In order to manage storm water drainage during construction, one or more of the following measures shall be implemented to prevent flooding of adjacent property, prevent erosion and retain soil runoff on the site.

1. Retention basins of sufficient size shall be utilized to retain storm water on the site.
2. Where storm water is conveyed to a public drainage system, collection point, gutter or similar disposal method, water shall be filtered by use of a barrier system, wattle or other method approved by the enforcing agency.
3. Compliance with a lawfully enacted storm water management ordinance.

Note: Refer to the State Water Resources Control Board for projects which disturb one acre or more of soil, or are part of a larger common plan of development which in total disturbs one acre or more of soil.

(Website: https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.html)

4.106.3 GRADING AND PAVING. Construction plans shall indicate how the site grading or drainage system will manage all surface water flows to keep water from entering buildings. Examples of methods to manage surface water include, but are not limited to, the following:

1. Swales
2. Water collection and disposal systems
3. French drains
4. Water retention gardens
5. Other water measures which keep surface water away from buildings and aid in groundwater recharge.

Exception: Additions and alterations not altering the drainage path.

4.106.4 Electric vehicle (EV) charging for new construction. New construction shall comply with Sections 4.106.4.1 or 4.106.4.2 to facilitate future installation and use of EV chargers. Electric vehicle supply equipment (EVSE) shall be installed in accordance with the *California Electrical Code*, Article 625.

Exceptions:
1. On a case-by-case basis, where the local enforcing agency has determined EV charging and infrastructure are not feasible based upon one or more of the following conditions:
   1.1 Where there is no local utility power supply or the local utility is unable to supply adequate power.
   1.2 Where there is evidence suitable to the local enforcing agency substantiating that additional local utility infrastructure design requirements, directly related to the implementation of Section 4.106.4, may adversely impact the construction cost of the project.
2. Accessory Dwelling Units (ADU) and Junior Accessory Dwelling Units (JADU) without additional parking facilities.

4.106.4.1 New one- and two-family dwellings and townhouses with attached private garages. For each dwelling unit, install a listed raceway to accommodate a dedicated 208/240-volt branch circuit. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or other enclosure in close proximity to the proposed location of an EV charger. Raceways are required to be continuous at enclosed, inaccessible or concealed areas and spaces. The service panel and/or subpanel shall provide capacity to install a 40-ampere 208/240-volt minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device.

Exemption: A raceway is not required if a minimum 40-ampere 208/240-volt dedicated EV branch circuit is installed in close proximity to the proposed location of an EV charger at the time of original construction in accordance with the *California Electrical Code*.

4.106.4.1.1 Identification. The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging as "EV CAPABLE". The raceway termination location shall be permanently and visibly marked as "EV CAPABLE".

4.106.4.2 New multifamily dwellings, hotels and motels and new residential parking facilities.
When parking is provided, parking spaces for new multifamily dwellings, hotels and motels shall meet the requirements of Sections 4.106.4.2.1 and 4.106.4.2.2. Calculations for spaces shall be rounded up to the nearest whole number. A parking space served by electric vehicle supply equipment or designed as a future EV charging space shall count as at least one standard automobile parking space only for the purpose of complying with any applicable minimum parking space requirements established by a local jurisdiction. See Vehicle Code Section 22511.2 for further details.

4.106.4.2.1Multifamily development projects with less than 20 dwelling units; and hotels and motels with less than 20 sleeping units or guest rooms.
The number of dwelling units, sleeping units or guest rooms shall be based on all buildings on a project site subject to this section.

1.EV Capable. Ten (10) percent of the total number of parking spaces on a building site, provided for all types of parking facilities, shall be electric vehicle charging spaces (EV spaces) capable of supporting future Level 2 EVSE. Electrical load calculations shall demonstrate that the electrical panel service capacity and electrical system, including any on-site distribution transformer(s), have sufficient capacity to simultaneously charge all EVs at all required EV spaces at a minimum of 40 amperes.

The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as "EV CAPABLE" in accordance with the California Electrical Code.

Exceptions:

1.When EV chargers (Level 2 EVSE) are installed in a number equal to or greater than the required number of EV capable spaces.

2.When EV chargers (Level 2 EVSE) are installed in a number less than the required number of EV capable spaces, the number of EV capable spaces required may be reduced by a number equal to the number of EV chargers installed.

Notes:

a.Construction documents are intended to demonstrate the project's capability and capacity for facilitating future EV charging.

b.There is no requirement for EV spaces to be constructed or available until receptacles for EV charging or EV chargers are installed for use.

2.EV Ready. Twenty-five (25) percent of the total number of parking spaces shall be equipped with low power Level 2 EV charging receptacles. For multifamily parking facilities, no more than one receptacle is required per dwelling unit when more than one parking space is provided for use by a single dwelling unit.

Exception: Areas of parking facilities served by parking lifts.

4.106.4.2.2 Multifamily development projects with 20 or more dwelling units, hotels and motels with 20 or more sleeping units or guest rooms.
The number of dwelling units, sleeping units or guest rooms shall be based on all buildings on a project site subject to this section.

1.EV Capable. Ten (10) percent of the total number of parking spaces on a building site, provided for all types of parking facilities, shall be electric vehicle charging spaces (EV spaces) capable of supporting future Level 2 EVSE. Electrical load calculations shall demonstrate that the electrical panel service capacity and electrical system, including any on-site distribution transformer(s), have sufficient capacity to simultaneously charge all EVs at all required EV spaces at a minimum of 40 amperes.

The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as "EV CAPABLE" in accordance with the California Electrical Code.

Exception: When EV chargers (Level 2 EVSE) are installed in a number greater than five (5) percent of parking spaces required by Section 4.106.4.2.2, Item 3, the number of EV capable spaces required may be reduced by a number equal to the number of EV chargers installed over the five (5) percent required.

Notes:

a.Construction documents shall show locations of future EV spaces.

b.There is no requirement for EV spaces to be constructed or available until receptacles for EV charging or EV chargers are installed for use.

2.EV Ready. Twenty-five (25) percent of the total number of parking spaces shall be equipped with low power Level 2 EV charging receptacles. For multifamily parking facilities, no more than one receptacle is required per dwelling unit when more than one parking space is provided for use by a single dwelling unit.

Exception: Areas of parking facilities served by parking lifts.

3.EV Chargers. Five (5) percent of the total number of parking spaces shall be equipped with Level 2 EVSE. Where common use parking is provided, at least one EV charger shall be located in the common use parking area and shall be available for use by all residents or guests.

When low power Level 2 EV charging receptacles or Level 2 EVSE are installed beyond the minimum required, an automatic load management system (ALMS) may be used to reduce the maximum required electrical capacity to each space served by the ALMS. The electrical system and any on-site distribution transformers shall have sufficient capacity to deliver at least 3.3 kW simultaneously to each EV charging station (EVCS) served by the ALMS. The branch circuit shall have a minimum capacity of 40 amperes, and installed EVSE shall have a capacity of not less than 30 amperes. ALMS shall not be used to reduce the minimum required electrical capacity to the required EV capable spaces.

4.106.4.2.2.1 Electric vehicle charging stations (EVCS).
Electric vehicle charging stations required by Section 4.106.4.2.2, Item 3, shall comply with Section 4.106.4.2.2.1.

Exception: Electric vehicle charging stations serving public accommodations, public housing, motels and hotels shall not be required to comply with this section. See California Building Code, Chapter 11B, for applicable requirements.

4.106.4.2.2.1.1 Location.
EVCS shall comply with at least one of the following options:

1.The charging space shall be located adjacent to an accessible parking space meeting the requirements of the California Building Code, Chapter 11A, to allow use of the EV charger from the accessible parking space.

2.The charging space shall be located on an accessible route, as defined in the California Building Code, Chapter 2, to the building.

Exception: Electric vehicle charging stations designed and constructed in compliance with the California Building Code, Chapter 11B, are not required to comply with Section 4.106.4.2.2.1.1 and Section 4.106.4.2.2.1.2, Item 3.

4.106.4.2.2.1.2 Electric vehicle charging stations (EVCS) dimensions.
The charging spaces shall be designed to comply with the following:

1.The minimum length of each EV space shall be 18 feet (5486 mm).

2.The minimum width of each EV space shall be 9 feet (2743 mm).

3.One in every 25 charging spaces, but not less than one, shall also have an 8-foot (2438 mm) wide minimum aisle. A 5-foot (1524 mm) wide minimum aisle shall be permitted provided the minimum width of the EV space is 12 feet (3658 mm).

a.Surface slope for this EV space and the aisle shall not exceed 1 unit vertical in 48 units horizontal (2.083 percent slope) in any direction.

4.106.4.2.2.1.3 Accessible EV spaces.
In addition to the requirements in Sections 4.106.4.2.2.1.1 and 4.106.4.2.2.1.2, all EVSE, when installed, shall comply with the accessibility provisions for EV chargers in the California Building Code, Chapter 11B. EV ready spaces and EVCS in multifamily developments shall comply with California Building Code, Chapter 11A, Section 1109A.

4.106.4.2.3 EV space requirements.
1.Single EV space required. Install a listed raceway capable of accommodating a 208/240-volt dedicated branch circuit. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or enclosure in close proximity to the location or the proposed location of the EV space. Construction documents shall identify the raceway termination point, receptacle or charger location, as applicable. The service panel and/ or subpanel shall have a 40-ampere minimum dedicated branch circuit, including branch circuit overcurrent protective device installed, or space(s) reserved to permit installation of a branch circuit overcurrent protective device.

Exception: A raceway is not required if a minimum 40-ampere 208/240-volt dedicated EV branch circuit is installed in close proximity to the location or the proposed location of the EV space, at the time of original construction in accordance with the California Electrical Code.

2.Multiple EV spaces required. Construction documents shall indicate the raceway termination point and the location of installed or future EV spaces, receptacles or EV chargers. Construction documents shall also provide information on amperage of installed or future receptacles or EVSE, raceway method(s), wiring schematics and electrical load calculations. Plan design shall be based upon a 40-ampere minimum branch circuit. Required raceways and related components that are planned to be installed underground, enclosed, inaccessible or in concealed areas and spaces shall be installed at the time of original construction.

Exception: A raceway is not required if a minimum 40-ampere 208/240-volt dedicated EV branch circuit is installed in close proximity to the location or the proposed location of the EV space at the time of original construction in accordance with the California Electrical Code.

4.106.4.2.4 Identification.
The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as "EV CAPABLE" in accordance with the California Electrical Code.

4.106.4.2.5 Electric Vehicle Ready Space Signage.
Electric vehicle ready spaces shall be identified by signage or pavement markings, in compliance with Caltrans Traffic Operations Policy Directive 13-01 (Zero Emission Vehicle Signs and Pavement Markings) or its successor(s).

4.106.4.3 Electric vehicle charging for additions and alterations of parking facilities serving existing multifamily buildings.
When new parking facilities are added, or electrical systems or lighting of existing parking facilities are added or altered and the work requires a building permit, ten (10) percent of the total number of parking spaces added or altered shall be electric vehicle charging spaces (EV spaces) capable of supporting future Level 2 EVSE.

Notes:

1.Construction documents are intended to demonstrate the project's capability and capacity for facilitating future EV charging.

2.There is no requirement for EV spaces to be constructed or available until EV chargers are installed for use.

DIVISION 4.2 ENERGY EFFICIENCY

4.201 GENERAL

4.201.1 SCOPE. For the purposes of mandatory energy efficiency standards in this code, the California Energy Commission will continue to adopt mandatory standards.

DIVISION 4.3 WATER EFFICIENCY AND CONSERVATION

4.303 INDOOR WATER USE

4.303.1 WATER CONSERVING PLUMBING FIXTURES AND FITTINGS. Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the sections 4.303.1.1, 4.303.1.2, 4.303.1.3, and 4.303.4.4.

Note: All noncompliant plumbing fixtures in any residential real property shall be replaced with water-conserving plumbing fixtures. Plumbing fixture replacement is required prior to issuance of a certificate of final completion, certificate of occupancy, or final permit approval by the local building department. See Civil Code Section 1101.1, et seq., for the definition of a noncompliant plumbing fixture, types of residential buildings affected and other important enactment dates.

4.303.1.1 Water Closets. The effective flush volume of all water closets shall not exceed 1.28 gallons per flush. Tank-type water closets shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Tank-type Toilets.

Note: The effective flush volume of dual flush toilets is defined as the composite, average flush volume of two reduced flushes and one full flush.

4.303.1.2 Urinals. The effective flush volume of wall mounted urinals shall not exceed 0.125 gallons per flush. The effective flush volume of all other urinals shall not exceed 0.5 gallons per flush.

4.303.1.3 Showerheads.

4.303.1.3.1 Single Showerhead. Showerheads shall have a maximum flow rate of not more than 1.8 gallons per minute at 80 psi. Showerheads shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Showerheads.

4.303.1.3.2 Multiple showerheads serving one shower. When a shower is served by more than one showerhead, the combined flow rate of all the showerheads and/or other shower outlets controlled by a single valve shall not exceed 1.8 gallons per minute at 80 psi, or the shower shall be designed to only allow one shower outlet to be in operation at a time.

Note: A hand-held shower shall be considered a showerhead.

4.303.1.4 Faucets.

4.303.1.4.1 Residential Lavatory Faucets. The maximum flow rate of residential lavatory faucets shall not exceed 1.2 gallons per minute at 60 psi. The minimum flow rate of residential lavatory faucets shall not be less than 0.8 gallons per minute at 20 psi.

4.303.1.4.2 Lavatory Faucets in Common and Public Use Areas. The maximum flow rate of lavatory faucets installed in common and public use areas (outside of dwellings or sleeping units) in residential buildings shall not exceed 0.5 gallons per minute at 60 psi.

4.303.1.4.3 Metering Faucets. Metering faucets when installed in residential buildings shall not deliver more than 0.2 gallons per cycle.

4.303.1.4.4 Kitchen Faucets. The maximum flow rate of kitchen faucets shall not exceed 1.8 gallons per minute at 60 psi. Kitchen faucets may temporarily increase the flow above the maximum rate, but not to exceed 2.2 gallons per minute at 60 psi, and must default to a maximum flow rate of 1.8 gallons per minute at 60 psi.

Note: Where complying faucets are unavailable, aerators or other means may be used to achieve reduction.

4.303.1.4.5 Pre-rinse spray valves.
When installed, shall meet the requirements in the *California Code of Regulations*, Title 20 (Appliance Efficiency Regulations), Sections 1605.1 (h)(4) Table H-2, Section 1605.3 (h)(4)(A), and Section 1607 (d)(7) and shall be equipped with an integral automatic shutoff.

FOR REFERENCE ONLY: The following table and code section have been reprinted from the *California Code of Regulations*, Title 20 (Appliance Efficiency Regulations),Section 1605.1 (h)(4) and Section 1605.3 (h)(4)(A).

TABLE H-2

STANDARDS FOR COMMERCIAL PRE-RINSE SPRAY VALVES MANUFACTURED ON OR AFTER JANUARY 28, 2019

PRODUCT CLASS [spray force in ounce force (ozf)]	MAXIMUM FLOW RATE (gpm)
Product Class 1 (≤ 5.0 ozf)	1.00
Product Class 2 (> 5.0 ozf and ≤ 8.0 ozf)	1.20
Product Class 3 (> 8.0 ozf)	1.28

Title 20 Section 1605.3 (h)(4)(A): Commercial prerinse spray values manufactured on or after January 1, 2006, shall have a minimum spray force of not less than 4.0 ounces-force (ozf)[113 grams-force(gf)]

4.303.2 Submeters for multifamily buildings and dwelling units in mixed-used residential/commercial buildings.
Submeters shall be installed to measure water usage of individual rental dwelling units in accordance with the *California Plumbing Code*.

4.303.3 Standards for plumbing fixtures and fittings. Plumbing fixtures and fittings shall be installed in accordance with the *California Plumbing Code*, and shall meet the applicable standards referenced in Table 1701.1 of the *California Plumbing Code*.

NOTE:
THIS TABLE COMPILES THE DATA IN SECTION 4.303.1, AND IS INCLUDED AS A CONVENIENCE FOR THE USER.

TABLE - MAXIMUM FIXTURE WATER USE

FIXTURE TYPE	FLOW RATE
SHOWER HEADS (RESIDENTIAL)	1.8 GMP @ 80 PSI
LAVATORY FAUCETS (RESIDENTIAL)	MAX. 1.2 GPM @ 60 PSI MIN. 0.8 GPM @ 20 PSI
LAVATORY FAUCETS IN COMMON & PUBLIC USE AREAS	0.5 GPM @ 60 PSI
KITCHEN FAUCETS	1.8 GPM @ 60 PSI
METERING FAUCETS	0.2 GAL/CYCLE
WATER CLOSET	1.28 GAL/FLUSH
URINALS	0.125 GAL/FLUSH

4.304 OUTDOOR WATER USE

4.304.1 OUTDOOR POTABLE WATER USE IN LANDSCAPE AREAS. Residential developments shall comply with a local water efficient landscape ordinance or the current California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent.

NOTES:

1. The Model Water Efficient Landscape Ordinance (MWELO) is located in the *California Code Regulations*, Title 23, Chapter 2.7, Division 2. MWELO and supporting documents, including water budget calculator, are available at: https://www.water.ca.gov/

DIVISION 4.4 MATERIAL CONSERVATION AND RESOURCE EFFICIENCY

4.406 ENHANCED DURABILITY AND REDUCED MAINTENANCE

4.406.1 RODENT PROOFING. Annular spaces around pipes, electric cables, conduits or other openings in sole/bottom plates at exterior walls shall be protected against the passage of rodents by closing such openings with cement mortar, concrete masonry or a similar method acceptable to the enforcing agency.

4.408 CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING

4.408.1 CONSTRUCTION WASTE MANAGEMENT. Recycle and/or salvage for reuse a minimum of 65 percent of the non-hazardous construction and demolition waste in accordance with either Section 4.408.2, 4.408.3 or 4.408.4, or meet a more stringent local construction and demolition waste management ordinance.

Exceptions:

1. Excavated soil and land-clearing debris.
2. Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist or are not located reasonably close to the jobsite.
3. The enforcing agency may make exceptions to the requirements of this section when isolated jobsites are located in areas beyond the haul boundaries of the diversion facility.

4.408.2 CONSTRUCTION WASTE MANAGEMENT PLAN. Submit a construction waste management plan in conformance with Items 1 through 5. The construction waste management plan shall be updated as necessary and shall be available during construction for examination by the enforcing agency.

1. Identify the construction and demolition waste materials to be diverted from disposal by recycling, reuse on the project or salvage for future use or sale.
2. Specify if construction and demolition waste materials will be sorted on-site (source separated) or bulk mixed (co-mingled stream).
3. Identify diversion facilities where the construction and demolition waste material collected will be taken.
4. Identify construction methods employed to reduce the amount of construction and demolition waste generated.
5. Specify that the amount of construction and demolition waste materials diverted shall be calculated by weight or volume, but not by both.

4.408.3 WASTE MANAGEMENT COMPANY. Utilize a waste management company, approved by the enforcing agency, which can provide verifiable documentation that the percentage of construction and demolition waste material diverted from the landfill complies with Section 4.408.1.

Note: The owner or contractor may make the determination if the construction and demolition waste materials will be diverted by a waste management company.

4.408.4 WASTE STREAM REDUCTION ALTERNATIVE [LR]. Projects that generate a total combined weight of construction and demolition waste disposed of in landfills, which do not exceed 3.4 lbs./sq.ft. of the building area shall meet the minimum 65% construction waste reduction requirement in Section 4.408.1

4.408.4.1 WASTE STREAM REDUCTION ALTERNATIVE. Projects that generate a total combined weight of construction and demolition waste disposed of in landfills, which do not exceed 2 pounds per square foot of the building area, shall meet the minimum 65% construction waste reduction requirement in Section 4.408.1

4.408.5 DOCUMENTATION. Documentation shall be provided to the enforcing agency which demonstrates compliance with Section 4.408.2, items 1 through 5, Section 4.408.3 or Section 4.408.4..

Notes:

1. Sample forms found in "A Guide to the California Green Building Standards Code (Residential)" located at www.hcd.ca.gov/CALGreen.html may be used to assist in documenting compliance with this section.
2. Mixed construction and demolition debris (C & D) processors can be located at the California Department of Resources Recycling and Recovery (CalRecycle).

4.410 BUILDING MAINTENANCE AND OPERATION

4.410.1 OPERATION AND MAINTENANCE MANUAL. At the time of final inspection, a manual, compact disc, web-based reference or other media acceptable to the enforcing agency which includes all of the following shall be placed in the building:

1. Directions to the owner or occupant that the manual shall remain with the building throughout the life cycle of the structure.
2. Operation and maintenance instructions for the following:
   a. Equipment and appliances, including water-saving devices and systems, HVAC systems, photovoltaic systems, electric vehicle chargers, water-heating systems and other major appliances and equipment.
   b. Roof and yard drainage, including gutters and downspouts.
   c. Space conditioning systems, including condensers and air filters.
   d. Landscape irrigation systems.
   e. Water reuse systems.
3. Information from local utility, water and waste recovery providers on methods to further reduce resource consumption, including recycle programs and locations.
4. Public transportation and/or carpool options available in the area.
5. Educational material on the positive impacts of an interior relative humidity between 30-60 percent and what methods an occupant may use to maintain the relative humidity level in that range.
6. Information about water-conserving landscape and irrigation design and controllers which conserve water.
7. Instructions for maintaining gutters and downspouts and the importance of diverting water at least 5 feet away from the foundation.
8. Information on required routine maintenance measures, including, but not limited to, caulking, painting, grading around the building, etc.
9. Information about state solar energy and incentive programs available.
10. A copy of all special inspections verifications required by the enforcing agency or this code.
11. Information from the Department of Forestry and Fire Protection on maintenance of defensible space around residential structures.
12. Information and/or drawings identifying the location of grab bar reinforcements.

4.410.2 RECYCLING BY OCCUPANTS. Where 5 or more multifamily dwelling units are constructed on a building site, provide readily accessible area(s) that serves all buildings on the site and are identified for the depositing, storage and collection of non-hazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastics, organic waster, and metals, or meet a lawfully enacted local recycling ordinance, if more restrictive.

Exception: Rural jurisdictions that meet and apply for the exemption in Public Resources Code Section 42649.82 (a)(2)(A) et seq. are note required to comply with the organic waste portion of this section.

DIVISION 4.5 ENVIRONMENTAL QUALITY

SECTION 4.501 GENERAL

4.501.1 Scope
The provisions of this chapter shall outline means of reducing the quality of air contaminants that are odorous, irritating and/or harmful to the comfort and well being of a building's installers, occupants and neighbors.

SECTION 4.502 DEFINITIONS

5.102.1 DEFINITIONS
The following terms are defined in Chapter 2 *(and are included here for reference)*

AGRIFIBER PRODUCTS. Agrifiber products include wheatboard, strawboard, panel substrates and door cores, not including furniture, fixtures and equipment (FF&E) not considered base building elements.

COMPOSITE WOOD PRODUCTS. Composite wood products include hardwood plywood, particleboard and medium density fiberboard. "Composite wood products" does not include hardboard, structural plywood, structural panels, structural composite lumber, oriented strand board, glued laminated timber, prefabricated wood I-joists or finger-jointed lumber, all as specified in California Code of regulations (CCR), title 17, Section 93120.1.

DIRECT-VENT APPLIANCE. A fuel-burning appliance with a sealed combustion system that draws all air for combustion from the outside atmosphere and discharges all flue gases to the outside atmosphere.

DISCLAIMER: *THIS DOCUMENT IS PROVIDED AND INTENDED TO BE USED AS A MEANS TO INDICATE AREAS OF COMPLIANCE WITH THE CALIFORNIA GREEN BUILDING STANDARDS (CALGREEN) CODE. DUE TO THE VARIABLES BETWEEN BUILDING DEPARTMENT JURISDICTIONS, THIS CHECKLIST IS TO BE USED ON AN INDIVIDUAL PROJECT BASIS AND MAY BE MODIFIED BY THE END USER TO MEET THOSE INDIVIDUAL NEEDS. THE END USER ASSUMES ALL RESPONSIBILITY ASSOCIATED WITH THE USE OF THIS DOCUMENT, INCLUDING VERIFICATION WITH THE FULL CODE.*

I & A ENGINEERING
1610 BLOSSOM HILL ROAD, SUITE "6A"
SAN JOSE, CALIFORNIA 95124
TEL: (408) 268-9337
FAX: (408) 268-1135

DRAWINGS NOT FOR CONSTRUCTION UNTIL STAMPED JOB COPY BY BUILDING DEPARTMENT. ALL DRAWINGS AND WRITTEN MATERIAL APPEARING HEREIN CONSTITUTE ORIGINAL AND UNPUBLISHED WORK OF THE ENGINEER AND MAY NOT BE DUPLICATED, USED, OR DISCLOSED WITHOUT WRITTEN CONSENT OF THE ENGINEER.

Barnell Ave.
Morgan Hill, CA 95037

PROJECT: LJ COMMONS 4 PLEX

DRAWING TITLE: CALGREEN MANDATORY MEASURES

REV	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		

JOB NO.: 23-113
CAD FILE:
DSGN'D BY: I. R.
DRAWN BY: H. N.
CHK'D BY: I. R.
APP'D BY: I. R.
DATE: 4/17/23
SCALE: AS NOTED
DRAWING NO.: CG-1
SHEET_*_OF_*_

2022 CALIFORNIA GREEN BUILDING STANDARDS CODE
RESIDENTIAL MANDATORY MEASURES, SHEET 2 (January 2023)

Y = YES
N/A = NOT APPLICABLE
RESPON. PARTY = RESPONSIBLE PARTY (ie: ARCHITECT, ENGINEER, OWNER, CONTRACTOR, INSPECTOR ETC.)

MAXIMUM INCREMENTAL REACTIVITY (MIR). The maximum change in weight of ozone formed by adding a compound to the "Base Reactive Organic Gas (ROG) Mixture" per weight of compound added, expressed to hundredths of a gram (g O³/g ROG).
Note: MIR values for individual compounds and hydrocarbon solvents are specified in CCR, Title 17, Sections 94700 and 94701.

MOISTURE CONTENT. The weight of the water in wood expressed in percentage of the weight of the oven-dry wood.

PRODUCT-WEIGHTED MIR (PWMIR). The sum of all weighted-MIR for all ingredients in a product subject to this article. The PWMIR is the total product reactivity expressed to hundredths of a gram of ozone formed per gram of product (excluding container and packaging).
Note: PWMIR is calculated according to equations found in CCR, Title 17, Section 94521 (a).

REACTIVE ORGANIC COMPOUND (ROC). Any compound that has the potential, once emitted, to contribute to ozone formation in the troposphere.

VOC. A volatile organic compound (VOC) broadly defined as a chemical compound based on carbon chains or rings with vapor pressures greater than 0.1 millimeters of mercury at room temperature. These compounds typically contain hydrogen and may contain oxygen, nitrogen and other elements. See CCR Title 17, Section 94508(a).

4.503 FIREPLACES
4.503.1 GENERAL. Any installed gas fireplace shall be a direct-vent sealed-combustion type. Any installed woodstove or pellet stove shall comply with U.S. EPA New Source Performance Standards (NSPS) emission limits as applicable, and shall have a permanent label indicating they are certified to meet the emission limits. Woodstoves, pellet stoves and fireplaces shall also comply with applicable local ordinances.

4.504 POLLUTANT CONTROL
4.504.1 COVERING OF DUCT OPENINGS & PROTECTION OF MECHANICAL EQUIPMENT DURING CONSTRUCTION. At the time of rough installation, during storage on the construction site and until final startup of the heating, cooling and ventilating equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheet metal or other methods acceptable to the enforcing agency to reduce the amount of water, dust or debris which may enter the system.

4.504.2 FINISH MATERIAL POLLUTANT CONTROL. Finish materials shall comply with this section.

4.504.2.1 Adhesives, Sealants and Caulks. Adhesives, sealant and caulks used on the project shall meet the requirements of the following standards unless more stringent local or regional air pollution or air quality management district rules apply:

1. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers and caulks shall comply with local or regional air pollution control or air quality management district rules where applicable or SCAQMD Rule 1168 VOC limits, as shown in Table 4.504.1 or 4.504.2, as applicable. Such products also shall comply with the Rule 1168 prohibition on the use of certain toxic compounds (chloroform, ethylene dichloride, methylene chloride, perchloroethylene and trichloroethylene), except for aerosol products, as specified in Subsection 2 below.
2. Aerosol adhesives, and smaller unit sizes of adhesives, and sealant or caulking compounds (in units of product, less packaging, which do not weigh more than 1 pound and do not consist of more than 16 fluid ounces) shall comply with statewide VOC standards and other requirements, including prohibitions on use of certain toxic compounds, of *California Code of Regulations*, Title 17, commencing with section 94507.

4.504.2.2 Paints and Coatings. Architectural paints and coatings shall comply with VOC limits in Table 1 of the ARB Architectural Suggested Control Measure, as shown in Table 4.504.3, unless more stringent local limits apply. The VOC content limit for coatings that do not meet the definitions for the specialty coatings categories listed in Table 4.504.3 shall be determined by classifying the coating as a Flat, Nonflat or Nonflat-High Gloss coating, based on its gloss, as defined in subsections 4.21, 4.36, and 4.37 of the 2007 California Air Resources Board, Suggested Control Measure, and the corresponding Flat, Nonflat or Nonflat-High Gloss VOC limit in Table 4.504.3 shall apply.

4.504.2.3 Aerosol Paints and Coatings. Aerosol paints and coatings shall meet the Product-weighted MIR Limits for ROC in Section 94522(a)(2) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances, in Sections 94522(e)(1) and (f)(1) of *California Code of Regulations*, Title 17, commencing with Section 94520; and in areas under the jurisdiction of the Bay Area Air Quality Management District additionally comply with the percent VOC by weight of product limits of Regulation 8, Rule 49.

4.504.2.4 Verification. Verification of compliance with this section shall be provided at the request of the enforcing agency. Documentation may include, but is not limited to, the following:

1. Manufacturer's product specification.
2. Field verification of on-site product containers.

TABLE 4.504.1 - ADHESIVE VOC LIMIT[1,2]

(Less Water and Less Exempt Compounds in Grams per Liter)	
ARCHITECTURAL APPLICATIONS	**VOC LIMIT**
INDOOR CARPET ADHESIVES	50
CARPET PAD ADHESIVES	50
OUTDOOR CARPET ADHESIVES	150
WOOD FLOORING ADHESIVES	100
RUBBER FLOOR ADHESIVES	60
SUBFLOOR ADHESIVES	50
CERAMIC TILE ADHESIVES	65
VCT & ASPHALT TILE ADHESIVES	50
DRYWALL & PANEL ADHESIVES	50
COVE BASE ADHESIVES	50
MULTIPURPOSE CONSTRUCTION ADHESIVE	70
STRUCTURAL GLAZING ADHESIVES	100
SINGLE-PLY ROOF MEMBRANE ADHESIVES	250
OTHER ADHESIVES NOT LISTED	50
SPECIALTY APPLICATIONS	
PVC WELDING	510
CPVC WELDING	490
ABS WELDING	325
PLASTIC CEMENT WELDING	250
ADHESIVE PRIMER FOR PLASTIC	550
CONTACT ADHESIVE	80
SPECIAL PURPOSE CONTACT ADHESIVE	250
STRUCTURAL WOOD MEMBER ADHESIVE	140
TOP & TRIM ADHESIVE	250
SUBSTRATE SPECIFIC APPLICATIONS	
METAL TO METAL	30
PLASTIC FOAMS	50
POROUS MATERIAL (EXCEPT WOOD)	50
WOOD	30
FIBERGLASS	80

1. IF AN ADHESIVE IS USED TO BOND DISSIMILAR SUBSTRATES TOGETHER, THE ADHESIVE WITH THE HIGHEST VOC CONTENT SHALL BE ALLOWED.

2. FOR ADDITIONAL INFORMATION REGARDING METHODS TO MEASURE THE VOC CONTENT SPECIFIED IN THIS TABLE, SEE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT RULE 1168.

TABLE 4.504.2 - SEALANT VOC LIMIT

(Less Water and Less Exempt Compounds in Grams per Liter)	
SEALANTS	**VOC LIMIT**
ARCHITECTURAL	250
MARINE DECK	760
NONMEMBRANE ROOF	300
ROADWAY	250
SINGLE-PLY ROOF MEMBRANE	450
OTHER	420
SEALANT PRIMERS	
ARCHITECTURAL	
NON-POROUS	250
POROUS	775
MODIFIED BITUMINOUS	500
MARINE DECK	760
OTHER	750

TABLE 4.504.3 - VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS[2,3]

GRAMS OF VOC PER LITER OF COATING, LESS WATER & LESS EXEMPT COMPOUNDS	
COATING CATEGORY	VOC LIMIT
FLAT COATINGS	50
NON-FLAT COATINGS	100
NONFLAT-HIGH GLOSS COATINGS	150
SPECIALTY COATINGS	
ALUMINUM ROOF COATINGS	400
BASEMENT SPECIALTY COATINGS	400
BITUMINOUS ROOF COATINGS	50
BITUMINOUS ROOF PRIMERS	350
BOND BREAKERS	350
CONCRETE CURING COMPOUNDS	350
CONCRETE/MASONRY SEALERS	100
DRIVEWAY SEALERS	50
DRY FOG COATINGS	150
FAUX FINISHING COATINGS	350
FIRE RESISTIVE COATINGS	350
FLOOR COATINGS	100
FORM-RELEASE COMPOUNDS	250
GRAPHIC ARTS COATINGS (SIGN PAINTS)	500
HIGH TEMPERATURE COATINGS	420
INDUSTRIAL MAINTENANCE COATINGS	250
LOW SOLIDS COATINGS[1]	120
MAGNESITE CEMENT COATINGS	450
MASTIC TEXTURE COATINGS	100
METALLIC PIGMENTED COATINGS	500
MULTICOLOR COATINGS	250
PRETREATMENT WASH PRIMERS	420
PRIMERS, SEALERS, & UNDERCOATERS	100
REACTIVE PENETRATING SEALERS	350
RECYCLED COATINGS	250
ROOF COATINGS	50
RUST PREVENTATIVE COATINGS	250
SHELLACS	
CLEAR	730
OPAQUE	550
SPECIALTY PRIMERS, SEALERS & UNDERCOATERS	100
STAINS	250
STONE CONSOLIDANTS	450
SWIMMING POOL COATINGS	340
TRAFFIC MARKING COATINGS	100
TUB & TILE REFINISH COATINGS	420
WATERPROOFING MEMBRANES	250
WOOD COATINGS	275
WOOD PRESERVATIVES	350
ZINC-RICH PRIMERS	340

1. GRAMS OF VOC PER LITER OF COATING, INCLUDING WATER & EXEMPT COMPOUNDS

2. THE SPECIFIED LIMITS REMAIN IN EFFECT UNLESS REVISED LIMITS ARE LISTED IN SUBSEQUENT COLUMNS IN THE TABLE.

3. VALUES IN THIS TABLE ARE DERIVED FROM THOSE SPECIFIED BY THE CALIFORNIA AIR RESOURCES BOARD, ARCHITECTURAL COATINGS SUGGESTED CONTROL MEASURE, FEB. 1, 2008. MORE INFORMATION IS AVAILABLE FROM THE AIR RESOURCES BOARD.

TABLE 4.504.5 - FORMALDEHYDE LIMITS[1]

MAXIMUM FORMALDEHYDE EMISSIONS IN PARTS PER MILLION	
PRODUCT	**CURRENT LIMIT**
HARDWOOD PLYWOOD VENEER CORE	0.05
HARDWOOD PLYWOOD COMPOSITE CORE	0.05
PARTICLE BOARD	0.09
MEDIUM DENSITY FIBERBOARD	0.11
THIN MEDIUM DENSITY FIBERBOARD[2]	0.13

1. VALUES IN THIS TABLE ARE DERIVED FROM THOSE SPECIFIED BY THE CALIF. AIR RESOURCES BOARD, AIR TOXICS CONTROL MEASURE FOR COMPOSITE WOOD AS TESTED IN ACCORDANCE WITH ASTM E 1333. FOR ADDITIONAL INFORMATION, SEE CALIF. CODE OF REGULATIONS, TITLE 17, SECTIONS 93120 THROUGH 93120.12.

2. THIN MEDIUM DENSITY FIBERBOARD HAS A MAXIMUM THICKNESS OF 5/16" (8 MM).

DIVISION 4.5 ENVIRONMENTAL QUALITY (continued)
4.504.3 CARPET SYSTEMS. All carpet installed in the building interior shall meet the requirements of the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.2, January 2017 (Emission testing method for California Specification 01350)

See California Department of Public Health's website for certification programs and testing labs.

https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx.

4.504.3.1 Carpet cushion. All carpet cushion installed in the building interior shall meet the requirements of the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.2, January 2017 (Emission testing method for California Specification 01350)

See California Department of Public Health's website for certification programs and testing labs.

https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx.

4.504.3.2 Carpet adhesive. All carpet adhesive shall meet the requirements of Table 4.504.1.

4.504.4 RESILIENT FLOORING SYSTEMS. Where resilient flooring is installed , at least 80% of floor area receiving resilient flooring shall meet the requirements of the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.2, January 2017 (Emission testing method for California Specification 01350)

See California Department of Public Health's website for certification programs and testing labs.

hhttps://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx.

4.504.5 COMPOSITE WOOD PRODUCTS. Hardwood plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the buildings shall meet the requirements for formaldehyde as specified in ARB's Air Toxics Control Measure for Composite Wood (17 CCR 93120 et seq.), by or before the dates specified in those sections, as shown in Table 4.504.5

4.504.5.1 Documentation. Verification of compliance with this section shall be provided as requested by the enforcing agency. Documentation shall include at least one of the following:

1. Product certifications and specifications.
2. Chain of custody certifications.
3. Product labeled and invoiced as meeting the Composite Wood Products regulation (see CCR, Title 17, Section 93120, et seq.).
4. Exterior grade products marked as meeting the PS-1 or PS-2 standards of the Engineered Wood Association, the Australian AS/NZS 2269, European 636 3S standards, and Canadian CSA 0121, CSA 0151, CSA 0153 and CSA 0325 standards.
5. Other methods acceptable to the enforcing agency.

4.505 INTERIOR MOISTURE CONTROL
4.505.1 General. Buildings shall meet or exceed the provisions of the *California Building Standards Code*.

4.505.2 CONCRETE SLAB FOUNDATIONS. Concrete slab foundations required to have a vapor retarder by California Building Code, Chapter 19, or concrete slab-on-ground floors required to have a vapor retarder by the California Residential Code, Chapter 5, shall also comply with this section.

4.505.2.1 Capillary break. A capillary break shall be installed in compliance with at least one of the following:

1. A 4-inch (101.6 mm) thick base of 1/2 inch (12.7mm) or larger clean aggregate shall be provided with a vapor barrier in direct contact with concrete and a concrete mix design, which will address bleeding, shrinkage, and curling, shall be used. For additional information, see American Concrete Institute, ACI 302.2R-06.
2. Other equivalent methods approved by the enforcing agency.
3. A slab design specified by a licensed design professional.

4.505.3 MOISTURE CONTENT OF BUILDING MATERIALS. Building materials with visible signs of water damage shall not be installed. Wall and floor framing shall not be enclosed when the framing members exceed 19 percent moisture content. Moisture content shall be verified in compliance with the following:

1. Moisture content shall be determined with either a probe-type or contact-type moisture meter.Equivalent moisture verification methods may be approved by the enforcing agency and shall satisfy requirements found in Section 101.8 of this code.
2. Moisture readings shall be taken at a point 2 feet (610 mm) to 4 feet (1219 mm) from the grade stamped end of each piece verified.
3. At least three random moisture readings shall be performed on wall and floor framing with documentation acceptable to the enforcing agency provided at the time of approval to enclose the wall and floor framing.

Insulation products which are visibly wet or have a high moisture content shall be replaced or allowed to dry prior to enclosure in wall or floor cavities. Wet-applied insulation products shall follow the manufacturers' drying recommendations prior to enclosure.

4.506 INDOOR AIR QUALITY AND EXHAUST
4.506.1 Bathroom exhaust fans. Each bathroom shall be mechanically ventilated and shall comply with the following:

1. Fans shall be ENERGY STAR compliant and be ducted to terminate outside the building.
2. Unless functioning as a component of a whole house ventilation system, fans must be controlled by a humidity control.
   a. Humidity controls shall be capable of adjustment between a relative humidity range less than or equal to 50% to a maximum of 80%. A humidity control may utilize manual or automatic means of adjustment.
   b. A humidity control may be a separate component to the exhaust fan and is not required to be integral (i.e., built-in)

Notes:

1. For the purposes of this section, a bathroom is a room which contains a bathtub, shower or tub/shower combination.
2. Lighting integral to bathroom exhaust fans shall comply with the *California Energy Code*.

4.507 ENVIRONMENTAL COMFORT
4.507.2 HEATING AND AIR-CONDITIONING SYSTEM DESIGN. Heating and air conditioning systems shall be sized, designed and have their equipment selected using the following methods:

1. The heat loss and heat gain is established according to ANSI/ACCA 2 Manual J - 2011 (Residential Load Calculation), ASHRAE handbooks or other equivalent design software or methods.
2. Duct systems are sized according to ANSI/ACCA 1 Manual D - 2014 (Residential Duct Systems), ASHRAE handbooks or other equivalent design software or methods.
3. Select heating and cooling equipment according to ANSI/ACCA 3 Manual S - 2014 (Residential Equipment Selection), or other equivalent design software or methods.

Exception: Use of alternate design temperatures necessary to ensure the system functions are acceptable.

CHAPTER 7
INSTALLER & SPECIAL INSPECTOR QUALIFICATIONS
702 QUALIFICATIONS
702.1 INSTALLER TRAINING. HVAC system installers shall be trained and certified in the proper installation of HVAC systems including ducts and equipment by a nationally or regionally recognized training or certification program. Uncertified persons may perform HVAC installations when under the direct supervision and responsibility of a person trained and certified to install HVAC systems or contractor licensed to install HVAC systems. Examples of acceptable HVAC training and certification programs include but are not limited to the following:

1. State certified apprenticeship programs.
2. Public utility training programs.
3. Training programs sponsored by trade, labor or statewide energy consulting or verification organizations.
4. Programs sponsored by manufacturing organizations.
5. Other programs acceptable to the enforcing agency.

702.2 SPECIAL INSPECTION [HCD]. When required by the enforcing agency, the owner or the responsible entity acting as the owner's agent shall employ one or more special inspectors to provide inspection or other duties necessary to substantiate compliance with this code. Special inspectors shall demonstrate competence to the satisfaction of the enforcing agency for the particular type of inspection or task to be performed. In addition to other certifications or qualifications acceptable to the enforcing agency, the following certifications or education may be considered by the enforcing agency when evaluating the qualifications of a special inspector:

1. Certification by a national or regional green building program or standard publisher.
2. Certification by a statewide energy consulting or verification organization, such as HERS raters, building performance contractors, and home energy auditors.
3. Successful completion of a third party apprentice training program in the appropriate trade.
4. Other programs acceptable to the enforcing agency.

Notes:
1. Special inspectors shall be independent entities with no financial interest in the materials or the project they are inspecting for compliance with this code.
2. HERS raters are special inspectors certified by the California Energy Commission (CEC) to rate homes in California according to the Home Energy Rating System (HERS).

[BSC] When required by the enforcing agency, the owner or the responsible entity acting as the owner's agent shall employ one or more special inspectors to provide inspection or other duties necessary to substantiate compliance with this code. Special inspectors shall demonstrate competence to the satisfaction of the enforcing agency for the particular type of inspection or task to be performed. In addition, the special inspector shall have a certification from a recognized state, national or international association, as determined by the local agency. The area of certification shall be closely related to the primary job function, as determined by the local agency.

Note: Special inspectors shall be independent entities with no financial interest in the materials or the project they are inspecting for compliance with this code.

703 VERIFICATIONS
703.1 DOCUMENTATION. Documentation used to show compliance with this code shall include but is not limited to, construction documents, plans, specifications, builder or installer certification, inspection reports, or other methods acceptable to the enforcing agency which demonstrate substantial conformance. When specific documentation or special inspection is necessary to verify compliance, that method of compliance will be specified in the appropriate section or identified applicable checklist.

DISCLAIMER: THIS DOCUMENT IS PROVIDED AND INTENDED TO BE USED AS A MEANS TO INDICATE AREAS OF COMPLIANCE WITH THE CALIFORNIA GREEN BUILDING STANDARDS (CALGREEN) CODE. DUE TO THE VARIABLES BETWEEN BUILDING DEPARTMENT JURISDICTIONS, THIS CHECKLIST IS TO BE USED ON AN INDIVIDUAL PROJECT BASIS AND MAY BE MODIFIED BY THE END USER TO MEET THOSE INDIVIDUAL NEEDS. THE END USER ASSUMES ALL RESPONSIBILITY ASSOCIATED WITH THE USE OF THIS DOCUMENT, INCLUDING VERIFICATION WITH THE FULL CODE.

I & A ENGINEERING
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DRAWINGS NOT FOR CONSTRUCTION UNTIL STAMPED JOB COPY BY BUILDING DEPARTMENT. ALL DRAWINGS AND WRITTEN MATERIAL APPEARING HEREIN CONSTITUTE ORIGINAL AND UNPUBLISHED WORK OF THE ENGINEER AND MAY NOT BE DUPLICATED, USED, OR DISCLOSED WITHOUT WRITTEN CONSENT OF THE ENGINEER.

Barnell Ave.
Morgan Hill, CA 95037

PROJECT: LJ COMMONS 4 PLEX

DRAWING TITLE: CALGREEN MANDATORY MEASURES

REV	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		
7		

JOB NO.: 23-113
CAD FILE:
DSGN'D BY: I. R.
DRAWN BY: H. N.
CHK'D BY: I. R.
APP'D BY: I. R.
DATE: 4/17/23
SCALE: AS NOTED
DRAWING NO.: CG-2
SHEET ___ OF ___

GreenPointRATED

NEW HOME RATING SYSTEM, VERSION 9.1

MULTIFAMILY

The GreenPoint Rated checklist tracks green features incorporated into the home. GreenPoint Rated is administered by Build It Green, a non-profit organization dedicated to healthy, energy efficient, and durable homes.
The minimum requirements of GreenPoint Rated are: verification of 50 or more points. Earn the following minimum points per category: Community (2) Energy (35), Indoor Air Quality/Health (6), Resources (6), and Water (6); and meet the prerequisites depending on Status. For California: CALGreen Mandatory HR, I, JR, O1. Outside California: ICC 700 Mandatory Measures, HR, I, JR, I, O1.

The criteria for the green building practices listed below are described in the GreenPoint Rated New Home Rating Manual v6.0. For more information please visit **www.builditgreen.org/greenpointrated**
Build It Green is not a code enforcement agency.

A home is only GreenPoint Rated if all features are verified by a Certified GreenPoint Rater and submitted through Build It Green.

New Home Multifamily Version 9.1

Planning Scoresheet

Points Targeted:	**91.4**
Certification Level Targeted:	**Silver**
Compliance Pathway Targeted:	**Option 1: All Electric Compliance**
T24 Compliance Targeted:	**4.2** %

- Minimum Points
- Points Targeted

LJ Commons

Measures		Points Targeted	Possible Points: Community	Energy	IAQ/Health	Resources	Water	Notes
CALGreen								
Yes	**CALGreen (REQUIRED)**	4		1	1	1	1	
A. SITE								
TBD	**A1. Construction Footprint**						1	
	A2. Job Site Construction Waste Diversion							
Yes	A2.1 70% C&D Waste Diversion (including Alternative Daily Cover)	2					2	
Yes	A2.2 Recycling Rates from Third-Party Verified Mixed-Use Waste Facility	1					1	
Yes	**A3. Recycled Content Base Material**	1					1	
TBD	**A4. Heat Island Effect Reduction (Non-Roof)**				1	1		
TBD	**A5. Construction Environmental Quality Management Plan Including Flush-Out**					1		
	A6. Stormwater Control: Prescriptive Path							
TBD	A6.1 Permeable Paving Material						1	
TBD	A6.2 Filtration and/or Bio-Retention Features						1	
TBD	A6.3 Non-Leaching Roofing Materials						1	
TBD	A6.4 Smart Stormwater Street Design		1					
TBD	**A7. Stormwater Control: Performance Path**						3	
B. FOUNDATION								
TBD	**B1. Low Carbon Concrete**						3	
TBD	**B2. Radon-Resistant Construction (Required for EPA Radon Zone 1)**					2		
TBD	**B3. Foundation Drainage System**						2	
TBD	**B4. Sealed Crawlspace**					1		
	B6. Structural Pest Controls							
Yes	B6.1 Termite Shields and Separated Exterior Wood-to-Concrete Connections	1					1	
TBD	B5.2 Plant Trunks, Bases, or Stems at Least 24 Inches from the Foundation						1	
C. LANDSCAPE								
24.13%	Enter the landscape area percentage. Points capped at 3 for less than 15%.							
TBD	**C1. Plants Grouped by Water Needs (Hydrozoning)**							1
Yes	**C2. Three Inches of Organic Mulch in Planting Beds**	1						1
	C3. Resource Efficient Landscapes							
Yes	C3.1 No Invasive Species According to Region	1					1	
Yes	C3.2 Plants Chosen and Located to Grow to Natural Size	1					1	
TBD	C3.3 Drought Tolerant, Native, or Other Appropriate Species							3
TBD	**C4. Minimal Turf in Landscape** C4.1 No Turf on Slopes Exceeding 10% and No Overhead Sprinklers Installed in Areas Less Than Eight Feet Wide							2
TBD	C4.2 Turf on a Small Percentage of Landscaped Area							2
TBD	**C5. Trees to Moderate Building Temperature**				1	1		
	C6. High-Efficiency Irrigation System							
Yes	C6.1 System Uses Only Low-Flow Drip, Bubblers or Sprinklers	2					2	
TBD	**C7. One Inch of Compost in the Top Six to Twelve Inches of Soil**						2	
	C8. Rainwater Harvesting System							
TBD	C8.1 Rainwater Harvesting System with 300 Gallon Storage Capacity						1	
TBD	C8.2 Rainwater to Flush Toilets or Meet 50% of Landscape Irrigation Demand						3	
TBD	**C9. Recycled Wastewater Irrigation System**						1	
TBD	**C10. Submeter or Dedicated Meter for Landscape Irrigation**						2	
TBD	**C11. Efficient Landscape Water Budget**						1	
	C12. Environmentally Preferable Materials for Site							
TBD	C12.1 Environmentally Preferable Materials for 70% of Hardscapes and Fencing					1		
TBD	C12.2 Play Structures and Surfaces Have an Average Recycled Content ≥20%					1		
Yes	**C13. Reduced Light Pollution**	1	1					
TBD	**C14. Large Stature Tree(s)**		1					
Yes	**C15. Third Party Landscape Program Certification**	1						1
TBD	**C16. Maintenance Contract with Certified Professional**							1
TBD	**C17. Community Garden**		2					

LJ Commons

		Points Targeted	Community	Energy	IAQ/Health	Resources	Water
G. STRUCTURAL FRAME AND BUILDING ENVELOPE							
	G1. Optimal Value Engineering						
TBD	G1.1 Joists, Rafters, and Studs at 24 Inches on Center			1		2	
Yes	G1.2 Non-Load Bearing Door and Window Headers Sized for Load	1				1	
TBD	G1.3 Advanced Framing Measures					2	
	G2. Construction Material Efficiencies						
TBD	G2.1 Prefabricated Wall or Roof Framing					2	
TBD	G2.2 Prefabricated Modular Units					6	
	G3. Engineered Beams and Headers	1				1	
Yes	**G4. Insulated Headers**	1		1			
	G5. FSC-Certified Wood						
TBD	G5.1 Dimensional Lumber, Studs, and Timber					6	
TBD	G5.2 Panel Products					3	
	G6. Solid Wall Systems						
TBD	G6.1 At Least 80% of Floors					1	
TBD	G6.2 At Least 80% of Exterior Walls			1		1	
TBD	G6.3 At Least 80% of Roofs			1		1	
TBD	**G7. Energy Heels on Roof Trusses**			1		1	
24 inches	**G8. Overhangs and Gutters**	2		1		1	
	G9. Reduced Pollution Entering the Home from the Garage						
Yes	G9.1 Detached or No Garage	2			2		
TBD	G9.2 Mitigation Strategies for Attached Garage				1		
	G10. Structural Pest and Rot Controls						
TBD	G10.1 All Wood Located At Least 12 Inches Above the Soil					1	
TBD	G10.2 Wood Framing Treated With Borates or Factory-Impregnated, or Wall Materials Other Than Wood					1	
Yes	**G11. Moisture-Resistant Materials in Wet Areas (such as Kitchen, Bathrooms, Utility Rooms, and Basements)**	2			1	1	

LJ Commons

		Points Targeted	Community	Energy	IAQ/Health	Resources	Water
E. EXTERIOR							
TBD	**E1. Environmentally Preferable Decking**					1	
Yes	**E2. Flashing Installation Third-Party Verified**	2				2	
TBD	**E3. Rain Screen Wall System**					2	
Yes	**E4. Durable and Non-Combustible Cladding Materials**	1				1	
Yes	**E5. Durable and Fire Resistant Roofing Materials or Assembly**	1				1	
TBD	**E6. Vegetated Roof**		2		2		
TBD	**E7. Cool Roof**			1			
F. INSULATION							
	F1. Insulation with 30% Post-Consumer or 65% Post-Industrial Recycled Content						
TBD	F1.1 Walls and Floors					0.5	
TBD	F1.2 Ceilings					0.5	
	F2. Low-Emitting Insulation						
TBD	F2.1 Walls and Floors				0.5		
TBD	F2.2 Ceilings				0.5		
	F3. Insulation That Does Not Contain Fire Retardants						
Yes	F3.1 Cavity Walls and Floors	1			1		
Yes	F3.2 Ceilings	1			1		
Yes	F3.3 Interior and Exterior Insulation	1			1		
G. PLUMBING							
	G1. Efficient Distribution of Domestic Hot Water						
TBD	G1.2 WaterSense Volume Limit for Hot Water Distribution						1
TBD	G1.3 Increased Efficiency in Hot Water Distribution						2
	G2. Install Water-Efficient Fixtures						
Yes	G2.1 WaterSense Showerheads ≤ 1.75 gpm	2					2
Yes	G2.1 WaterSense Bathroom Faucets ≤ 1.0 gpm	1					1
1.28 gpf	G2.3 WaterSense Toilets with a Maximum Performance (MaP) Threshold of No Less Than 500 Grams ≥ 1.28 gpf OR ≤ 1.1 gpf	1					2
No	G2.4 Urinals with Flush Rate of ≤ 0.1 gpf	0					1
TBD	**G3. Pre-Plumbing for Greywater System**						2
TBD	**G4. Operational Greywater System**						4
TBD	**G5. Thermostatic Shower Shut-Off Valve**						1
TBD	**G6. Submeter Water for Tenants**						2
H. HEATING, VENTILATION, AND AIR CONDITIONING							
	H1. All Electric or Sealed Combustion Units						
Yes	H1.1 Sealed Combustion Furnace or Heat Pump	1			1		
Yes	H1.2 Sealed Combustion or Heat Pump Water Heater	2			2		
TBD	**H2. High Performing Zoned Hydronic Radiant Heating System**			1	1		
	H3. Effective Ductwork						
Yes	H3.1 Duct Mastic on Duct Joints and Seams	1		1			
TBD	H3.2 Pressure Balance the Ductwork System			1			
	H5. Advanced Practices for Cooling						
TBD	H5.1 ENERGY STAR® Ceiling Fans in Living Areas and Bedrooms			1			
TBD	H5.2 Operable Windows and Skylights Located to Induce Cross Ventilation in At Least One Room in 90% of Units			1			
	H6. Whole House Mechanical Ventilation Precitces to Improve Indoor Air Quality						
Yes	H6.1 Meet ASHRAE Standard 62.2-2019 Ventilation Residential Standards	Y	R	R	R	R	R
TBD	H6.2 Advanced Ventilation Standards			2			
TBD	H6.3 Outdoor Air is Filtered and Tempered			1			
	H7. Effective Range Design and Installation						
Yes	H7.1 Effective Range Hood Ducting and Design	1		1			
TBD	H7.2 Automatic Range Hood Control			1			
TBD	**H8. High Efficiency HVAC Filter (MERV 16+)**			1			
TBD	**H9. Advanced Refrigerants**			1			
I. RENEWABLE ENERGY							
0.0%	**I1. Onsite Renewable Generation (PV, Micro Hydro and Wind)**	0		35			
	I2. Low Carbon Homes						
TBD	I2.1 Near Zero Energy Home			2			
No	I2.2 Near Zero Energy Home with Flexibility Strategies	0		2			
	I3. Energy Storage and Thermal Load Shifting						
TBD	I3.1 Battery Energy Storage System (BESS)			2			
TBD	I3.2 Auxiliary Thermal Energy Storage System or Pre-Heating of Hot Water			1			
TBD	I3.3 Pre-Cooling Equipment for AC			1			
TBD	**I4. Solar Hot Water Systems to Preheat Domestic Hot Water**			4			
J. BUILDING PERFORMANCE AND TESTING							
Yes	**J1. Third-Party Verification of Quality of Insulation Installation**	1			1		
Yes	**J2. Supply and Return Air Flow Testing**	2		1	1		
TBD	**J3. Compartmentalization of Units**			1	1		

LJ Commons

		Points Targeted	Community	Energy	IAQ/Health	Resources	Water
TBD	**J4. All Electric or Combustion Appliance Safety Testing**					1	
	J5. Building Energy Performance						
Option 1: All Electric Compliance	J5.1 All Electric Home Outperforms Title 24	33.3869		26+			
0.0%	J5.2 Non-Residential Spaces Outperform Title 24	0.0		15			
Yes	**J6. Title 24 Prepared and Signed by a CABEC Certified Energy Analyst**	1		1			
TBD	**J7. Participation in Utility Program with Third-Party Plan Review**			1			
TBD	**J8. ENERGY STAR® for Homes**			1			
No	**J9. EPA Indoor airPlus Certification**				2		
K. FINISHES							
	K1. Entryways Designed to Reduce Tracked-In Contaminants						
TBD	K1.1 Entryways to Individual Units					1	
TBD	K1.2 Entryways to Buildings					1	
	K2. Low-VOC Interior Wall and Ceiling Paints						
TBD	K2.1 Zero-VOC Interior Wall and Ceiling Paints (< 5 g/l)				1		
Yes	**K3. Low-VOC Caulks and Adhesives**	1				1	
	K4. Environmentally Preferable Materials for Interior Finish						
TBD	K4.1 Cabinets					2	
TBD	K4.2 Interior Trim					2	
TBD	K4.3 Shelving					2	
TBD	K4.4 Doors					2	
TBD	K4.5 Countertops					1	
	K5. Formaldehyde Emissions in Interior Finish Exceed CARB						
TBD	K5.1 Doors				1		
TBD	K5.2 Cabinets and Countertops				2		
TBD	K5.3 Interior Trim and Shelving				2		
TBD	**K6. Products That Comply With the Health Product Declaration Open Standard**				2		
TBD	**K7. Indoor Air Formaldehyde Level Less Than 27 Parts Per Billion**				2		
No	**K8. Comprehensive Inclusion of Low Emitting Finishes**				1		
	K9. Durable Cabinets						
TBD	K9.1 Durable Cabinet Construction					1	
TBD	K9.2 Durable Cabinet Hardware					1	
TBD	**K10. At Least 20% of Interior Furniture Has Environmentally Preferable Attributes**					1	

LJ Commons

		Points Targeted	Community	Energy	IAQ/Health	Resources	Water
L. FLOORING							
TBD	**L1. Environmentally Preferable Flooring**					3	
TBD	**L3. Durable Flooring**				1	1	
TBD	**L4. Thermal Mass Flooring**			1			
M. APPLIANCES AND LIGHTING							
Yes	**M1. ENERGY STAR® Dishwasher**	1					1
	M2. Efficient Clothes Washing and Drying						
TBD	M2.1 CEE-Rated or ENERGY STAR® Clothes Washer			1			2
TBD	M2.2 ENERGY STAR® Dryer			2			
TBD	M2.3 Solar Dryer/ Laundry Lines			0.5			
TBD	**M3. Size-Efficient ENERGY STAR® Refrigerator**			2			
	M4. Permanent Centers for Waste Reduction Strategies						
Yes	M4.1 Built-In Recycling Center	1				1	
TBD	M4.2 Built-In Composting Center					1	
TBD	M4.3 Trash Chutes in Multifamily Building					1	
	M5. Lighting Efficiency						
Yes	M5.1 High-Efficacy Lighting	2		2			
TBD	M5.2 Lighting System Designed to IESNA Footcandle Standards or Designed by Lighting Consultant			2			
TBD	**M6. Electric Vehicle Charging Stations and Infrastructure**			2	2		
TBD	**M7. Central Laundry**						1
TBD	**M8. Gearless Elevator**			1			
TBD	**M9. Gas Infrastructure Removed for Major Alterations**				4		
TBD	**M10. All-Electric Commercial Kitchen**				4		
N. COMMUNITY							
	N1. Smart Development						
Yes	N1.1 Infill Site	2	1			1	
TBD	N1.2 Designated Brownfield Site		1			1	
TBD	N1.3 Conserve Resources by Increasing Density			2		2	
TBD	N1.4 Cluster Homes for Land Preservation		1			1	
	N1.5 Home Size Efficiency					10	
	Enter the area of the home, in square feet						
	Enter the number of bedrooms						
	N2. Home(s)Development Located Near Transit						
Yes	N2.1 Within 1 Mile of a Major Transit Stop	1	1				
Yes	N2.2 Within 1/2 mile of a Major Transit Stop	0	2				
	N3. Pedestrian and Bicycle Access						
	N3.1 Pedestrian Access to Services Within 1/2 Mile of Community Services		2				
	Enter the number of Tier 1 services						
	Enter the number of Tier 2 services						
Yes	N3.2 Connection to Pedestrian Pathways	1	1				
TBD	N3.3 Traffic Calming Strategies		2				
TBD	N3.4 Sidewalks Buffered from Roadways and 5-8 Feet Wide		1				
TBD	N3.5 Bicycle Storage for Residents		2				
TBD	N3.6 Bicycle Storage for Non-Residents		1				
TBD	N3.7 Reduced Parking Capacity		2				
	N4. Outdoor Gathering Places						
TBD	N4.1 Public or Semi-Public Outdoor Gathering Places for Residents		1				
TBD	N4.2 Public Outdoor Gathering Places with Direct Access to Community Services		1				
	N5. Social Interaction						
TBD	N5.1 Residence Entries with Views to Callers		1				
TBD	N5.2 Entrances Visible from Street and/or Other Front Doors		1				
TBD	N5.3 Porches Oriented to Street and Public Space		1				
	N6. Passive Solar Design						
TBD	N6.1 Heating Load			2			
TBD	N6.2 Cooling Load			2			
	N7. Adaptable Building						
TBD	N7.1 Universal Design Principles in Units		1		1		
TBD	N7.2 Full Function Independent Rental Unit		1				
	N8. Resiliency						
TBD	N8.1 Climate Impact Assessment		1		1	1	
TBD	N8.2 Strategies to Address Assessment Findings		1		1	1	
	N9. Social Equity						
TBD	N9.1 Diverse Workforce		1			1	
TBD	N9.2 Community Location		1		1		
	N10. Affordability						
TBD	N10.1 Dedicated Units for Households Making 80% of AMI or Less		2				

LJ Commons

		Points Targeted	Community	Energy	IAQ/Health	Resources	Water
TBD	N10.2 Units with Multiple Bedrooms for Households Making 80% of AMI or Less		1				
TBD	N10.3 At Least 20% of Units at 120% AMI or Less are For Sale		1				
	N11. Mixed-Use Developments						
TBD	N11.1 Live/Work Units Include a Dedicated Commercial Entrance		1				
TBD	N11.2 At Least 2% of Development Floor Space Supports Mixed Use		1				
TBD	N11.3 Half of the Non-Residential Floor Space is Dedicated to Community Service		1				
O. OTHER							
Yes	**O1. GreenPoint Rated Checklist in Blueprints**	Y	R	R	R	R	R
Yes	**O2. Pre-Construction Kickoff Meeting with Rater and Subcontractors**	2		0.5		1	0.5
Yes	**O3. Orientation and Training to Occupants—Detailed Educational Walkthroughs**	2		0.5	0.5	0.5	0.5
TBD	**O4. Builder's or Developer's Management Staff are Certified Green Building Professionals**			0.5	0.5	0.5	0.5
	O5. Home System Monitors						
TBD	O5.1 Home Energy System Monitors			2			
TBD	O5.2 Home Water System Monitors					2	
TBD	O5.3 Home Indoor Air Quality System Monitors				2		
TBD	O5.4 Home Outdoor Air Quality System Monitors		1		1		
	O6. Green Building Education						
TBD	O6.1 Marketing Green Building		2				
TBD	O6.2 Green Building Signage			0.5			0.5
TBD	**O7. Green Appraisal Addendum or Energy Efficiency Score**		1				
TBD	**O8. Detailed Durability Plan and Third-Party Verification of Plan Implementation**					1	
TBD	**O9. Residents Are Offered Free or Discounted Transit Passes**		2				
TBD	**O10. Vandalism Deterrence Practices and Vandalism Management Plan**		1				
TBD	**O11. Smokefree Housing**				2		
TBD	**O12. Integrated Pest Management Plan**				1		
P. DESIGN CONSIDERATIONS							
	P1. Acoustics: Noise and Vibration Control		1		1		
	Enter the number of Tier 1 practices						
	Enter the number of Tier 2 practices						
	P2. Mixed-Use Design Strategies						
TBD	P2.1 Tenant Improvement Requirements for Build Outs				1		1
TBD	P2.2 Commercial Loading Area Separated for Residential Area				1		
TBD	P2.3 Separate Mechanical and Plumbing Systems				1		
	P3. Commissioning						
TBD	P3.1 Design Phase			1	1		
TBD	P3.2 Construction Phase			2	1		
TBD	P3.3 Post-Construction Phase			2	1		
TBD	**P4. Building Enclosure Testing**			1	1	1	
INNOVATION							
TBD	**Enter innovation 1 description here. Enter up to four points at right.**						
TBD	**Enter innovation 2 description here. Enter up to four points at right.**						
TBD	**Enter innovation 3 description here. Enter up to four points at right.**						
TBD	**Enter innovation 4 description here. Enter up to four points at right.**						

Summary

	Total	Community	Energy	IAQ/Health	Resources	Water
Total Available Points in Specific Categories	426	50	132	30	100	60
Minimum Points Required in Specific Categories	100	10	35	6	6	6
Points Targeted/Achieved	91.4	9.2	47.4	14.5	10.3	11.0

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Barnell Ave.
Morgan Hill, CA 95037

PROJECT: LJ COMMONS 4 PLEX

DRAWING TITLE: GREEN POINT RATED CHECKLIST

REV	DATE	DESCRIPTION
1		
2		
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JOB NO.: 23-113
CAD FILE:
DSGN'D BY: I. R.
DRAWN BY: H. N.
CHK'D BY: I. R.
APP'D BY: I. R.
DATE: 4/17/23
SCALE: AS NOTED
DRAWING NO.: CG-3
SHEET ___ OF ___

GENERAL INFORMATION					
01	**Project Name**	Barnell Ave ADU #1			
02	**Run Title**	Title 24 Analysis			
03	**Project Location**	Barnell Ave			
04	**City**	Morgan Hill	05	**Standards Version**	2022
06	**Zip code**	95037	07	**Software Version**	EnergyPro 9.2
08	**Climate Zone**	4	09	**Front Orientation (deg/ Cardinal)**	0
10	**Building Type**	Single family	11	**Number of Dwelling Units**	1
12	**Project Scope**	Newly Constructed	13	**Number of Bedrooms**	2
14	**Addition Cond. Floor Area (ft²)**	0	15	**Number of Stories**	1
16	**Existing Cond. Floor Area (ft²)**	n/a	17	**Fenestration Average U-factor**	0.3
18	**Total Cond. Floor Area (ft²)**	747	19	**Glazing Percentage (%)**	12.45%
20	**ADU Bedroom Count**	n/a	21	**ADU Conditioned Floor Area**	n/a
22	**Fuel Type**	Natural gas	23	**No Dwelling Units:**	No

COMPLIANCE RESULTS	
01	**Building Complies with Computer Performance**
02	**This building incorporates features that require field testing and/or verification by a certified HERS rater under the supervision of a CEC-approved HERS provider.**
03	**This building incorporates one or more Special Features shown below**

ENERGY DESIGN RATINGS						
	Energy Design Ratings			**Compliance Margins**		
	Source Energy (EDR1)	**Efficiency[1] EDR (EDR2efficiency)**	**Total[2] EDR (EDR2total)**	**Source Energy (EDR1)**	**Efficiency[1] EDR (EDR2efficiency)**	**Total[2] EDR (EDR2total)**
Standard Design	38.5	45.3	34.8			
Proposed Design	36.1	41.4	32.7	2.4	3.9	2.1
RESULT[3]: PASS						

[1]Efficiency EDR includes improvements like a better building envelope and more efficient equipment
[2]Total EDR includes efficiency and demand response measures such as photovoltaic (PV) system and batteries
[3]Building complies when source energy, efficiency and total compliance margins are greater than or equal to zero and unmet load hour limits are not exceeded

- Standard Design PV Capacity: 2.09 kWdc
- PV System resized to 2.09 kWdc (a factor of 2.094) to achieve 'Standard Design PV' PV scaling

ENERGY USE SUMMARY						
Energy Use	**Standard Design Source Energy (EDR1) (kBtu/ft² -yr)**	**Standard Design TDV Energy (EDR2) (kTDV/ft² -yr)**	**Proposed Design Source Energy (EDR1) (kBtu/ft² -yr)**	**Proposed Design TDV Energy (EDR2) (kTDV/ft² -yr)**	**Compliance Margin (EDR1)**	**Compliance Margin (EDR2)**
Space Heating	1.63	7.48	1.95	15.44	-0.32	-7.96
Space Cooling	1.35	40.81	0.84	32.97	0.51	7.84
IAQ Ventilation	0.46	4.91	0.46	4.91	0	0
Water Heating	3.02	31.47	2.13	24.21	0.89	7.26
Self Utilization/Flexibility Credit				0		0
Efficiency Compliance Total	**6.46**	**84.67**	**5.38**	**77.53**	**1.08**	**7.14**
Photovoltaics	-2.46	-83.35	-2.46	-82.99		
Battery			0	0		
Flexibility						
Indoor Lighting	0.96	9.45	0.96	9.45		
Appl. & Cooking	6.99	45.76	6.95	45.3		
Plug Loads	6.05	62.97	6.05	62.97		
Outdoor Lighting	0.21	1.89	0.21	1.89		
TOTAL COMPLIANCE	**18.21**	**121.39**	**17.09**	**114.15**		

ENERGY USE INTENSITY				
	Standard Design (kBtu/ft² - yr)	**Proposed Design (kBtu/ft² - yr)**	**Compliance Margin (kBtu/ft² - yr)**	**Margin Percentage**
Gross EUI[1]	26.37	24.43	1.94	7.36
Net EUI[2]	11.22	9.28	1.94	17.29

Notes
1. Gross EUI is Energy Use Total (not including PV) / Total Building Area.
2. Net EUI is Energy Use Total (including PV) / Total Building Area.

REQUIRED PV SYSTEMS											
01	**02**	**03**	**04**	**05**	**06**	**07**	**08**	**09**	**10**	**11**	**12**
DC System Size (kWdc)	**Exception**	**Module Type**	**Array Type**	**Power Electronics**	**CFI**	**Azimuth (deg)**	**Tilt Input**	**Array Angle (deg)**	**Tilt: (x in 12)**	**Inverter Eff. (%)**	**Annual Solar Access (%)**
2.09	NA	Standard (14-17%)	Fixed	none	true	150-270	n/a	n/a	<=7:12	96	98

REQUIRED SPECIAL FEATURES
The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.
• Insulation below roof deck • Northwest Energy Efficiency Alliance (NEEA) rated heat pump water heater; specific brand/model, or equivalent, must be installed

HERS FEATURE SUMMARY
The following is a summary of the features that must be field-verified by a certified HERS Rater as a condition for meeting the modeled energy performance for this computer analysis. Additional detail is provided in the building tables below. Registered CF2Rs and CF3Rs are required to be completed in the HERS Registry
• Quality insulation installation (QII) • Indoor air quality ventilation • Kitchen range hood • Minimum Airflow • Verified EER/EER2 • Verified SEER/SEER2 • Fan Efficacy Watts/CFM • Verified HSPF • Verified heat pump rated heating capacity • Duct leakage testing

BUILDING - FEATURES INFORMATION						
01	**02**	**03**	**04**	**05**	**06**	**07**
Project Name	**Conditioned Floor Area (ft²)**	**Number of Dwelling Units**	**Number of Bedrooms**	**Number of Zones**	**Number of Ventilation Cooling Systems**	**Number of Water Heating Systems**
Barnell Ave ADU #1	747	1	2	1	0	1

ZONE INFORMATION						
01	**02**	**03**	**04**	**05**	**06**	**07**
Zone Name	**Zone Type**	**HVAC System Name**	**Zone Floor Area (ft²)**	**Avg. Ceiling Height**	**Water Heating System 1**	**Status**
2nd Flr Zone	Conditioned	Undefined System1	747	9	DHW Sys 1	New

OPAQUE SURFACES							
01	**02**	**03**	**04**	**05**	**06**	**07**	**08**
Name	**Zone**	**Construction**	**Azimuth**	**Orientation**	**Gross Area (ft²)**	**Window and Door Area (ft2)**	**Tilt (deg)**
NE Exterior Wall	2nd Flr Zone	R-21 Wall	135	n/a	238	25	90
SE Exterior Wall	2nd Flr Zone	R-21 Wall	135	n/a	328	18	90
SW Exterior Wall	2nd Flr Zone	R-21 Wall	225	n/a	188	0	90
NW Exterior Wall	2nd Flr Zone	R-21 Wall	315	n/a	329	50	90

OPAQUE SURFACES							
01	**02**	**03**	**04**	**05**	**06**	**07**	**08**
Name	**Zone**	**Construction**	**Azimuth**	**Orientation**	**Gross Area (ft²)**	**Window and Door Area (ft2)**	**Tilt (deg)**
Roof	2nd Flr Zone	R-38 HP Attic	n/a	n/a	747	n/a	n/a
Raised Floor	2nd Flr Zone	R-19 Floor No Crawlspace	n/a	n/a	747	n/a	n/a

ATTIC							
01	**02**	**03**	**04**	**05**	**06**	**07**	**08**
Name	**Construction**	**Type**	**Roof Rise (x in 12)**	**Roof Reflectance**	**Roof Emittance**	**Radiant Barrier**	**Cool Roof**
Attic 2nd Flr Zone	Attic Roof2nd Flr Zone	Ventilated	6	0.1	0.85	No	No

FENESTRATION / GLAZING													
01	**02**	**03**	**04**	**05**	**06**	**07**	**08**	**09**	**10**	**11**	**12**	**13**	**14**
Name	**Type**	**Surface**	**Orientation**	**Azimuth**	**Width (ft)**	**Height (ft)**	**Mult.**	**Area (ft²)**	**U-factor**	**U-factor Source**	**SHGC**	**SHGC Source**	**Exterior Shading**
Window	Window	NE Exterior Wall		135			1	25	0.3	NFRC	0.23	NFRC	Bug Screen
Window 2	Window	SE Exterior Wall		135			1	18	0.3	NFRC	0.23	NFRC	Bug Screen
Window 3	Window	NW Exterior Wall		315			1	50	0.3	NFRC	0.23	NFRC	Bug Screen

OPAQUE SURFACE CONSTRUCTIONS							
01	**02**	**03**	**04**	**05**	**06**	**07**	**08**
Construction Name	**Surface Type**	**Construction Type**	**Framing**	**Total Cavity R-value**	**Interior / Exterior Continuous R-value**	**U-factor**	**Assembly Layers**
R-21 Wall	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O. C.	R-21	None / None	0.069	Inside Finish: Gypsum Board Cavity / Frame: R-21 / 2x6 Exterior Finish: 3 Coat Stucco

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Barnell Ave.
Morgan Hill, CA 95037

PROJECT: LJ COMMONS 4 PLEX

DRAWING TITLE: ADU 1 TITLE 24

REV	DATE	DESCRIPTION
1		
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JOB NO.: 23-113
CAD FILE:
DSGN'D BY: I. R.
DRAWN BY: J. T.
CHK'D BY: I. R.
APP'D BY: I. R.
DATE: 4/17/23
SCALE: AS NOTED
DRAWING NO.: T24-ADU1-1
SHEET * OF *

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01E**

Project Name: Barnell Ave ADU #1 **Calculation Date/Time:** 2023-11-01T15:35:09-07:00 **(Page 7 of 11)**

Calculation Description: Title 24 Analysis **Input File Name:** BARNELL AVE - ADU #1.ribd22x

OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07	08
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Interior / Exterior Continuous R-value	U-factor	Assembly Layers
Attic Roof2nd Flr Zone	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-19	None / 0	0.059	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: R-13.0 / 2x4 Around Roof Joists: R-6.0 insul.
R-38 HP Attic	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-38	None / None	0.025	Over Ceiling Joists: R-28.9 insul. Cavity / Frame: R-9.1 / 2x4 Inside Finish: Gypsum Board
R-19 Floor No Crawlspace	Exterior Floors	Wood Framed Floor	2x10 @ 16 in. O. C.	R-19	None / None	0.047	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: R-19 / 2x10

BUILDING ENVELOPE - HERS VERIFICATION

01	02	03	04	05
Quality Insulation Installation (QII)	High R-value Spray Foam Insulation	Building Envelope Air Leakage	CFM50	CFM50
Required	Not Required	N/A	n/a	n/a

WATER HEATING SYSTEMS

01	02	03	04	05	06	07	08	09
Name	System Type	Distribution Type	Water Heater Name	Number of Units	Solar Heating System	Compact Distribution	HERS Verification	Water Heater Name (#)
DHW Sys 1	Domestic Hot Water (DHW)	Standard	DHW Heater 1	1	n/a	None	n/a	DHW Heater 1 (1)

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01E**

Project Name: Barnell Ave ADU #1 **Calculation Date/Time:** 2023-11-01T15:35:09-07:00 **(Page 10 of 11)**

Calculation Description: Title 24 Analysis **Input File Name:** BARNELL AVE - ADU #1.ribd22x

HVAC FAN SYSTEMS - HERS VERIFICATION

01	02	03
Name	Verified Fan Watt Draw	Required Fan Efficacy (Watts/CFM)
HVAC Fan 1-hers-fan	Required	0.45

INDOOR AIR QUALITY (IAQ) FANS

01	02	03	04	05	06	07	08	09
Dwelling Unit	Airflow (CFM)	Fan Efficacy (W/CFM)	IAQ Fan Type	Includes Heat/Energy Recovery?	IAQ Recovery Effectiveness - SRE/ASRE	Includes Fault Indicator Display?	HERS Verification	Status
SFam IAQVentRpt	44	0.35	Exhaust	No	n/a / n/a	No	Yes	

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01E**

Project Name: Barnell Ave ADU #1 **Calculation Date/Time:** 2023-11-01T15:35:09-07:00 **(Page 8 of 11)**

Calculation Description: Title 24 Analysis **Input File Name:** BARNELL AVE - ADU #1.ribd22x

WATER HEATERS - NEEA HEAT PUMP

01	02	03	04	05	06	07	08
Name	# of Units	Tank Vol. (gal)	NEEA Heat Pump Brand	NEEA Heat Pump Model	Tank Location	Duct Inlet Air Source	Duct Outlet Air Source
DHW Heater 1	1	80	A. O. Smith	HPTU 80N 120 (80 gal)	Outside	2nd Flr Zone	2nd Flr Zone

WATER HEATING - HERS VERIFICATION

01	02	03	04	05	06	07
Name	Pipe Insulation	Parallel Piping	Compact Distribution	Compact Distribution Type	Recirculation Control	Shower Drain Water Heat Recovery
DHW Sys 1 - 1/1	Not Required	Not Required	Not Required	None	Not Required	Not Required

SPACE CONDITIONING SYSTEMS

01	02	03	04	05	06	07	08	09
Name	System Type	Heating Unit Name	Heating Equipment Count	Cooling Unit Name	Cooling Equipment Count	Fan Name	Distribution Name	Required Thermostat Type
Undefined System1	Heat pump heating cooling	Heat Pump System 1	1	Heat Pump System 1	1	HVAC Fan 1	Air Distribution System 1	Setback

HVAC - HEAT PUMPS

01	02	03	04	05	06	07	08	09	10	11	12	13
Name	System Type	Number of Units	Heating				Cooling			Zonally Controlled	Compressor Type	HERS Verification
			Heating Efficiency Type	HSPF/HSPF2/COP	Cap 47	Cap 17	Cooling Efficiency Type	SEER/SEER2	EER/EER2/CEER			
Heat Pump System 1	Central split HP	1	HSPF	9.5	60000	50000	EERSEER	16	12.5	Not Zonal	Single Speed	Heat Pump System 1-hers-htpump

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01E**

Project Name: Barnell Ave ADU #1 **Calculation Date/Time:** 2023-11-01T15:35:09-07:00 **(Page 11 of 11)**

Calculation Description: Title 24 Analysis **Input File Name:** BARNELL AVE - ADU #1.ribd22x

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Iradj Rahnama	Documentation Author Signature: Iradj Rahnama
Company: I & A Engineering	Signature Date: 2023-11-01 15:41:24
Address: 1610 BLOSSOM HILL RD. SUITE E	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: San Jose, CA 95124	Phone: 408-268-9337

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design identified on this Certificate of Compliance.
2. I certify that the energy features and performance specifications identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
3. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.

Responsible Designer Name: Iradj Rahnama	Responsible Designer Signature: Iradj Rahnama
Company: I & A Engineering	Date Signed: 2023-11-01 15:41:24
Address: 1610 BLOSSOM HILL RD. SUITE E	License: N/A
City/State/Zip: San Jose, CA 95124	Phone: 408-268-9337

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CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01E**

Project Name: Barnell Ave ADU #1 **Calculation Date/Time:** 2023-11-01T15:35:09-07:00 **(Page 9 of 11)**

Calculation Description: Title 24 Analysis **Input File Name:** BARNELL AVE - ADU #1.ribd22x

HVAC HEAT PUMPS - HERS VERIFICATION

01	02	03	04	05	06	07	08	09
Name	Verified Airflow	Airflow Target	Verified EER/EER2	Verified SEER/SEER2	Verified Refrigerant Charge	Verified HSPF/HSPF2	Verified Heating Cap 47	Verified Heating Cap 17
Heat Pump System 1-hers-htpump	Required	350	Required	Required	No	Yes	Yes	Yes

HVAC - DISTRIBUTION SYSTEMS

01	02	03	04	05	06	07	08	09	10	11	12
Name	Type	Design Type	Duct Ins. R-value		Duct Location		Surface Area		Bypass Duct	Duct Leakage	HERS Verification
			Supply	Return	Supply	Return	Supply	Return			
Air Distribution System 1	Unconditioned attic	Non-Verified	R-8	R-8	Attic	Attic	n/a	n/a	No Bypass Duct	Sealed and Tested	Air Distribution System 1-hers-dist

HVAC DISTRIBUTION - HERS VERIFICATION

01	02	03	04	05	06	07	08	09
Name	Duct Leakage Verification	Duct Leakage Target (%)	Verified Duct Location	Verified Duct Design	Buried Ducts	Deeply Buried Ducts	Low-leakage Air Handler	Low Leakage Ducts Entirely in Conditioned Space
Air Distribution System 1-hers-dist	Yes	5.0	Not Required	Not Required	Not Required	Credit not taken	Not Required	No

HVAC - FAN SYSTEMS

01	02	03	04
Name	Type	Fan Power (Watts/CFM)	Name
HVAC Fan 1	HVAC Fan	0.45	HVAC Fan 1-hers-fan

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Barnell Ave.
Morgan Hill, CA 95037

PROJECT: LJ COMMONS 4 PLEX

DRAWING TITLE: ADU 1 TITLE 24

REV	DATE	DESCRIPTION
1		
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JOB NO.: 23-113
CAD FILE:
DSGN'D BY: I. R.
DRAWN BY: J. T.
CHK'D BY: I. R.
APP'D BY: I. R.
DATE: 4/17/23
SCALE: AS NOTED

DRAWING NO.: T24-ADU1-2

SHEET * OF *

RESIDENTIAL MEASURES SUMMARY — RMS-1

Project Name	Building Type		Date
Barnell Ave ADU #1	☑ Single Family ☐ Multi Family ☐ Addition Alone ☐ Existing+ Addition/Alteration		11/1/2023
Project Address	**California Energy Climate Zone**	**Total Cond. Floor Area**	**Addition**	**# of Units**
Barnell Ave Morgan Hill	CA Climate Zone 04	747	n/a	1

INSULATION

Construction	Type	Cavity	Area (ft^2)	Special Features	Status
Wall	Wood Framed	R 20	990		New
Roof	Wood Framed Attic	R 38	747	Add=R-19.0	New
Floor	Wood Framed w/o Crawl Space	R 19	747		New

FENESTRATION

Total Area: 93 | Glazing Percentage: 12.4% | New/Altered Average U-Factor: 0.30

Orientation	Area(ft^2)	U-Fac	SHGC	Overhang	Sidefins	Exterior Shades	Status
Left (SE)	43.0	0.300	0.23	none	none	N/A	New
Right (NW)	50.0	0.300	0.23	none	none	N/A	New

HVAC SYSTEMS

Qty.	Heating	Min. Eff	Cooling	Min. Eff	Thermostat	Status
1	Electric Heat Pump	9.50 HSPF	Split Heat Pump	16.0 SEER	Setback	New

HVAC DISTRIBUTION

Location	Heating	Cooling	Duct Location	Duct R-Value	Status
Undefined System	Ducted	Ducted	Attic	8.0	New

WATER HEATING

Qty.	Type	Gallons	Min. Eff	Distribution	Status
1	Heat Pump	80	2.90	Standard	New

2022 Single-Family Residential Mandatory Requirements Summary

NOTE: Single-family residential buildings subject to the Energy Codes must comply with all applicable mandatory measures, regardless of the compliance approach used. Review the respective section for more information.
(04/2022)

Building Envelope:

§ 110.6(a)1:	**Air Leakage.** Manufactured fenestration, exterior doors, and exterior pet doors must limit air leakage to 0.3 CFM per square foot or less when tested per NFRC-400, ASTM E283, or AAMA/WDMA/CSA 101/I.S.2/A440-2011. *
§ 110.6(a)5:	**Labeling.** Fenestration products and exterior doors must have a label meeting the requirements of § 10-111(a).
§ 110.6(b):	**Field fabricated exterior doors and fenestration** products must use U-factors and solar heat gain coefficient (SHGC) values from Tables 110.6-A, 110.6-B, or JA4.5 for exterior doors. They must be caulked and/or weather-stripped.
§ 110.7:	**Air Leakage.** All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be caulked, gasketed, or weather stripped.
§ 110.8(a):	**Insulation Certification by Manufacturers.** Insulation must be certified by the Department of Consumer Affairs, Bureau of Household Goods and Services (BHGS).
§ 110.8(g):	**Insulation Requirements for Heated Slab Floors.** Heated slab floors must be insulated per the requirements of § 110.8(g).
§ 110.8(i):	**Roofing Products Solar Reflectance and Thermal Emittance.** The thermal emittance and aged solar reflectance values of the roofing material must meet the requirements of § 110.8(i) and be labeled per §10-113 when the installation of a cool roof is specified on the CF1R.
§ 110.8(j):	**Radiant Barrier.** When required, radiant barriers must have an emittance of 0.05 or less and be certified to the Department of Consumer Affairs.
§ 150.0(a):	**Roof Deck, Ceiling and Rafter Roof Insulation.** Roof decks in newly constructed attics in climate zones 4 and 8-16 area-weighted average U-factor not exceeding U-0.184. Ceiling and rafter roofs minimum R-22 insulation in wood-frame ceiling; or area-weighted average U-factor must not exceed 0.043. Rafter roof alterations minimum R-19 or area-weighted average U-factor of 0.054 or less. Attic access doors must have permanently attached insulation using adhesive or mechanical fasteners. The attic access must be gasketed to prevent air leakage. Insulation must be installed in direct contact with a roof or ceiling which is sealed to limit infiltration and exfiltration, as specified in § 110.7, including but not limited to placing insulation either above or below the roof deck or on top of a drywall ceiling. *
§ 150.0(b):	**Loose-fill Insulation.** Loose fill insulation must meet the manufacturer's required density for the labeled R-value.
§ 150.0(c):	**Wall Insulation.** Minimum R-13 insulation in 2x4 inch wood framing wall or have a U-factor of 0.102 or less, or R-20 in 2x6 inch wood framing or have a U-factor of 0.071 or less. Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102. Masonry walls must meet Tables 150.1-A or B. *
§ 150.0(d):	**Raised-floor Insulation.** Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U-factor. *
§ 150.0(f):	**Slab Edge Insulation.** Slab edge insulation must meet all of the following: have a water absorption rate, for the insulation material alone without facings, no greater than 0.3 percent; have a water vapor permeance no greater than 2.0 perm per inch; be protected from physical damage and UV light deterioration; and, when installed as part of a heated slab floor, meet the requirements of § 110.8(g).
§ 150.0(g)1:	**Vapor Retarder.** In climate zones 1 through 16, the earth floor of unvented crawl space must be covered with a Class I or Class II vapor retarder. This requirement also applies to controlled ventilation crawl space for buildings complying with the exception to §150.0(d).
§ 150.0(g)2:	**Vapor Retarder.** In climate zones 14 and 16, a Class I or Class II vapor retarder must be installed on the conditioned space side of all insulation in all exterior walls, vented attics, and unvented attics with air-permeable insulation.
§ 150.0(q):	**Fenestration Products.** Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a maximum U-factor of 0.45; or area-weighted average U-factor of all fenestration must not exceed 0.45. *

Fireplaces, Decorative Gas Appliances, and Gas Log:

§ 110.5(e)	**Pilot Light.** Continuously burning pilot lights are not allowed for indoor and outdoor fireplaces.
§ 150.0(e)1:	**Closable Doors.** Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox.
§ 150.0(e)2:	**Combustion Intake.** Masonry or factory-built fireplaces must have a combustion outside air intake, which is at least six square inches in area and is equipped with a readily accessible, operable, and tight-fitting damper or combustion-air control device. *
§ 150.0(e)3:	**Flue Damper.** Masonry or factory-built fireplaces must have a flue damper with a readily accessible control. *

Space Conditioning, Water Heating, and Plumbing System:

§ 110.0-§ 110.3:	**Certification.** Heating, ventilation, and air conditioning (HVAC) equipment, water heaters, showerheads, faucets, and all other regulated appliances must be certified by the manufacturer to the California Energy Commission. *
§ 110.2(a):	**HVAC Efficiency.** Equipment must meet the applicable efficiency requirements in Table 110.2-A through Table 110.2-N. *
§ 110.2(b):	**Controls for Heat Pumps with Supplementary Electric Resistance Heaters.** Heat pumps with supplementary electric resistance heaters must have controls that prevent supplementary heater operation when the heating load can be met by the heat pump alone; and in which the cut-on temperature for compression heating is higher than the cut-on temperature for supplementary heating, and the cut-off temperature for compression heating is higher than the cut-off temperature for supplementary heating. *
§ 110.2(c):	**Thermostats.** All heating or cooling systems not controlled by a central energy management control system (EMCS) must have a setback thermostat. *
§ 110.3(c)3:	**Insulation.** Unfired service water heater storage tanks and solar water-heating backup tanks must have adequate insulation, or tank surface heat loss rating.
§ 110.3(c)6:	**Isolation Valves.** Instantaneous water heaters with an input rating greater than 6.8 kBtu per hour (2 kW) must have isolation valves with hose bibbs or other fittings on both cold and hot water lines to allow for flushing the water heater when the valves are closed.

2022 Single-Family Residential Mandatory Requirements Summary

§ 110.5:	**Pilot Lights.** Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces; household cooking appliances (except appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu per hour); and pool and spa heaters. *
§ 150.0(h)1:	**Building Cooling and Heating Loads.** Heating and/or cooling loads are calculated in accordance with the ASHRAE Handbook, Equipment Volume, Applications Volume, and Fundamentals Volume; the SMACNA Residential Comfort System Installation Standards Manual; or the ACCA Manual J using design conditions specified in § 150.0(h)2.
§ 150.0(h)3A:	**Clearances.** Air conditioner and heat pump outdoor condensing units must have a clearance of at least five feet from the outlet of any dryer.
§ 150.0(h)3B:	**Liquid Line Drier.** Air conditioners and heat pump systems must be equipped with liquid line filter driers if required, as specified by the manufacturer's instructions.
§ 150.0(j)1:	**Water Piping, Solar Water-heating System Piping, and Space Conditioning System Line Insulation.** All domestic hot water piping must be insulated as specified in § 609.11 of the California Plumbing Code. *
§ 150.0(j)2:	**Insulation Protection.** Piping insulation must be protected from damage, including that due to sunlight, moisture, equipment' maintenance, and wind as required by §120.3(b). Insulation exposed to weather must be water retardant and protected from UV light (no adhesive tapes). Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space must include, or be protected by, a Class I or Class II vapor retarder. Pipe insulation buried below grade must be installed in a waterproof and non-crushable casing or sleeve.
§ 150.0(n)1:	**Gas or Propane Water Heating Systems.** Systems using gas or propane water heaters to serve individual dwelling units must designate a space at least 2.5' x 2.5' x 7' suitable for the future installation of a heat pump water heator, and meet electrical and plumbing requirements, based on the distance between this designated space and the water heater location; and a condensate drain no more than 2' higher than the base of the water heater
§ 150.0(n)3:	**Solar Water-heating Systems.** Solar water-heating systems and collectors must be certified and rated by the Solar Rating and Certification Corporation (SRCC), the International Association of Plumbing and Mechanical Officials, Research and Testing (IAPMO R&T), or by a listing agency that is approved by the executive director.

Ducts and Fans:

§ 110.8(d)3:	**Ducts.** Insulation installed on an existing space-conditioning duct must comply with § 604.0 of the California Mechanical Code (CMC). If a contractor installs the insulation, the contractor must certify to the customer, in writing, that the insulation meets this requirement.
§ 150.0(m)1:	**CMC Compliance.** All air-distribution system ducts and plenums must meet CMC §§ 601.0-605.0 and ANSI/SMACNA-006-2006 HVAC Duct Construction Standards Metal and Flexible 3rd Edition. Portions of supply-air and return-air ducts and plenums must be insulated to R-6.0 or higher; ducts located entirely in conditioned space as confirmed through field verification and diagnostic testing (RA3.1.4.3.8) do not require insulation. Connections of metal ducts and inner core of flexible ducts must be mechanically fastened. Openings must be sealed with mastic, tape, or other duct-closure system that meets the applicable UL requirements, or aerosol sealant that meets UL 723. The combination of mastic and either mesh or tape must be used to seal openings greater than ¼", if mastic or tape is used. Building cavities, air handler support platforms, and plenums designed or constructed with materials other than sealed sheet metal, duct board or flexible duct must not be used to convey conditioned air. Building cavities and support platforms may contain ducts; ducts installed in these spaces must not be compressed. *
§ 150.0(m)2:	**Factory-Fabricated Duct Systems.** Factory-fabricated duct systems must comply with applicable requirements for duct construction, connections, and closures; joints and seams of duct systems and their components must not be sealed with cloth back rubber adhesive duct tapes unless such tape is used in combination with mastic and draw bands.
§ 150.0(m)3:	**Field-Fabricated Duct Systems.** Field-fabricated duct systems must comply with applicable requirements for: pressure-sensitive tapes, mastics, sealants, and other requirements specified for duct construction.
§ 150.0(m)7:	**Backdraft Damper.** Fan systems that exchange air between the conditioned space and outdoors must have backdraft or automatic dampers.
§ 150.0(m)8:	**Gravity Ventilation Dampers.** Gravity ventilating systems serving conditioned space must have either automatic or readily accessible, manually operated dampers in all openings to the outside, except combustion inlet and outlet air openings and elevator shaft vents.
§ 150.0(m)9:	**Protection of Insulation.** Insulation must be protected from damage due tosunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather must be suitable for outdoor service (e.g., protected by aluminum, sheet metal, painted canvas, or plastic cover). Cellular foam insulation must be protected as above or painted with a water retardant and solar radiation-resistant coating.
§ 150.0(m)10:	**Porous Inner Core Flex Duct.** Porous inner cores of flex ducts must have a non-porous layer or air barrier between the inner core and outer vapor barrier. *
§ 150.0(m)11:	**Duct System Sealing and Leakage Test.** When space conditioning systems use forced air duct systems to supply conditioned air to an occupiable space, the ducts must be sealed and duct leakage tested, as confirmed through field verification and diagnostic testing, in accordance with Reference Residential Appendix RA3.1.
§ 150.0(m)12:	**Air Filtration.** Space conditioning systems with ducts exceeding 10 feet and the supply side of ventilation systems must have MERV 13 or equivalent filters. Filters for space conditioning systems must have a two inch depth or can be one inch if sized per Equation 150.0-A. Clean-filter pressure drop and labeling must meet the requirements in §150.0(m)12. Filters must be accessible for regular service. Filter racks or grilles must use gaskets, sealing, or other means to close gaps around the inserted filters to and prevents air from bypassing the filter. *

2022 Single-Family Residential Mandatory Requirements Summary

Ventilation and Indoor Air Quality:

§ 150.0(o)1:	**Requirements for Ventilation and Indoor Air Quality**. All dwelling units must meet the requirements of ASHRAE Standard 62.2, Ventilation and Acceptable Indoor Air Quality in Residential Buildings subject to the amendments specified in § 150.0(o)1. *
§ 150.0(o)1B:	**Central Fan Integrated (CFI) Ventilation Systems.** Continuous operation of CFI air handlers is not allowed to provide the whole-dwelling unit ventilation airflow required per §150.0(o)1C. A motorized damper(s) must be installed on the ventilation duct(s) that prevents all airflow through the space conditioning duct system when the damper(s) is closed andcontrolled per §150.0(o)1Biii&iv. CFI ventilation systems must have controls that track outdoor air ventilation run time, and either open or close the motorized damper(s) for compliance with §150.0(o)1C.
§ 150.0(o)1C:	**Whole-Dwelling Unit Mechanical Ventilation for Single-Family Detached and townhouses .** Single-family detached dwelling units, and attached dwelling units not sharing ceilings or floors with other dwelling units, occupiable spaces, public garages, or commercial spaces must have mechanical ventilation airflow specified in § 150.0(o)1C-iii.
§ 150.0(o)1G:	**Local Mechanical Exhaust.** Kitchens and bathrooms must have local mechanical exhaust; nonenclosed kitchens must have demand-controlled exhaust system meeting requirements of §150.0(o)1Giii,enclosed kitchens and bathrooms can use demand-controlled or continuous exhaust meeting §150.0(o)1Giii-iv. Airflow must be measured by the installer per §150.0(o)1Gv, and rated for sound per §150.0(o)1Gvi. *
§ 150.0(o)1H&I:	**Airflow Measurement and Sound Ratings of Whole-Dwelling Unit Ventilation Systems.** The airflow required per § 150.0(o)1C must be measured by using a flow hood, flow grid, or other airflow measuring device at the fan's inlet or outlet terminals/grilles per Reference Residential Appendix RA3.7. Whole-Dwelling unit ventilation systems must be rated for sound per ASHRAE 62.2 §7.2 at no less than the minimum airflow rate required by §150.0(o)1C.
§ 150.0(o)2:	**Field Verification and Diagnostic Testing.** Whole-Dwelling Unit ventilation airflow, vented range hood airflow and sound rating, and HRV and ERV fan efficacy must be verified in accordance with Reference Residential Appendix RA3.7. Vented range hoods must be verified per Reference Residential Appendix RA3.7.4.3 to confirm if it is rated by HVI or AHAM to comply with the airflow rates and sound requirements per §150.0(o)1G

Pool and Spa Systems and Equipment:

§ 110.4(a):	**Certification by Manufacturers.** Any pool or spa heating system or equipment must be certified to have all of the following: compliance with the Appliance Efficiency Regulations and listing in MAEDbS; an on-off switch mounted outside of the heater that allows shutting off the heater without adjusting the thermostat setting; a permanent weatherproof plate or card with operating instructions; and must not use electric resistance heating. *
§ 110.4(b)1:	**Piping.** Any pool or spa heating system or equipment must be installed with at least 36 inches of pipe between the filter and the heater, or dedicated suction and return lines, or built-in or built-up connections to allow for future solar heating.
§ 110.4(b)2:	**Covers.** Outdoor pools or spas that have a heat pump or gas heater must have a cover.
§ 110.4(b)3:	**Directional Inlets and Time Switches for Pools.** Pools must have directional inlets that adequately mix the pool water, and a time switch that will allow all pumps to be set or programmed to run only during off-peak electric demand periods.
§ 110.5:	**Pilot Light.** Natural gas pool and spa heaters must not have a continuously burning pilot light.
§ 150.0(p):	**Pool Systems and Equipment Installation.** Residential pool systems or equipment must meet the specified requirements for pump sizing, flow rate, piping, filters, and valves. *

Lighting:

§ 110.9:	**Lighting Controls and Components.** All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirements of § 110.9. *
§ 150.0(k)1A:	**Luminaire Efficacy.** All installed luminaires must meet the requirements in Table 150.0-A, except lighting integral to exhaust fans, kitchen range hoods, bath vanity mirrors, and garage door openers; navigation lighting less than 5 watts; and lighting internal to drawers, cabinets, and linen closets with an efficacy of at least 45 lumens per watt.
§ 150.0(k)1B:	**Screw based luminaires.** Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8. *
§ 150.0(k)1C:	**Recessed Downlight Luminaires in Ceilings.** Luminaires recessed into ceilings must not contain screw based sockets, must be airtight, and must be sealed with a gasket or caulk. California Electrical Code § 410.116 must also be met.
§ 150.0(k)1D:	**Light Sources in Enclosed or Recessed Luminaires.** Lamps and other separable light sources that are not compliant with the JA8 elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
§ 150.0(k)1E:	**Blank Electrical Boxes.** The number of electrical boxes that are more than five feet above the finished floor and do not contain a luminaire or other device shall be no more than the number of bedrooms. These boxes must be served by a dimmer, vacancy sensor control, low voltage wiring, or fan speed control.
§ 150.0(k)1F:	**Lighting Integral to Exhaust Fans.** Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.0(k). *

2022 Single-Family Residential Mandatory Requirements Summary

§ 150.0(k)1G:	**Screw based luminaires.** Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8. *
§ 150.0(k)1H:	**Light Sources in Enclosed or Recessed Luminaires.** Lamps and other separable light sources that are not compliant with the JA8 elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
§ 150.0(k)1I:	**Light Sources in Drawers, Cabinets, and Linen Closets.** Light sources internal to drawers, cabinetry or linen closets are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, emit no more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is closed.
§ 150.0(k)2A:	**Interior Switches and Controls.** All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A.
§ 150.0(k)2B:	**Interior Switches and Controls.** Exhaust fans must be controlled separately from lighting systems. *
§ 150.0(k)2A:	**Accessible Controls.** Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually turned on and off. *
§ 150.0(k)2B:	**Multiple Controls.** Controls must not bypass a dimmer, occupant sensor, or vacancy sensor function if the dimmer or sensor is installed to comply with § 150.0(k).
§ 150.0(k)2C:	**Mandatory Requirements.** Lighting controls must comply with the applicable requirements of § 110.9.
§ 150.0(k)2D:	**Energy Management Control Systems.** An energy management control system (EMCS) may be used to comply with dimming, occupancy, and control requirements if it provides the functionality of the specified control per § 110.9 and the physical controls specified in § 150.0(k)2A.
§ 150.0(k)2E:	**Automatic Shutoff Controls.** In bathrooms, garages, laundry rooms, utility rooms and walk-in closets, at least one installed luminaire must be controlled by an occupancy or vacancy sensor providing automatic-off functionality. Lighting inside drawers and cabinets with opaque fronts or doors must have controls that turn the light off when the drawer or door is closed.
§ 150.0(k)2F:	**Dimmers.** Lighting in habitable spaces (e.g., living rooms, dining rooms, kitchens, and bedrooms) must have readily accessible wall-mounted dimming controls that allow the lighting to be manually adjusted up and down. Forward phase cut dimmers controlling LED light sources in these spaces must comply with NEMA SSL 7A.
§ 150.0(k)2K:	**Independent controls.** Integrated lighting of exhaust fans shall be controlled independently from the fans. Lighting under cabinets or shelves, lighting in display cabinets, and switched outlets must be controlled separately from ceiling-installed lighting.
§ 150.0(k)3A:	**Residential Outdoor Lighting.** For single-family residential buildings, outdoor lighting permanently mounted to a residential building, or to other buildings on the same lot, must have a manual on/off switch and either a photocell and motion sensor or automatic time switch control) or an astronomical time clock. An energy management control system that provides the specified control functionality and meets all applicable requirements may be used to meet these requirements.
§ 150.0(k)4:	**Internally illuminated address signs.** Internally illuminated address signs must either comply with § 140.8 or consume no more than 5 watts of power.
§ 150.0(k)5:	**Residential Garages for Eight or More Vehicles.** Lighting for residential parking garages for eight or more vehicles must comply with the applicable requirements for nonresidential garages in §§ 110.9, 130.0, 130.1, 130.4, 140.6, and 141.0.

Solar Readiness:

§ 110.10(a)1:	**Single-family Residences.** Single-family residences located in subdivisions with 10 or more single-family residences and where the application for a tentative subdivision map for the residences has been deemed complete and approved by the enforcement agency, which do not have a photovoltaic system installed, must comply with the requirements of § 110.10(b)-(e).
§110.10(b)1A:	**Minimum Solar Zone Area.** The solar zone must have a minimum total area as described below. The solar zone must comply with access, pathway, smoke ventilation, and spacing requirements as specified in Title 24, Part 9 or other parts of Title 24 or in any requirements adopted by a local jurisdiction. The solar zone total area must be comprised of areas that have no dimension less than 5 feet and are no less than 80 square feet each for buildings with roof areas less than or equal to 10,000 square feet or no less than 160 square feet each for buildings with roof areas greater than 10,000 square feet. For single-family residences, the solar zone must be located on the roof or overhang of the building and have a total area no less than 250 square feet. *
§ 110.10(b)2:	**Azimuth.** All sections of the solar zone located on steep-sloped roofs must have an azimuth between 90-300° of true north.
§ 110.10(b)3A:	**Shading.** The solar zone must not contain any obstructions, including but not limited to: vents, chimneys, architectural features, and roof mounted equipment.
§ 110.10(b)3B:	**Shading.** Any obstruction located on the roof or any other part of the building that projects above a solar zone must be located at least twice the horizontal distance of the height difference between the highest point of the obstruction and the horizontal projection of the nearest point of the solar zone, measured in the vertical plane.
§ 110.10(b)4:	**Structural Design Loads on Construction Documents.** For areas of the roof designated as a solar zone, the structural design loads for roof dead load and roof live load must be clearly indicated on the construction documents.
§ 110.10(c):	**Interconnection Pathways.** The construction documents must indicate: a location reserved for inverters and metering equipment and a pathway reserved for routing of conduit from the solar zone to the point of interconnection with the electrical service; and for single-family residences and central water-heating systems, a pathway reserved for routing plumbing from the solar zone to the water-heating system.
§ 110.10(d):	**Documentation.** A copy of the construction documents or a comparable document indicating the information from § 110.10(b)-(c) must be provided to the occupant.
§ 110.10(e)1:	**Main Electrical Service Panel.** The main electrical service panel must have a minimum busbar rating of 200 amps.
§ 110.10(e)2:	**Main Electrical Service Panel.** The main electrical service panel must have a reserved space to allow for the installation of a double pole circuit breaker for a future solar electric installation. The reserved space must be permanently marked as "For Future Solar Electric."

Electric and Energy Storage Ready:

2022 Single-Family Residential Mandatory Requirements Summary

§ 150.0(s)	**Energy Storage System (ESS) Ready.** All single-family residences must meet all of the following: Either ESS-ready interconnection equipment with backed up capacity of 60 amps or more and four or more ESS supplied branch circuits, or a dedicated raceway from the main service to a subpanel that supplies the branch circuits in § 150.0(s); at least four branch circuits must be identified and have their source collocated at a single panelboard suitable to be supplied by the ESS, with one circuit supplying the refrigerator, one lighting circuit near the primary exit, and one circuit supplying a sleeping room receptacle outlet; main panelboard must have a minimum busbar rating of 225 amps; sufficient space must be reserved to allow future installation of a system isolation equipment/transfer switch within 3' of the main panelboard, with raceways installed between the panelboard and the switch location to allow the connection of backup power source.
§ 150.0(t)	**Heat Pump Space Heater Ready.** Systems using gas or propane furnaces to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the furnace with circuit conductors rated at least 30 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."
§ 150.0(u)	**Electric Cooktop Ready.** Systems using gas or propane cooktop to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the cooktop with circuit conductors rated at least 50 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."
§ 150.0(v)	**Electric Clothes Dryer Ready.** Clothes dryer locations with gas or propane plumbing to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the dryer location with circuit conductors rated at least 30 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."

*Exceptions may apply.

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Barnell Ave.
Morgan Hill, CA 95037

PROJECT: LJ COMMONS 4 PLEX

DRAWING TITLE: ADU 1 TITLE 24

REV	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		
7		

JOB NO.: 23-113
CAD FILE:
DSGN'D BY: I. R. | DRAWN BY: J. T.
CHK'D BY: I. R. | APP'D BY: I. R.
DATE: 4/17/23 | SCALE: AS NOTED
DRAWING NO.: T24-ADU1-3
SHEET * OF *

GENERAL INFORMATION					
01	**Project Name**	Barnell Ave ADU #2			
02	**Run Title**	Title 24 Analysis			
03	**Project Location**	Barnell Ave			
04	**City**	Morgan Hill	05	**Standards Version**	2022
06	**Zip code**	95037	07	**Software Version**	EnergyPro 9.2
08	**Climate Zone**	4	09	**Front Orientation (deg/ Cardinal)**	0
10	**Building Type**	Single family	11	**Number of Dwelling Units**	1
12	**Project Scope**	Newly Constructed	13	**Number of Bedrooms**	2
14	**Addition Cond. Floor Area (ft²)**	0	15	**Number of Stories**	1
16	**Existing Cond. Floor Area (ft²)**	n/a	17	**Fenestration Average U-factor**	0.3
18	**Total Cond. Floor Area (ft²)**	702	19	**Glazing Percentage (%)**	12.68%
20	**ADU Bedroom Count**	n/a	21	**ADU Conditioned Floor Area**	n/a
22	**Fuel Type**	Natural gas	23	**No Dwelling Units:**	No

COMPLIANCE RESULTS	
01	**Building Complies with Computer Performance**
02	**This building incorporates features that require field testing and/or verification by a certified HERS rater under the supervision of a CEC-approved HERS provider.**
03	**This building incorporates one or more Special Features shown below**

ENERGY DESIGN RATINGS						
	Energy Design Ratings			Compliance Margins		
	Source Energy (EDR1)	Efficiency[1] EDR (EDR2efficiency)	Total[2] EDR (EDR2total)	Source Energy (EDR1)	Efficiency[1] EDR (EDR2efficiency)	Total[2] EDR (EDR2total)
Standard Design	38.8	45.7	35			
Proposed Design	36.7	41.7	32.8	2.1	4	2.2
RESULT[3]: PASS						

[1]Efficiency EDR includes improvements like a better building envelope and more efficient equipment
[2]Total EDR includes efficiency and demand response measures such as photovoltaic (PV) system and batteries
[3]Building complies when source energy, efficiency and total compliance margins are greater than or equal to zero and unmet load hour limits are not exceeded

- Standard Design PV Capacity: 2.09 kWdc
- PV System resized to 2.09 kWdc (a factor of 2.087) to achieve 'Standard Design PV' PV scaling

ENERGY USE SUMMARY						
Energy Use	**Standard Design Source Energy (EDR1) (kBtu/ft² -yr)**	**Standard Design TDV Energy (EDR2) (kTDV/ft² -yr)**	**Proposed Design Source Energy (EDR1) (kBtu/ft² -yr)**	**Proposed Design TDV Energy (EDR2) (kTDV/ft² -yr)**	**Compliance Margin (EDR1)**	**Compliance Margin (EDR2)**
Space Heating	1.25	5.79	1.79	14.29	-0.54	-8.5
Space Cooling	1.44	42.23	0.87	33.64	0.57	8.59
IAQ Ventilation	0.47	5.07	0.47	5.07	0	0
Water Heating	3.17	33.13	2.25	25.6	0.92	7.53
Self Utilization/Flexibility Credit				0		0
Efficiency Compliance Total	**6.33**	**86.22**	**5.38**	**78.6**	**0.95**	**7.62**
Photovoltaics	-2.61	-88.4	-2.61	-87.95		
Battery		0		0		
Flexibility						
Indoor Lighting	0.99	9.71	0.99	9.71		
Appl. & Cooking	7.45	48.78	7.4	48.23		
Plug Loads	6.44	67.01	6.44	67.01		
Outdoor Lighting	0.21	1.91	0.21	1.91		
TOTAL COMPLIANCE	**18.81**	**125.23**	**17.81**	**117.51**		

ENERGY USE INTENSITY				
	Standard Design (kBtu/ft² - yr)	**Proposed Design (kBtu/ft² - yr)**	**Compliance Margin (kBtu/ft² - yr)**	**Margin Percentage**
Gross EUI[1]	27.42	25.63	1.79	6.53
Net EUI[2]	11.36	9.56	1.8	15.85

Notes
1. Gross EUI is Energy Use Total (not including PV) / Total Building Area.
2. Net EUI is Energy Use Total (including PV) / Total Building Area.

REQUIRED PV SYSTEMS											
01	**02**	**03**	**04**	**05**	**06**	**07**	**08**	**09**	**10**	**11**	**12**
DC System Size (kWdc)	**Exception**	**Module Type**	**Array Type**	**Power Electronics**	**CFI**	**Azimuth (deg)**	**Tilt Input**	**Array Angle (deg)**	**Tilt: (x in 12)**	**Inverter Eff. (%)**	**Annual Solar Access (%)**
2.09	NA	Standard (14-17%)	Fixed	none	true	150-270	n/a	n/a	<=7:12	96	98

REQUIRED SPECIAL FEATURES
The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.
• Insulation below roof deck • Northwest Energy Efficiency Alliance (NEEA) rated heat pump water heater; specific brand/model, or equivalent, must be installed

HERS FEATURE SUMMARY
The following is a summary of the features that must be field-verified by a certified HERS Rater as a condition for meeting the modeled energy performance for this computer analysis. Additional detail is provided in the building tables below. Registered CF2Rs and CF3Rs are required to be completed in the HERS Registry
• Quality insulation installation (QII) • Indoor air quality ventilation • Kitchen range hood • Minimum Airflow • Verified EER/EER2 • Verified SEER/SEER2 • Fan Efficacy Watts/CFM • Verified HSPF • Verified heat pump rated heating capacity • Duct leakage testing

BUILDING - FEATURES INFORMATION						
01	**02**	**03**	**04**	**05**	**06**	**07**
Project Name	**Conditioned Floor Area (ft²)**	**Number of Dwelling Units**	**Number of Bedrooms**	**Number of Zones**	**Number of Ventilation Cooling Systems**	**Number of Water Heating Systems**
Barnell Ave ADU #2	702	1	2	1	0	1

ZONE INFORMATION						
01	**02**	**03**	**04**	**05**	**06**	**07**
Zone Name	**Zone Type**	**HVAC System Name**	**Zone Floor Area (ft²)**	**Avg. Ceiling Height**	**Water Heating System 1**	**Status**
2nd Flr Zone	Conditioned	Undefined System1	702	9	DHW Sys 1	New

OPAQUE SURFACES							
01	**02**	**03**	**04**	**05**	**06**	**07**	**08**
Name	**Zone**	**Construction**	**Azimuth**	**Orientation**	**Gross Area (ft²)**	**Window and Door Area (ft2)**	**Tilt (deg)**
NE Exterior Wall	2nd Flr Zone	R-21 Wall	135	n/a	173	0	90
SE Exterior Wall	2nd Flr Zone	R-21 Wall	135	n/a	261	39	90
SW Exterior Wall	2nd Flr Zone	R-21 Wall	225	n/a	239	0	90
NW Exterior Wall	2nd Flr Zone	R-21 Wall	315	n/a	261	50	90

OPAQUE SURFACES							
01	**02**	**03**	**04**	**05**	**06**	**07**	**08**
Name	**Zone**	**Construction**	**Azimuth**	**Orientation**	**Gross Area (ft²)**	**Window and Door Area (ft2)**	**Tilt (deg)**
Roof	2nd Flr Zone	R-38 HP Attic	n/a	n/a	702	n/a	n/a
Raised Floor	2nd Flr Zone	R-19 Floor No Crawlspace	n/a	n/a	702	n/a	n/a

ATTIC							
01	**02**	**03**	**04**	**05**	**06**	**07**	**08**
Name	**Construction**	**Type**	**Roof Rise (x in 12)**	**Roof Reflectance**	**Roof Emittance**	**Radiant Barrier**	**Cool Roof**
Attic 2nd Flr Zone	Attic Roof2nd Flr Zone	Ventilated	6	0.1	0.85	No	No

FENESTRATION / GLAZING													
01	**02**	**03**	**04**	**05**	**06**	**07**	**08**	**09**	**10**	**11**	**12**	**13**	**14**
Name	**Type**	**Surface**	**Orientation**	**Azimuth**	**Width (ft)**	**Height (ft)**	**Mult.**	**Area (ft²)**	**U-factor**	**U-factor Source**	**SHGC**	**SHGC Source**	**Exterior Shading**
Window	Window	SE Exterior Wall		135			1	39	0.3	NFRC	0.23	NFRC	Bug Screen
Window 2	Window	NW Exterior Wall		315			1	50	0.3	NFRC	0.23	NFRC	Bug Screen

OPAQUE SURFACE CONSTRUCTIONS							
01	**02**	**03**	**04**	**05**	**06**	**07**	**08**
Construction Name	**Surface Type**	**Construction Type**	**Framing**	**Total Cavity R-value**	**Interior / Exterior Continuous R-value**	**U-factor**	**Assembly Layers**
R-21 Wall	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O. C.	R-21	None / None	0.069	Inside Finish: Gypsum Board Cavity / Frame: R-21 / 2x6 Exterior Finish: 3 Coat Stucco

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Barnell Ave.
Morgan Hill, CA 95037

PROJECT: LJ COMMONS 4 PLEX

DRAWING TITLE: ADU 2 TITLE 24

REV	DATE	DESCRIPTION
1		
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JOB NO.: 23-113
CAD FILE:
DSGN'D BY: I. R. — DRAWN BY: J. T.
CHK'D BY: I. R. — APP'D BY: I. R.
DATE: 4/17/23 — SCALE: AS NOTED
DRAWING NO.: T24-ADU2-1
SHEET * OF *

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01E**

Project Name: Barnell Ave ADU #2 **Calculation Date/Time:** 2023-11-01T15:30:17-07:00 **(Page 7 of 11)**

Calculation Description: Title 24 Analysis **Input File Name:** BARNELL AVE - ADU #2.ribd22x

OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07	08
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Interior / Exterior Continuous R-value	U-factor	Assembly Layers
Attic Roof2nd Flr Zone	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-19	None / 0	0.059	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: R-13.0 / 2x4 Around Roof Joists: R-6.0 insul.
R-38 HP Attic	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-38	None / None	0.025	Over Ceiling Joists: R-28.9 insul. Cavity / Frame: R-9.1 / 2x4 Inside Finish: Gypsum Board
R-19 Floor No Crawlspace	Exterior Floors	Wood Framed Floor	2x10 @ 16 in. O. C.	R-19	None / None	0.047	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: R-19 / 2x10

BUILDING ENVELOPE - HERS VERIFICATION

01	02	03	04	05
Quality Insulation Installation (QII)	High R-value Spray Foam Insulation	Building Envelope Air Leakage	CFM50	CFM50
Required	Not Required	N/A	n/a	n/a

WATER HEATING SYSTEMS

01	02	03	04	05	06	07	08	09
Name	System Type	Distribution Type	Water Heater Name	Number of Units	Solar Heating System	Compact Distribution	HERS Verification	Water Heater Name (#)
DHW Sys 1	Domestic Hot Water (DHW)	Standard	DHW Heater 1	1	n/a	None	n/a	DHW Heater 1 (1)

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01E**

Project Name: Barnell Ave ADU #2 **Calculation Date/Time:** 2023-11-01T15:30:17-07:00 **(Page 8 of 11)**

Calculation Description: Title 24 Analysis **Input File Name:** BARNELL AVE - ADU #2.ribd22x

WATER HEATERS - NEEA HEAT PUMP

01	02	03	04	05	06	07	08
Name	# of Units	Tank Vol. (gal)	NEEA Heat Pump Brand	NEEA Heat Pump Model	Tank Location	Duct Inlet Air Source	Duct Outlet Air Source
DHW Heater 1	1	80	A. O. Smith	HPTU 80N 120 (80 gal)	Outside	2nd Flr Zone	2nd Flr Zone

WATER HEATING - HERS VERIFICATION

01	02	03	04	05	06	07
Name	Pipe Insulation	Parallel Piping	Compact Distribution	Compact Distribution Type	Recirculation Control	Shower Drain Water Heat Recovery
DHW Sys 1 - 1/1	Not Required	Not Required	Not Required	None	Not Required	Not Required

SPACE CONDITIONING SYSTEMS

01	02	03	04	05	06	07	08	09
Name	System Type	Heating Unit Name	Heating Equipment Count	Cooling Unit Name	Cooling Equipment Count	Fan Name	Distribution Name	Required Thermostat Type
Undefined System1	Heat pump heating cooling	Heat Pump System 1	1	Heat Pump System 1	1	HVAC Fan 1	Air Distribution System 1	Setback

HVAC - HEAT PUMPS

01	02	03	04	05	06	07	08	09	10	11	12	13
			Heating				Cooling					
Name	System Type	Number of Units	Heating Efficiency Type	HSPF/HS PF2/COP	Cap 47	Cap 17	Cooling Efficiency Type	SEER/SEER2	EER/EER 2/CEER	Zonally Controlled	Compressor Type	HERS Verification
Heat Pump System 1	Central split HP	1	HSPF	9.5	60000	50000	EERSEER	16	12.5	Not Zonal	Single Speed	Heat Pump System 1-hers-htpump

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01E**

Project Name: Barnell Ave ADU #2 **Calculation Date/Time:** 2023-11-01T15:30:17-07:00 **(Page 9 of 11)**

Calculation Description: Title 24 Analysis **Input File Name:** BARNELL AVE - ADU #2.ribd22x

HVAC HEAT PUMPS - HERS VERIFICATION

01	02	03	04	05	06	07	08	09
Name	Verified Airflow	Airflow Target	Verified EER/EER2	Verified SEER/SEER2	Verified Refrigerant Charge	Verified HSPF/HSPF2	Verified Heating Cap 47	Verified Heating Cap 17
Heat Pump System 1-hers-htpump	Required	350	Required	Required	No	Yes	Yes	Yes

HVAC - DISTRIBUTION SYSTEMS

01	02	03	04	05	06	07	08	09	10	11	12
			Duct Ins. R-value		Duct Location		Surface Area				
Name	Type	Design Type	Supply	Return	Supply	Return	Supply	Return	Bypass Duct	Duct Leakage	HERS Verification
Air Distribution System 1	Unconditioned attic	Non-Verified	R-8	R-8	Attic	Attic	n/a	n/a	No Bypass Duct	Sealed and Tested	Air Distribution System 1-hers-dist

HVAC DISTRIBUTION - HERS VERIFICATION

01	02	03	04	05	06	07	08	09
Name	Duct Leakage Verification	Duct Leakage Target (%)	Verified Duct Location	Verified Duct Design	Buried Ducts	Deeply Buried Ducts	Low-leakage Air Handler	Low Leakage Ducts Entirely in Conditioned Space
Air Distribution System 1-hers-dist	Yes	5.0	Not Required	Not Required	Not Required	Credit not taken	Not Required	No

HVAC - FAN SYSTEMS

01	02	03	04
Name	Type	Fan Power (Watts/CFM)	Name
HVAC Fan 1	HVAC Fan	0.45	HVAC Fan 1-hers-fan

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01E**

Project Name: Barnell Ave ADU #2 **Calculation Date/Time:** 2023-11-01T15:30:17-07:00 **(Page 10 of 11)**

Calculation Description: Title 24 Analysis **Input File Name:** BARNELL AVE - ADU #2.ribd22x

HVAC FAN SYSTEMS - HERS VERIFICATION

01	02	03
Name	Verified Fan Watt Draw	Required Fan Efficacy (Watts/CFM)
HVAC Fan 1-hers-fan	Required	0.45

INDOOR AIR QUALITY (IAQ) FANS

01	02	03	04	05	06	07	08	09
Dwelling Unit	Airflow (CFM)	Fan Efficacy (W/CFM)	IAQ Fan Type	Includes Heat/Energy Recovery?	IAQ Recovery Effectiveness - SRE/ASRE	Includes Fault Indicator Display?	HERS Verification	Status
SFam IAQVentRpt	43	0.35	Exhaust	No	n/a / n/a	No	Yes	

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01E**

Project Name: Barnell Ave ADU #2 **Calculation Date/Time:** 2023-11-01T15:30:17-07:00 **(Page 11 of 11)**

Calculation Description: Title 24 Analysis **Input File Name:** BARNELL AVE - ADU #2.ribd22x

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name:	Documentation Author Signature:
Iradj Rahnama	Iradj Rahnama
Company:	Signature Date:
I & A Engineering	2023-11-01 15:33:26
Address:	CEA/ HERS Certification Identification (if applicable):
1610 BLOSSOM HILL RD. SUITE E	
City/State/Zip:	Phone:
San Jose, CA 95124	408-268-9337

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design identified on this Certificate of Compliance.
2. I certify that the energy features and performance specifications identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
3. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.

Responsible Designer Name:	Responsible Designer Signature:
Iradj Rahnama	Iradj Rahnama
Company:	Date Signed:
I & A Engineering	2023-11-01 15:33:26
Address:	License:
1610 BLOSSOM HILL RD. SUITE E	N/A
City/State/Zip:	Phone:
San Jose, CA 95124	408-268-9337

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Barnell Ave.
Morgan Hill, CA 95037

PROJECT: LJ COMMONS 4 PLEX

DRAWING TITLE: ADU 2 TITLE 24

REV	DATE	DESCRIPTION
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JOB NO.: 23-113
CAD FILE:
DSGN'D BY: I. R.
DRAWN BY: J. T.
CHK'D BY: I. R.
APP'D BY: I. R.
DATE: 4/17/23
SCALE: AS NOTED

DRAWING NO.: T24-ADU2-2

SHEET * OF *

RESIDENTIAL MEASURES SUMMARY — RMS-1

Project Name	Building Type		Date
Barnell Ave ADU #2	☑ Single Family ☐ Multi Family ☐ Addition Alone ☐ Existing+ Addition/Alteration		*11/1/2023*
Project Address	**California Energy Climate Zone**	**Total Cond. Floor Area**	**Addition**	**# of Units**
Barnell Ave Morgan Hill	*CA Climate Zone 04*	*702*	*n/a*	*1*

INSULATION

Construction	Type	Cavity	Area (ft^2)	Special Features	Status
Wall	*Wood Framed*	*R 20*	*845*		*New*
Roof	*Wood Framed Attic*	*R 38*	*702*	*Add=R-19.0*	*New*
Floor	*Wood Framed w/o Crawl Space*	*R 19*	*702*		*New*

FENESTRATION — Total Area: 89 — Glazing Percentage: 12.7% — New/Altered Average U-Factor: 0.30

Orientation	Area (ft^2)	U-Fac	SHGC	Overhang	Sidefins	Exterior Shades	Status
Left (SE)	*39.0*	*0.300*	*0.23*	*none*	*none*	*N/A*	*New*
Right (NW)	*50.0*	*0.300*	*0.23*	*none*	*none*	*N/A*	*New*

HVAC SYSTEMS

Qty.	Heating	Min. Eff	Cooling	Min. Eff	Thermostat	Status
1	*Electric Heat Pump*	*9.50 HSPF*	*Split Heat Pump*	*16.0 SEER*	*Setback*	*New*

HVAC DISTRIBUTION

Location	Heating	Cooling	Duct Location	Duct R-Value	Status
Undefined System	*Ducted*	*Ducted*	*Attic*	*8.0*	*New*

WATER HEATING

Qty.	Type	Gallons	Min. Eff	Distribution	Status
1	*Heat Pump*	*80*	*2.90*	*Standard*	*New*

EnergyPro 9.2 by EnergySoft — *User Number: 5619* — *ID: 23-113* — *Page 1 of 6*

2022 Single-Family Residential Mandatory Requirements Summary

§ 150.0(m)13:	**Space Conditioning System Airflow Rate and Fan Efficacy.** Space conditioning systems that use ducts to supply cooling must have a hole for the placement of a static pressure probe, or a permanently installed static pressure probe in the supply plenum. Airflow must be ≥ 350 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.45 watts per CFM for gas furnace air handlers and ≤ 0.58 watts per CFM for all others. Small duct high velocity systems must provide an airflow ≥ 250 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.62 watts per CFM. Field verification testing is required in accordance with Reference Residential Appendix RA3.3. *

Ventilation and Indoor Air Quality:

§ 150.0(o)1:	**Requirements for Ventilation and Indoor Air Quality**. All dwelling units must meet the requirements of ASHRAE Standard 62.2, Ventilation and Acceptable Indoor Air Quality in Residential Buildings subject to the amendments specified in § 150.0(o)1. *
§ 150.0(o)1B:	**Central Fan Integrated (CFI) Ventilation Systems.** Continuous operation of CFI air handlers is not allowed to provide the whole-dwelling unit ventilation airflow required per §150.0(o)1C. A motorized damper(s) must be installed on the ventilation duct(s) that prevents all airflow through the space conditioning duct system when the damper(s) is closed andcontrolled per §150.0(o)1Biii&iv. CFI ventilation systems must have controls that track outdoor air ventilation run time, and either open or close the motorized damper(s) for compliance with §150.0(o)1C.
§ 150.0(o)1C:	**Whole-Dwelling Unit Mechanical Ventilation for Single-Family Detached and townhouses .** Single-family detached dwelling units, and attached dwelling units not sharing ceilings or floors with other dwelling units, occupiable spaces, public garages, or commercial spaces must have mechanical ventilation airflow specified in § 150.0(o)1C-iii.
§ 150.0(o)1G:	**Local Mechanical Exhaust.** Kitchens and bathrooms must have local mechanical exhaust; nonenclosed kitchens must have demand-controlled exhaust system meeting requirements of §150.0(o)1Giii,enclosed kitchens and bathrooms can use demand-controlled or continuous exhaust meeting §150.0(o)1Giii-iv. Airflow must be measured by the installer per §150.0(o)1Gv, and rated for sound per §150.0(o)1Gvi. *
§ 150.0(o)1H&I:	**Airflow Measurement and Sound Ratings of Whole-Dwelling Unit Ventilation Systems.** The airflow required per § 150.0(o)1C must be measured by using a flow hood, flow grid, or other airflow measuring device at the fan's inlet or outlet terminals/grilles per Reference Residential Appendix RA3.7. Whole-Dwelling unit ventilation systems must be rated for sound per ASHRAE 62.2 §7.2 at no less than the minimum airflow rate required by §150.0(o)1C.
§ 150.0(o)2:	**Field Verification and Diagnostic Testing.** Whole-Dwelling Unit ventilation airflow, vented range hood airflow and sound rating, and HRV and ERV fan efficacy must be verified in accordance with Reference Residential Appendix RA3.7. Vented range hoods must be verified per Reference Residential Appendix RA3.7.4.3 to confirm if it is rated by HVI or AHAM to comply with the airflow rates and sound requirements per §150.0(o)1G

Pool and Spa Systems and Equipment:

§ 110.4(a):	**Certification by Manufacturers.** Any pool or spa heating system or equipment must be certified to have all of the following: compliance with the Appliance Efficiency Regulations and listing in MAEDbS; an on-off switch mounted outside of the heater that allows shutting off the heater without adjusting the thermostat setting; a permanent weatherproof plate or card with operating instructions; and must not use electric resistance heating. *
§ 110.4(b)1:	**Piping.** Any pool or spa heating system or equipment must be installed with at least 36 inches of pipe between the filter and the heater, or dedicated suction and return lines, or built-in or built-up connections to allow for future solar heating.
§ 110.4(b)2:	**Covers.** Outdoor pools or spas that have a heat pump or gas heater must have a cover.
§ 110.4(b)3:	**Directional Inlets and Time Switches for Pools.** Pools must have directional inlets that adequately mix the pool water, and a time switch that will allow all pumps to be set or programmed to run only during off-peak electric demand periods.
§ 110.5:	**Pilot Light.** Natural gas pool and spa heaters must not have a continuously burning pilot light.
§ 150.0(p):	**Pool Systems and Equipment Installation.** Residential pool systems or equipment must meet the specified requirements for pump sizing, flow rate, piping, filters, and valves. *

Lighting:

§ 110.9:	**Lighting Controls and Components.** All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirements of § 110.9. *
§ 150.0(k)1A:	**Luminaire Efficacy.** All installed luminaires must meet the requirements in Table 150.0-A, except lighting integral to exhaust fans, kitchen range hoods, bath vanity mirrors, and garage door openers; navigation lighting less than 5 watts; and lighting internal to drawers, cabinets, and linen closets with an efficacy of at least 45 lumens per watt.
§ 150.0(k)1B:	**Screw based luminaires.** Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8. *
§ 150.0(k)1C:	**Recessed Downlight Luminaires in Ceilings.** Luminaires recessed into ceilings must not contain screw based sockets, must be airtight, and must be sealed with a gasket or caulk. California Electrical Code § 410.116 must also be met.
§ 150.0(k)1D:	**Light Sources in Enclosed or Recessed Luminaires.** Lamps and other separable light sources that are not compliant with the JA8 elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
§ 150.0(k)1E:	**Blank Electrical Boxes.** The number of electrical boxes that are more than five feet above the finished floor and do not contain a luminaire or other device shall be no more than the number of bedrooms. These boxes must be served by a dimmer, vacancy sensor control, low voltage wiring, or fan speed control.
§ 150.0(k)1F:	**Lighting Integral to Exhaust Fans.** Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.0(k). *

5/6/22

2022 Single-Family Residential Mandatory Requirements Summary

NOTE: Single-family residential buildings subject to the Energy Codes must comply with all applicable mandatory measures, regardless of the compliance approach used. Review the respective section for more information.
(04/2022)

Building Envelope:

§ 110.6(a)1:	**Air Leakage.** Manufactured fenestration, exterior doors, and exterior pet doors must limit air leakage to 0.3 CFM per square foot or less when tested per NFRC-400, ASTM E283, or AAMA/WDMA/CSA 101/I.S.2/A440-2011. *
§ 110.6(a)5:	**Labeling.** Fenestration products and exterior doors must have a label meeting the requirements of § 10-111(a).
§ 110.6(b):	**Field fabricated exterior doors and fenestration** products must use U-factors and solar heat gain coefficient (SHGC) values from Tables 110.6-A, 110.6-B, or JA4.5 for exterior doors. They must be caulked and/or weather-stripped. *
§ 110.7:	**Air Leakage.** All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be caulked, gasketed, or weather stripped.
§ 110.8(a):	**Insulation Certification by Manufacturers.** Insulation must be certified by the Department of Consumer Affairs, Bureau of Household Goods and Services (BHGS).
§ 110.8(g):	**Insulation Requirements for Heated Slab Floors.** Heated slab floors must be insulated per the requirements of § 110.8(g).
§ 110.8(i):	**Roofing Products Solar Reflectance and Thermal Emittance.** The thermal emittance and aged solar reflectance values of the roofing material must meet the requirements of § 110.8(i) and be labeled per §10-113 when the installation of a cool roof is specified on the CF1R.
§ 110.8(j):	**Radiant Barrier.** When required, radiant barriers must have an emittance of 0.05 or less and be certified to the Department of Consumer Affairs.
§ 150.0(a):	**Roof Deck, Ceiling and Rafter Roof Insulation.** Roof decks in newly constructed attics in climate zones 4 and 8-16 area-weighted average U-factor not exceeding U-0.184. Ceiling and rafter roofs minimum R-22 insulation in wood-frame ceiling; or area-weighted average U-factor must not exceed 0.043. Rafter roof alterations minimum R-19 or area-weighted average U-factor of 0.054 or less. Attic access doors must have permanently attached insulation using adhesive or mechanical fasteners. The attic access must be gasketed to prevent air leakage. Insulation must be installed in direct contact with a roof or ceiling which is sealed to limit infiltration and exfiltration, as specified in § 110.7, including but not limited to placing insulation either above or below the roof deck or on top of a drywall ceiling. *
§ 150.0(b):	**Loose-fill Insulation.** Loose fill insulation must meet the manufacturer's required density for the labeled R-value.
§ 150.0(c):	**Wall Insulation.** Minimum R-13 insulation in 2x4 inch wood framing wall or have a U-factor of 0.102 or less, or R-20 in 2x6 inch wood framing or have a U-factor of 0.071 or less. Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102. Masonry walls must meet Tables 150.1-A or B. *
§ 150.0(d):	**Raised-floor Insulation.** Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U-factor. *
§ 150.0(f):	**Slab Edge Insulation.** Slab edge insulation must meet all of the following: have a water absorption rate, for the insulation material alone without facings, no greater than 0.3 percent; have a water vapor permeance no greater than 2.0 perm per inch; be protected from physical damage and UV light deterioration; and, when installed as part of a heated slab floor, meet the requirements of § 110.8(g).
§ 150.0(g)1:	**Vapor Retarder.** In climate zones 1 through 16, the earth floor of unvented crawl space must be covered with a Class I or Class II vapor retarder. This requirement also applies to controlled ventilation crawl space for buildings complying with the exception to §150.0(d).
§ 150.0(g)2:	**Vapor Retarder.** In climate zones 14 and 16, a Class I or Class II vapor retarder must be installed on the conditioned space side of all insulation in all exterior walls, vented attics, and unvented attics with air-permeable insulation.
§ 150.0(q):	**Fenestration Products.** Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a maximum U-factor of 0.45, or area-weighted average U-factor of all fenestration must not exceed 0.45. *

Fireplaces, Decorative Gas Appliances, and Gas Log:

§ 110.5(e)	**Pilot Light.** Continuously burning pilot lights are not allowed for indoor and outdoor fireplaces.
§ 150.0(e)1:	**Closable Doors.** Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox.
§ 150.0(e)2:	**Combustion Intake.** Masonry or factory-built fireplaces must have a combustion outside air intake, which is at least six square inches in area and is equipped with a readily accessible, operable, and tight-fitting damper or combustion-air control device. *
§ 150.0(e)3:	**Flue Damper.** Masonry or factory-built fireplaces must have a flue damper with a readily accessible control. *

Space Conditioning, Water Heating, and Plumbing System:

§ 110.0-§ 110.3:	**Certification.** Heating, ventilation, and air conditioning (HVAC) equipment, water heaters, showerheads, faucets, and all other regulated appliances must be certified by the manufacturer to the California Energy Commission. *
§ 110.2(a):	**HVAC Efficiency.** Equipment must meet the applicable efficiency requirements in Table 110.2-A through Table 110.2-N. *
§ 110.2(b):	**Controls for Heat Pumps with Supplementary Electric Resistance Heaters.** Heat pumps with supplementary electric resistance heaters must have controls that prevent supplementary heater operation when the heating load can be met by the heat pump alone; and in which the cut-on temperature for compression heating is higher than the cut-on temperature for supplementary heating, and the cut-off temperature for compression heating is higher than the cut-off temperature for supplementary heating. *
§ 110.2(c):	**Thermostats.** All heating or cooling systems not controlled by a central energy management control system (EMCS) must have a setback thermostat. *
§ 110.3(c)3:	**Insulation.** Unfired service water heater storage tanks and solar water-heating backup tanks must have adequate insulation, or tank surface heat loss rating.
§ 110.3(c)6:	**Isolation Valves**. Instantaneous water heaters with an input rating greater than 6.8 kBtu per hour (2 kW) must have isolation valves with hose bibbs or other fittings on both cold and hot water lines to allow for flushing the water heater when the valves are closed.

5/6/22

2022 Single-Family Residential Mandatory Requirements Summary

§ 150.0(k)1G:	**Screw based luminaires.** Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8. *
§ 150.0(k)1H:	**Light Sources in Enclosed or Recessed Luminaires.** Lamps and other separable light sources that are not compliant with the JA8 elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
§ 150.0(k)1I:	**Light Sources in Drawers, Cabinets, and Linen Closets.** Light sources internal to drawers, cabinetry or linen closets are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, emit no more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is closed.
§ 150.0(k)2A:	**Interior Switches and Controls.** All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A.
§ 150.0(k)2B:	**Interior Switches and Controls.** Exhaust fans must be controlled separately from lighting systems. *
§ 150.0(k)2A:	**Accessible Controls.** Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually turned on and off. *
§ 150.0(k)2B:	**Multiple Controls.** Controls must not bypass a dimmer, occupant sensor, or vacancy sensor function if the dimmer or sensor is installed to comply with § 150.0(k).
§ 150.0(k)2C:	**Mandatory Requirements.** Lighting controls must comply with the applicable requirements of § 110.9.
§ 150.0(k)2D:	**Energy Management Control Systems.** An energy management control system (EMCS) may be used to comply with dimming, occupancy, and control requirements if it provides the functionality of the specified control per § 110.9 and the physical controls specified in § 150.0(k)2A.
§ 150.0(k)2E:	**Automatic Shutoff Controls.** In bathrooms, garages, laundry rooms, utility rooms and walk-in closets, at least one installed luminaire must be controlled by an occupancy or vacancy sensor providing automatic-off functionality. Lighting inside drawers and cabinets with opaque fronts or doors must have controls that turn the light off when the drawer or door is closed.
§ 150.0(k)2F:	**Dimmers.** Lighting in habitable spaces (e.g., living rooms, dining rooms, kitchens, and bedrooms) must have readily accessible wall-mounted dimming controls that allow the lighting to be manually adjusted up and down. Forward phase cut dimmers controlling LED light sources in these spaces must comply with NEMA SSL 7A.
§ 150.0(k)2K:	**Independent controls.** Integrated lighting of exhaust fans shall be controlled independently from the fans. Lighting under cabinets or shelves, lighting in display cabinets, and switched outlets must be controlled separately from ceiling-installed lighting.
§ 150.0(k)3A:	**Residential Outdoor Lighting.** For single-family residential buildings, outdoor lighting permanently mounted to a residential building, or to other buildings on the same lot, must have a manual on/off switch and either a photocell and motion sensor or automatic time switch control) or an astronomical time clock. An energy management control system that provides the specified control functionality and meets all applicable requirements may be used to meet these requirements.
§ 150.0(k)4:	**Internally illuminated address signs.** Internally illuminated address signs must either comply with § 140.8 or consume no more than 5 watts of power.
§ 150.0(k)5:	**Residential Garages for Eight or More Vehicles.** Lighting for residential parking garages for eight or more vehicles must comply with the applicable requirements for nonresidential garages in §§ 110.9, 130.0, 130.1, 130.4, 140.6, and 141.0.

Solar Readiness:

§ 110.10(a)1:	**Single-family Residences.** Single-family residences located in subdivisions with 10 or more single-family residences and where the application for a tentative subdivision map for the residences has been deemed complete and approved by the enforcement agency, which do not have a photovoltaic system installed, must comply with the requirements of § 110.10(b)-(e).
§110.10(b)1A:	**Minimum Solar Zone Area.** The solar zone must have a minimum total area as described below. The solar zone must comply with access, pathway, smoke ventilation, and spacing requirements as specified in Title 24, Part 9 or other parts of Title 24 or in any requirements adopted by a local jurisdiction. The solar zone total area must be comprised of areas that have no dimension less than 5 feet and are no less than 80 square feet each for buildings with roof areas less than or equal to 10,000 square feet or no less than 160 square feet each for buildings with roof areas greater than 10,000 square feet. For single-family residences, the solar zone must be located on the roof or overhang of the building and have a total area no less than 250 square feet. *
§ 110.10(b)2:	**Azimuth.** All sections of the solar zone located on steep-sloped roofs must have an azimuth between 90-300° of true north.
§ 110.10(b)3A:	**Shading.** The solar zone must not contain any obstructions, including but not limited to: vents, chimneys, architectural features, and roof mounted equipment.
§ 110.10(b)3B:	**Shading.** Any obstruction located on the roof or any other part of the building that projects above a solar zone must be located at least twice the horizontal distance of the height difference between the highest point of the obstruction and the horizontal projection of the nearest point of the solar zone, measured in the vertical plane.
§ 110.10(b)4:	**Structural Design Loads on Construction Documents.** For areas of the roof designated as a solar zone, the structural design loads for roof dead load and roof live load must be clearly indicated on the construction documents.
§ 110.10(c):	**Interconnection Pathways.** The construction documents must indicate: a location reserved for inverters and metering equipment and a pathway reserved for routing of conduit from the solar zone to the point of interconnection with the electrical service; and for single-family residences and central water-heating systems, a pathway reserved for routing plumbing from the solar zone to the water-heating system.
§ 110.10(d):	**Documentation.** A copy of the construction documents or a comparable document indicating the information from § 110.10(b)-(c) must be provided to the occupant.
§ 110.10(e)1:	**Main Electrical Service Panel.** The main electrical service panel must have a minimum busbar rating of 200 amps.
§ 110.10(e)2:	**Main Electrical Service Panel.** The main electrical service panel must have a reserved space to allow for the installation of a double pole circuit breaker for a future solar electric installation. The reserved space must be permanently marked as "For Future Solar Electric."

Electric and Energy Storage Ready:

5/6/22

2022 Single-Family Residential Mandatory Requirements Summary

§ 110.5:	**Pilot Lights.** Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces; household cooking appliances (except appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu per hour); and pool and spa heaters. *
§ 150.0(h)1:	**Building Cooling and Heating Loads.** Heating and/or cooling loads are calculated in accordance with the ASHRAE Handbook, Equipment Volume, Applications Volume, and Fundamentals Volume; the SMACNA Residential Comfort System Installation Standards Manual; or the ACCA Manual J using design conditions specified in § 150.0(h)2.
§ 150.0(h)3A:	**Clearances.** Air conditioner and heat pump outdoor condensing units must have a clearance of at least five feet from the outlet of any dryer.
§ 150.0(h)3B:	**Liquid Line Drier.** Air conditioners and heat pump systems must be equipped with liquid line filter driers if required, as specified by the manufacturer's instructions.
§ 150.0(j)1:	**Water Piping, Solar Water-heating System Piping, and Space Conditioning System Line Insulation.** All domestic hot water piping must be insulated as specified in § 609.11 of the California Plumbing Code. *
§ 150.0(j)2:	**Insulation Protection.** Piping insulation must be protected from damage, including that due to sunlight, moisture, equipment` maintenance, and wind as required by §120.3(b). Insulation exposed to weather must be water retardant and protected from UV light (no adhesive tapes). Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space must include, or be protected by, a Class I or Class II vapor retarder. Pipe insulation buried below grade must be installed in a waterproof and non-crushable casing or sleeve.
§ 150.0(n)1:	**Gas or Propane Water Heating Systems.** Systems using gas or propane water heaters to serve individual dwelling units must designate a space at least 2.5' x 2.5' x 7' suitable for the future installation of a heat pump water heater, and meet electrical and plumbing requirements, based on the distance between this designated space and the water heater location; and a condensate drain no more than 2" higher than the base of the water heater
§ 150.0(n)3:	**Solar Water-heating Systems.** Solar water-heating systems and collectors must be certified and rated by the Solar Rating and Certification Corporation (SRCC), the International Association of Plumbing and Mechanical Officials, Research and Testing (IAPMO R&T), or by a listing agency that is approved by the executive director.

Ducts and Fans:

§ 110.8(d)3:	**Ducts.** Insulation installed on an existing space-conditioning duct must comply with § 604.0 of the California Mechanical Code (CMC). If a contractor installs the insulation, the contractor must certify to the customer, in writing, that the insulation meets this requirement.
§ 150.0(m)1:	**CMC Compliance.** All air-distribution system ducts and plenums must meet CMC §§ 601.0-605.0 and ANSI/SMACNA-006-2006 HVAC Duct Construction Standards Metal and Flexible 3rd Edition. Portions of supply-air and return-air ducts and plenums must be insulated to R-6.0 or higher; ducts located entirely in conditioned space as confirmed through field verification and diagnostic testing (RA3.1.4.3.8) do not require insulation. Connections of metal ducts and inner core of flexible ducts must be mechanically fastened. Openings must be sealed with mastic, tape, or other duct-closure system that meets the applicable UL requirements, or aerosol sealant that meets UL 723. The combination of mastic and either mesh or tape must be used to seal openings greater than ¼", If mastic or tape is used. Building cavities, air handler support platforms, and plenums designed or constructed with materials other than sealed sheet metal, duct board or flexible duct must not be used to convey conditioned air. Building cavities and support platforms may contain ducts; ducts installed in these spaces must not be compressed. *
§ 150.0(m)2:	**Factory-Fabricated Duct Systems.** Factory-fabricated duct systems must comply with applicable requirements for duct construction, connections, and closures; joints and seams of duct systems and their components must not be sealed with cloth back rubber adhesive duct tapes unless such tape is used in combination with mastic and draw bands.
§ 150.0(m)3:	**Field-Fabricated Duct Systems.** Field-fabricated duct systems must comply with applicable requirements for: pressure-sensitive tapes, mastics, sealants, and other requirements specified for duct construction.
§ 150.0(m)7:	**Backdraft Damper.** Fan systems that exchange air between the conditioned space and outdoors must have backdraft or automatic dampers.
§ 150.0(m)8:	**Gravity Ventilating Dampers.** Gravity ventilating systems serving conditioned space must have either automatic or readily accessible, manually operated dampers in all openings to the outside, except combustion inlet and outlet air openings and elevator shaft vents.
§ 150.0(m)9:	**Protection of Insulation.** Insulation must be protected from damage due tosunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather must be suitable for outdoor service (e.g., protected by aluminum, sheet metal, painted canvas, or plastic cover). Cellular foam insulation must be protected as above or painted with a water retardant and solar radiation-resistant coating.
§ 150.0(m)10:	**Porous Inner Core Flex Duct.** Porous inner cores of flex ducts must have a non-porous layer or air barrier between the inner core and outer vapor barrier.
§ 150.0(m)11:	**Duct System Sealing and Leakage Test.** When space conditioning systems use forced air duct systems to supply conditioned air to an occupiable space, the ducts must be sealed and duct leakage tested, as confirmed through field verification and diagnostic testing, in accordance with Reference Residential Appendix RA3.1.
§ 150.0(m)12:	**Air Filtration.** Space conditioning systems with ducts exceeding 10 feet and the supply side of ventilation systems must have MERV 13 or equivalent filters. Filters for space conditioning systems must have a two inch depth or can be one inch if sized per Equation 150.0-A. Clean-filter pressure drop and labeling must meet the requirements in §150.0(m)12. Filters must be accessible for regular service. Filter racks or grilles must use gaskets, sealing, or other means to close gaps around the inserted filters to and prevents air from bypassing the filter. *

2022 Single-Family Residential Mandatory Requirements Summary

§ 150.0(s)	**Energy Storage System (ESS) Ready.** All single-family residences must meet all of the following: Either ESS-ready interconnection equipment with backed up capacity of 60 amps or more and four or more ESS supplied branch circuits, or a dedicated raceway from the main service to a subpanel that supplies the branch circuits in § 150.0(s); at least four branch circuits must be identified and have their source collocated at a single panelboard suitable to be supplied by the ESS, with one circuit supplying the refrigerator, one lighting circuit near the primary exit, and one circuit supplying a sleeping room receptacle outlet; main panelboard must have a minimum busbar rating of 225 amps; sufficient space must be reserved to allow future installation of a system isolation equipment/transfer switch within 3' of the main panelboard, with raceways installed between the panelboard and the switch location to allow the connection of backup power source.
§ 150.0(t)	**Heat Pump Space Heater Ready.** Systems using gas or propane furnaces to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the furnace with circuit conductors rated at least 30 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."
§ 150.0(u)	**Electric Cooktop Ready.** Systems using gas or propane cooktop to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the cooktop with circuit conductors rated at least 50 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."
§ 150.0(v)	**Electric Clothes Dryer Ready.** Clothes dryer locations with gas or propane plumbing to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the dryer location with circuit conductors rated at least 30 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."

*Exceptions may apply.

5/6/22

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Barnell Ave.
Morgan Hill, CA 95037

PROJECT: LJ COMMONS 4 PLEX

DRAWING TITLE: ADU 2 TITLE 24

REV	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		
7		

JOB NO.: 23-113
CAD FILE:
DSGN'D BY: I. R. | DRAWN BY: J. T.
CHK'D BY: I. R. | APP'D BY: I. R.
DATE: 4/17/23 | SCALE: AS NOTED
DRAWING NO.: T24-ADU2-3
SHEET * OF *

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01E**

Project Name: Barnell Ave Unit 1 **Calculation Date/Time:** 2023-11-01T15:43:13-07:00 **(Page 1 of 14)**

Calculation Description: Title 24 Analysis **Input File Name:** BARNELL AVE - UNIT 1.ribd22x

GENERAL INFORMATION					
01	**Project Name**	Barnell Ave Unit 1			
02	**Run Title**	Title 24 Analysis			
03	**Project Location**	Barnell Ave			
04	**City**	Morgan Hill	05	**Standards Version**	2022
06	**Zip code**	95037	07	**Software Version**	EnergyPro 9.2
08	**Climate Zone**	4	09	**Front Orientation (deg/ Cardinal)**	0
10	**Building Type**	Single family	11	**Number of Dwelling Units**	1
12	**Project Scope**	Newly Constructed	13	**Number of Bedrooms**	3
14	**Addition Cond. Floor Area (ft²)**	0	15	**Number of Stories**	2
16	**Existing Cond. Floor Area (ft²)**	n/a	17	**Fenestration Average U-factor**	0.3
18	**Total Cond. Floor Area (ft²)**	1281	19	**Glazing Percentage (%)**	15.30%
20	**ADU Bedroom Count**	n/a	21	**ADU Conditioned Floor Area**	n/a
22	**Fuel Type**	Natural gas	23	**No Dwelling Units**	No

COMPLIANCE RESULTS	
01	**Building Complies with Computer Performance**
02	**This building incorporates features that require field testing and/or verification by a certified HERS rater under the supervision of a CEC-approved HERS provider.**
03	**This building incorporates one or more Special Features shown below**

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01E**

Project Name: Barnell Ave Unit 1 **Calculation Date/Time:** 2023-11-01T15:43:13-07:00 **(Page 2 of 14)**

Calculation Description: Title 24 Analysis **Input File Name:** BARNELL AVE - UNIT 1.ribd22x

ENERGY DESIGN RATINGS						
	Energy Design Ratings			Compliance Margins		
	Source Energy (EDR1)	Efficiency[1] EDR (EDR2efficiency)	Total[2] EDR (EDR2total)	Source Energy (EDR1)	Efficiency[1] EDR (EDR2efficiency)	Total[2] EDR (EDR2total)
Standard Design	36.7	41.1	32.2			
Proposed Design	33.7	39.7	31.4	3	1.4	0.8
RESULT[3]: PASS						

[1]Efficiency EDR includes improvements like a better building envelope and more efficient equipment

[2]Total EDR includes efficiency and demand response measures such as photovoltaic (PV) system and batteries

[3]Building complies when source energy, efficiency and total compliance margins are greater than or equal to zero and unmet load hour limits are not exceeded

- Standard Design PV Capacity: 2.42 kWdc
- PV System resized to 2.42 kWdc (a factor of 2.420) to achieve Standard Design PV PV scaling

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01E**

Project Name: Barnell Ave Unit 1 **Calculation Date/Time:** 2023-11-01T15:43:13-07:00 **(Page 3 of 14)**

Calculation Description: Title 24 Analysis **Input File Name:** BARNELL AVE - UNIT 1.ribd22x

ENERGY USE SUMMARY						
Energy Use	**Standard Design Source Energy (EDR1) (kBtu/ft² -yr)**	**Standard Design TDV Energy (EDR2) (kTDV/ft² -yr)**	**Proposed Design Source Energy (EDR1) (kBtu/ft² -yr)**	**Proposed Design TDV Energy (EDR2) (kTDV/ft² -yr)**	**Compliance Margin (EDR1)**	**Compliance Margin (EDR2)**
Space Heating	1.99	8.97	1.88	15.03	0.11	-6.06
Space Cooling	0.63	24.15	0.4	21.48	0.23	2.67
IAQ Ventilation	0.4	4.28	0.4	4.28	0	0
Water Heating	2.08	22.03	1.41	16.67	0.67	5.36
Self Utilization/Flexibility Credit				0		0
Efficiency Compliance Total	**5.1**	**59.43**	**4.09**	**57.46**	**1.01**	**1.97**
Photovoltaics	-1.66	-56.09	-1.66	-56.03		
Battery			0	0		
Flexibility						
Indoor Lighting	0.79	7.76	0.79	7.76		
Appl. & Cooking	4.4	28.7	4.37	28.35		
Plug Loads	4.25	44.25	4.25	44.25		
Outdoor Lighting	0.19	1.76	0.19	1.76		
TOTAL COMPLIANCE	**13.07**	**85.81**	**12.03**	**83.55**		

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01E**

Project Name: Barnell Ave Unit 1 **Calculation Date/Time:** 2023-11-01T15:43:13-07:00 **(Page 4 of 14)**

Calculation Description: Title 24 Analysis **Input File Name:** BARNELL AVE - UNIT 1.ribd22x

ENERGY USE INTENSITY				
	Standard Design (kBtu/ft² - yr)	**Proposed Design (kBtu/ft² - yr)**	**Compliance Margin (kBtu/ft² - yr)**	**Margin Percentage**
Gross EUI[1]	18.58	16.96	1.62	8.72
Net EUI[2]	8.36	6.74	1.62	19.38

Notes
1. Gross EUI is Energy Use Total (not including PV) / Total Building Area.
2. Net EUI is Energy Use Total (including PV) / Total Building Area.

REQUIRED PV SYSTEMS

01	02	03	04	05	06	07	08	09	10	11	12
DC System Size (kWdc)	**Exception**	**Module Type**	**Array Type**	**Power Electronics**	**CFI**	**Azimuth (deg)**	**Tilt Input**	**Array Angle (deg)**	**Tilt: (x in 12)**	**Inverter Eff. (%)**	**Annual Solar Access (%)**
2.42	NA	Standard (14-17%)	Fixed	none	true	150-270	n/a	n/a	<=7:12	96	98

REQUIRED SPECIAL FEATURES

The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.

- Insulation below roof deck
- Northwest Energy Efficiency Alliance (NEEA) rated heat pump water heater; specific brand/model, or equivalent, must be installed

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01E**

Project Name: Barnell Ave Unit 1 **Calculation Date/Time:** 2023-11-01T15:43:13-07:00 **(Page 5 of 14)**

Calculation Description: Title 24 Analysis **Input File Name:** BARNELL AVE - UNIT 1.ribd22x

HERS FEATURE SUMMARY

The following is a summary of the features that must be field-verified by a certified HERS Rater as a condition for meeting the modeled energy performance for this computer analysis. Additional detail is provided in the building tables below. Registered CF2Rs and CF3Rs are required to be completed in the HERS Registry

- Quality insulation installation (QII)
- Indoor air quality ventilation
- Kitchen range hood
- Minimum Airflow
- Verified EER/EER2
- Verified SEER/SEER2
- Fan Efficacy Watts/CFM
- Verified HSPF
- Verified heat pump rated heating capacity
- Duct leakage testing

BUILDING - FEATURES INFORMATION

01	02	03	04	05	06	07
Project Name	**Conditioned Floor Area (ft²)**	**Number of Dwelling Units**	**Number of Bedrooms**	**Number of Zones**	**Number of Ventilation Cooling Systems**	**Number of Water Heating Systems**
Barnell Ave Unit 1	1281	1	3	2	0	1

ZONE INFORMATION

01	02	03	04	05	06	07
Zone Name	**Zone Type**	**HVAC System Name**	**Zone Floor Area (ft²)**	**Avg. Ceiling Height**	**Water Heating System 1**	**Status**
1st Flr Zone	Conditioned	Undefined System1	612	9	DHW Sys 1	New
2nd Flr Zone	Conditioned	Undefined System1	669	9	DHW Sys 1	New

OPAQUE SURFACES

01	02	03	04	05	06	07	08
Name	**Zone**	**Construction**	**Azimuth**	**Orientation**	**Gross Area (ft²)**	**Window and Door Area (ft2)**	**Tilt (deg)**
NE Exterior Wall	1st Flr Zone	R-21 Wall	45	n/a	42	0	90
SE Exterior Wall	1st Flr Zone	R-21 Wall	135	n/a	239	24	90

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01E**

Project Name: Barnell Ave Unit 1 **Calculation Date/Time:** 2023-11-01T15:43:13-07:00 **(Page 6 of 14)**

Calculation Description: Title 24 Analysis **Input File Name:** BARNELL AVE - UNIT 1.ribd22x

OPAQUE SURFACES

01	02	03	04	05	06	07	08
Name	**Zone**	**Construction**	**Azimuth**	**Orientation**	**Gross Area (ft²)**	**Window and Door Area (ft2)**	**Tilt (deg)**
SW Exterior Wall	1st Flr Zone	R-21 Wall	225	n/a	153	40	90
NW Exterior Wall	1st Flr Zone	R-21 Wall	315	n/a	221	40	90
NE Exterior Wall 2	1st Flr Zone	R-21 Wall	45	n/a	92	10	90
NW Exterior Wall 2	1st Flr Zone	R-21 Wall	315	n/a	99	15	90
NE Exterior Wall 3	1st Flr Zone	R-21 Wall	45	n/a	32	0	90
SE Exterior Wall 2	1st Flr Zone	R-21 Wall	135	n/a	81	0	90
SE Exterior Wall 3	2nd Flr Zone	R-21 Wall	135	n/a	209	0	90
NE Exterior Wall 4	2nd Flr Zone	R-21 Wall	45	n/a	105	30	90
SE Exterior Wall 4	2nd Flr Zone	R-21 Wall	135	n/a	93	0	90
NW Exterior Wall 3	2nd Flr Zone	R-21 Wall	315	n/a	17	0	90
NW Exterior Wall 4	2nd Flr Zone	R-21 Wall	315	n/a	116	15	90
SE Exterior Wall 5	2nd Flr Zone	R-21 Wall	135	n/a	53	0	90
SW Exterior Wall 2	2nd Flr Zone	R-21 Wall	225	n/a	153	30	90
NW Exterior Wall 5	2nd Flr Zone	R-21 Wall	315	n/a	95	0	90
NE Exterior Wall 5	2nd Flr Zone	R-21 Wall	45	n/a	48	4	90
NW Exterior Wall 6	2nd Flr Zone	R-21 Wall	315	n/a	80	4	90
NW Exterior Wall 7	2nd Flr Zone	R-21 Wall	315	n/a	48	4	90
Roof	2nd Flr Zone	R-38 HP Attic	n/a	n/a	133	n/a	n/a
Roof 2	2nd Flr Zone	R-38 HP Attic	n/a	n/a	137	n/a	n/a
Roof 3	2nd Flr Zone	R-38 HP Attic	n/a	n/a	116	n/a	n/a
Roof 4	2nd Flr Zone	R-38 HP Attic	n/a	n/a	137	n/a	n/a
Roof 5	2nd Flr Zone	R-38 HP Attic	n/a	n/a	48	n/a	n/a
Roof 6	2nd Flr Zone	R-38 HP Attic	n/a	n/a	53	n/a	n/a
CEILING Interior Surface	1st Flr Zone	R-0 Roof No Attic	n/a	n/a	455	n/a	n/a
CEILING Interior Surface 2	1st Flr Zone	R-0 Roof No Attic	n/a	n/a	125	n/a	n/a

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01E**

Project Name: Barnell Ave Unit 1 **Calculation Date/Time:** 2023-11-01T15:43:13-07:00 **(Page 7 of 14)**

Calculation Description: Title 24 Analysis **Input File Name:** BARNELL AVE - UNIT 1.ribd22x

OPAQUE SURFACES

01	02	03	04	05	06	07	08
Name	**Zone**	**Construction**	**Azimuth**	**Orientation**	**Gross Area (ft²)**	**Window and Door Area (ft2)**	**Tilt (deg)**
CEILING Interior Surface 3	1st Flr Zone	R-0 Roof No Attic	n/a	n/a	32	n/a	n/a
FLOOR Interior Surface	2nd Flr Zone	R-0 Floor No Crawlspace	n/a	n/a	133	n/a	n/a
FLOOR Interior Surface 2	2nd Flr Zone	R-0 Floor No Crawlspace	n/a	n/a	137	n/a	n/a
FLOOR Interior Surface 3	2nd Flr Zone	R-0 Floor No Crawlspace	n/a	n/a	116	n/a	n/a
FLOOR Interior Surface 4	2nd Flr Zone	R-0 Floor No Crawlspace	n/a	n/a	137	n/a	n/a
FLOOR Interior Surface 5	2nd Flr Zone	R-0 Floor No Crawlspace	n/a	n/a	48	n/a	n/a
FLOOR Interior Surface 6	2nd Flr Zone	R-0 Floor No Crawlspace	n/a	n/a	53	n/a	n/a

ATTIC

01	02	03	04	05	06	07	08
Name	**Construction**	**Type**	**Roof Rise (x in 12)**	**Roof Reflectance**	**Roof Emittance**	**Radiant Barrier**	**Cool Roof**
Attic 2nd Flr Zone	Attic Roof2nd Flr Zone	Ventilated	6	0.1	0.85	No	No

FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10	11	12	13	14
Name	**Type**	**Surface**	**Orientation**	**Azimuth**	**Width (ft)**	**Height (ft)**	**Mult.**	**Area (ft²)**	**U-factor**	**U-factor Source**	**SHGC**	**SHGC Source**	**Exterior Shading**
Window	Window	SE Exterior Wall		135			1	4	0.3	NFRC	0.23	NFRC	Bug Screen
Window 2	Window	SW Exterior Wall		225			1	40	0.3	NFRC	0.23	NFRC	Bug Screen

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01E**

Project Name: Barnell Ave Unit 1 **Calculation Date/Time:** 2023-11-01T15:43:13-07:00 **(Page 8 of 14)**

Calculation Description: Title 24 Analysis **Input File Name:** BARNELL AVE - UNIT 1.ribd22x

FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10	11	12	13	14
Name	**Type**	**Surface**	**Orientation**	**Azimuth**	**Width (ft)**	**Height (ft)**	**Mult.**	**Area (ft²)**	**U-factor**	**U-factor Source**	**SHGC**	**SHGC Source**	**Exterior Shading**
Window 3	Window	NW Exterior Wall		315			1	40	0.3	NFRC	0.23	NFRC	Bug Screen
Window 4	Window	NE Exterior Wall 2		45			1	10	0.3	NFRC	0.23	NFRC	Bug Screen
Window 5	Window	NW Exterior Wall 2		315			1	15	0.3	NFRC	0.23	NFRC	Bug Screen
Window 6	Window	NE Exterior Wall 4		45			1	30	0.3	NFRC	0.23	NFRC	Bug Screen
Window 7	Window	NW Exterior Wall 4		315			1	15	0.3	NFRC	0.23	NFRC	Bug Screen
Window 8	Window	SW Exterior Wall 2		225			1	30	0.3	NFRC	0.23	NFRC	Bug Screen
Window 9	Window	NE Exterior Wall 5		45			1	4	0.3	NFRC	0.23	NFRC	Bug Screen
Window 10	Window	NW Exterior Wall 6		315			1	4	0.3	NFRC	0.23	NFRC	Bug Screen
Window 11	Window	NW Exterior Wall 7		315			1	4	0.3	NFRC	0.23	NFRC	Bug Screen

OPAQUE DOORS

01	02	03	04
Name	**Side of Building**	**Area (ft²)**	**U-factor**
Door	SE Exterior Wall	20	0.2

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01E**

Project Name: Barnell Ave Unit 1 **Calculation Date/Time:** 2023-11-01T15:43:13-07:00 **(Page 9 of 14)**

Calculation Description: Title 24 Analysis **Input File Name:** BARNELL AVE - UNIT 1.ribd22x

SLAB FLOORS

01	02	03	04	05	06	07	08
Name	**Zone**	**Area (ft²)**	**Perimeter (ft)**	**Edge Insul. R-value and Depth**	**Edge Insul. R-value and Depth**	**Carpeted Fraction**	**Heated**
Slab-on-Grade	1st Flr Zone	455	0.1	none	0	80%	No
Slab-on-Grade 2	1st Flr Zone	125	0.1	none	0	80%	No
Slab-on-Grade 3	1st Flr Zone	32	0.1	none	0	80%	No

OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07	08
Construction Name	**Surface Type**	**Construction Type**	**Framing**	**Total Cavity R-value**	**Interior / Exterior Continuous R-value**	**U-factor**	**Assembly Layers**
R-21 Wall	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O. C.	R-21	None / None	0.069	Inside Finish: Gypsum Board Cavity / Frame: R-21 / 2x6 Exterior Finish: 3 Coat Stucco
Attic Roof2nd Flr Zone	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-19	None / 0	0.059	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: R-13.0 / 2x4 Around Roof Joists: R-6.0 insul.
R-38 HP Attic	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-38	None / None	0.025	Over Ceiling Joists: R-28.9 insul. Cavity / Frame: R-9.1 / 2x4 Inside Finish: Gypsum Board
R-0 Floor No Crawlspace	Interior Floors	Wood Framed Floor	2x12 @ 16 in. O. C.	R-0	None / None	0.196	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x12 Ceiling Below Finish: Gypsum Board

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TEL: (408) 268-9337
FAX: (408) 268-1135

Barnell Ave.
Morgan Hill, CA 95037

PROJECT: LJ COMMONS 4 PLEX

DRAWING TITLE: UNIT 1 TITLE 24

REV	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		
7		

JOB NO.: 23-113
CAD FILE:
DSGN'D BY: I. R.
DRAWN BY: J. T.
CHK'D BY: I. R.
APP'D BY: I. R.
DATE: 4/17/23
SCALE: AS NOTED
DRAWING NO.: T24-1-1
SHEET ___ OF ___

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01E**

Project Name: Barnell Ave Unit 1 **Calculation Date/Time:** 2023-11-01T15:43:13-07:00 **(Page 10 of 14)**

Calculation Description: Title 24 Analysis **Input File Name:** BARNELL AVE - UNIT 1.ribd22x

OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07	08
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Interior / Exterior Continuous R-value	U-factor	Assembly Layers
R-0 Roof No Attic	Interior Ceiling	Wood Framed Ceiling	2x4 @ 16 in. O. C.	R-0	None / None	0.202	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x4 Ceiling Below Finish: Gypsum Board

BUILDING ENVELOPE - HERS VERIFICATION

01	02	03	04	05
Quality Insulation Installation (QII)	High R-value Spray Foam Insulation	Building Envelope Air Leakage	CFM50	CFM50
Required	Not Required	N/A	n/a	n/a

WATER HEATING SYSTEMS

01	02	03	04	05	06	07	08	09
Name	System Type	Distribution Type	Water Heater Name	Number of Units	Solar Heating System	Compact Distribution	HERS Verification	Water Heater Name (#)
DHW Sys 1	Domestic Hot Water (DHW)	Standard	DHW Heater 1	1	n/a	None	n/a	DHW Heater 1 (1)

WATER HEATERS - NEEA HEAT PUMP

01	02	03	04	05	06	07	08
Name	# of Units	Tank Vol. (gal)	NEEA Heat Pump Brand	NEEA Heat Pump Model	Tank Location	Duct Inlet Air Source	Duct Outlet Air Source
DHW Heater 1	1	80	A. O. Smith	HPTU 80N 120 (80 gal)	Outside	2nd Flr Zone	2nd Flr Zone

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01E**

Project Name: Barnell Ave Unit 1 **Calculation Date/Time:** 2023-11-01T15:43:13-07:00 **(Page 11 of 14)**

Calculation Description: Title 24 Analysis **Input File Name:** BARNELL AVE - UNIT 1.ribd22x

WATER HEATING - HERS VERIFICATION

01	02	03	04	05	06	07
Name	Pipe Insulation	Parallel Piping	Compact Distribution	Compact Distribution Type	Recirculation Control	Shower Drain Water Heat Recovery
DHW Sys 1 - 1/1	Not Required	Not Required	Not Required	None	Not Required	Not Required

SPACE CONDITIONING SYSTEMS

01	02	03	04	05	06	07	08	09
Name	System Type	Heating Unit Name	Heating Equipment Count	Cooling Unit Name	Cooling Equipment Count	Fan Name	Distribution Name	Required Thermostat Type
Undefined System1	Heat pump heating cooling	Heat Pump System 1	1	Heat Pump System 1	1	HVAC Fan 1	Air Distribution System 1	Setback

HVAC - HEAT PUMPS

01	02	03	04	05	06	07	08	09	10	11	12	13
			Heating				Cooling					
Name	System Type	Number of Units	Heating Efficiency Type	HSPF/HSPF2/COP	Cap 47	Cap 17	Cooling Efficiency Type	SEER/SEER2	EER/EER2/CEER	Zonally Controlled	Compressor Type	HERS Verification
Heat Pump System 1	Central split HP	1	HSPF	9.5	60000	50000	EERSEER	16	12.5	Not Zonal	Single Speed	Heat Pump System 1-hers-htpump

HVAC HEAT PUMPS - HERS VERIFICATION

01	02	03	04	05	06	07	08	09
Name	Verified Airflow	Airflow Target	Verified EER/EER2	Verified SEER/SEER2	Verified Refrigerant Charge	Verified HSPF/HSPF2	Verified Heating Cap 47	Verified Heating Cap 17
Heat Pump System 1-hers-htpump	Required	350	Required	Required	No	Yes	Yes	Yes

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01E**

Project Name: Barnell Ave Unit 1 **Calculation Date/Time:** 2023-11-01T15:43:13-07:00 **(Page 12 of 14)**

Calculation Description: Title 24 Analysis **Input File Name:** BARNELL AVE - UNIT 1.ribd22x

HVAC - DISTRIBUTION SYSTEMS

01	02	03	04	05	06	07	08	09	10	11	12
			Duct Ins. R-value		Duct Location		Surface Area				
Name	Type	Design Type	Supply	Return	Supply	Return	Supply	Return	Bypass Duct	Duct Leakage	HERS Verification
Air Distribution System 1	Unconditioned attic	Non-Verified	R-8	R-8	Attic	Attic	n/a	n/a	No Bypass Duct	Sealed and Tested	Air Distribution System 1-hers-dist

HVAC DISTRIBUTION - HERS VERIFICATION

01	02	03	04	05	06	07	08	09
Name	Duct Leakage Verification	Duct Leakage Target (%)	Verified Duct Location	Verified Duct Design	Buried Ducts	Deeply Buried Ducts	Low-leakage Air Handler	Low Leakage Ducts Entirely in Conditioned Space
Air Distribution System 1-hers-dist	Yes	5.0	Not Required	Not Required	Not Required	Credit not taken	Not Required	No

HVAC - FAN SYSTEMS

01	02	03	04
Name	Type	Fan Power (Watts/CFM)	Name
HVAC Fan 1	HVAC Fan	0.45	HVAC Fan 1-hers-fan

HVAC FAN SYSTEMS - HERS VERIFICATION

01	02	03
Name	Verified Fan Watt Draw	Required Fan Efficacy (Watts/CFM)
HVAC Fan 1-hers-fan	Required	0.45

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01E**

Project Name: Barnell Ave Unit 1 **Calculation Date/Time:** 2023-11-01T15:43:13-07:00 **(Page 13 of 14)**

Calculation Description: Title 24 Analysis **Input File Name:** BARNELL AVE - UNIT 1.ribd22x

INDOOR AIR QUALITY (IAQ) FANS

01	02	03	04	05	06	07	08	09
Dwelling Unit	Airflow (CFM)	Fan Efficacy (W/CFM)	IAQ Fan Type	Includes Heat/Energy Recovery?	IAQ Recovery Effectiveness - SRE/ASRE	Includes Fault Indicator Display?	HERS Verification	Status
SFam IAQVentRpt	66	0.35	Exhaust	No	n/a / n/a	No	Yes	

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01E**

Project Name: Barnell Ave Unit 1 **Calculation Date/Time:** 2023-11-01T15:43:13-07:00 **(Page 14 of 14)**

Calculation Description: Title 24 Analysis **Input File Name:** BARNELL AVE - UNIT 1.ribd22x

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Iradj Rahnama	Documentation Author Signature: Iradj Rahnama
Company: I & A Engineering	Signature Date: 2023-11-01 15:47:51
Address: 1610 BLOSSOM HILL RD. SUITE E	CEA/ HERS Certification Identification (If applicable):
City/State/Zip: San Jose, CA 95124	Phone: 408-268-9337

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design identified on this Certificate of Compliance.
2. I certify that the energy features and performance specifications identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
3. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.

Responsible Designer Name: Iradj Rahnama	Responsible Designer Signature: Iradj Rahnama
Company: I & A Engineering	Date Signed: 2023-11-01 15:47:51
Address: 1610 BLOSSOM HILL RD. SUITE E	License: N/A
City/State/Zip: San Jose, CA 95124	Phone: 408-268-9337

Digitally signed by CalCERTS. This digital signature is provided in order to secure the content of this registered document, and in no way implies Registration Provider responsibility for the accuracy of the information.

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PROJECT: LJ COMMONS 4 PLEX

DRAWING TITLE: UNIT 1 TITLE 24

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CHK'D BY: I. R.
APP'D BY: I. R.
DATE: 4/17/23
SCALE: AS NOTED
DRAWING NO.: T24-1-2
SHEET * OF *

RESIDENTIAL MEASURES SUMMARY — RMS-1

Project Name	Building Type		Date
Barnell Ave Unit 1	☑ Single Family ☐ Addition Alone ☐ Multi Family ☐ Existing+ Addition/Alteration		*11/1/2023*
Project Address	**California Energy Climate Zone**	**Total Cond. Floor Area**	**Addition**	**# of Units**
Barnell Ave Morgan Hill	*CA Climate Zone 04*	*1,281*	*n/a*	*1*

INSULATION

Construction	Type	Cavity	Area (ft^2)	Special Features	Status
Wall	*Wood Framed*	*R 20*	*1,760*		*New*
Door	*Opaque Door*	*R-5*	*20*		*New*
Slab	*Unheated Slab-on-Grade*	*- no insulation*	*612*	*Perim = 0'*	*New*
Demising	*Wood Framed Rafter*	*- no insulation*	*612*		*New*
Demising	*Wood Framed w/o Crawl Space*	*- no insulation*	*624*		*New*
Roof	*Wood Framed Attic*	*R 38*	*624*	*Add=R-19.0*	*New*

FENESTRATION — Total Area: *196* Glazing Percentage: *15.3%* New/Altered Average U-Factor: *0.30*

Orientation	Area (ft^2)	U-Fac	SHGC	Overhang	Sidefins	Exterior Shades	Status
Left (SE)	*4.0*	*0.300*	*0.23*	*none*	*none*	*N/A*	*New*
Rear (SW)	*70.0*	*0.300*	*0.23*	*none*	*none*	*N/A*	*New*
Right (NW)	*78.0*	*0.300*	*0.23*	*none*	*none*	*N/A*	*New*
Front (NE)	*44.0*	*0.300*	*0.23*	*none*	*none*	*N/A*	*New*

HVAC SYSTEMS

Qty.	Heating	Min. Eff	Cooling	Min. Eff	Thermostat	Status
1	*Electric Heat Pump*	*9.50 HSPF*	*Split Heat Pump*	*16.0 SEER*	*Setback*	*New*

HVAC DISTRIBUTION

Location	Heating	Cooling	Duct Location	Duct R-Value	Status
Undefined System	*Ducted*	*Ducted*	*Attic*	*8.0*	*New*

WATER HEATING

Qty.	Type	Gallons	Min. Eff	Distribution	Status
1	*Heat Pump*	*80*	*2.90*	*Standard*	*New*

2022 Single-Family Residential Mandatory Requirements Summary

NOTE: Single-family residential buildings subject to the Energy Codes must comply with all applicable mandatory measures, regardless of the compliance approach used. Review the respective section for more information.
(04/2022)

Building Envelope:

§ 110.6(a)1:	**Air Leakage.** Manufactured fenestration, exterior doors, and exterior pet doors must limit air leakage to 0.3 CFM per square foot or less when tested per NFRC-400, ASTM E283, or AAMA/WDMA/CSA 101/I.S.2/A440-2011. *
§ 110.6(a)5:	**Labeling.** Fenestration products and exterior doors must have a label meeting the requirements of § 10-111(a).
§ 110.6(b):	**Field fabricated exterior doors and fenestration** products must use U-factors and solar heat gain coefficient (SHGC) values from Tables 110.6-A, 110.6-B, or JA4.5 for exterior doors. They must be caulked and/or weather-stripped.
§ 110.7:	**Air Leakage.** All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be caulked, gasketed, or weather stripped.
§ 110.8(a):	**Insulation Certification by Manufacturers.** Insulation must be certified by the Department of Consumer Affairs, Bureau of Household Goods and Services (BHGS).
§ 110.8(g):	**Insulation Requirements for Heated Slab Floors.** Heated slab floors must be insulated per the requirements of § 110.8(g).
§ 110.8(i):	**Roofing Products Solar Reflectance and Thermal Emittance.** The thermal emittance and aged solar reflectance values of the roofing material must meet the requirements of § 110.8(i) and be labeled per §10-113 when the installation of a cool roof is specified on the CF1R.
§ 110.8(j):	**Radiant Barrier.** When required, radiant barriers must have an emittance of 0.05 or less and be certified to the Department of Consumer Affairs.
§ 150.0(a):	**Roof Deck, Ceiling and Rafter Roof Insulation.** Roof decks in newly constructed attics in climate zones 4 and 8-16 area-weighted average U-factor not exceeding U-0.184. Ceiling and rafter roofs minimum R-22 insulation in wood-frame ceiling; or area-weighted average U-factor must not exceed 0.043. Rafter roof alterations minimum R-19 or area-weighted average U-factor of 0.054 or less. Attic access doors must have permanently attached insulation using adhesive or mechanical fasteners. The attic access must be gasketed to prevent air leakage. Insulation must be installed in direct contact with a roof or ceiling which is sealed to limit infiltration and exfiltration, as specified in § 110.7, including but not limited to placing insulation either above or below the roof deck or on top of a drywall ceiling. *
§ 150.0(b):	**Loose-fill Insulation.** Loose fill insulation must meet the manufacturer's required density for the labeled R-value.
§ 150.0(c):	**Wall Insulation.** Minimum R-13 insulation in 2x4 inch wood framing wall or have a U-factor of 0.102 or less, or R-20 in 2x6 inch wood framing or have a U-factor of 0.071 or less. Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102. Masonry walls must meet Tables 150.1-A or B. *
§ 150.0(d):	**Raised-floor Insulation.** Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U-factor. *
§ 150.0(f):	**Slab Edge Insulation.** Slab edge insulation must meet all of the following: have a water absorption rate, for the insulation material alone without facings, no greater than 0.3 percent; have a water vapor permeance no greater than 2.0 perm per inch; be protected from physical damage and UV light deterioration; and, when installed as part of a heated slab floor, meet the requirements of § 110.8(g).
§ 150.0(g)1:	**Vapor Retarder.** In climate zones 1 through 16, the earth floor of unvented crawl space must be covered with a Class I or Class II vapor retarder. This requirement also applies to controlled ventilation crawl space for buildings complying with the exception to §150.0(d).
§ 150.0(g)2:	**Vapor Retarder.** In climate zones 14 and 16, a Class I or Class II vapor retarder must be installed on the conditioned space side of all insulation in all exterior walls, vented attics, and unvented attics with air-permeable insulation.
§ 150.0(q):	**Fenestration Products.** Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a maximum U-factor of 0.45, or area-weighted average U-factor of all fenestration must not exceed 0.45. *

Fireplaces, Decorative Gas Appliances, and Gas Log:

§ 110.5(e)	**Pilot Light.** Continuously burning pilot lights are not allowed for indoor and outdoor fireplaces.
§ 150.0(e)1:	**Closable Doors.** Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox.
§ 150.0(e)2:	**Combustion Intake.** Masonry or factory-built fireplaces must have a combustion outside air intake, which is at least six square inches in area and is equipped with a readily accessible, operable, and tight-fitting damper or combustion-air control device. *
§ 150.0(e)3:	**Flue Damper.** Masonry or factory-built fireplaces must have a flue damper with a readily accessible control. *

Space Conditioning, Water Heating, and Plumbing System:

§ 110.0-§ 110.3:	**Certification.** Heating, ventilation, and air conditioning (HVAC) equipment, water heaters, showerheads, faucets, and all other regulated appliances must be certified by the manufacturer to the California Energy Commission. *
§ 110.2(a):	**HVAC Efficiency.** Equipment must meet the applicable efficiency requirements in Table 110.2-A through Table 110.2-N. *
§ 110.2(b):	**Controls for Heat Pumps with Supplementary Electric Resistance Heaters.** Heat pumps with supplementary electric resistance heaters must have controls that prevent supplementary heater operation when the heating load can be met by the heat pump alone; and in which the cut-on temperature for compression heating is higher than the cut-on temperature for supplementary heating, and the cut-off temperature for compression heating is higher than the cut-off temperature for supplementary heating.
§ 110.2(c):	**Thermostats.** All heating or cooling systems not controlled by a central energy management control system (EMCS) must have a setback thermostat. *
§ 110.3(c)3:	**Insulation.** Unfired service water heater storage tanks and solar water-heating backup tanks must have adequate insulation, or tank surface heat loss rating.
§ 110.3(c)6:	**Isolation Valves.** Instantaneous water heaters with an input rating greater than 6.8 kBtu per hour (2 kW) must have isolation valves with hose bibbs or other fittings on both cold and hot water lines to allow for flushing the water heater when the valves are closed.

2022 Single-Family Residential Mandatory Requirements Summary

§ 110.5:	**Pilot Lights.** Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces; household cooking appliances (except appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu per hour); and pool and spa heaters. *
§ 150.0(h)1:	**Building Cooling and Heating Loads.** Heating and/or cooling loads are calculated in accordance with the ASHRAE Handbook, Equipment Volume, Applications Volume, and Fundamentals Volume; the SMACNA Residential Comfort System Installation Standards Manual; or the ACCA Manual J using design conditions specified in § 150.0(h)2.
§ 150.0(h)3A:	**Clearances.** Air conditioner and heat pump outdoor condensing units must have a clearance of at least five feet from the outlet of any dryer.
§ 150.0(h)3B:	**Liquid Line Drier.** Air conditioners and heat pump systems must be equipped with liquid line filter driers if required, as specified by the manufacturer's instructions.
§ 150.0(j)1:	**Water Piping, Solar Water-heating System Piping, and Space Conditioning System Line Insulation.** All domestic hot water piping must be insulated as specified in § 609.11 of the California Plumbing Code. *
§ 150.0(j)2:	**Insulation Protection.** Piping insulation must be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind as required by §120.3(b). Insulation exposed to weather must be water retardant and protected from UV light (no adhesive tapes). Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space must include, or be protected by, a Class I or Class II vapor retarder. Pipe insulation buried below grade must be installed in a waterproof and non-crushable casing or sleeve.
§ 150.0(n)1:	**Gas or Propane Water Heating Systems.** Systems using gas or propane water heaters to serve individual dwelling units must designate a space at least 2.5' x 2.5' x 7' suitable for the future installation of a heat pump water heater, and meet electrical and plumbing requirements, based on the distance between this designated space and the water heater location; and a condensate drain no more than 2" higher than the base of the water heater.
§ 150.0(n)3:	**Solar Water-heating Systems.** Solar water-heating systems and collectors must be certified and rated by the Solar Rating and Certification Corporation (SRCC), the International Association of Plumbing and Mechanical Officials, Research and Testing (IAPMO R&T), or by a listing agency that is approved by the executive director.

Ducts and Fans:

§ 110.8(d)3:	**Ducts.** Insulation installed on an existing space-conditioning duct must comply with § 604.0 of the California Mechanical Code (CMC). If a contractor installs the insulation, the contractor must certify to the customer, in writing, that the insulation meets this requirement.
§ 150.0(m)1:	**CMC Compliance.** All air-distribution system ducts and plenums must meet CMC §§ 601.0-605.0 and ANSI/SMACNA-006-2006 HVAC Duct Construction Standards Metal and Flexible 3rd Edition. Portions of supply-air and return-air ducts and plenums must be insulated to R-6.0 or higher; ducts located entirely in conditioned space as confirmed through field verification and diagnostic testing (RA3.1.4.3.8) do not require insulation. Connections of metal ducts and inner core of flexible ducts must be mechanically fastened. Openings must be sealed with mastic, tape, or other duct-closure system that meets the applicable UL requirements, or aerosol sealant that meets UL 723. The combination of mastic and either mesh or tape must be used to seal openings greater than ¼", If mastic or tape is used. Building cavities, air handler support platforms, and plenums designed or constructed with materials other than sealed sheet metal, duct board or flexible duct must not be used to convey conditioned air. Building cavities and support platforms may contain ducts; ducts installed in these spaces must not be compressed. *
§ 150.0(m)2:	**Factory-Fabricated Duct Systems.** Factory-fabricated duct systems must comply with applicable requirements for duct construction, connections, and closures; joints and seams of duct systems and their components must not be sealed with cloth back rubber adhesive duct tapes unless such tape is used in combination with mastic and draw bands.
§ 150.0(m)3:	**Field-Fabricated Duct Systems.** Field-fabricated duct systems must comply with applicable requirements for: pressure-sensitive tapes, mastics, sealants, and other requirements specified for duct construction.
§ 150.0(m)7:	**Backdraft Damper.** Fan systems that exchange air between the conditioned space and outdoors must have backdraft or automatic dampers.
§ 150.0(m)8:	**Gravity Ventilating Dampers.** Gravity ventilating systems serving conditioned space must have either automatic or readily accessible, manually operated dampers in all openings to the outside, except combustion inlet and outlet air openings and elevator shaft vents.
§ 150.0(m)9:	**Protection of Insulation.** Insulation must be protected from damage due tosunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather must be suitable for outdoor service (e.g., protected by aluminum, sheet metal, painted canvas, or plastic cover). Cellular foam insulation must be protected as above or painted with a water retardant and solar radiation-resistant coating.
§ 150.0(m)10:	**Porous Inner Core Flex Duct.** Porous inner cores of flex ducts must have a non-porous layer or air barrier between the inner core and outer vapor barrier.
§ 150.0(m)11:	**Duct System Sealing and Leakage Test.** When space conditioning systems use forced air duct systems to supply conditioned air to an occupiable space, the ducts must be sealed and duct leakage tested, as confirmed through field verification and diagnostic testing, in accordance with Reference Residential Appendix RA3.1.
§ 150.0(m)12:	**Air Filtration.** Space conditioning systems with ducts exceeding 10 feet and the supply side of ventilation systems must have MERV 13 or equivalent filters. Filters for space conditioning systems must have a two inch depth or can be one inch if sized per Equation 150.0-A. Clean-filter pressure drop and labeling must meet the requirements in §150.0(m)12. Filters must be accessible for regular service. Filter racks or grilles must use gaskets, sealing, or other means to close gaps around the inserted filters to and prevents air from bypassing the filter. *

2022 Single-Family Residential Mandatory Requirements Summary

§ 150.0(m)13:	**Space Conditioning System Airflow Rate and Fan Efficacy.** Space conditioning systems that use ducts to supply cooling must have a hole for the placement of a static pressure probe, or a permanently installed static pressure probe in the supply plenum. Airflow must be ≥ 350 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.45 watts per CFM for gas furnace air handlers and ≤ 0.58 watts per CFM for all others. Small duct high velocity systems must provide an airflow ≥ 250 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.62 watts per CFM. Field verification testing is required in accordance with Reference Residential Appendix RA3.3. *

Ventilation and Indoor Air Quality:

§ 150.0(o)1:	**Requirements for Ventilation and Indoor Air Quality**. All dwelling units must meet the requirements of ASHRAE Standard 62.2, Ventilation and Acceptable Indoor Air Quality in Residential Buildings subject to the amendments specified in § 150.0(o)1. *
§ 150.0(o)1B:	**Central Fan Integrated (CFI) Ventilation Systems.** Continuous operation of CFI air handlers is not allowed to provide the whole-dwelling unit ventilation airflow required per §150.0(o)1C. A motorized damper(s) must be installed on the ventilation duct(s) that prevents all airflow through the space conditioning duct system when the damper(s) is closed andcontrolled per §150.0(o)1Biii&iv. CFI ventilation systems must have controls that track outdoor air ventilation run time, and either open or close the motorized damper(s) for compliance with §150.0(o)1C.
§ 150.0(o)1C:	**Whole-Dwelling Unit Mechanical Ventilation for Single-Family Detached and townhouses .** Single-family detached dwelling units, and attached dwelling units not sharing ceilings or floors with other dwelling units, occupiable spaces, public garages, or commercial spaces must have mechanical ventilation airflow specified in § 150.0(o)1Ci-iii.
§ 150.0(o)1G:	**Local Mechanical Exhaust.** Kitchens and bathrooms must have local mechanical exhaust; nonenclosed kitchens must have demand-controlled exhaust system meeting requirements of §150.0(o)1Giii,enclosed kitchens and bathrooms can use demand-controlled or continuous exhaust meeting §150.0(o)1Giii-iv. Airflow must be measured by the installer per §150.0(o)1Gv, and rated for sound per §150.0(o)1Gvi. *
§ 150.0(o)1H&I:	**Airflow Measurement and Sound Ratings of Whole-Dwelling Unit Ventilation Systems.** The airflow required per § 150.0(o)1C must be measured by using a flow hood, flow grid, or other airflow measuring device at the fan's inlet or outlet terminals/grilles per Reference Residential Appendix RA3.7. Whole-Dwelling unit ventilation systems must be rated for sound per ASHRAE 62.2 §7.2 at no less than the minimum airflow rate required by §150.0(o)1C.
§ 150.0(o)2:	**Field Verification and Diagnostic Testing.** Whole-Dwelling Unit ventilation airflow, vented range hood airflow and sound rating, and HRV and ERV fan efficacy must be verified in accordance with Reference Residential Appendix RA3.7. Vented range hoods must be verified per Reference Residential Appendix RA3.7.4.3 to confirm if it is rated by HVI or AHAM to comply with the airflow rates and sound requirements per §150.0(o)1G

Pool and Spa Systems and Equipment:

§ 110.4(a):	**Certification by Manufacturers.** Any pool or spa heating system or equipment must be certified to have all of the following: compliance with the Appliance Efficiency Regulations and listing in MAEDbS; an on-off switch mounted outside of the heater that allows shutting off the heater without adjusting the thermostat setting; a permanent weatherproof plate or card with operating instructions; and must not use electric resistance heating. *
§ 110.4(b)1:	**Piping.** Any pool or spa heating system or equipment must be installed with at least 36 inches of pipe between the filter and the heater, or dedicated suction and return lines, or built-in or built-up connections to allow for future solar heating.
§ 110.4(b)2:	**Covers.** Outdoor pools or spas that have a heat pump or gas heater must have a cover.
§ 110.4(b)3:	**Directional Inlets and Time Switches for Pools.** Pools must have directional inlets that adequately mix the pool water, and a time switch that will allow all pumps to be set or programmed to run only during off-peak electric demand periods.
§ 110.5:	**Pilot Light.** Natural gas pool and spa heaters must not have a continuously burning pilot light.
§ 150.0(p):	**Pool Systems and Equipment Installation.** Residential pool systems or equipment must meet the specified requirements for pump sizing, flow rate, piping, filters, and valves. *

Lighting:

§ 110.9:	**Lighting Controls and Components.** All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirements of § 110.9. *
§ 150.0(k)1A:	**Luminaire Efficacy.** All installed luminaires must meet the requirements in Table 150.0-A, except lighting integral to exhaust fans, kitchen range hoods, bath vanity mirrors, and garage door openers; navigation lighting less than 5 watts; and lighting internal to drawers, cabinets, and linen closets with an efficacy of at least 45 lumens per watt.
§ 150.0(k)1B:	**Screw based luminaires.** Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8. *
§ 150.0(k)1C:	**Recessed Downlight Luminaires in Ceilings.** Luminaires recessed into ceilings must not contain screw based sockets, must be airtight, and must be sealed with a gasket or caulk. California Electrical Code § 410.116 must also be met.
§ 150.0(k)1D:	**Light Sources in Enclosed or Recessed Luminaires.** Lamps and other separable light sources that are not compliant with the JA8 elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
§ 150.0(k)1E:	**Blank Electrical Boxes.** The number of electrical boxes that are more than five feet above the finished floor and do not contain a luminaire or other device shall be no more than the number of bedrooms. These boxes must be served by a dimmer, vacancy sensor control, low voltage wiring, or fan speed control.
§ 150.0(k)1F:	**Lighting Integral to Exhaust Fans.** Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.0(k). *

2022 Single-Family Residential Mandatory Requirements Summary

§ 150.0(k)1G:	**Screw based luminaires.** Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8. *
§ 150.0(k)1H:	**Light Sources in Enclosed or Recessed Luminaires.** Lamps and other separable light sources that are not compliant with the JA8 elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
§ 150.0(k)1I:	**Light Sources in Drawers, Cabinets, and Linen Closets.** Light sources internal to drawers, cabinetry or linen closets are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, emit no more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is closed.
§ 150.0(k)2A:	**Interior Switches and Controls.** All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A.
§ 150.0(k)2B:	**Interior Switches and Controls.** Exhaust fans must be controlled separately from lighting systems. *
§ 150.0(k)2A:	**Accessible Controls.** Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually turned on and off. *
§ 150.0(k)2B:	**Multiple Controls.** Controls must not bypass a dimmer, occupant sensor, or vacancy sensor function if the dimmer or sensor is installed to comply with § 150.0(k).
§ 150.0(k)2C:	**Mandatory Requirements.** Lighting controls must comply with the applicable requirements of § 110.9.
§ 150.0(k)2D:	**Energy Management Control Systems.** An energy management control system (EMCS) may be used to comply with dimming, occupancy, and control requirements if it provides the functionality of the specified control per § 110.9 and the physical controls specified in § 150.0(k)2A.
§ 150.0(k)2E:	**Automatic Shutoff Controls.** In bathrooms, garages, laundry rooms, utility rooms and walk-in closets, at least one installed luminaire must be controlled by an occupancy or vacancy sensor providing automatic-off functionality. Lighting inside drawers and cabinets with opaque fronts or doors must have controls that turn the light off when the drawer or door is closed.
§ 150.0(k)2F:	**Dimmers.** Lighting in habitable spaces (e.g., living rooms, dining rooms, kitchens, and bedrooms) must have readily accessible wall-mounted dimming controls that allow the lighting to be manually adjusted up and down. Forward phase cut dimmers controlling LED light sources in these spaces must comply with NEMA SSL 7A.
§ 150.0(k)2K:	**Independent controls.** Integrated lighting of exhaust fans shall be controlled independently from the fans. Lighting under cabinets or shelves, lighting in display cabinets, and switched outlets must be controlled separately from ceiling-installed lighting.
§ 150.0(k)3A:	**Residential Outdoor Lighting.** For single-family residential buildings, outdoor lighting permanently mounted to a residential building, or to other buildings on the same lot, must have a manual on/off switch and either a photocell and motion sensor or automatic time switch control) or an astronomical time clock. An energy management control system that provides the specified control functionality and meets all applicable requirements may be used to meet these requirements.
§ 150.0(k)4:	**Internally illuminated address signs.** Internally illuminated address signs must either comply with § 140.8 or consume no more than 5 watts of power.
§ 150.0(k)5:	**Residential Garages for Eight or More Vehicles.** Lighting for residential parking garages for eight or more vehicles must comply with the applicable requirements for nonresidential garages in §§ 110.9, 130.0, 130.1, 130.4, 140.6, and 141.0.

Solar Readiness:

§ 110.10(a)1:	**Single-family Residences.** Single-family residences located in subdivisions with 10 or more single-family residences and where the application for a tentative subdivision map for the residences has been deemed complete and approved by the enforcement agency, which do not have a photovoltaic system installed, must comply with the requirements of § 110.10(b)-(e).
§110.10(b)1A:	**Minimum Solar Zone Area.** The solar zone must have a minimum total area as described below. The solar zone must comply with access, pathway, smoke ventilation, and spacing requirements as specified in Title 24, Part 9 or other parts of Title 24 or in any requirements adopted by a local jurisdiction. The solar zone total area must be comprised of areas that have no dimension less than 5 feet and are no less than 80 square feet each for buildings with roof areas less than or equal to 10,000 square feet or no less than 160 square feet each for buildings with roof areas greater than 10,000 square feet. For single-family residences, the solar zone must be located on the roof or overhang of the building and have a total area no less than 250 square feet. *
§ 110.10(b)2:	**Azimuth.** All sections of the solar zone located on steep-sloped roofs must have an azimuth between 90-300° of true north.
§ 110.10(b)3A:	**Shading.** The solar zone must not contain any obstructions, including but not limited to: vents, chimneys, architectural features, and roof mounted equipment.
§ 110.10(b)3B:	**Shading.** Any obstruction located on the roof or any other part of the building that projects above a solar zone must be located at least twice the horizontal distance of the height difference between the highest point of the obstruction and the horizontal projection of the nearest point of the solar zone, measured in the vertical plane.
§ 110.10(b)4:	**Structural Design Loads on Construction Documents.** For areas of the roof designated as a solar zone, the structural design loads for roof dead load and roof live load must be clearly indicated on the construction documents.
§ 110.10(c):	**Interconnection Pathways.** The construction documents must indicate: a location reserved for inverters and metering equipment and a pathway reserved for routing of conduit from the solar zone to the point of interconnection with the electrical service; and for single-family residences and central water-heating systems, a pathway reserved for routing plumbing from the solar zone to the water-heating system.
§ 110.10(d):	**Documentation.** A copy of the construction documents or a comparable document indicating the information from § 110.10(b)-(c) must be provided to the occupant.
§ 110.10(e)1:	**Main Electrical Service Panel.** The main electrical service panel must have a minimum busbar rating of 200 amps.
§ 110.10(e)2:	**Main Electrical Service Panel.** The main electrical service panel must have a reserved space to allow for the installation of a double pole circuit breaker for a future solar electric installation. The reserved space must be permanently marked as "For Future Solar Electric."

Electric and Energy Storage Ready:

2022 Single-Family Residential Mandatory Requirements Summary

§ 150.0(s)	**Energy Storage System (ESS) Ready.** All single-family residences must meet all of the following: Either ESS-ready interconnection equipment with backed up capacity of 60 amps or more and four or more ESS supplied branch circuits, or a dedicated raceway from the main service to a subpanel that supplies the branch circuits in § 150.0(s); at least four branch circuits must be identified and have their source collocated at a single panelboard suitable to be supplied by the ESS, with one circuit supplying the refrigerator, one lighting circuit near the primary exit, and one circuit supplying a sleeping room receptacle outlet; main panelboard must have a minimum busbar rating of 225 amps; sufficient space must be reserved to allow future installation of a system isolation equipment/transfer switch within 3' of the main panelboard, with raceways installed between the panelboard and the switch location to allow the connection of backup power source.
§ 150.0(t)	**Heat Pump Space Heater Ready.** Systems using gas or propane furnaces to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the furnace with circuit conductors rated at least 30 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."
§ 150.0(u)	**Electric Cooktop Ready.** Systems using gas or propane cooktop to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the cooktop with circuit conductors rated at least 50 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."
§ 150.0(v)	**Electric Clothes Dryer Ready.** Clothes dryer locations with gas or propane plumbing to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the dryer location with circuit conductors rated at least 30 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."

*Exceptions may apply.

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Barnell Ave.
Morgan Hill, CA 95037

PROJECT: LJ COMMONS 4 PLEX

DRAWING TITLE: UNIT 1 TITLE 24

REV	DATE	DESCRIPTION
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JOB NO.: 23-113
CAD FILE:
DSGN'D BY: I. R. | DRAWN BY: J. T.
CHK'D BY: I. R. | APP'D BY: I. R.
DATE: 4/17/23 | SCALE: AS NOTED
DRAWING NO.: T24-1-3
SHEET * OF *

GENERAL INFORMATION					
01	Project Name	Barnell Ave Unit 2			
02	Run Title	Title 24 Analysis			
03	Project Location	Barnell Ave			
04	City	Morgan Hill	05	Standards Version	2022
06	Zip code	95037	07	Software Version	EnergyPro 9.2
08	Climate Zone	4	09	Front Orientation (deg/ Cardinal)	0
10	Building Type	Single family	11	Number of Dwelling Units	1
12	Project Scope	Newly Constructed	13	Number of Bedrooms	2
14	Addition Cond. Floor Area (ft^2)	0	15	Number of Stories	2
16	Existing Cond. Floor Area (ft^2)	n/a	17	Fenestration Average U-factor	0.3
18	Total Cond. Floor Area (ft^2)	870	19	Glazing Percentage (%)	15.98%
20	ADU Bedroom Count	n/a	21	ADU Conditioned Floor Area	n/a
22	Fuel Type	Natural gas	23	No Dwelling Units	No

COMPLIANCE RESULTS	
01	Building Complies with Computer Performance
02	This building incorporates features that require field testing and/or verification by a certified HERS rater under the supervision of a CEC-approved HERS provider.
03	This building incorporates one or more Special Features shown below

ENERGY DESIGN RATINGS						
	Energy Design Ratings			Compliance Margins		
	Source Energy (EDR1)	Efficiency[1] EDR (EDR2efficiency)	Total[2] EDR (EDR2total)	Source Energy (EDR1)	Efficiency[1] EDR (EDR2efficiency)	Total[2] EDR (EDR2total)
Standard Design	37.6	43.9	33.8			
Proposed Design	36.1	41.8	32.7	1.5	2.1	1.1
RESULT[3]: PASS						

[1]Efficiency EDR includes improvements like a better building envelope and more efficient equipment
[2]Total EDR includes efficiency and demand response measures such as photovoltaic (PV) system and batteries
[3]Building complies when source energy, efficiency and total compliance margins are greater than or equal to zero and unmet load hour limits are not exceeded

- Standard Design PV Capacity: 2.03 kWdc
- PV System resized to 2.03 kWdc (a factor of 2.033) to achieve Standard Design PV PV scaling

ENERGY USE SUMMARY						
Energy Use	Standard Design Source Energy (EDR1) (kBtu/ft^2 -yr)	Standard Design TDV Energy (EDR2) (kTDV/ft^2 -yr)	Proposed Design Source Energy (EDR1) (kBtu/ft^2 -yr)	Proposed Design TDV Energy (EDR2) (kTDV/ft^2 -yr)	Compliance Margin (EDR1)	Compliance Margin (EDR2)
Space Heating	1.21	5.55	1.61	12.66	-0.4	-7.11
Space Cooling	0.81	28.42	0.63	24.58	0.18	3.84
IAQ Ventilation	0.42	4.49	0.42	4.49	0	0
Water Heating	2.65	27.6	1.86	21.19	0.79	6.41
Self Utilization/Flexibility Credit				0		0
Efficiency Compliance Total	5.09	66.06	4.52	62.92	0.57	3.14
Photovoltaics	-2.05	-69.42	-2.05	-69.28		
Battery			0	0		
Flexibility						
Indoor Lighting	0.9	8.88	0.9	8.88		
Appl. & Cooking	5.98	39.04	5.94	38.61		
Plug Loads	5.2	54.07	5.2	54.07		
Outdoor Lighting	0.2	1.85	0.2	1.85		
TOTAL COMPLIANCE	15.32	100.48	14.71	97.05		

ENERGY USE INTENSITY				
	Standard Design (kBtu/ft^2 - yr)	Proposed Design (kBtu/ft^2 - yr)	Compliance Margin (kBtu/ft^2 - yr)	Margin Percentage
Gross EUI[1]	22.03	21	1.03	4.68
Net EUI[2]	9.4	8.37	1.03	10.96

Notes
1. Gross EUI is Energy Use Total (not including PV) / Total Building Area.
2. Net EUI is Energy Use Total (including PV) / Total Building Area.

REQUIRED PV SYSTEMS											
01	02	03	04	05	06	07	08	09	10	11	12
DC System Size (kWdc)	Exception	Module Type	Array Type	Power Electronics	CFI	Azimuth (deg)	Tilt Input	Array Angle (deg)	Tilt: (x in 12)	Inverter Eff. (%)	Annual Solar Access (%)
2.03	NA	Standard (14-17%)	Fixed	none	true	150-270	n/a	n/a	<=7:12	96	98

REQUIRED SPECIAL FEATURES
The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.
• Insulation below roof deck
• Northwest Energy Efficiency Alliance (NEEA) rated heat pump water heater; specific brand/model, or equivalent, must be installed

HERS FEATURE SUMMARY
The following is a summary of the features that must be field-verified by a certified HERS Rater as a condition for meeting the modeled energy performance for this computer analysis. Additional detail is provided in the building tables below. Registered CF2Rs and CF3Rs are required to be completed in the HERS Registry
• Quality insulation installation (QII)
• Indoor air quality ventilation
• kitchen range hood
• Minimum Airflow
• Verified EER/EER2
• Verified SEER/SEER2
• Verified Refrigerant Charge
• Fan Efficacy Watts/CFM
• Verified HSPF
• Verified heat pump rated heating capacity
• Duct leakage testing

BUILDING - FEATURES INFORMATION						
01	02	03	04	05	06	07
Project Name	Conditioned Floor Area (ft^2)	Number of Dwelling Units	Number of Bedrooms	Number of Zones	Number of Ventilation Cooling Systems	Number of Water Heating Systems
Barnell Ave Unit 2	870	1	2	2	0	1

ZONE INFORMATION						
01	02	03	04	05	06	07
Zone Name	Zone Type	HVAC System Name	Zone Floor Area (ft^2)	Avg. Ceiling Height	Water Heating System 1	Status
1st Flr Zone	Conditioned	Undefined System1	438	9	DHW Sys 1	New
2nd Flr Zone	Conditioned	Undefined System1	432	9	DHW Sys 1	New

OPAQUE SURFACES							
01	02	03	04	05	06	07	08
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft^2)	Window and Door Area (ft2)	Tilt (deg)
SE Exterior Wall	1st Flr Zone	R-21 Wall	135	n/a	153	40	90
SW Exterior Wall	1st Flr Zone	R-21 Wall	225	n/a	140	40	90

OPAQUE SURFACES							
01	02	03	04	05	06	07	08
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft^2)	Window and Door Area (ft2)	Tilt (deg)
NW Exterior Wall	1st Flr Zone	R-21 Wall	315	n/a	35	20	90
SW Exterior Wall 2	1st Flr Zone	R-21 Wall	225	n/a	86	0	90
NW Exterior Wall 2	1st Flr Zone	R-21 Wall	315	n/a	87	10	90
NW Exterior Wall 3	1st Flr Zone	R-21 Wall	315	n/a	32	0	90
SW Exterior Wall 3	2nd Flr Zone	R-21 Wall	225	n/a	98	15	90
NW Exterior Wall 4	2nd Flr Zone	R-21 Wall	315	n/a	110	15	90
SE Exterior Wall 2	2nd Flr Zone	R-21 Wall	135	n/a	153	0	90
SW Exterior Wall 4	2nd Flr Zone	R-21 Wall	225	n/a	95	15	90
SW Exterior Wall 5	2nd Flr Zone	R-21 Wall	225	n/a	51	4	90
NW Exterior Wall 5	2nd Flr Zone	R-21 Wall	315	n/a	44	0	90
WALL Interior Surface	1st Flr Zone	R-0 Wall	n/a	n/a	140	0	n/a
WALL Interior Surface 2	1st Flr Zone	R-0 Wall	n/a	n/a	80	0	n/a
WALL Interior Surface 3	2nd Flr Zone	R-0 Wall	n/a	n/a	119	0	n/a
Roof	2nd Flr Zone	R-38 HP Attic	n/a	n/a	69	n/a	n/a
Roof 2	2nd Flr Zone	R-38 HP Attic	n/a	n/a	114	n/a	n/a
Roof 3	2nd Flr Zone	R-38 HP Attic	n/a	n/a	161	n/a	n/a
Roof 4	2nd Flr Zone	R-38 HP Attic	n/a	n/a	54	n/a	n/a
Roof 5	2nd Flr Zone	R-38 HP Attic	n/a	n/a	34	n/a	n/a
CELING Interior Surface	1st Flr Zone	R-0 Roof No Attic	n/a	n/a	311	n/a	n/a
CELING Interior Surface 2	1st Flr Zone	R-0 Roof No Attic	n/a	n/a	95	n/a	n/a
CELING Interior Surface 3	1st Flr Zone	R-0 Roof No Attic	n/a	n/a	32	n/a	n/a
FLOOR Interior Surface	2nd Flr Zone	R-0 Floor No Crawlspace	n/a	n/a	69	n/a	n/a
FLOOR Interior Surface 2	2nd Flr Zone	R-0 Floor No Crawlspace	n/a	n/a	114	n/a	n/a

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SHEET * OF *

OPAQUE SURFACES

01 Name	02 Zone	03 Construction	04 Azimuth	05 Orientation	06 Gross Area (ft²)	07 Window and Door Area (ft2)	08 Tilt (deg)
FLOOR Interior Surface 3	2nd Flr Zone	R-0 Floor No Crawlspace	n/a	n/a	161	n/a	n/a
FLOOR Interior Surface 4	2nd Flr Zone	R-0 Floor No Crawlspace	n/a	n/a	54	n/a	n/a
FLOOR Interior Surface 5	2nd Flr Zone	R-0 Floor No Crawlspace	n/a	n/a	34	n/a	n/a

ATTIC

01 Name	02 Construction Type	03 Roof Rise (x in 12)	04 Roof Reflectance	05 Roof Emittance	06 Radiant Barrier	07 Cool Roof
Attic 2nd Flr Zone	Attic Roof2nd Flr Zone	Ventilated	6	0.1	0.85	No	No

FENESTRATION / GLAZING

01 Name	02 Type	03 Surface	04 Orientation	05 Azimuth	06 Width (ft)	07 Height (ft)	08 Mult.	09 Area (ft²)	10 U-factor	11 U-factor Source	12 SHGC	13 SHGC Source	14 Exterior Shading
Window	Window	SE Exterior Wall		135			1	40	0.3	NFRC	0.23	NFRC	Bug Screen
Window 2	Window	SW Exterior Wall		225			1	40	0.3	NFRC	0.23	NFRC	Bug Screen
Window 3	Window	NW Exterior Wall 2		315			1	10	0.3	NFRC	0.23	NFRC	Bug Screen
Window 4	Window	SW Exterior Wall 3		225			1	15	0.3	NFRC	0.23	NFRC	Bug Screen
Window 5	Window	NW Exterior Wall 4		315			1	15	0.3	NFRC	0.23	NFRC	Bug Screen

FENESTRATION / GLAZING

01 Name	02 Type	03 Surface	04 Orientation	05 Azimuth	06 Width (ft)	07 Height (ft)	08 Mult.	09 Area (ft²)	10 U-factor	11 U-factor Source	12 SHGC	13 SHGC Source	14 Exterior Shading
Window 6	Window	SW Exterior Wall 4		225			1	15	0.3	NFRC	0.23	NFRC	Bug Screen
Window 7	Window	SW Exterior Wall 5		225			1	4	0.3	NFRC	0.23	NFRC	Bug Screen

OPAQUE DOORS

01 Name	02 Side of Building	03 Area (ft²)	04 U-factor
Door	NW Exterior Wall	20	0.2

SLAB FLOORS

01 Name	02 Zone	03 Area (ft²)	04 Perimeter (ft)	05 Edge Insul. R-value and Depth	06 Edge insul. R-value and Depth	07 Carpeted Fraction	08 Heated
Slab-on-Grade	1st Flr Zone	311	0.1	none	0	80%	No
Slab-on-Grade 2	1st Flr Zone	95	0.1	none	0	80%	No
Slab-on-Grade 3	1st Flr Zone	32	0.1	none	0	80%	No

OPAQUE SURFACE CONSTRUCTIONS

01 Construction Name	02 Surface Type	03 Construction Type	04 Framing	05 Total Cavity R-value	06 Interior / Exterior Continuous R-value	07 U-factor	08 Assembly Layers
R-21 Wall	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O. C.	R-21	None / None	0.069	Inside Finish: Gypsum Board Cavity / Frame: R-21 / 2x6 Exterior Finish: 3 Coat Stucco
R-0 Wall	Interior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-0	None / None	0.277	Inside Finish: Gypsum Board Cavity / Frame: no insul. / 2x4 Other Side Finish: Gypsum Board
Attic Roof2nd Flr Zone	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-19	None / 0	0.059	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: R-13.0 / 2x4 Around Roof Joists: R-6.0 insul.
R-38 HP Attic	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-38	None / None	0.025	Over Ceiling Joists: R-28.9 insul. Cavity / Frame: R-9.3 / 2x4 Inside Finish: Gypsum Board
R-0 Floor No Crawlspace	Interior Floors	Wood Framed Floor	2x12 @ 16 in. O. C.	R-0	None / None	0.196	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x12 Ceiling Below Finish: Gypsum Board
R-0 Roof No Attic	Interior Ceiling	Wood Framed Ceiling	2x4 @ 16 in. O. C.	R-0	None / None	0.202	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x4 Ceiling Below Finish: Gypsum Board

BUILDING ENVELOPE - HERS VERIFICATION

01 Quality Insulation Installation (QII)	02 High R-value Spray Foam Insulation	03 Building Envelope Air Leakage	04 CFM50	05 CFM50
Required	Not Required	N/A	n/a	n/a

WATER HEATING SYSTEMS

01 Name	02 System Type	03 Distribution Type	04 Water Heater Name	05 Number of Units	06 Solar Heating System	07 Compact Distribution	08 HERS Verification	09 Water Heater Name (#)
DHW Sys 1	Domestic Hot Water (DHW)	Standard	DHW Heater 1	1	n/a	None	n/a	DHW Heater 1 (1)

WATER HEATERS - NEEA HEAT PUMP

01 Name	02 # of Units	03 Tank Vol. (gal)	04 NEEA Heat Pump Brand	05 NEEA Heat Pump Model	06 Tank Location	07 Duct Inlet Air Source	08 Duct Outlet Air Source
DHW Heater 1	1	80	A. O. Smith	HPTU 80N 120 (80 gal)	Outside	1st Flr Zone	1st Flr Zone

WATER HEATING - HERS VERIFICATION

01 Name	02 Pipe Insulation	03 Parallel Piping	04 Compact Distribution	05 Compact Distribution Type	06 Recirculation Control	07 Shower Drain Water Heat Recovery
DHW Sys 1 - 1/1	Not Required	Not Required	Not Required	None	Not Required	Not Required

SPACE CONDITIONING SYSTEMS

01 Name	02 System Type	03 Heating Unit Name	04 Heating Equipment Count	05 Cooling Unit Name	06 Cooling Equipment Count	07 Fan Name	08 Distribution Name	09 Required Thermostat Type
Undefined System1	Heat pump heating cooling	Heat Pump System 1	1	Heat Pump System 1	1	HVAC Fan 1	Air Distribution System 1	Setback

HVAC - HEAT PUMPS

01	02	03	04	05	06	07	08	09	10	11	12	13
			Heating				Cooling					
Name	System Type	Number of Units	Heating Efficiency Type	HSPF/WS PF2/COP	Cap 47	Cap 17	Cooling Efficiency Type	SEER/SEER2	EER/EER 2/CEER	Zonally Controlled	Compressor Type	HERS Verification
Heat Pump System 1	Central split HP	1	HSPF	9.5	60000	50000	EERSEER	16	12.5	Zonally Controlled	Multi-speed	Heat Pump System 1-hers-htpump

HVAC HEAT PUMPS - HERS VERIFICATION

01 Name	02 Verified Airflow	03 Airflow Target	04 Verified EER/EER2	05 Verified SEER/SEER2	06 Verified Refrigerant Charge	07 Verified HSPF/HSPF2	08 Verified Heating Cap 47	09 Verified Heating Cap 17
Heat Pump System 1-hers-htpump	Required	350	Required	Required	Yes	Yes	Yes	Yes

HVAC - DISTRIBUTION SYSTEMS

01	02	03	04	05	06	07	08	09	10	11	12
			Duct Ins. R-value		Duct Location		Surface Area				
Name	Type	Design Type	Supply	Return	Supply	Return	Supply	Return	Bypass Duct	Duct Leakage	HERS Verification
Air Distribution System 1	Unconditioned attic	Non-Verified	R-8	R-8	Attic	Attic	n/a	n/a	No Bypass Duct	Sealed and Tested	Air Distribution System 1-hers-dist

HVAC DISTRIBUTION - HERS VERIFICATION

01 Name	02 Duct Leakage Verification	03 Duct Leakage Target (%)	04 Verified Duct Location	05 Verified Duct Design	06 Buried Ducts	07 Deeply Buried Ducts	08 Low-leakage Air Handler	09 Low Leakage Ducts Entirely in Conditioned Space
Air Distribution System 1-hers-dist	Yes	5.0	Not Required	Not Required	Not Required	Credit not taken	Not Required	No

HVAC - FAN SYSTEMS

01 Name	02 Type	03 Fan Power (Watts/CFM)	04 Name
HVAC Fan 1	HVAC Fan	0.45	HVAC Fan 1-hers-fan

HVAC FAN SYSTEMS - HERS VERIFICATION

01	02	03
Name	Verified Fan Watt Draw	Required Fan Efficacy (Watts/CFM)
HVAC Fan 1-hers-fan	Required	0.45

INDOOR AIR QUALITY (IAQ) FANS

01 Dwelling Unit	02 Airflow (CFM)	03 Fan Efficacy (W/CFM)	04 IAQ Fan Type	05 Includes Heat/Energy Recovery?	06 IAQ Recovery Effectiveness - SRE/ASRE	07 Includes Fault Indicator Display?	08 HERS Verification	09 Status
SFam IAQVentRpt	47	0.35	Exhaust	No	n/a / n/a	No	Yes	

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name:	Documentation Author Signature:
Iradj Rahnama	Iradj Rahnama
Company: I & A Engineering	Signature Date: 2023-11-01 15:59:03
Address: 1610 BLOSSOM HILL RD. SUITE E	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: San Jose, CA 95124	Phone: 408-268-9337

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design identified on this Certificate of Compliance.
2. I certify that the energy features and performance specifications identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
3. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.

Responsible Designer Name:	Responsible Designer Signature:
Iradj Rahnama	Iradj Rahnama
Company: I & A Engineering	Date Signed: 2023-11-01 15:59:03
Address: 1610 BLOSSOM HILL RD. SUITE E	License: N/A
City/State/Zip: San Jose, CA 95124	Phone: 408-268-9337

Digitally signed by CalCERTS. This digital signature is provided in order to secure the content of this registered document, and in no way implies Registration Provider responsibility for the accuracy of the information.

Easy to Verify at CalCERTS.com

I & A ENGINEERING
1610 BLOSSOM HILL ROAD, SUITE "6A"
SAN JOSE, CALIFORNIA 95124
TEL: (408) 268-9337
FAX: (408) 268-1135

Barnell Ave.
Morgan Hill, CA 95037

PROJECT: LJ COMMONS 4 PLEX

DRAWING TITLE: UNIT 2 TITLE 24

REV	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		
7		

JOB NO.: 23-113
CAD FILE:
DSGN'D BY: I. R.
DRAWN BY: J. T.
CHK'D BY: I. R.
APP'D BY: I. R.
DATE: 4/17/23
SCALE: AS NOTED
DRAWING NO.: T24-2-2
SHEET * OF *

RESIDENTIAL MEASURES SUMMARY — RMS-1

Project Name	Building Type		Date
Barnell Ave Unit 2	☑ Single Family ☐ Multi Family ☐ Addition Alone ☐ Existing+ Addition/Alteration		*11/1/2023*
Project Address	**California Energy Climate Zone**	**Total Cond. Floor Area**	**Addition**	**# of Units**
Barnell Ave Morgan Hill	*CA Climate Zone 04*	*870*	*n/a*	*1*

INSULATION

Construction	Type	Cavity	Area (ft^2)	Special Features	Status
Wall	*Wood Framed*	*R 20*	*925*		*New*
Door	*Opaque Door*	*R-5*	*20*		*New*
Slab	*Unheated Slab-on-Grade*	*- no insulation*	*438*	*Perim = 0'*	*New*
Demising	*Wood Framed Rafter*	*- no insulation*	*438*		*New*
Demising	*Wood Framed*	*- no insulation*	*339*		*New*
Demising	*Wood Framed w/o Crawl Space*	*- no insulation*	*432*		*New*
Roof	*Wood Framed Attic*	*R 38*	*432*	*Add=R-19.0*	*New*

FENESTRATION — Total Area: *139* — Glazing Percentage: *16.0%* — New/Altered Average U-Factor: *0.30*

Orientation	Area (ft^2)	U-Fac	SHGC	Overhang	Sidefins	Exterior Shades	Status
Left (SE)	*40.0*	*0.300*	*0.23*	*none*	*none*	*N/A*	*New*
Rear (SW)	*74.0*	*0.300*	*0.23*	*none*	*none*	*N/A*	*New*
Right (NW)	*25.0*	*0.300*	*0.23*	*none*	*none*	*N/A*	*New*

HVAC SYSTEMS

Qty.	Heating	Min. Eff	Cooling	Min. Eff	Thermostat	Status
1	*Electric Heat Pump*	*9.50 HSPF*	*Split Heat Pump*	*16.0 SEER*	*Setback*	*New*

HVAC DISTRIBUTION

Location	Heating	Cooling	Duct Location	Duct R-Value	Status
Undefined System	*Ducted*	*Ducted*	*Attic*	*8.0*	*New*

WATER HEATING

Qty.	Type	Gallons	Min. Eff	Distribution	Status
1	*Heat Pump*	*80*	*2.90*	*Standard*	*New*

2022 Single-Family Residential Mandatory Requirements Summary

NOTE: Single-family residential buildings subject to the Energy Codes must comply with all applicable mandatory measures, regardless of the compliance approach used. Review the respective section for more information.
(04/2022)

Building Envelope:

§ 110.6(a)1:	**Air Leakage.** Manufactured fenestration, exterior doors, and exterior pet doors must limit air leakage to 0.3 CFM per square foot or less when tested per NFRC-400, ASTM E283, or AAMA/WDMA/CSA 101/I.S.2/A440-2011. *
§ 110.6(a)5:	**Labeling.** Fenestration products and exterior doors must have a label meeting the requirements of § 10-111(a).
§ 110.6(b):	**Field fabricated exterior doors and fenestration** products must use U-factors and solar heat gain coefficient (SHGC) values from Tables 110.6-A, 110.6-B, or JA4.5 for exterior doors. They must be caulked and/or weather-stripped.
§ 110.7:	**Air Leakage.** All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be caulked, gasketed, or weather stripped.
§ 110.8(a):	**Insulation Certification by Manufacturers.** Insulation must be certified by the Department of Consumer Affairs, Bureau of Household Goods and Services (BHGS).
§ 110.8(g):	**Insulation Requirements for Heated Slab Floors.** Heated slab floors must be insulated per the requirements of § 110.8(g).
§ 110.8(i):	**Roofing Products Solar Reflectance and Thermal Emittance.** The thermal emittance and aged solar reflectance values of the roofing material must meet the requirements of § 110.8(i) and be labeled per §10-113 when the installation of a cool roof is specified on the CF1R.
§ 110.8(j):	**Radiant Barrier.** When required, radiant barriers must have an emittance of 0.05 or less and be certified to the Department of Consumer Affairs.
§ 150.0(a):	**Roof Deck, Ceiling and Rafter Roof Insulation.** Roof decks in newly constructed attics in climate zones 4 and 8-16 area-weighted average U-factor not exceeding U-0.184. Ceiling and rafter roofs minimum R-22 insulation in wood-frame ceiling; or area-weighted average U-factor must not exceed 0.043. Rafter roof alterations minimum R-19 or area-weighted average U-factor of 0.054 or less. Attic access doors must have permanently attached insulation using adhesive or mechanical fasteners. The attic access must be gasketed to prevent air leakage. Insulation must be installed in direct contact with a roof or ceiling which is sealed to limit infiltration and exfiltration, as specified in § 110.7, including but not limited to placing insulation either above or below the roof deck or on top of a drywall ceiling. *
§ 150.0(b):	**Loose-fill Insulation.** Loose fill insulation must meet the manufacturer's required density for the labeled R-value.
§ 150.0(c):	**Wall Insulation.** Minimum R-13 insulation in 2x4 inch wood framing wall or have a U-factor of 0.102 or less, or R-20 in 2x6 inch wood framing or have a U-factor of 0.071 or less. Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102. Masonry walls must meet Tables 150.1-A or B. *
§ 150.0(d):	**Raised-floor Insulation.** Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U-factor. *
§ 150.0(f):	**Slab Edge Insulation.** Slab edge insulation must meet all of the following: have a water absorption rate, for the insulation material alone without facings, no greater than 0.3 percent; have a water vapor permeance no greater than 2.0 perm per inch; be protected from physical damage and UV light deterioration; and, when installed as part of a heated slab floor, meet the requirements of § 110.8(g).
§ 150.0(g)1:	**Vapor Retarder.** In climate zones 1 through 16, the earth floor of unvented crawl space must be covered with a Class I or Class II vapor retarder. This requirement also applies to controlled ventilation crawl space for buildings complying with the exception to §150.0(d).
§ 150.0(g)2:	**Vapor Retarder.** In climate zones 14 and 16, a Class I or Class II vapor retarder must be installed on the conditioned space side of all insulation in all exterior walls, vented attics, and unvented attics with air-permeable insulation.
§ 150.0(q):	**Fenestration Products.** Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a maximum U-factor of 0.45; or area-weighted average U-factor of all fenestration must not exceed 0.45. *

Fireplaces, Decorative Gas Appliances, and Gas Log:

§ 110.5(e)	**Pilot Light.** Continuously burning pilot lights are not allowed for indoor and outdoor fireplaces.
§ 150.0(e)1:	**Closable Doors.** Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox.
§ 150.0(e)2:	**Combustion Intake.** Masonry or factory-built fireplaces must have a combustion outside air intake, which is at least six square inches in area and is equipped with a readily accessible, operable, and tight-fitting damper or combustion-air control device. *
§ 150.0(e)3:	**Flue Damper.** Masonry or factory-built fireplaces must have a flue damper with a readily accessible control. *

Space Conditioning, Water Heating, and Plumbing System:

§ 110.0-§ 110.3:	**Certification.** Heating, ventilation, and air conditioning (HVAC) equipment, water heaters, showerheads, faucets, and all other regulated appliances must be certified by the manufacturer to the California Energy Commission. *
§ 110.2(a):	**HVAC Efficiency.** Equipment must meet the applicable efficiency requirements in Table 110.2-A through Table 110.2-N. *
§ 110.2(b):	**Controls for Heat Pumps with Supplementary Electric Resistance Heaters.** Heat pumps with supplementary electric resistance heaters must have controls that prevent supplementary heater operation when the heating load can be met by the heat pump alone; and in which the cut-on temperature for compression heating is higher than the cut-on temperature for supplementary heating, and the cut-off temperature for compression heating is higher than the cut-off temperature for supplementary heating. *
§ 110.2(c):	**Thermostats.** All heating or cooling systems not controlled by a central energy management control system (EMCS) must have a setback thermostat. *
§ 110.3(c)3:	**Insulation.** Unfired service water heater storage tanks and solar water-heating backup tanks must have adequate insulation, or tank surface heat loss rating.
§ 110.3(c)6:	**Isolation Valves.** Instantaneous water heaters with an input rating greater than 6.8 kBtu per hour (2 kW) must have isolation valves with hose bibbs or other fittings on both cold and hot water lines to allow for flushing the water heater when the valves are closed.

2022 Single-Family Residential Mandatory Requirements Summary

§ 110.5:	**Pilot Lights.** Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces; household cooking appliances (except appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu per hour); and pool and spa heaters. *
§ 150.0(h)1:	**Building Cooling and Heating Loads.** Heating and/or cooling loads are calculated in accordance with the ASHRAE Handbook, Equipment Volume, Applications Volume, and Fundamentals Volume; the SMACNA Residential Comfort System Installation Standards Manual; or the ACCA Manual J using design conditions specified in § 150.0(h)2.
§ 150.0(h)3A:	**Clearances.** Air conditioner and heat pump outdoor condensing units must have a clearance of at least five feet from the outlet of any dryer.
§ 150.0(h)3B:	**Liquid Line Drier.** Air conditioners and heat pump systems must be equipped with liquid line filter driers if required, as specified by the manufacturer's instructions.
§ 150.0(j)1:	**Water Piping, Solar Water-heating System Piping, and Space Conditioning System Line Insulation.** All domestic hot water piping must be insulated as specified in § 609.11 of the California Plumbing Code. *
§ 150.0(j)2:	**Insulation Protection.** Piping insulation must be protected from damage, including that due to sunlight, moisture, equipment` maintenance, and wind as required by §120.3(b). Insulation exposed to weather must be water retardant and protected from UV light (no adhesive tapes). Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space must include, or be protected by, a Class I or Class II vapor retarder. Pipe insulation buried below grade must be installed in a waterproof and non-crushable casing or sleeve.
§ 150.0(n)1:	**Gas or Propane Water Heating Systems.** Systems using gas or propane water heaters to serve individual dwelling units must designate a space at least 2.5' x 2.5' x 7' suitable for the future installation of a heat pump water heater, and meet electrical and plumbing requirements, based on the distance between this designated space and the water heater location; and a condensate drain no more than 2" higher than the base of the water heater
§ 150.0(n)3:	**Solar Water-heating Systems.** Solar water-heating systems and collectors must be certified and rated by the Solar Rating and Certification Corporation (SRCC), the International Association of Plumbing and Mechanical Officials, Research and Testing (IAPMO R&T), or by a listing agency that is approved by the executive director.

Ducts and Fans:

§ 110.8(d)3:	**Ducts.** Insulation installed on an existing space-conditioning duct must comply with § 604.0 of the California Mechanical Code (CMC). If a contractor installs the insulation, the contractor must certify to the customer, in writing, that the insulation meets this requirement.
§ 150.0(m)1:	**CMC Compliance.** All air-distribution system ducts and plenums must meet CMC §§ 601.0-605.0 and ANSI/SMACNA-006-2006 HVAC Duct Construction Standards Metal and Flexible 3rd Edition. Portions of supply-air and return-air ducts and plenums must be insulated to R-6.0 or higher; ducts located entirely in conditioned space as confirmed through field verification and diagnostic testing (RA3.1.4.3.8) do not require insulation. Connections of metal ducts and inner core of flexible ducts must be mechanically fastened. Openings must be sealed with mastic, tape, or other duct-closure system that meets the applicable UL requirements, or aerosol sealant that meets UL 723. The combination of mastic and either mesh or tape must be used to seal openings greater than ¼", If mastic or tape is used. Building cavities, air handler support platforms, and plenums designed or constructed with materials other than sealed sheet metal, duct board or flexible duct must not be used to convey conditioned air. Building cavities and support platforms may contain ducts; ducts installed in these spaces must not be compressed. *
§ 150.0(m)2:	**Factory-Fabricated Duct Systems.** Factory-fabricated duct systems must comply with applicable requirements for duct construction, connections, and closures; joints and seams of duct systems and their components must not be sealed with cloth back rubber adhesive duct tapes unless such tape is used in combination with mastic and draw bands.
§ 150.0(m)3:	**Field-Fabricated Duct Systems.** Field-fabricated duct systems must comply with applicable requirements for: pressure-sensitive tapes, mastics, sealants, and other requirements specified for duct construction.
§ 150.0(m)7:	**Backdraft Damper.** Fan systems that exchange air between the conditioned space and outdoors must have backdraft or automatic dampers.
§ 150.0(m)8:	**Gravity Ventilating Dampers.** Gravity ventilating systems serving conditioned space must have either automatic or readily accessible, manually operated dampers in all openings to the outside, except combustion inlet and outlet air openings and elevator shaft vents.
§ 150.0(m)9:	**Protection of Insulation.** Insulation must be protected from damage due tosunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather must be suitable for outdoor service (e.g., protected by aluminum, sheet metal, painted canvas, or plastic cover). Cellular foam insulation must be protected as above or painted with a water retardant and solar radiation-resistant coating.
§ 150.0(m)10:	**Porous Inner Core Flex Duct.** Porous inner cores of flex ducts must have a non-porous layer or air barrier between the inner core and outer vapor barrier.
§ 150.0(m)11:	**Duct System Sealing and Leakage Test.** When space conditioning systems use forced air duct systems to supply conditioned air to an occupiable space, the ducts must be sealed and duct leakage tested, as confirmed through field verification and diagnostic testing, in accordance with Reference Residential Appendix RA3.1.
§ 150.0(m)12:	**Air Filtration.** Space conditioning systems with ducts exceeding 10 feet and the supply side of ventilation systems must have MERV 13 or equivalent filters. Filters for space conditioning systems must have a two inch depth or can be one inch if sized per Equation 150.0-A. Clean-filter pressure drop and labeling must meet the requirements in §150.0(m)12. Filters must be accessible for regular service. Filter racks or grilles must use gaskets, sealing, or other means to close gaps around the inserted filters to and prevents air from bypassing the filter. *

2022 Single-Family Residential Mandatory Requirements Summary

Ventilation and Indoor Air Quality:

§ 150.0(o)1:	**Requirements for Ventilation and Indoor Air Quality**. All dwelling units must meet the requirements of ASHRAE Standard 62.2, Ventilation and Acceptable Indoor Air Quality in Residential Buildings subject to the amendments specified in § 150.0(o)1. *
§ 150.0(o)1B:	**Central Fan Integrated (CFI) Ventilation Systems.** Continuous operation of CFI air handlers is not allowed to provide the whole-dwelling unit ventilation airflow required per §150.0(o)1C. A motorized damper(s) must be installed on the ventilation duct(s) that prevents all airflow through the space conditioning duct system when the damper(s) is closed andcontrolled per §150.0(o)1Biii&iv. CFI ventilation systems must have controls that track outdoor air ventilation run time, and either open or close the motorized damper(s) for compliance with §150.0(o)1C.
§ 150.0(o)1C:	**Whole-Dwelling Unit Mechanical Ventilation for Single-Family Detached and townhouses .** Single-family detached dwelling units, and attached dwelling units not sharing ceilings or floors with other dwelling units, occupiable spaces, public garages, or commercial spaces must have mechanical ventilation airflow specified in § 150.0(o)1Ci-iii.
§ 150.0(o)1G:	**Local Mechanical Exhaust.** Kitchens and bathrooms must have local mechanical exhaust; nonenclosed kitchens must have demand-controlled exhaust system meeting requirements of §150.0(o)1Giii,enclosed kitchens and bathrooms can use demand-controlled or continuous exhaust meeting §150.0(o)1Giii-iv. Airflow must be measured by the installer per §150.0(o)1Gv, and rated for sound per §150.0(o)1Gvi. *
§ 150.0(o)1H&I:	**Airflow Measurement and Sound Ratings of Whole-Dwelling Unit Ventilation Systems.** The airflow required per § 150.0(o)1C must be measured by using a flow hood, flow grid, or other airflow measuring device at the fan's inlet or outlet terminals/grilles per Reference Residential Appendix RA3.7. Whole-Dwelling unit ventilation systems must be rated for sound per ASHRAE 62.2 §7.2 at no less than the minimum airflow rate required by §150.0(o)1C.
§ 150.0(o)2:	**Field Verification and Diagnostic Testing.** Whole-Dwelling Unit ventilation airflow, vented range hood airflow and sound rating, and HRV and ERV fan efficacy must be verified in accordance with Reference Residential Appendix RA3.7. Vented range hoods must be verified per Reference Residential Appendix RA3.7.4.3 to confirm if it is rated by HVI or AHAM to comply with the airflow rates and sound requirements per §150.0(o)1G

Pool and Spa Systems and Equipment:

§ 110.4(a):	**Certification by Manufacturers.** Any pool or spa heating system or equipment must be certified to have all of the following: compliance with the Appliance Efficiency Regulations and listing in MAEDbS; an on-off switch mounted outside of the heater that allows shutting off the heater without adjusting the thermostat setting; a permanent weatherproof plate or card with operating instructions; and must not use electric resistance heating. *
§ 110.4(b)1:	**Piping.** Any pool or spa heating system or equipment must be installed with at least 36 inches of pipe between the filter and the heater, or dedicated suction and return lines, or built-in or built-up connections to allow for future solar heating.
§ 110.4(b)2:	**Covers.** Outdoor pools or spas that have a heat pump or gas heater must have a cover.
§ 110.4(b)3:	**Directional Inlets and Time Switches for Pools.** Pools must have directional inlets that adequately mix the pool water, and a time switch that will allow all pumps to be set or programmed to run only during off-peak electric demand periods.
§ 110.5:	**Pilot Light.** Natural gas pool and spa heaters must not have a continuously burning pilot light.
§ 150.0(p):	**Pool Systems and Equipment Installation.** Residential pool systems or equipment must meet the specified requirements for pump sizing, flow rate, piping, filters, and valves. *

Lighting:

§ 110.9:	**Lighting Controls and Components.** All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirements of § 110.9. *
§ 150.0(k)1A:	**Luminaire Efficacy.** All installed luminaires must meet the requirements in Table 150.0-A, except lighting integral to exhaust fans, kitchen range hoods, bath vanity mirrors, and garage door openers; navigation lighting less than 5 watts; and lighting internal to drawers, cabinets, and linen closets with an efficacy of at least 45 lumens per watt.
§ 150.0(k)1B:	**Screw based luminaires.** Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8. *
§ 150.0(k)1C:	**Recessed Downlight Luminaires in Ceilings.** Luminaires recessed into ceilings must not contain screw based sockets, must be airtight, and must be sealed with a gasket or caulk. California Electrical Code § 410.116 must also be met.
§ 150.0(k)1D:	**Light Sources in Enclosed or Recessed Luminaires.** Lamps and other separable light sources that are not compliant with the JA8 elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
§ 150.0(k)1E:	**Blank Electrical Boxes.** The number of electrical boxes that are more than five feet above the finished floor and do not contain a luminaire or other device shall be no more than the number of bedrooms. These boxes must be served by a dimmer, vacancy sensor control, low voltage wiring, or fan speed control.
§ 150.0(k)1F:	**Lighting Integral to Exhaust Fans.** Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.0(k). *

2022 Single-Family Residential Mandatory Requirements Summary

§ 150.0(k)1G:	**Screw based luminaires.** Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8. *
§ 150.0(k)1H:	**Light Sources in Enclosed or Recessed Luminaires.** Lamps and other separable light sources that are not compliant with the JA8 elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
§ 150.0(k)1I:	**Light Sources in Drawers, Cabinets, and Linen Closets.** Light sources internal to drawers, cabinetry or linen closets are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, emit no more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is closed.
§ 150.0(k)2A:	**Interior Switches and Controls.** All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A.
§ 150.0(k)2B:	**Interior Switches and Controls.** Exhaust fans must be controlled separately from lighting systems. *
§ 150.0(k)2A:	**Accessible Controls.** Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually turned on and off. *
§ 150.0(k)2B:	**Multiple Controls.** Controls must not bypass a dimmer, occupant sensor, or vacancy sensor function if the dimmer or sensor is installed to comply with § 150.0(k).
§ 150.0(k)2C:	**Mandatory Requirements.** Lighting controls must comply with the applicable requirements of § 110.9.
§ 150.0(k)2D:	**Energy Management Control Systems.** An energy management control system (EMCS) may be used to comply with dimming, occupancy, and control requirements if it provides the functionality of the specified control per § 110.9 and the physical controls specified in § 150.0(k)2A.
§ 150.0(k)2E:	**Automatic Shutoff Controls.** In bathrooms, garages, laundry rooms, utility rooms and walk-in closets, at least one installed luminaire must be controlled by an occupancy or vacancy sensor providing automatic-off functionality. Lighting inside drawers and cabinets with opaque fronts or doors must have controls that turn the light off when the drawer or door is closed.
§ 150.0(k)2F:	**Dimmers.** Lighting in habitable spaces (e.g., living rooms, dining rooms, kitchens, and bedrooms) must have readily accessible wall-mounted dimming controls that allow the lighting to be manually adjusted up and down. Forward phase cut dimmers controlling LED light sources in these spaces must comply with NEMA SSL 7A.
§ 150.0(k)2K:	**Independent controls.** Integrated lighting of exhaust fans shall be controlled independently from the fans. Lighting under cabinets or shelves, lighting in display cabinets, and switched outlets must be controlled separately from ceiling-installed lighting.
§ 150.0(k)3A:	**Residential Outdoor Lighting.** For single-family residential buildings, outdoor lighting permanently mounted to a residential building, or to other buildings on the same lot, must have a manual on/off switch and either a photocell and motion sensor or automatic time switch control) or an astronomical time clock. An energy management control system that provides the specified control functionality and meets all applicable requirements may be used to meet these requirements.
§ 150.0(k)4:	**Internally illuminated address signs.** Internally illuminated address signs must either comply with § 140.8 or consume no more than 5 watts of power.
§ 150.0(k)5:	**Residential Garages for Eight or More Vehicles.** Lighting for residential parking garages for eight or more vehicles must comply with the applicable requirements for nonresidential garages in §§ 110.9, 130.0, 130.1, 130.4, 140.6, and 141.0.

Solar Readiness:

§ 110.10(a)1:	**Single-family Residences.** Single-family residences located in subdivisions with 10 or more single-family residences and where the application for a tentative subdivision map for the residences has been deemed complete and approved by the enforcement agency, which do not have a photovoltaic system installed, must comply with the requirements of § 110.10(b)-(e).
§110.10(b)1A:	**Minimum Solar Zone Area.** The solar zone must have a minimum total area as described below. The solar zone must comply with access, pathway, smoke ventilation, and spacing requirements as specified in Title 24, Part 9 or other parts of Title 24 or in any requirements adopted by a local jurisdiction. The solar zone total area must be comprised of areas that have no dimension less than 5 feet and are no less than 80 square feet each for buildings with roof areas less than or equal to 10,000 square feet or no less than 160 square feet each for buildings with roof areas greater than 10,000 square feet. For single-family residences, the solar zone must be located on the roof or overhang of the building and have a total area no less than 250 square feet. *
§ 110.10(b)2:	**Azimuth.** All sections of the solar zone located on steep-sloped roofs must have an azimuth between 90-300° of true north.
§ 110.10(b)3A:	**Shading.** The solar zone must not contain any obstructions, including but not limited to: vents, chimneys, architectural features, and roof mounted equipment.
§ 110.10(b)3B:	**Shading.** Any obstruction located on the roof or any other part of the building that projects above a solar zone must be located at least twice the horizontal distance of the height difference between the highest point of the obstruction and the horizontal projection of the nearest point of the solar zone, measured in the vertical plane.
§ 110.10(b)4:	**Structural Design Loads on Construction Documents.** For areas of the roof designated as a solar zone, the structural design loads for roof dead load and roof live load must be clearly indicated on the construction documents.
§ 110.10(c):	**Interconnection Pathways.** The construction documents must indicate: a location reserved for inverters and metering equipment and a pathway reserved for routing of conduit from the solar zone to the point of interconnection with the electrical service; and for single-family residences and central water-heating systems, a pathway reserved for routing plumbing from the solar zone to the water-heating system.
§ 110.10(d):	**Documentation.** A copy of the construction documents or a comparable document indicating the information from § 110.10(b)-(c) must be provided to the occupant.
§ 110.10(e)1:	**Main Electrical Service Panel.** The main electrical service panel must have a minimum busbar rating of 200 amps.
§ 110.10(e)2:	**Main Electrical Service Panel.** The main electrical service panel must have a reserved space to allow for the installation of a double pole circuit breaker for a future solar electric installation. The reserved space must be permanently marked as "For Future Solar Electric."

Electric and Energy Storage Ready:

2022 Single-Family Residential Mandatory Requirements Summary

§ 150.0(s)	**Energy Storage System (ESS) Ready.** All single-family residences must meet all of the following: Either ESS-ready interconnection equipment with backed up capacity of 60 amps or more and four or more ESS supplied branch circuits, or a dedicated raceway from the main service to a subpanel that supplies the branch circuits in § 150.0(s); at least four branch circuits must be identified and have their source collocated at a single panelboard suitable to be supplied by the ESS, with one circuit supplying the refrigerator, one lighting circuit near the primary exit, and one circuit supplying a sleeping room receptacle outlet; main panelboard must have a minimum busbar rating of 225 amps; sufficient space must be reserved to allow future installation of a system isolation equipment/transfer switch within 3' of the main panelboard, with raceways installed between the panelboard and the switch location to allow the connection of backup power source.
§ 150.0(t)	**Heat Pump Space Heater Ready.** Systems using gas or propane furnaces to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the furnace with circuit conductors rated at least 30 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."
§ 150.0(u)	**Electric Cooktop Ready.** Systems using gas or propane cooktop to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the cooktop with circuit conductors rated at least 50 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."
§ 150.0(v)	**Electric Clothes Dryer Ready.** Clothes dryer locations with gas or propane plumbing to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the dryer location with circuit conductors rated at least 30 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."

*Exceptions may apply.

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Barnell Ave.
Morgan Hill, CA 95037

PROJECT: LJ COMMONS 4 PLEX

DRAWING TITLE: UNIT 2 TITLE 24

REV	DATE	DESCRIPTION
△		
△		
△		
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JOB NO.: 23-113
CAD FILE:
DSGN'D BY: I. R. | DRAWN BY: J. T.
CHK'D BY: I. R. | APP'D BY: I. R.
DATE: 4/17/23 | SCALE: AS NOTED
DRAWING NO.: T24-2-3
SHEET * OF *

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01E**

Project Name: Barnell Ave Unit 3 **Calculation Date/Time:** 2023-11-01T16:04:15-07:00 **(Page 1 of 13)**

Calculation Description: Title 24 Analysis **Input File Name:** BARNELL AVE - UNIT 3.ribd22x

GENERAL INFORMATION					
01	**Project Name**	Barnell Ave Unit 3			
02	**Run Title**	Title 24 Analysis			
03	**Project Location**	Barnell Ave			
04	**City**	Morgan Hill	05	**Standards Version**	2022
06	**Zip code**	95037	07	**Software Version**	EnergyPro 9.2
08	**Climate Zone**	4	09	**Front Orientation (deg/ Cardinal)**	0
10	**Building Type**	Single family	11	**Number of Dwelling Units**	1
12	**Project Scope**	Newly Constructed	13	**Number of Bedrooms**	2
14	**Addition Cond. Floor Area (ft²)**	0	15	**Number of Stories**	2
16	**Existing Cond. Floor Area (ft²)**	n/a	17	**Fenestration Average U-factor**	0.3
18	**Total Cond. Floor Area (ft²)**	870	19	**Glazing Percentage (%)**	9.20%
20	**ADU Bedroom Count**	n/a	21	**ADU Conditioned Floor Area**	n/a
22	**Fuel Type**	Natural gas	23	**No Dwelling Units:**	No

COMPLIANCE RESULTS	
01	**Building Complies with Computer Performance**
02	**This building incorporates features that require field testing and/or verification by a certified HERS rater under the supervision of a CEC-approved HERS provider.**
03	**This building incorporates one or more Special Features shown below**

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01E**

Project Name: Barnell Ave Unit 3 **Calculation Date/Time:** 2023-11-01T16:04:15-07:00 **(Page 2 of 13)**

Calculation Description: Title 24 Analysis **Input File Name:** BARNELL AVE - UNIT 3.ribd22x

ENERGY DESIGN RATINGS

	Energy Design Ratings			Compliance Margins		
	Source Energy (EDR1)	Efficiency[1] EDR (EDR2efficiency)	Total[2] EDR (EDR2total)	Source Energy (EDR1)	Efficiency[1] EDR (EDR2efficiency)	Total[2] EDR (EDR2total)
Standard Design	39.7	49	35.1			
Proposed Design	39	46.3	33.6	0.7	2.7	1.5

RESULT[3]: PASS

[1]Efficiency EDR includes improvements like a better building envelope and more efficient equipment
[2]Total EDR includes efficiency and demand response measures such as photovoltaic (PV) system and batteries
[3]Building complies when source energy, efficiency and total compliance margins are greater than or equal to zero and unmet load hour limits are not exceeded

- Standard Design PV Capacity: 2.04 kWdc
- PV System resized to 2.04 kWdc (a factor of 2.044) to achieve Standard Design PV PV sizing

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01E**

Project Name: Barnell Ave Unit 3 **Calculation Date/Time:** 2023-11-01T16:04:15-07:00 **(Page 3 of 13)**

Calculation Description: Title 24 Analysis **Input File Name:** BARNELL AVE - UNIT 3.ribd22x

ENERGY USE SUMMARY

Energy Use	Standard Design Source Energy (EDR1) (kBtu/ft²-yr)	Standard Design TDV Energy (EDR2) (kTDV/ft²-yr)	Proposed Design Source Energy (EDR1) (kBtu/ft²-yr)	Proposed Design TDV Energy (EDR2) (kTDV/ft²-yr)	Compliance Margin (EDR1)	Compliance Margin (EDR2)
Space Heating	0.65	3.02	1.54	12.24	-0.89	-9.22
Space Cooling	0.91	25.99	0.57	19.72	0.34	6.27
IAQ Ventilation	0.42	4.49	0.42	4.49	0	0
Water Heating	2.64	27.45	1.87	21.19	0.77	6.26
Self Utilization/Flexibility Credit				0		0
Efficiency Compliance Total	**4.62**	**60.95**	**4.4**	**57.64**	**0.22**	**3.31**
Photovoltaics	-2.06	-69.81	-2.06	-69.69		
Battery			0	0		
Flexibility						
Indoor Lighting	0.9	8.88	0.9	8.88		
Appl. & Cooking	5.99	39.2	5.92	38.46		
Plug Loads	5.2	54.07	5.2	54.07		
Outdoor Lighting	0.2	1.85	0.2	1.85		
TOTAL COMPLIANCE	**14.85**	**95.14**	**14.56**	**91.21**		

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01E**

Project Name: Barnell Ave Unit 3 **Calculation Date/Time:** 2023-11-01T16:04:15-07:00 **(Page 4 of 13)**

Calculation Description: Title 24 Analysis **Input File Name:** BARNELL AVE - UNIT 3.ribd22x

ENERGY USE INTENSITY

	Standard Design (kBtu/ft² - yr)	Proposed Design (kBtu/ft² - yr)	Compliance Margin (kBtu/ft² - yr)	Margin Percentage
Gross EUI[1]	21.5	20.96	0.54	2.51
Net EUI[2]	8.8	8.26	0.54	6.14

Notes
1. Gross EUI is Energy Use Total (not including PV) / Total Building Area.
2. Net EUI is Energy Use Total (including PV) / Total Building Area.

REQUIRED PV SYSTEMS

01	02	03	04	05	06	07	08	09	10	11	12
DC System Size (kWdc)	**Exception**	**Module Type**	**Array Type**	**Power Electronics**	**CFI**	**Azimuth (deg)**	**Tilt Input**	**Array Angle (deg)**	**Tilt: (x in 12)**	**Inverter Eff. (%)**	**Annual Solar Access (%)**
2.04	NA	Standard (14-17%)	Fixed	none	true	150-270	n/a	n/a	<=7:12	96	98

REQUIRED SPECIAL FEATURES

The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.

- Insulation below roof deck
- Northwest Energy Efficiency Alliance (NEEA) rated heat pump water heater; specific brand/model, or equivalent, must be installed

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01E**

Project Name: Barnell Ave Unit 3 **Calculation Date/Time:** 2023-11-01T16:04:15-07:00 **(Page 5 of 13)**

Calculation Description: Title 24 Analysis **Input File Name:** BARNELL AVE - UNIT 3.ribd22x

HERS FEATURE SUMMARY

The following is a summary of the features that must be field-verified by a certified HERS Rater as a condition for meeting the modeled energy performance for this computer analysis. Additional detail is provided in the building tables below. Registered CF2Rs and CF3Rs are required to be completed in the HERS Registry

- Indoor air quality ventilation
- Kitchen range hood
- Minimum Airflow
- Verified EER/EER2
- Verified SEER/SEER2
- Fan Efficacy Watts/CFM
- Verified HSPF
- Verified heat pump rated heating capacity
- Duct leakage testing

BUILDING - FEATURES INFORMATION

01	02	03	04	05	06	07
Project Name	**Conditioned Floor Area (ft²)**	**Number of Dwelling Units**	**Number of Bedrooms**	**Number of Zones**	**Number of Ventilation Cooling Systems**	**Number of Water Heating Systems**
Barnell Ave Unit 3	870	1	2	2	0	1

ZONE INFORMATION

01	02	03	04	05	06	07
Zone Name	**Zone Type**	**HVAC System Name**	**Zone Floor Area (ft²)**	**Avg. Ceiling Height**	**Water Heating System 1**	**Status**
1st Flr Zone	Conditioned	Undefined System1	438	9	DHW Sys 1	New
2nd Flr Zone	Conditioned	Undefined System1	432	9	DHW Sys 1	New

OPAQUE SURFACES

01	02	03	04	05	06	07	08
Name	**Zone**	**Construction**	**Azimuth**	**Orientation**	**Gross Area (ft²)**	**Window and Door Area (ft2)**	**Tilt (deg)**
SE Exterior Wall	1st Flr Zone	R-21 Wall	135	n/a	153	40	90
NW Exterior Wall	1st Flr Zone	R-21 Wall	315	n/a	35	20	90
NW Exterior Wall 2	1st Flr Zone	R-21 Wall	315	n/a	87	10	90

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01E**

Project Name: Barnell Ave Unit 3 **Calculation Date/Time:** 2023-11-01T16:04:15-07:00 **(Page 6 of 13)**

Calculation Description: Title 24 Analysis **Input File Name:** BARNELL AVE - UNIT 3.ribd22x

OPAQUE SURFACES

01	02	03	04	05	06	07	08
Name	**Zone**	**Construction**	**Azimuth**	**Orientation**	**Gross Area (ft²)**	**Window and Door Area (ft2)**	**Tilt (deg)**
NW Exterior Wall 3	1st Flr Zone	R-21 Wall	315	n/a	32	0	90
NW Exterior Wall 4	2nd Flr Zone	R-21 Wall	315	n/a	110	15	90
SE Exterior Wall 2	2nd Flr Zone	R-21 Wall	135	n/a	153	15	90
NW Exterior Wall 5	2nd Flr Zone	R-21 Wall	315	n/a	44	0	90
WALL Interior Surface	1st Flr Zone	R-0 Wall	n/a	n/a	140	0	n/a
WALL Interior Surface 2	1st Flr Zone	R-0 Wall	n/a	n/a	140	0	n/a
WALL Interior Surface 3	1st Flr Zone	R-0 Wall	n/a	n/a	86	0	n/a
WALL Interior Surface 4	1st Flr Zone	R-0 Wall	n/a	n/a	80	0	n/a
WALL Interior Surface 5	2nd Flr Zone	R-0 Wall	n/a	n/a	119	0	n/a
WALL Interior Surface 6	2nd Flr Zone	R-0 Wall	n/a	n/a	98	0	n/a
WALL Interior Surface 7	2nd Flr Zone	R-0 Wall	n/a	n/a	95	0	n/a
WALL Interior Surface 8	2nd Flr Zone	R-0 Wall	n/a	n/a	51	0	n/a
Roof	2nd Flr Zone	R-38 HP Attic	n/a	n/a	69	n/a	n/a
Roof 2	2nd Flr Zone	R-38 HP Attic	n/a	n/a	114	n/a	n/a
Roof 3	2nd Flr Zone	R-38 HP Attic	n/a	n/a	161	n/a	n/a
Roof 4	2nd Flr Zone	R-38 HP Attic	n/a	n/a	54	n/a	n/a
Roof 5	2nd Flr Zone	R-38 HP Attic	n/a	n/a	34	n/a	n/a
CELING Interior Surface	1st Flr Zone	R-0 Roof No Attic	n/a	n/a	311	n/a	n/a
CELING Interior Surface 2	1st Flr Zone	R-0 Roof No Attic	n/a	n/a	95	n/a	n/a
CELING Interior Surface 3	1st Flr Zone	R-0 Roof No Attic	n/a	n/a	32	n/a	n/a
FLOOR Interior Surface	2nd Flr Zone	R-0 Floor No Crawlspace	n/a	n/a	69	n/a	n/a
FLOOR Interior Surface 2	2nd Flr Zone	R-0 Floor No Crawlspace	n/a	n/a	114	n/a	n/a
FLOOR Interior Surface 3	2nd Flr Zone	R-0 Floor No Crawlspace	n/a	n/a	161	n/a	n/a

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01E**

Project Name: Barnell Ave Unit 3 **Calculation Date/Time:** 2023-11-01T16:04:15-07:00 **(Page 7 of 13)**

Calculation Description: Title 24 Analysis **Input File Name:** BARNELL AVE - UNIT 3.ribd22x

OPAQUE SURFACES

01	02	03	04	05	06	07	08
Name	**Zone**	**Construction**	**Azimuth**	**Orientation**	**Gross Area (ft²)**	**Window and Door Area (ft2)**	**Tilt (deg)**
FLOOR Interior Surface 4	2nd Flr Zone	R-0 Floor No Crawlspace	n/a	n/a	54	n/a	n/a
FLOOR Interior Surface 5	2nd Flr Zone	R-0 Floor No Crawlspace	n/a	n/a	34	n/a	n/a

ATTIC

01	02	03	04	05	06	07	08
Name	**Construction**	**Type**	**Roof Rise (x in 12)**	**Roof Reflectance**	**Roof Emittance**	**Radiant Barrier**	**Cool Roof**
Attic 2nd Flr Zone	Attic Roof2nd Flr Zone	Ventilated	6	0.1	0.85	No	No

FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10	11	12	13	14
Name	**Type**	**Surface**	**Orientation**	**Azimuth**	**Width (ft)**	**Height (ft)**	**Mult.**	**Area (ft²)**	**U-factor**	**U-factor Source**	**SHGC**	**SHGC Source**	**Exterior Shading**
Window	Window	SE Exterior Wall		135			1	40	0.3	NFRC	0.23	NFRC	Bug Screen
Window 2	Window	NW Exterior Wall 2		315			1	10	0.3	NFRC	0.23	NFRC	Bug Screen
Window 3	Window	NW Exterior Wall 4		315			1	15	0.3	NFRC	0.23	NFRC	Bug Screen
Window 4	Window	SE Exterior Wall 2		135			1	15	0.3	NFRC	0.23	NFRC	Bug Screen

OPAQUE DOORS

01	02	03	04
Name	**Side of Building**	**Area (ft²)**	**U-factor**
Door	NW Exterior Wall	20	0.2

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Morgan Hill, CA 95037

PROJECT: LJ COMMONS 4 PLEX

DRAWING TITLE: UNIT 3 TITLE 24

REV	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		
7		

JOB NO.: 23-113
CAD FILE:
DSGN'D BY: I. R.
DRAWN BY: J. T.
CHK'D BY: I. R.
APP'D BY: I. R.
DATE: 4/17/23
SCALE: AS NOTED

DRAWING NO.: T24-3-1

SHEET_*_OF_*

SLAB FLOORS

01	02	03	04	05	06	07	08
Name	Zone	Area (ft^2)	Perimeter (ft)	Edge Insul. R-value and Depth	Edge Insul. R-value and Depth	Carpeted Fraction	Heated
Slab-on-Grade	1st Flr Zone	311	0.1	none	0	80%	No
Slab-on-Grade 2	1st Flr Zone	95	0.1	none	0	80%	No
Slab-on-Grade 3	1st Flr Zone	32	0.1	none	0	80%	No

OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07	08
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Interior / Exterior Continuous R-value	U-factor	Assembly Layers
R-21 Wall	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O. C.	R-21	None / None	0.069	Inside Finish: Gypsum Board Cavity / Frame: R-21 / 2x6 Exterior Finish: 3 Coat Stucco
R-0 Wall	Interior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-0	None / None	0.277	Inside Finish: Gypsum Board Cavity / Frame: no insul. / 2x4 Other Side Finish: Gypsum Board
Attic Roof2nd Flr Zone	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-19	None / 0	0.059	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: R-13.0 / 2x4 Around Roof Joists: R-6.0 insul.
R-38 HP Attic	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-38	None / None	0.025	Over Ceiling Joists: R-28.9 insul. Cavity / Frame: R-9.1 / 2x4 Inside Finish: Gypsum Board

HVAC HEAT PUMPS - HERS VERIFICATION

01	02	03	04	05	06	07	08	09
Name	Verified Airflow	Airflow Target	Verified EER/EER2	Verified SEER/SEER2	Verified Refrigerant Charge	Verified HSPF/HSPF2	Verified Heating Cap 47	Verified Heating Cap 17
Heat Pump System 1-hers-htpump	Required	350	Required	Required	No	Yes	Yes	Yes

HVAC - DISTRIBUTION SYSTEMS

01	02	03	04	05	06	07	08	09	10	11	12
Name	Type	Design Type	Duct Ins. R-value		Duct Location		Surface Area		Bypass Duct	Duct Leakage	HERS Verification
			Supply	Return	Supply	Return	Supply	Return			
Air Distribution System 1	Unconditioned attic	Non-Verified	R-8	R-8	Attic	Attic	n/a	n/a	No Bypass Duct	Sealed and Tested	Air Distribution System 1-hers-dist

HVAC DISTRIBUTION - HERS VERIFICATION

01	02	03	04	05	06	07	08	09
Name	Duct Leakage Verification	Duct Leakage Target (%)	Verified Duct Location	Verified Duct Design	Buried Ducts	Deeply Buried Ducts	Low-leakage Air Handler	Low Leakage Ducts Entirely in Conditioned Space
Air Distribution System 1-hers-dist	Yes	5.0	Not Required	Not Required	Not Required	Credit not taken	Not Required	No

HVAC - FAN SYSTEMS

01	02	03	04
Name	Type	Fan Power (Watts/CFM)	Name
HVAC Fan 1	HVAC Fan	0.45	HVAC Fan 1-hers-fan

OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07	08
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Interior / Exterior Continuous R-value	U-factor	Assembly Layers
R-0 Floor No Crawlspace	Interior Floors	Wood Framed Floor	2x12 @ 16 in. O. C.	R-0	None / None	0.196	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x12 Ceiling Below Finish: Gypsum Board
R-0 Roof No Attic	Interior Ceiling	Wood Framed Ceiling	2x4 @ 16 in. O. C.	R-0	None / None	0.202	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x4 Ceiling Below Finish: Gypsum Board

BUILDING ENVELOPE - HERS VERIFICATION

01	02	03	04	05
Quality Insulation Installation (QII)	High R-value Spray Foam Insulation	Building Envelope Air Leakage	CFM50	CFM50
Not Required	Not Required	N/A	n/a	n/a

WATER HEATING SYSTEMS

01	02	03	04	05	06	07	08	09
Name	System Type	Distribution Type	Water Heater Name	Number of Units	Solar Heating System	Compact Distribution	HERS Verification	Water Heater Name (#)
DHW Sys 1	Domestic Hot Water (DHW)	Standard	DHW Heater 1	1	n/a	None	n/a	DHW Heater 1 (1)

HVAC FAN SYSTEMS - HERS VERIFICATION

01	02	03
Name	Verified Fan Watt Draw	Required Fan Efficacy (Watts/CFM)
HVAC Fan 1-hers-fan	Required	0.45

INDOOR AIR QUALITY (IAQ) FANS

01	02	03	04	05	06	07	08	09
Dwelling Unit	Airflow (CFM)	Fan Efficacy (W/CFM)	IAQ Fan Type	Includes Heat/Energy Recovery?	IAQ Recovery Effectiveness - SRE/ASRE	Includes Fault Indicator Display?	HERS Verification	Status
5fam IAQVentRpt	47	0.35	Exhaust	No	n/a / n/a	No	Yes	

WATER HEATERS - NEEA HEAT PUMP

01	02	03	04	05	06	07	08
Name	# of Units	Tank Vol. (gal)	NEEA Heat Pump Brand	NEEA Heat Pump Model	Tank Location	Duct Inlet Air Source	Duct Outlet Air Source
DHW Heater 1	1	80	A. O. Smith	HPTU 80N 120 (80 gal)	Outside	1st Flr Zone	1st Flr Zone

WATER HEATING - HERS VERIFICATION

01	02	03	04	05	06	07
Name	Pipe Insulation	Parallel Piping	Compact Distribution	Compact Distribution Type	Recirculation Control	Shower Drain Water Heat Recovery
DHW Sys 1 - 1/1	Not Required	Not Required	Not Required	None	Not Required	Not Required

SPACE CONDITIONING SYSTEMS

01	02	03	04	05	06	07	08	09
Name	System Type	Heating Unit Name	Heating Equipment Count	Cooling Unit Name	Cooling Equipment Count	Fan Name	Distribution Name	Required Thermostat Type
Undefined System1	Heat pump heating cooling	Heat Pump System 1	1	Heat Pump System 1	1	HVAC Fan 1	Air Distribution System 1	Setback

HVAC - HEAT PUMPS

01	02	03	04	05	06	07	08	09	10	11	12	13
Name	System Type	Number of Units	Heating				Cooling			Zonally Controlled	Compressor Type	HERS Verification
			Heating Efficiency Type	HSPF/HSPF2/COP	Cap 47	Cap 17	Cooling Efficiency Type	SEER/SEER2	EER/EER2/CEER			
Heat Pump System 1	Central split HP	1	HSPF	9.5	60000	50000	EERSEER	16	12.5	Not Zonal	Single Speed	Heat Pump System 1-hers-htpump

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I, I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Iradj Rahnama	Documentation Author Signature: Iradj Rahnama
Company: I & A Engineering	Signature Date: 2023-11-01 16:10:17
Address: 1610 BLOSSOM HILL RD. SUITE E	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: San Jose, CA 95124	Phone: 408-268-9337

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design identified on this Certificate of Compliance.
2. I certify that the energy features and performance specifications identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
3. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.

Responsible Designer Name: Iradj Rahnama	Responsible Designer Signature: Iradj Rahnama
Company: I & A Engineering	Date Signed: 2023-11-01 16:10:17
Address: 1610 BLOSSOM HILL RD. SUITE E	License: N/A
City/State/Zip: San Jose, CA 95124	Phone: 408-268-9337

Digitally signed by CalCERTS. This digital signature is provided in order to secure the content of this registered document, and in no way implies Registration Provider responsibility for the accuracy of the information.

Easy to Verify at CalCERTS.com

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TEL: (408) 268-9337
FAX: (408) 268-1135

Barnell Ave.
Morgan Hill, CA 95037

PROJECT: LJ COMMONS 4 PLEX

DRAWING TITLE: UNIT 3 TITLE 24

REV	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		
7		

JOB NO.: 23-113
CAD FILE:
DSGN'D BY: I. R. | DRAWN BY: J. T.
CHK'D BY: I. R. | APP'D BY: I. R.
DATE: 4/17/23 | SCALE: AS NOTED
DRAWING NO.: T24-3-2
SHEET * OF *

RESIDENTIAL MEASURES SUMMARY — RMS-1

Project Name	Building Type		Date
Barnell Ave Unit 3	☑ Single Family ☐ Multi Family	☐ Addition Alone ☐ Existing+ Addition/Alteration	*11/1/2023*

Project Address	California Energy Climate Zone	Total Cond. Floor Area	Addition	# of Units
Barnell Ave Morgan Hill	*CA Climate Zone 04*	*870*	*n/a*	*1*

INSULATION

Construction	Type	Cavity	Area (ft^2)	Special Features	Status
Wall	*Wood Framed*	*R 20*	*514*		*New*
Door	*Opaque Door*	*R-5*	*20*		*New*
Slab	*Unheated Slab-on-Grade*	*- no insulation*	*438*	*Perim = 0'*	*New*
Demising	*Wood Framed Rafter*	*- no insulation*	*438*		*New*
Demising	*Wood Framed*	*- no insulation*	*809*		*New*
Demising	*Wood Framed w/o Crawl Space*	*- no insulation*	*432*		*New*
Roof	*Wood Framed Attic*	*R 38*	*432*	*Add=R-19.0*	*New*

FENESTRATION — Total Area: *80* | Glazing Percentage: *9.2%* | New/Altered Average U-Factor: *0.30*

Orientation	Area (ft^2)	U-Fac	SHGC	Overhang	Sidefins	Exterior Shades	Status
Left (SE)	*55.0*	*0.300*	*0.23*	*none*	*none*	*N/A*	*New*
Right (NW)	*25.0*	*0.300*	*0.23*	*none*	*none*	*N/A*	*New*

HVAC SYSTEMS

Qty.	Heating	Min. Eff	Cooling	Min. Eff	Thermostat	Status
1	*Electric Heat Pump*	*9.50 HSPF*	*Split Heat Pump*	*16.0 SEER*	*Setback*	*New*

HVAC DISTRIBUTION

Location	Heating	Cooling	Duct Location	Duct R-Value	Status
Undefined System	*Ducted*	*Ducted*	*Attic*	*8.0*	*New*

WATER HEATING

Qty.	Type	Gallons	Min. Eff	Distribution	Status
1	*Heat Pump*	*80*	*2.90*	*Standard*	*New*

2022 Single-Family Residential Mandatory Requirements Summary

NOTE: Single-family residential buildings subject to the Energy Codes must comply with all applicable mandatory measures, regardless of the compliance approach used. Review the respective section for more information.
(04/2022)

Building Envelope:

§ 110.6(a)1:	**Air Leakage.** Manufactured fenestration, exterior doors, and exterior pet doors must limit air leakage to 0.3 CFM per square foot or less when tested per NFRC-400, ASTM E283, or AAMA/WDMA/CSA 101/I.S.2/A440-2011. *
§ 110.6(a)5:	**Labeling.** Fenestration products and exterior doors must have a label meeting the requirements of § 10-111(a).
§ 110.6(b):	**Field fabricated exterior doors and fenestration** products must use U-factors and solar heat gain coefficient (SHGC) values from Tables 110.6-A, 110.6-B, or JA4.5 for exterior doors. They must be caulked and/or weather-stripped.
§ 110.7:	**Air Leakage.** All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be caulked, gasketed, or weather stripped.
§ 110.8(a):	**Insulation Certification by Manufacturers.** Insulation must be certified by the Department of Consumer Affairs, Bureau of Household Goods and Services (BHGS).
§ 110.8(g):	**Insulation Requirements for Heated Slab Floors.** Heated slab floors must be insulated per the requirements of § 110.8(g).
§ 110.8(i):	**Roofing Products Solar Reflectance and Thermal Emittance.** The thermal emittance and aged solar reflectance values of the roofing material must meet the requirements of § 110.8(i) and be labeled per §10-113 when the installation of a cool roof is specified on the CF1R.
§ 110.8(j):	**Radiant Barrier.** When required, radiant barriers must have an emittance of 0.05 or less and be certified to the Department of Consumer Affairs.
§ 150.0(a):	**Roof Deck, Ceiling and Rafter Roof Insulation.** Roof decks in newly constructed attics in climate zones 4 and 8-16 area-weighted average U-factor not exceeding U-0.184. Ceiling and rafter roofs minimum R-22 insulation in wood-frame ceiling; or area-weighted average U-factor must not exceed 0.043. Rafter roof alterations minimum R-19 or area-weighted average U-factor of 0.054 or less. Attic access doors must have permanently attached insulation using adhesive or mechanical fasteners. The attic access must be gasketed to prevent air leakage. Insulation must be installed in direct contact with a roof or ceiling which is sealed to limit infiltration and exfiltration, as specified in § 110.7, including but not limited to placing insulation either above or below the roof deck or on top of a drywall ceiling. *
§ 150.0(b):	**Loose-fill Insulation.** Loose fill insulation must meet the manufacturer's required density for the labeled R-value.
§ 150.0(c):	**Wall Insulation.** Minimum R-13 insulation in 2x4 inch wood framing wall or have a U-factor of 0.102 or less, or R-20 in 2x6 inch wood framing or have a U-factor of 0.071 or less. Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102. Masonry walls must meet Tables 150.1-A or B. *
§ 150.0(d):	**Raised-floor Insulation.** Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U-factor. *
§ 150.0(f):	**Slab Edge Insulation.** Slab edge insulation must meet all of the following: have a water absorption rate, for the insulation material alone without facings, no greater than 0.3 percent; have a water vapor permeance no greater than 2.0 perm per inch; be protected from physical damage and UV light deterioration; and, when installed as part of a heated slab floor, meet the requirements of § 110.8(g).
§ 150.0(g)1:	**Vapor Retarder.** In climate zones 1 through 16, the earth floor of unvented crawl space must be covered with a Class I or Class II vapor retarder. This requirement also applies to controlled ventilation crawl space for buildings complying with the exception to §150.0(d).
§ 150.0(g)2:	**Vapor Retarder.** In climate zones 14 and 16, a Class I or Class II vapor retarder must be installed on the conditioned space side of all insulation in all exterior walls, vented attics, and unvented attics with air-permeable insulation.
§ 150.0(q):	**Fenestration Products.** Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a maximum U-factor of 0.45; or area-weighted average U-factor of all fenestration must not exceed 0.45. *

Fireplaces, Decorative Gas Appliances, and Gas Log:

§ 110.5(e)	**Pilot Light.** Continuously burning pilot lights are not allowed for indoor and outdoor fireplaces.
§ 150.0(e)1:	**Closable Doors.** Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox.
§ 150.0(e)2:	**Combustion Intake.** Masonry or factory-built fireplaces must have a combustion outside air intake, which is at least six square inches in area and is equipped with a readily accessible, operable, and tight-fitting damper or combustion-air control device. *
§ 150.0(e)3:	**Flue Damper.** Masonry or factory-built fireplaces must have a flue damper with a readily accessible control. *

Space Conditioning, Water Heating, and Plumbing System:

§ 110.0-§ 110.3:	**Certification.** Heating, ventilation, and air conditioning (HVAC) equipment, water heaters, showerheads, faucets, and all other regulated appliances must be certified by the manufacturer to the California Energy Commission. *
§ 110.2(a):	**HVAC Efficiency.** Equipment must meet the applicable efficiency requirements in Table 110.2-A through Table 110.2-N. *
§ 110.2(b):	**Controls for Heat Pumps with Supplementary Electric Resistance Heaters.** Heat pumps with supplementary electric resistance heaters must have controls that prevent supplementary heater operation when the heating load can be met by the heat pump alone; and in which the cut-on temperature for compression heating is higher than the cut-on temperature for supplementary heating, and the cut-off temperature for compression heating is higher than the cut-off temperature for supplementary heating.
§ 110.2(c):	**Thermostats.** All heating or cooling systems not controlled by a central energy management control system (EMCS) must have a setback thermostat. *
§ 110.3(c)3:	**Insulation.** Unfired service water heater storage tanks and solar water-heating backup tanks must have adequate insulation, or tank surface heat loss rating.
§ 110.3(c)6:	**Isolation Valves.** Instantaneous water heaters with an input rating greater than 6.8 kBtu per hour (2 kW) must have isolation valves with hose bibbs or other fittings on both cold and hot water lines to allow for flushing the water heater when the valves are closed.

2022 Single-Family Residential Mandatory Requirements Summary

§ 110.5:	**Pilot Lights.** Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces; household cooking appliances (except appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu per hour); and pool and spa heaters. *
§ 150.0(h)1:	**Building Cooling and Heating Loads.** Heating and/or cooling loads are calculated in accordance with the ASHRAE Handbook, Equipment Volume, Applications Volume, and Fundamentals Volume; the SMACNA Residential Comfort System Installation Standards Manual; or the ACCA Manual J using design conditions specified in § 150.0(h)2.
§ 150.0(h)3A:	**Clearances.** Air conditioner and heat pump outdoor condensing units must have a clearance of at least five feet from the outlet of any dryer.
§ 150.0(h)3B:	**Liquid Line Drier.** Air conditioners and heat pump systems must be equipped with liquid line filter driers if required, as specified by the manufacturer's instructions.
§ 150.0(j)1:	**Water Piping, Solar Water-heating System Piping, and Space Conditioning System Line Insulation.** All domestic hot water piping must be insulated as specified in § 609.11 of the California Plumbing Code. *
§ 150.0(j)2:	**Insulation Protection.** Piping insulation must be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind as required by §120.3(b). Insulation exposed to weather must be water retardant and protected from UV light (no adhesive tapes). Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space must include, or be protected by, a Class I or Class II vapor retarder. Pipe insulation buried below grade must be installed in a waterproof and non-crushable casing or sleeve.
§ 150.0(n)1:	**Gas or Propane Water Heating Systems.** Systems using gas or propane water heaters to serve individual dwelling units must designate a space at least 2.5' x 2.5' x 7' suitable for the future installation of a heat pump water heater, and meet electrical and plumbing requirements, based on the distance between this designated space and the water heater location; and a condensate drain no more than 2" higher than the base of the water heater
§ 150.0(n)3:	**Solar Water-heating Systems.** Solar water-heating systems and collectors must be certified and rated by the Solar Rating and Certification Corporation (SRCC), the International Association of Plumbing and Mechanical Officials, Research and Testing (IAPMO R&T), or by a listing agency that is approved by the executive director.

Ducts and Fans:

§ 110.8(d)3:	**Ducts.** Insulation installed on an existing space-conditioning duct must comply with § 604.0 of the California Mechanical Code (CMC). If a contractor installs the insulation, the contractor must certify to the customer, in writing, that the insulation meets this requirement.
§ 150.0(m)1:	**CMC Compliance.** All air-distribution system ducts and plenums must meet CMC §§ 601.0-605.0 and ANSI/SMACNA-006-2006 HVAC Duct Construction Standards Metal and Flexible 3rd Edition. Portions of supply-air and return-air ducts and plenums must be insulated to R-6.0 or higher; ducts located entirely in conditioned space as confirmed through field verification and diagnostic testing (RA3.1.4.3.8) do not require insulation. Connections of metal ducts and inner core of flexible ducts must be mechanically fastened. Openings must be sealed with mastic, tape, or other duct-closure system that meets the applicable UL requirements, or aerosol sealant that meets UL 723. The combination of mastic and either mesh or tape must be used to seal openings greater than ¼", If mastic or tape is used. Building cavities, air handler support platforms, and plenums designed or constructed with materials other than sealed sheet metal, duct board or flexible duct must not be used to convey conditioned air. Building cavities and support platforms may contain ducts; ducts installed in these spaces must not be compressed. *
§ 150.0(m)2:	**Factory-Fabricated Duct Systems.** Factory-fabricated duct systems must comply with applicable requirements for duct construction, connections, and closures; joints and seams of duct systems and their components must not be sealed with cloth back rubber adhesive duct tapes unless such tape is used in combination with mastic and draw bands.
§ 150.0(m)3:	**Field-Fabricated Duct Systems.** Field-fabricated duct systems must comply with applicable requirements for: pressure-sensitive tapes, mastics, sealants, and other requirements specified for duct construction.
§ 150.0(m)7:	**Backdraft Damper.** Fan systems that exchange air between the conditioned space and outdoors must have backdraft or automatic dampers.
§ 150.0(m)8:	**Gravity Ventilation Dampers.** Gravity ventilating systems serving conditioned space must have either automatic or readily accessible, manually operated dampers in all openings to the outside, except combustion inlet and outlet air openings and elevator shaft vents.
§ 150.0(m)9:	**Protection of Insulation.** Insulation must be protected from damage due tosunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather must be suitable for outdoor service (e.g., protected by aluminum, sheet metal, painted canvas, or plastic cover). Cellular foam insulation must be protected as above or painted with a water retardant and solar radiation-resistant coating.
§ 150.0(m)10:	**Porous Inner Core Flex Duct.** Porous inner cores of flex ducts must have a non-porous layer or air barrier between the inner core and outer vapor barrier.
§ 150.0(m)11:	**Duct System Sealing and Leakage Test.** When space conditioning systems use forced air duct systems to supply conditioned air to an occupiable space, the ducts must be sealed and duct leakage tested, as confirmed through field verification and diagnostic testing, in accordance with Reference Residential Appendix RA3.1.
§ 150.0(m)12:	**Air Filtration.** Space conditioning systems with ducts exceeding 10 feet and the supply side of ventilation systems must have MERV 13 or equivalent filters. Filters for space conditioning systems must have a two inch depth or can be one inch if sized per Equation 150.0-A. Clean-filter pressure drop and labeling must meet the requirements in §150.0(m)12. Filters must be accessible for regular service. Filter racks or grilles must use gaskets, sealing, or other means to close gaps around the inserted filters to and prevents air from bypassing the filter. *

2022 Single-Family Residential Mandatory Requirements Summary

Ventilation and Indoor Air Quality:

§ 150.0(o)1:	**Requirements for Ventilation and Indoor Air Quality**. All dwelling units must meet the requirements of ASHRAE Standard 62.2, Ventilation and Acceptable Indoor Air Quality in Residential Buildings subject to the amendments specified in § 150.0(o)1. *
§ 150.0(o)1B:	**Central Fan Integrated (CFI) Ventilation Systems.** Continuous operation of CFI air handlers is not allowed to provide the whole-dwelling unit ventilation airflow required per §150.0(o)1C. A motorized damper(s) must be installed on the ventilation duct(s) that prevents all airflow through the space conditioning duct system when the damper(s) is closed andcontrolled per §150.0(o)1Biii&iv. CFI ventilation systems must have controls that track outdoor air ventilation run time, and either open or close the motorized damper(s) for compliance with §150.0(o)1C.
§ 150.0(o)1C:	**Whole-Dwelling Unit Mechanical Ventilation for Single-Family Detached and townhouses .** Single-family detached dwelling units, and attached dwelling units not sharing ceilings or floors with other dwelling units, occupiable spaces, public garages, or commercial spaces must have mechanical ventilation airflow specified in § 150.0(o)1C-iii.
§ 150.0(o)1G:	**Local Mechanical Exhaust.** Kitchens and bathrooms must have local mechanical exhaust; nonenclosed kitchens must have demand-controlled exhaust system meeting requirements of §150.0(o)1Giii,enclosed kitchens and bathrooms can use demand-controlled or continuous exhaust meeting §150.0(o)1Giii-iv. Airflow must be measured by the installer per §150.0(o)1Gv, and rated for sound per §150.0(o)1Gvi. *
§ 150.0(o)1H&I:	**Airflow Measurement and Sound Ratings of Whole-Dwelling Unit Ventilation Systems.** The airflow required per § 150.0(o)1C must be measured by using a flow hood, flow grid, or other airflow measuring device at the fan's inlet or outlet terminals/grilles per Reference Residential Appendix RA3.7. Whole-Dwelling unit ventilation systems must be rated for sound per ASHRAE 62.2 §7.2 at no less than the minimum airflow rate required by §150.0(o)1C.
§ 150.0(o)2:	**Field Verification and Diagnostic Testing.** Whole-Dwelling Unit ventilation airflow, vented range hood airflow and sound rating, and HRV and ERV fan efficacy must be verified in accordance with Reference Residential Appendix RA3.7. Vented range hoods must be verified per Reference Residential Appendix RA3.7.4.3 to confirm if it is rated by HVI or AHAM to comply with the airflow rates and sound requirements per §150.0(o)1G

Pool and Spa Systems and Equipment:

§ 110.4(a):	**Certification by Manufacturers.** Any pool or spa heating system or equipment must be certified to have all of the following: compliance with the Appliance Efficiency Regulations and listing in MAEDbS; an on-off switch mounted outside of the heater that allows shutting off the heater without adjusting the thermostat setting; a permanent weatherproof plate or card with operating instructions; and must not use electric resistance heating. *
§ 110.4(b)1:	**Piping.** Any pool or spa heating system or equipment must be installed with at least 36 inches of pipe between the filter and the heater, or dedicated suction and return lines, or built-in or built-up connections to allow for future solar heating.
§ 110.4(b)2:	**Covers.** Outdoor pools or spas that have a heat pump or gas heater must have a cover.
§ 110.4(b)3:	**Directional Inlets and Time Switches for Pools.** Pools must have directional inlets that adequately mix the pool water, and a time switch that will allow all pumps to be set or programmed to run only during off-peak electric demand periods.
§ 110.5:	**Pilot Light.** Natural gas pool and spa heaters must not have a continuously burning pilot light.
§ 150.0(p):	**Pool Systems and Equipment Installation.** Residential pool systems or equipment must meet the specified requirements for pump sizing, flow rate, piping, filters, and valves. *

Lighting:

§ 110.9:	**Lighting Controls and Components.** All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirements of § 110.9. *
§ 150.0(k)1A:	**Luminaire Efficacy.** All installed luminaires must meet the requirements in Table 150.0-A, except lighting integral to exhaust fans, kitchen range hoods, bath vanity mirrors, and garage door openers; navigation lighting less than 5 watts; and lighting internal to drawers, cabinets, and linen closets with an efficacy of at least 45 lumens per watt.
§ 150.0(k)1B:	**Screw based luminaires.** Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8. *
§ 150.0(k)1C:	**Recessed Downlight Luminaires in Ceilings.** Luminaires recessed into ceilings must not contain screw based sockets, must be airtight, and must be sealed with a gasket or caulk. California Electrical Code § 410.116 must also be met.
§ 150.0(k)1D:	**Light Sources in Enclosed or Recessed Luminaires.** Lamps and other separable light sources that are not compliant with the JA8 elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
§ 150.0(k)1E:	**Blank Electrical Boxes.** The number of electrical boxes that are more than five feet above the finished floor and do not contain a luminaire or other device shall be no more than the number of bedrooms. These boxes must be served by a dimmer, vacancy sensor control, low voltage wiring, or fan speed control.
§ 150.0(k)1F:	**Lighting Integral to Exhaust Fans.** Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.0(k). *

2022 Single-Family Residential Mandatory Requirements Summary

§ 150.0(k)1G:	**Screw based luminaires.** Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8. *
§ 150.0(k)1H:	**Light Sources in Enclosed or Recessed Luminaires.** Lamps and other separable light sources that are not compliant with the JA8 elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
§ 150.0(k)1I:	**Light Sources in Drawers, Cabinets, and Linen Closets.** Light sources internal to drawers, cabinetry or linen closets are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, emit no more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is closed.
§ 150.0(k)2A:	**Interior Switches and Controls.** All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A.
§ 150.0(k)2B:	**Interior Switches and Controls.** Exhaust fans must be controlled separately from lighting systems. *
§ 150.0(k)2A:	**Accessible Controls.** Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually turned on and off. *
§ 150.0(k)2B:	**Multiple Controls.** Controls must not bypass a dimmer, occupant sensor, or vacancy sensor function if the dimmer or sensor is installed to comply with § 150.0(k).
§ 150.0(k)2C:	**Mandatory Requirements.** Lighting controls must comply with the applicable requirements of § 110.9.
§ 150.0(k)2D:	**Energy Management Control Systems.** An energy management control system (EMCS) may be used to comply with dimming, occupancy, and control requirements if it provides the functionality of the specified control per § 110.9 and the physical controls specified in § 150.0(k)2A.
§ 150.0(k)2E:	**Automatic Shutoff Controls.** In bathrooms, garages, laundry rooms, utility rooms and walk-in closets, at least one installed luminaire must be controlled by an occupancy or vacancy sensor providing automatic-off functionality. Lighting inside drawers and cabinets with opaque fronts or doors must have controls that turn the light off when the drawer or door is closed.
§ 150.0(k)2F:	**Dimmers.** Lighting in habitable spaces (e.g., living rooms, dining rooms, kitchens, and bedrooms) must have readily accessible wall-mounted dimming controls that allow the lighting to be manually adjusted up and down. Forward phase cut dimmers controlling LED light sources in these spaces must comply with NEMA SSL 7A.
§ 150.0(k)2K:	**Independent controls.** Integrated lighting of exhaust fans shall be controlled independently from the fans. Lighting under cabinets or shelves, lighting in display cabinets, and switched outlets must be controlled separately from ceiling-installed lighting.
§ 150.0(k)3A:	**Residential Outdoor Lighting.** For single-family residential buildings, outdoor lighting permanently mounted to a residential building, or to other buildings on the same lot, must have a manual on/off switch and either a photocell and motion sensor or automatic time switch control) or an astronomical time clock. An energy management control system that provides the specified control functionality and meets all applicable requirements may be used to meet these requirements.
§ 150.0(k)4:	**Internally illuminated address signs.** Internally illuminated address signs must either comply with § 140.8 or consume no more than 5 watts of power.
§ 150.0(k)5:	**Residential Garages for Eight or More Vehicles.** Lighting for residential parking garages for eight or more vehicles must comply with the applicable requirements for nonresidential garages in §§ 110.9, 130.0, 130.1, 130.4, 140.6, and 141.0.

Solar Readiness:

§ 110.10(a)1:	**Single-family Residences.** Single-family residences located in subdivisions with 10 or more single-family residences and where the application for a tentative subdivision map for the residences has been deemed complete and approved by the enforcement agency, which do not have a photovoltaic system installed, must comply with the requirements of § 110.10(b)-(e).
§110.10(b)1A:	**Minimum Solar Zone Area.** The solar zone must have a minimum total area as described below. The solar zone must comply with access, pathway, smoke ventilation, and spacing requirements as specified in Title 24, Part 9 or other parts of Title 24 or in any requirements adopted by a local jurisdiction. The solar zone total area must be comprised of areas that have no dimension less than 5 feet and are no less than 80 square feet each for buildings with roof areas less than or equal to 10,000 square feet or no less than 160 square feet each for buildings with roof areas greater than 10,000 square feet. For single-family residences, the solar zone must be located on the roof or overhang of the building and have a total area no less than 250 square feet. *
§ 110.10(b)2:	**Azimuth.** All sections of the solar zone located on steep-sloped roofs must have an azimuth between 90-300° of true north.
§ 110.10(b)3A:	**Shading.** The solar zone must not contain any obstructions, including but not limited to: vents, chimneys, architectural features, and roof mounted equipment.
§ 110.10(b)3B:	**Shading.** Any obstruction located on the roof or any other part of the building that projects above a solar zone must be located at least twice the horizontal distance of the height difference between the highest point of the obstruction and the horizontal projection of the nearest point of the solar zone, measured in the vertical plane.
§ 110.10(b)4:	**Structural Design Loads on Construction Documents.** For areas of the roof designated as a solar zone, the structural design loads for roof dead load and roof live load must be clearly indicated on the construction documents.
§ 110.10(c):	**Interconnection Pathways.** The construction documents must indicate: a location reserved for inverters and metering equipment and a pathway reserved for routing of conduit from the solar zone to the point of interconnection with the electrical service; and for single-family residences and central water-heating systems, a pathway reserved for routing plumbing from the solar zone to the water-heating system.
§ 110.10(d):	**Documentation.** A copy of the construction documents or a comparable document indicating the information from § 110.10(b)-(c) must be provided to the occupant.
§ 110.10(e)1:	**Main Electrical Service Panel.** The main electrical service panel must have a minimum busbar rating of 200 amps.
§ 110.10(e)2:	**Main Electrical Service Panel.** The main electrical service panel must have a reserved space to allow for the installation of a double pole circuit breaker for a future solar electric installation. The reserved space must be permanently marked as "For Future Solar Electric."

Electric and Energy Storage Ready:

2022 Single-Family Residential Mandatory Requirements Summary

§ 150.0(s)	**Energy Storage System (ESS) Ready.** All single-family residences must meet all of the following: Either ESS-ready interconnection equipment with backed up capacity of 60 amps or more and four or more ESS supplied branch circuits, or a dedicated raceway from the main service to a subpanel that supplies the branch circuits in § 150.0(s); at least four branch circuits must be identified and have their source collocated at a single panelboard suitable to be supplied by the ESS, with one circuit supplying the refrigerator, one lighting circuit near the primary exit, and one circuit supplying a sleeping room receptacle outlet; main panelboard must have a minimum busbar rating of 225 amps; sufficient space must be reserved to allow future installation of a system isolation equipment/transfer switch within 3' of the main panelboard, with raceways installed between the panelboard and the switch location to allow the connection of backup power source.
§ 150.0(t)	**Heat Pump Space Heater Ready.** Systems using gas or propane furnaces to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the furnace with circuit conductors rated at least 30 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."
§ 150.0(u)	**Electric Cooktop Ready.** Systems using gas or propane cooktop to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the cooktop with circuit conductors rated at least 50 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."
§ 150.0(v)	**Electric Clothes Dryer Ready.** Clothes dryer locations with gas or propane plumbing to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the dryer location with circuit conductors rated at least 30 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."

*Exceptions may apply.

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Barnell Ave.
Morgan Hill, CA 95037

PROJECT: LJ COMMONS 4 PLEX

DRAWING TITLE: UNIT 3 TITLE 24

REV	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		
7		

JOB NO.: 23-113
CAD FILE:
DSGN'D BY: I. R. | DRAWN BY: J. T.
CHK'D BY: I. R. | APP'D BY: I. R.
DATE: 4/17/23 | SCALE: AS NOTED
DRAWING NO.: T24-3-3
SHEET * OF *

GENERAL INFORMATION					
01	**Project Name**	Barnell Ave Unit 4			
02	**Run Title**	Title 24 Analysis			
03	**Project Location**	Barnell Ave			
04	**City**	Morgan Hill	05	**Standards Version**	2022
06	**Zip code**	95037	07	**Software Version**	EnergyPro 9.2
08	**Climate Zone**	4	09	**Front Orientation (deg/ Cardinal)**	0
10	**Building Type**	Single family	11	**Number of Dwelling Units**	1
12	**Project Scope**	Newly Constructed	13	**Number of Bedrooms**	3
14	**Addition Cond. Floor Area (ft²)**	0	15	**Number of Stories**	2
16	**Existing Cond. Floor Area (ft²)**	n/a	17	**Fenestration Average U-factor**	0.3
18	**Total Cond. Floor Area (ft²)**	859	19	**Glazing Percentage (%)**	8.15%
20	**ADU Bedroom Count**	n/a	21	**ADU Conditioned Floor Area**	n/a
22	**Fuel Type**	Natural gas	23	**No Dwelling Units:**	No

COMPLIANCE RESULTS	
01	**Building Complies with Computer Performance**
02	**This building incorporates features that require field testing and/or verification by a certified HERS rater under the supervision of a CEC-approved HERS provider.**
03	**This building incorporates one or more Special Features shown below**

ENERGY DESIGN RATINGS

	Energy Design Ratings			Compliance Margins		
	Source Energy (EDR1)	Efficiency[1] EDR (EDR2efficiency)	Total[2] EDR (EDR2total)	Source Energy (EDR1)	Efficiency[1] EDR (EDR2efficiency)	Total[2] EDR (EDR2total)
Standard Design	39.6	45.1	34.9			
Proposed Design	38.5	41.4	32.8	1.1	3.7	2.1

RESULT[3]: PASS

[1]Efficiency EDR includes improvements like a better building envelope and more efficient equipment
[2]Total EDR includes efficiency and demand response measures such as photovoltaic (PV) system and batteries
[3]Building complies when source energy, efficiency and total compliance margins are greater than or equal to zero and unmet load hour limits are not exceeded

- Standard Design PV Capacity: 2.34 kWdc
- PV System resized to 2.34 kWdc (a factor of 2.338) to achieve 'Standard Design PV' PV scaling

ENERGY USE SUMMARY

Energy Use	Standard Design Source Energy (EDR1) (kBtu/ft² -yr)	Standard Design TDV Energy (EDR2) (kTDV/ft² -yr)	Proposed Design Source Energy (EDR1) (kBtu/ft² -yr)	Proposed Design TDV Energy (EDR2) (kTDV/ft² -yr)	Compliance Margin (EDR1)	Compliance Margin (EDR2)
Space Heating	0.47	2.25	1.62	13.21	-1.15	-10.96
Space Cooling	1.03	28.5	0.44	19.16	0.59	9.34
IAQ Ventilation	0.49	5.26	0.49	5.26	0	0
Water Heating	2.94	30.87	2.01	23.79	0.93	7.08
Self Utilization/Flexibility Credit				0		0
Efficiency Compliance Total	**4.93**	**66.88**	**4.56**	**61.42**	**0.37**	**5.46**
Photovoltaics	-2.39	-80.9	-2.39	-80.66		
Battery			0	0		
Flexibility						
Indoor Lighting	0.91	8.92	0.91	8.92		
Appl. & Cooking	6.62	43.3	6.53	42.35		
Plug Loads	6.34	65.98	6.34	65.98		
Outdoor Lighting	0.2	1.85	0.2	1.85		
TOTAL COMPLIANCE	**16.61**	**106.03**	**16.15**	**99.86**		

ENERGY USE INTENSITY

	Standard Design (kBtu/ft² - yr)	Proposed Design (kBtu/ft² - yr)	Compliance Margin (kBtu/ft² - yr)	Margin Percentage
Gross EUI[1]	24.32	23.36	0.96	3.95
Net EUI[2]	9.61	8.65	0.96	9.99

Notes
1. Gross EUI is Energy Use Total (not including PV) / Total Building Area.
2. Net EUI is Energy Use Total (including PV) / Total Building Area.

REQUIRED PV SYSTEMS

01	02	03	04	05	06	07	08	09	10	11	12
DC System Size (kWdc)	**Exception**	**Module Type**	**Array Type**	**Power Electronics**	**CFI**	**Azimuth (deg)**	**Tilt Input**	**Array Angle (deg)**	**Tilt: (x in 12)**	**Inverter Eff. (%)**	**Annual Solar Access (%)**
2.34	NA	Standard (14-17%)	Fixed	none	true	150-270	n/a	n/a	<=7:12	96	98

REQUIRED SPECIAL FEATURES

The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.

- Insulation below roof deck
- Northwest Energy Efficiency Alliance (NEEA) rated heat pump water heater; specific brand/model, or equivalent, must be installed

HERS FEATURE SUMMARY

The following is a summary of the features that must be field-verified by a certified HERS Rater as a condition for meeting the modeled energy performance for this computer analysis. Additional detail is provided in the building tables below. Registered CF2Rs and CF3Rs are required to be completed in the HERS Registry

- Indoor air quality ventilation
- Kitchen range hood
- Minimum Airflow
- Verified EER/EER2
- Verified SEER/SEER2
- Fan Efficacy Watts/CFM
- Verified HSPF
- Verified heat pump rated heating capacity
- Duct leakage testing

BUILDING - FEATURES INFORMATION

01	02	03	04	05	06	07
Project Name	**Conditioned Floor Area (ft²)**	**Number of Dwelling Units**	**Number of Bedrooms**	**Number of Zones**	**Number of Ventilation Cooling Systems**	**Number of Water Heating Systems**
Barnell Ave Unit 4	859	1	3	2	0	1

ZONE INFORMATION

01	02	03	04	05	06	07
Zone Name	**Zone Type**	**HVAC System Name**	**Zone Floor Area (ft²)**	**Avg. Ceiling Height**	**Water Heating System 1**	**Status**
1st Flr Zone	Conditioned	Undefined System1	427	9	DHW Sys 1	New
2nd Flr Zone	Conditioned	Undefined System1	432	9	DHW Sys 1	New

OPAQUE SURFACES

01	02	03	04	05	06	07	08
Name	**Zone**	**Construction**	**Azimuth**	**Orientation**	**Gross Area (ft²)**	**Window and Door Area (ft2)**	**Tilt (deg)**
NE Exterior Wall	1st Flr Zone	R-21 Wall	45	n/a	128	0	90
SE Exterior Wall	1st Flr Zone	R-21 Wall	135	n/a	153	40	90
NW Exterior Wall	1st Flr Zone	R-21 Wall	315	n/a	95	20	90

OPAQUE SURFACES

01	02	03	04	05	06	07	08
Name	**Zone**	**Construction**	**Azimuth**	**Orientation**	**Gross Area (ft²)**	**Window and Door Area (ft2)**	**Tilt (deg)**
NE Exterior Wall 2	1st Flr Zone	R-21 Wall	45	n/a	98	0	90
NW Exterior Wall 2	1st Flr Zone	R-21 Wall	315	n/a	58	0	90
NE Exterior Wall 3	2nd Flr Zone	R-21 Wall	45	n/a	86	0	90
NW Exterior Wall 3	2nd Flr Zone	R-21 Wall	315	n/a	110	15	90
SE Exterior Wall 2	2nd Flr Zone	R-21 Wall	135	n/a	153	15	90
NE Exterior Wall 4	2nd Flr Zone	R-21 Wall	45	n/a	68	0	90
NW Exterior Wall 4	2nd Flr Zone	R-21 Wall	315	n/a	44	0	90
WALL Interior Surface	1st Flr Zone	R-0 Wall	n/a	n/a	140	0	n/a
WALL Interior Surface 2	1st Flr Zone	R-0 Wall	n/a	n/a	140	0	n/a
WALL Interior Surface 3	1st Flr Zone	R-0 Wall	n/a	n/a	86	0	n/a
WALL Interior Surface 4	1st Flr Zone	R-0 Wall	n/a	n/a	80	0	n/a
WALL Interior Surface 5	2nd Flr Zone	R-0 Wall	n/a	n/a	119	0	n/a
WALL Interior Surface 6	2nd Flr Zone	R-0 Wall	n/a	n/a	98	0	n/a
WALL Interior Surface 7	2nd Flr Zone	R-0 Wall	n/a	n/a	95	0	n/a
WALL Interior Surface 8	2nd Flr Zone	R-0 Wall	n/a	n/a	51	0	n/a
Roof	2nd Flr Zone	R-38 HP Attic	n/a	n/a	69	n/a	n/a
Roof 2	2nd Flr Zone	R-38 HP Attic	n/a	n/a	114	n/a	n/a
Roof 3	2nd Flr Zone	R-38 HP Attic	n/a	n/a	161	n/a	n/a
Roof 4	2nd Flr Zone	R-38 HP Attic	n/a	n/a	54	n/a	n/a
Roof 5	2nd Flr Zone	R-38 HP Attic	n/a	n/a	34	n/a	n/a
CEILING Interior Surface	1st Flr Zone	R-0 Roof No Attic	n/a	n/a	233	n/a	n/a
CEILING Interior Surface 2	1st Flr Zone	R-0 Roof No Attic	n/a	n/a	122	n/a	n/a
CEILING Interior Surface 3	1st Flr Zone	R-0 Roof No Attic	n/a	n/a	72	n/a	n/a
FLOOR Interior Surface	2nd Flr Zone	R-0 Floor No Crawlspace	n/a	n/a	69	n/a	n/a

OPAQUE SURFACES

01	02	03	04	05	06	07	08
Name	**Zone**	**Construction**	**Azimuth**	**Orientation**	**Gross Area (ft²)**	**Window and Door Area (ft2)**	**Tilt (deg)**
FLOOR Interior Surface 2	2nd Flr Zone	R-0 Floor No Crawlspace	n/a	n/a	114	n/a	n/a
FLOOR Interior Surface 3	2nd Flr Zone	R-0 Floor No Crawlspace	n/a	n/a	161	n/a	n/a
FLOOR Interior Surface 4	2nd Flr Zone	R-0 Floor No Crawlspace	n/a	n/a	54	n/a	n/a
FLOOR Interior Surface 5	2nd Flr Zone	R-0 Floor No Crawlspace	n/a	n/a	34	n/a	n/a

ATTIC

01	02	03	04	05	06	07	08
Name	**Construction**	**Type**	**Roof Rise (x in 12)**	**Roof Reflectance**	**Roof Emittance**	**Radiant Barrier**	**Cool Roof**
Attic 2nd Flr Zone	Attic Roof2nd Flr Zone	Ventilated	6	0.1	0.85	No	No

FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10	11	12	13	14
Name	**Type**	**Surface**	**Orientation**	**Azimuth**	**Width (ft)**	**Height (ft)**	**Mult.**	**Area (ft²)**	**U-factor**	**U-factor Source**	**SHGC**	**SHGC Source**	**Exterior Shading**
Window	Window	SE Exterior Wall		135			1	40	0.3	NFRC	0.23	NFRC	Bug Screen
Window 2	Window	NW Exterior Wall 3		315			1	15	0.3	NFRC	0.23	NFRC	Bug Screen
Window 3	Window	SE Exterior Wall 2		135			1	15	0.3	NFRC	0.23	NFRC	Bug Screen

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Barnell Ave.
Morgan Hill, CA 95037

PROJECT: LJ COMMONS 4 PLEX
DRAWING TITLE: UNIT 4 TITLE 24

REV	DATE	DESCRIPTION
1		
2		
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7		

JOB NO.: 23-113
CAD FILE:
DSGN'D BY: I. R. | DRAWN BY: J. T.
CHK'D BY: I. R. | APP'D BY: I. R.
DATE: 4/17/23 | SCALE: AS NOTED
DRAWING NO.: T24-4-1
SHEET_*_OF_*

OPAQUE DOORS

01	02	03	04
Name	Side of Building	Area (ft^2)	U-factor
Door	NW Exterior Wall	20	0.2

SLAB FLOORS

01	02	03	04	05	06	07	08
Name	Zone	Area (ft^2)	Perimeter (ft)	Edge Insul. R-value and Depth	Edge Insul. R-value and Depth	Carpeted Fraction	Heated
Slab-on-Grade	1st Flr Zone	311	0.1	none	0	80%	No
Slab-on-Grade 2	1st Flr Zone	122	0.1	none	0	80%	No
Slab-on-Grade 3	1st Flr Zone	72	0.1	none	0	80%	No

OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07	08
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Interior / Exterior Continuous R-value	U-factor	Assembly Layers
R-21 Wall	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O. C.	R-21	None / None	0.069	Inside Finish: Gypsum Board Cavity / Frame: R-21 / 2x6 Exterior Finish: 3 Coat Stucco
R-0 Wall	Interior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-0	None / None	0.277	Inside Finish: Gypsum Board Cavity / Frame: no insul. / 2x4 Other Side Finish: Gypsum Board
Attic Roof2nd Flr Zone	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-19	None / 0	0.059	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: R-13.0 / 2x4 Around Roof Joists: R-6.0 Insul.

OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07	08
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Interior / Exterior Continuous R-value	U-factor	Assembly Layers
R-38 HP Attic	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-38	None / None	0.025	Over Ceiling Joists: R-28.9 insul. Cavity / Frame: R-9.1 / 2x4 Inside Finish: Gypsum Board
R-0 Floor No Crawlspace	Interior Floors	Wood Framed Floor	2x12 @ 16 in. O. C.	R-0	None / None	0.196	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x12 Ceiling Below Finish: Gypsum Board
R-0 Roof No Attic	Interior Ceiling	Wood Framed Ceiling	2x4 @ 16 in. O. C.	R-0	None / None	0.202	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x4 Ceiling Below Finish: Gypsum Board

BUILDING ENVELOPE - HERS VERIFICATION

01	02	03	04	05
Quality Insulation Installation (QII)	High R-value Spray Foam Insulation	Building Envelope Air Leakage	CFM50	CFM50
Not Required	Not Required	N/A	n/a	n/a

WATER HEATING SYSTEMS

01	02	03	04	05	06	07	08	09
Name	System Type	Distribution Type	Water Heater Name	Number of Units	Solar Heating System	Compact Distribution	HERS Verification	Water Heater Name (#)
DHW Sys 1	Domestic Hot Water (DHW)	Standard	DHW Heater 1	1	n/a	None	n/a	DHW Heater 1 (1)

WATER HEATERS - NEEA HEAT PUMP

01	02	03	04	05	06	07	08
Name	# of Units	Tank Vol. (gal)	NEEA Heat Pump Brand	NEEA Heat Pump Model	Tank Location	Duct Inlet Air Source	Duct Outlet Air Source
DHW Heater 1	1	80	A. O. Smith	HPTU 80N 120 (80 gal)	Outside	2nd Flr Zone	2nd Flr Zone

WATER HEATING - HERS VERIFICATION

01	02	03	04	05	06	07
Name	Pipe Insulation	Parallel Piping	Compact Distribution	Compact Distribution Type	Recirculation Control	Shower Drain Water Heat Recovery
DHW Sys 1 - 1/1	Not Required	Not Required	Not Required	None	Not Required	Not Required

SPACE CONDITIONING SYSTEMS

01	02	03	04	05	06	07	08	09
Name	System Type	Heating Unit Name	Heating Equipment Count	Cooling Unit Name	Cooling Equipment Count	Fan Name	Distribution Name	Required Thermostat Type
Undefined System1	Heat pump heating cooling	Heat Pump System 1	1	Heat Pump System 1	1	HVAC Fan 1	Air Distribution System 1	Setback

HVAC - HEAT PUMPS

01	02	03	04	05	06	07	08	09	10	11	12	13
Name	System Type	Number of Units	Heating				Cooling			Zonally Controlled	Compressor Type	HERS Verification
			Heating Efficiency Type	HSPF/HSPF2/COP	Cap 47	Cap 17	Cooling Efficiency Type	SEER/SEER2	EER/EER2/CEER			
Heat Pump System 1	Central split HP	1	HSPF	9.5	60000	50000	EERSEER	16	12.5	Not Zonal	Single Speed	Heat Pump System 1-hers-htpump

HVAC HEAT PUMPS - HERS VERIFICATION

01	02	03	04	05	06	07	08	09
Name	Verified Airflow	Airflow Target	Verified EER/EER2	Verified SEER/SEER2	Verified Refrigerant Charge	Verified HSPF/HSPF2	Verified Heating Cap 47	Verified Heating Cap 17
Heat Pump System 1-hers-htpump	Required	350	Required	Required	No	Yes	Yes	Yes

HVAC - DISTRIBUTION SYSTEMS

01	02	03	04	05	06	07	08	09	10	11	12
Name	Type	Design Type	Duct Ins. R-value		Duct Location		Surface Area		Bypass Duct	Duct Leakage	HERS Verification
			Supply	Return	Supply	Return	Supply	Return			
Air Distribution System 1	Unconditioned attic	Non-Verified	R-8	R-8	Attic	Attic	n/a	n/a	No Bypass Duct	Sealed and Tested	Air Distribution System 1-hers-dist

HVAC DISTRIBUTION - HERS VERIFICATION

01	02	03	04	05	06	07	08	09
Name	Duct Leakage Verification	Duct Leakage Target (%)	Verified Duct Location	Verified Duct Design	Buried Ducts	Deeply Buried Ducts	Low-leakage Air Handler	Low Leakage Ducts Entirely in Conditioned Space
Air Distribution System 1-hers-dist	Yes	5.0	Not Required	Not Required	Not Required	Credit not taken	Not Required	No

HVAC - FAN SYSTEMS

01	02	03	04
Name	Type	Fan Power (Watts/CFM)	Name
HVAC Fan 1	HVAC Fan	0.45	HVAC Fan 1-hers-fan

HVAC FAN SYSTEMS - HERS VERIFICATION

01	02	03
Name	Verified Fan Watt Draw	Required Fan Efficacy (Watts/CFM)
HVAC Fan 1-hers-fan	Required	0.45

INDOOR AIR QUALITY (IAQ) FANS

01	02	03	04	05	06	07	08	09
Dwelling Unit	Airflow (CFM)	Fan Efficacy (W/CFM)	IAQ Fan Type	Includes Heat/Energy Recovery?	IAQ Recovery Effectiveness - SRE/ASRE	Includes Fault Indicator Display?	HERS Verification	Status
SFam IAQVentRpt	55	0.35	Exhaust	No	n/a / n/a	No	Yes	

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Iradj Rahnama	Documentation Author Signature: Iradj Rahnama
Company: I & A Engineering	Signature Date: 2023-11-01 16:20:14
Address: 1610 BLOSSOM HILL RD. SUITE E	CEA/ HERS Certification Identification (If applicable):
City/State/Zip: San Jose, CA 95124	Phone: 408-268-9337

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design identified on this Certificate of Compliance.
2. I certify that the energy features and performance specifications identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
3. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.

Responsible Designer Name: Iradj Rahnama	Responsible Designer Signature: Iradj Rahnama
Company: I & A Engineering	Date Signed: 2023-11-01 16:20:14
Address: 1610 BLOSSOM HILL RD. SUITE E	License: N/A
City/State/Zip: San Jose, CA 95124	Phone: 408-268-9337

Digitally signed by CalCERTS. This digital signature is provided in order to secure the content of this registered document, and in no way implies Registration Provider responsibility for the accuracy of the information.

Easy to Verify at CalCERTS.com

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TEL: (408) 268-9337
FAX: (408) 268-1135

Barnell Ave.
Morgan Hill, CA 95037

PROJECT: LJ COMMONS 4 PLEX

DRAWING TITLE: UNIT 4 TITLE 24

REV	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		
7		

JOB NO.: 23-113
CAD FILE:
DSGN'D BY: I. R.
DRAWN BY: J. T.
CHK'D BY: I. R.
APP'D BY: I. R.
DATE: 4/17/23
SCALE: AS NOTED
DRAWING NO.: T24-4-2
SHEET * OF *

RESIDENTIAL MEASURES SUMMARY — RMS-1

Project Name	Building Type		Date
Barnell Ave Unit 4	☑ Single Family ☐ Multi Family	☐ Addition Alone ☐ Existing+ Addition/Alteration	11/1/2023

Project Address	California Energy Climate Zone	Total Cond. Floor Area	Addition	# of Units
Barnell Ave Morgan Hill	CA Climate Zone 04	859	n/a	1

INSULATION

Construction	Type	Cavity	Area (ft^2)	Special Features	Status
Wall	Wood Framed	R 20	903		New
Slab	Unheated Slab-on-Grade	- no insulation	505	Perim = 0'	New
Demising	Wood Framed Rafter	- no insulation	427		New
Demising	Wood Framed	- no insulation	809		New
Door	Opaque Door	R-5	20		New
Demising	Wood Framed w/o Crawl Space	- no insulation	432		New
Roof	Wood Framed Attic	R 38	432	Add=R-19.0	New

FENESTRATION

Total Area: 70 | Glazing Percentage: 8.1% | New/Altered Average U-Factor: 0.30

Orientation	Area(ft^2)	U-Fac	SHGC	Overhang	Sidefins	Exterior Shades	Status
Left (SE)	55.0	0.300	0.23	none	none	N/A	New
Right (NW)	15.0	0.300	0.23	none	none	N/A	New

HVAC SYSTEMS

Qty.	Heating	Min. Eff	Cooling	Min. Eff	Thermostat	Status
1	Electric Heat Pump	9.50 HSPF	Split Heat Pump	16.0 SEER	Setback	New

HVAC DISTRIBUTION

Location	Heating	Cooling	Duct Location	Duct R-Value	Status
Undefined System	Ducted	Ducted	Attic	8.0	New

WATER HEATING

Qty.	Type	Gallons	Min. Eff	Distribution	Status
1	Heat Pump	80	2.90	Standard	New

2022 Single-Family Residential Mandatory Requirements Summary

NOTE: Single-family residential buildings subject to the Energy Codes must comply with all applicable mandatory measures, regardless of the compliance approach used. Review the respective section for more information.
(04/2022)

Building Envelope:

§ 110.6(a)1:	**Air Leakage.** Manufactured fenestration, exterior doors, and exterior pet doors must limit air leakage to 0.3 CFM per square foot or less when tested per NFRC-400, ASTM E283, or AAMA/WDMA/CSA 101/I.S.2/A440-2011. *
§ 110.6(a)5:	**Labeling.** Fenestration products and exterior doors must have a label meeting the requirements of § 10-111(a).
§ 110.6(b):	**Field fabricated exterior doors and fenestration** products must use U-factors and solar heat gain coefficient (SHGC) values from Tables 110.6-A, 110.6-B, or JA4.5 for exterior doors. They must be caulked and/or weather-stripped.
§ 110.7:	**Air Leakage.** All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be caulked, gasketed, or weather stripped.
§ 110.8(a):	**Insulation Certification by Manufacturers.** Insulation must be certified by the Department of Consumer Affairs, Bureau of Household Goods and Services (BHGS).
§ 110.8(g):	**Insulation Requirements for Heated Slab Floors.** Heated slab floors must be insulated per the requirements of § 110.8(g).
§ 110.8(i):	**Roofing Products Solar Reflectance and Thermal Emittance.** The thermal emittance and aged solar reflectance values of the roofing material must meet the requirements of § 110.8(i) and be labeled per §10-113 when the installation of a cool roof is specified on the CF1R.
§ 110.8(j):	**Radiant Barrier.** When required, radiant barriers must have an emittance of 0.05 or less and be certified to the Department of Consumer Affairs.
§ 150.0(a):	**Roof Deck, Ceiling and Rafter Roof Insulation.** Roof decks in newly constructed attics in climate zones 4 and 8-16 area-weighted average U-factor not exceeding U-0.184. Ceiling and rafter roofs minimum R-22 insulation in wood-frame ceiling; or area-weighted average U-factor must not exceed 0.043. Rafter roof alterations minimum R-19 or area-weighted average U-factor of 0.054 or less. Attic access doors must have permanently attached insulation using adhesive or mechanical fasteners. The attic access must be gasketed to prevent air leakage. Insulation must be installed in direct contact with a roof or ceiling which is sealed to limit infiltration and exfiltration , as specified in § 110.7, including but not limited to placing insulation either above or below the roof deck or on top of a drywall ceiling. *
§ 150.0(b):	**Loose-fill Insulation.** Loose fill insulation must meet the manufacturer's required density for the labeled R-value.
§ 150.0(c):	**Wall Insulation.** Minimum R-13 insulation in 2x4 inch wood framing wall or have a U-factor of 0.102 or less, or R-20 in 2x6 inch wood framing or have a U-factor of 0.071 or less. Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102. Masonry walls must meet Tables 150.1-A or B. *
§ 150.0(d):	**Raised-floor Insulation.** Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U-factor. *
§ 150.0(f):	**Slab Edge Insulation.** Slab edge insulation must meet all of the following: have a water absorption rate, for the insulation material alone without facings, no greater than 0.3 percent; have a water vapor permeance no greater than 2.0 perm per inch; be protected from physical damage and UV light deterioration; and, when installed as part of a heated slab floor, meet the requirements of § 110.8(g).
§ 150.0(g)1:	**Vapor Retarder.** In climate zones 1 through 16, the earth floor of unvented crawl space must be covered with a Class I or Class II vapor retarder. This requirement also applies to controlled ventilation crawl space for buildings complying with the exception to §150.0(d).
§ 150.0(g)2:	**Vapor Retarder.** In climate zones 14 and 16, a Class I or Class II vapor retarder must be installed on the conditioned space side of all insulation in all exterior walls, vented attics, and unvented attics with air-permeable insulation.
§ 150.0(q):	**Fenestration Products.** Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a maximum U-factor of 0.45; or area-weighted average U-factor of all fenestration must not exceed 0.45. *

Fireplaces, Decorative Gas Appliances, and Gas Log:

§ 110.5(e)	**Pilot Light.** Continuously burning pilot lights are not allowed for indoor and outdoor fireplaces.
§ 150.0(e)1:	**Closable Doors.** Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox.
§ 150.0(e)2:	**Combustion Intake.** Masonry or factory-built fireplaces must have a combustion outside air intake, which is at least six square inches in area and is equipped with a readily accessible, operable, and tight-fitting damper or combustion-air control device. *
§ 150.0(e)3:	**Flue Damper.** Masonry or factory-built fireplaces must have a flue damper with a readily accessible control. *

Space Conditioning, Water Heating, and Plumbing System:

§ 110.0-§ 110.3:	**Certification.** Heating, ventilation, and air conditioning (HVAC) equipment, water heaters, showerheads, faucets, and all other regulated appliances must be certified by the manufacturer to the California Energy Commission. *
§ 110.2(a):	**HVAC Efficiency.** Equipment must meet the applicable efficiency requirements in Table 110.2-A through Table 110.2-N. *
§ 110.2(b):	**Controls for Heat Pumps with Supplementary Electric Resistance Heaters.** Heat pumps with supplementary electric resistance heaters must have controls that prevent supplementary heater operation when the heating load can be met by the heat pump alone; and in which the cut-on temperature for compression heating is higher than the cut-on temperature for supplementary heating, and the cut-off temperature for compression heating is higher than the cut-off temperature for supplementary heating.
§ 110.2(c):	**Thermostats.** All heating or cooling systems not controlled by a central energy management control system (EMCS) must have a setback thermostat. *
§ 110.3(c)3:	**Insulation.** Unfired service water heater storage tanks and solar water-heating backup tanks must have adequate insulation, or tank surface heat loss rating.
§ 110.3(c)6:	**Isolation Valves.** Instantaneous water heaters with an input rating greater than 6.8 kBtu per hour (2 kW) must have isolation valves with hose bibbs or other fittings on both cold and hot water lines to allow for flushing the water heater when the valves are closed.

2022 Single-Family Residential Mandatory Requirements Summary

§ 110.5:	**Pilot Lights.** Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces; household cooking appliances (except appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu per hour); and pool and spa heaters. *
§ 150.0(h)1:	**Building Cooling and Heating Loads.** Heating and/or cooling loads are calculated in accordance with the ASHRAE Handbook, Equipment Volume, Applications Volume, and Fundamentals Volume; the SMACNA Residential Comfort System Installation Standards Manual; or the ACCA Manual J using design conditions specified in § 150.0(h)2.
§ 150.0(h)3A:	**Clearances.** Air conditioner and heat pump outdoor condensing units must have a clearance of at least five feet from the outlet of any dryer.
§ 150.0(h)3B:	**Liquid Line Drier.** Air conditioners and heat pump systems must be equipped with liquid line filter driers if required, as specified by the manufacturer's instructions.
§ 150.0(j)1:	**Water Piping, Solar Water-heating System Piping, and Space Conditioning System Line Insulation.** All domestic hot water piping must be insulated as specified in § 609.11 of the California Plumbing Code. *
§ 150.0(j)2:	**Insulation Protection.** Piping insulation must be protected from damage, including that due to sunlight, moisture, equipment' maintenance, and wind as required by §120.3(b). Insulation exposed to weather must be water retardant and protected from UV light (no adhesive tapes). Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space must include, or be protected by, a Class I or Class II vapor retarder. Pipe insulation buried below grade must be installed in a waterproof and non-crushable casing or sleeve.
§ 150.0(n)1:	**Gas or Propane Water Heating Systems.** Systems using gas or propane water heaters to serve individual dwelling units must designate a space at least 2.5' x 2.5' x 7' suitable for the future installation of a heat pump water heater, and meet electrical and plumbing requirements, based on the distance between this designated space and the water heater location; and a condensate drain no more than 2' higher than the base of the water heater
§ 150.0(n)3:	**Solar Water-heating Systems.** Solar water-heating systems and collectors must be certified and rated by the Solar Rating and Certification Corporation (SRCC), the International Association of Plumbing and Mechanical Officials, Research and Testing (IAPMO R&T), or by a listing agency that is approved by the executive director.

Ducts and Fans:

§ 110.8(d)3:	**Ducts.** Insulation installed on an existing space-conditioning duct must comply with § 604.0 of the California Mechanical Code (CMC). If a contractor installs the insulation, the contractor must certify to the customer, in writing, that the insulation meets this requirement.
§ 150.0(m)1:	**CMC Compliance.** All air-distribution system ducts and plenums must meet CMC §§ 601.0-605.0 and ANSI/SMACNA-006-2006 HVAC Duct Construction Standards Metal and Flexible 3rd Edition. Portions of supply-air and return-air ducts and plenums must be insulated to R-6.0 or higher; ducts located entirely in conditioned space as confirmed through field verification and diagnostic testing (RA3.1.4.3.8) do not require insulation. Connections of metal ducts and inner core of flexible ducts must be mechanically fastened. Openings must be sealed with mastic, tape, or other duct-closure system that meets the applicable UL requirements, or aerosol sealant that meets UL 723. The combination of mastic and either mesh or tape must be used to seal openings greater than ¼", if mastic or tape is used. Building cavities, air handler support platforms, and plenums designed or constructed with materials other than sealed sheet metal, duct board or flexible duct must not be used to convey conditioned air. Building cavities and support platforms may contain ducts; ducts installed in these spaces must not be compressed. *
§ 150.0(m)2:	**Factory-Fabricated Duct Systems.** Factory-fabricated duct systems must comply with applicable requirements for duct construction, connections, and closures; joints and seams of duct systems and their components must not be sealed with cloth back rubber adhesive duct tapes unless such tape is used in combination with mastic and draw bands.
§ 150.0(m)3:	**Field-Fabricated Duct Systems.** Field-fabricated duct systems must comply with applicable requirements for: pressure-sensitive tapes, mastics, sealants, and other requirements specified for duct construction.
§ 150.0(m)7:	**Backdraft Damper.** Fan systems that exchange air between the conditioned space and outdoors must have backdraft or automatic dampers.
§ 150.0(m)8:	**Gravity Ventilation Dampers.** Gravity ventilating systems serving conditioned space must have either automatic or readily accessible, manually operated dampers in all openings to the outside, except combustion inlet and outlet air openings and elevator shaft vents.
§ 150.0(m)9:	**Protection of Insulation.** Insulation must be protected from damage due tosunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather must be suitable for outdoor service (e.g., protected by aluminum, sheet metal, painted canvas, or plastic cover). Cellular foam insulation must be protected as above or painted with a water retardant and solar radiation-resistant coating.
§ 150.0(m)10:	**Porous Inner Core Flex Duct.** Porous inner cores of flex ducts must have a non-porous layer or air barrier between the inner core and outer vapor barrier.
§ 150.0(m)11:	**Duct System Sealing and Leakage Test.** When space conditioning systems use forced air duct systems to supply conditioned air to an occupiable space, the ducts must be sealed and duct leakage tested, as confirmed through field verification and diagnostic testing, in accordance with Reference Residential Appendix RA3.1.
§ 150.0(m)12:	**Air Filtration.** Space conditioning systems with ducts exceeding 10 feet and the supply side of ventilation systems must have MERV 13 or equivalent filters. Filters for space conditioning systems must have a two inch depth or can be one inch if sized per Equation 150.0-A. Clean-filter pressure drop and labeling must meet the requirements in §150.0(m)12. Filters must be accessible for regular service. Filter racks or grilles must use gaskets, sealing, or other means to close gaps around the inserted filters to and prevents air from bypassing the filter. *

2022 Single-Family Residential Mandatory Requirements Summary

§ 150.0(s)	**Energy Storage System (ESS) Ready.** All single-family residences must meet all of the following: Either ESS-ready interconnection equipment with backed up capacity of 60 amps or more and four or more ESS supplied branch circuits, or a dedicated raceway from the main service to a subpanel that supplies the branch circuits in § 150.0(s); at least four branch circuits must be identified and have their source collocated at a single panelboard suitable to be supplied by the ESS, with one circuit supplying the refrigerator, one lighting circuit near the primary exit, and one circuit supplying a sleeping room receptacle outlet; main panelboard must have a minimum busbar rating of 225 amps; sufficient space must be reserved to allow future installation of a system isolation equipment/transfer switch within 3' of the main panelboard, with raceways installed between the panelboard and the switch location to allow the connection of backup power source.
§ 150.0(t)	**Heat Pump Space Heater Ready.** Systems using gas or propane furnaces to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the furnace with circuit conductors rated at least 30 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."
§ 150.0(u)	**Electric Cooktop Ready.** Systems using gas or propane cooktop to serve individual dwelling units must include: A dedicated 240V branch circuit wiring installed within 3' of the cooktop with circuit conductors rated at least 50 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."
§ 150.0(v)	**Electric Clothes Dryer Ready.** Clothes dryer locations with gas or propane plumbing to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the dryer location with circuit conductors rated at least 30 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."

*Exceptions may apply.

2022 Single-Family Residential Mandatory Requirements Summary

§ 150.0(m)13:	**Space Conditioning System Airflow Rate and Fan Efficacy.** Space conditioning systems that use ducts to supply cooling must have a hole for the placement of a static pressure probe, or a permanently installed static pressure probe in the supply plenum. Airflow must be ≥ 350 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.45 watts per CFM for gas furnace air handlers and ≤ 0.58 watts per CFM for all others. Small duct high velocity systems must provide an airflow ≥ 250 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.62 watts per CFM. Field verification testing is required in accordance with Reference Residential Appendix RA3.3. *

Ventilation and Indoor Air Quality:

§ 150.0(o)1:	**Requirements for Ventilation and Indoor Air Quality**. All dwelling units must meet the requirements of ASHRAE Standard 62.2, Ventilation and Acceptable Indoor Air Quality in Residential Buildings subject to the amendments specified in § 150.0(o)1. *
§ 150.0(o)1B:	**Central Fan Integrated (CFI) Ventilation Systems.** Continuous operation of CFI air handlers is not allowed to provide the whole-dwelling unit ventilation airflow required per §150.0(o)1C. A motorized damper(s) must be installed on the ventilation duct(s) that prevents all airflow through the space conditioning duct system when the damper(s) is closed andcontrolled per §150.0(o)1Biii&iv. CFI ventilation systems must have controls that track outdoor air ventilation run time, and either open or close the motorized damper(s) for compliance with §150.0(o)1C.
§ 150.0(o)1C:	**Whole-Dwelling Unit Mechanical Ventilation for Single-Family Detached and townhouses .** Single-family detached dwelling units, and attached dwelling units not sharing ceilings or floors with other dwelling units, occupiable spaces, public garages, or commercial spaces must have mechanical ventilation airflow specified in § 150.0(o)1C-iii.
§ 150.0(o)1G:	**Local Mechanical Exhaust.** Kitchens and bathrooms must have local mechanical exhaust; nonenclosed kitchens must have demand-controlled exhaust system meeting requirements of §150.0(o)1Giii,enclosed kitchens and bathrooms can use demand-controlled or continuous exhaust meeting §150.0(o)1Giii-iv. Airflow must be measured by the installer per §150.0(o)1Gv, and rated for sound per §150.0(o)1Gvi. *
§ 150.0(o)1H&I:	**Airflow Measurement and Sound Ratings of Whole-Dwelling Unit Ventilation Systems.** The airflow required per § 150.0(o)1C must be measured by using a flow hood, flow grid, or other airflow measuring device at the fan's inlet or outlet terminals/grilles per Reference Residential Appendix RA3.7. Whole-Dwelling unit ventilation systems must be rated for sound per ASHRAE 62.2 §7.2 at no less than the minimum airflow rate required by §150.0(o)1C.
§ 150.0(o)2:	**Field Verification and Diagnostic Testing.** Whole-Dwelling Unit ventilation airflow, vented range hood airflow and sound rating, and HRV and ERV fan efficacy must be verified in accordance with Reference Residential Appendix RA3.7. Vented range hoods must be verified per Reference Residential Appendix RA3.7.4.3 to confirm if it is rated by HVI or AHAM to comply with the airflow rates and sound requirements per §150.0(o)1G

Pool and Spa Systems and Equipment:

§ 110.4(a):	**Certification by Manufacturers.** Any pool or spa heating system or equipment must be certified to have all of the following: compliance with the Appliance Efficiency Regulations and listing in MAEDbS; an on-off switch mounted outside of the heater that allows shutting off the heater without adjusting the thermostat setting; a permanent weatherproof plate or card with operating instructions; and must not use electric resistance heating. *
§ 110.4(b)1:	**Piping.** Any pool or spa heating system or equipment must be installed with at least 36 inches of pipe between the filter and the heater, or dedicated suction and return lines, or built-in or built-up connections to allow for future solar heating.
§ 110.4(b)2:	**Covers.** Outdoor pools or spas that have a heat pump or gas heater must have a cover.
§ 110.4(b)3:	**Directional Inlets and Time Switches for Pools.** Pools must have directional inlets that adequately mix the pool water, and a time switch that will allow all pumps to be set or programmed to run only during off-peak electric demand periods.
§ 110.5:	**Pilot Light.** Natural gas pool and spa heaters must not have a continuously burning pilot light.
§ 150.0(p):	**Pool Systems and Equipment Installation.** Residential pool systems or equipment must meet the specified requirements for pump sizing, flow rate, piping, filters, and valves. *

Lighting:

§ 110.9:	**Lighting Controls and Components.** All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirements of § 110.9. *
§ 150.0(k)1A:	**Luminaire Efficacy.** All installed luminaires must meet the requirements in Table 150.0-A, except lighting integral to exhaust fans, kitchen range hoods, bath vanity mirrors, and garage door openers; navigation lighting less than 5 watts; and lighting internal to drawers, cabinets, and linen closets with an efficacy of at least 45 lumens per watt.
§ 150.0(k)1B:	**Screw based luminaires.** Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8. *
§ 150.0(k)1C:	**Recessed Downlight Luminaires in Ceilings.** Luminaires recessed into ceilings must not contain screw based sockets, must be airtight, and must be sealed with a gasket or caulk. California Electrical Code § 410.116 must also be met.
§ 150.0(k)1D:	**Light Sources in Enclosed or Recessed Luminaires.** Lamps and other separable light sources that are not compliant with the JA8 elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
§ 150.0(k)1E:	**Blank Electrical Boxes.** The number of electrical boxes that are more than five feet above the finished floor and do not contain a luminaire or other device shall be no more than the number of bedrooms. These boxes must be served by a dimmer, vacancy sensor control, low voltage wiring, or fan speed control.
§ 150.0(k)1F:	**Lighting Integral to Exhaust Fans.** Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.(k). *

2022 Single-Family Residential Mandatory Requirements Summary

§ 150.0(k)1G:	**Screw based luminaires.** Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8. *
§ 150.0(k)1H:	**Light Sources in Enclosed or Recessed Luminaires.** Lamps and other separable light sources that are not compliant with the JA8 elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
§ 150.0(k)1I:	**Light Sources in Drawers, Cabinets, and Linen Closets.** Light sources internal to drawers, cabinetry or linen closets are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, emit no more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is closed.
§ 150.0(k)2A:	**Interior Switches and Controls.** All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A.
§ 150.0(k)2B:	**Interior Switches and Controls.** Exhaust fans must be controlled separately from lighting systems. *
§ 150.0(k)2A:	**Accessible Controls.** Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually turned on and off. *
§ 150.0(k)2B:	**Multiple Controls.** Controls must not bypass a dimmer, occupant sensor, or vacancy sensor function if the dimmer or sensor is installed to comply with § 150.0(k).
§ 150.0(k)2C:	**Mandatory Requirements.** Lighting controls must comply with the applicable requirements of § 110.9.
§ 150.0(k)2D:	**Energy Management Control Systems.** An energy management control system (EMCS) may be used to comply with dimming, occupancy, and control requirements if it provides the functionality of the specified control per § 110.9 and the physical controls specified in § 150.0(k)2A.
§ 150.0(k)2E:	**Automatic Shutoff Controls.** In bathrooms, garages, laundry rooms, utility rooms and walk-in closets, at least one installed luminaire must be controlled by an occupancy or vacancy sensor providing automatic-off functionality. Lighting inside drawers and cabinets with opaque fronts or doors must have controls that turn the light off when the drawer or door is closed.
§ 150.0(k)2F:	**Dimmers.** Lighting in habitable spaces (e.g., living rooms, dining rooms, kitchens, and bedrooms) must have readily accessible wall-mounted dimming controls that allow the lighting to be manually adjusted up and down. Forward phase cut dimmers controlling LED light sources in these spaces must comply with NEMA SSL 7A.
§ 150.0(k)2K:	**Independent controls.** Integrated lighting of exhaust fans shall be controlled independently from the fans. Lighting under cabinets or shelves, lighting in display cabinets, and switched outlets must be controlled separately from ceiling-installed lighting.
§ 150.0(k)3A:	**Residential Outdoor Lighting.** For single-family residential buildings, outdoor lighting permanently mounted to a residential building, or to other buildings on the same lot, must have a manual on/off switch and either a photocell and motion sensor or automatic time switch control) or an astronomical time clock. An energy management control system that provides the specified control functionality and meets all applicable requirements may be used to meet these requirements.
§ 150.0(k)4:	**Internally illuminated address signs.** Internally illuminated address signs must either comply with § 140.8 or consume no more than 5 watts of power.
§ 150.0(k)5:	**Residential Garages for Eight or More Vehicles.** Lighting for residential parking garages for eight or more vehicles must comply with the applicable requirements for nonresidential garages in §§ 110.9, 130.0, 130.1, 130.4, 140.6, and 141.0.

Solar Readiness:

§ 110.10(a)1:	**Single-family Residences.** Single-family residences located in subdivisions with 10 or more single-family residences and where the application for a tentative subdivision map for the residences has been deemed complete and approved by the enforcement agency, which do not have a photovoltaic system installed, must comply with the requirements of § 110.10(b)-(e).
§110.10(b)1A:	**Minimum Solar Zone Area.** The solar zone must have a minimum total area as described below. The solar zone must comply with access, pathway, smoke ventilation, and spacing requirements as specified in Title 24, Part 9 or other parts of Title 24 or in any requirements adopted by a local jurisdiction. The solar zone total area must be comprised of areas that have no dimension less than 5 feet and are no less than 80 square feet each for buildings with roof areas less than or equal to 10,000 square feet or no less than 160 square feet each for buildings with roof areas greater than 10,000 square feet. For single-family residences, the solar zone must be located on the roof or overhang of the building and have a total area no less than 250 square feet. *
§ 110.10(b)2:	**Azimuth.** All sections of the solar zone located on steep-sloped roofs must have an azimuth between 90-300° of true north.
§ 110.10(b)3A:	**Shading.** The solar zone must not contain any obstructions, including but not limited to: vents, chimneys, architectural features, and roof mounted equipment.
§ 110.10(b)3B:	**Shading.** Any obstruction located on the roof or any other part of the building that projects above a solar zone must be located at least twice the horizontal distance of the height difference between the highest point of the obstruction and the horizontal projection of the nearest point of the solar zone, measured in the vertical plane.
§ 110.10(b)4:	**Structural Design Loads on Construction Documents.** For areas of the roof designated as a solar zone, the structural design loads for roof dead load and roof live load must be clearly indicated on the construction documents.
§ 110.10(c):	**Interconnection Pathways.** The construction documents must indicate: a location reserved for inverters and metering equipment and a pathway reserved for routing of conduit from the solar zone to the point of interconnection with the electrical service; and for single-family residences and central water-heating systems, a pathway reserved for routing plumbing from the solar zone to the water-heating system.
§ 110.10(d):	**Documentation.** A copy of the construction documents or a comparable document indicating the information from § 110.10(b)-(c) must be provided to the occupant.
§ 110.10(e)1:	**Main Electrical Service Panel.** The main electrical service panel must have a minimum busbar rating of 200 amps.
§ 110.10(e)2:	**Main Electrical Service Panel.** The main electrical service panel must have a reserved space to allow for the installation of a double pole circuit breaker for a future solar electric installation. The reserved space must be permanently marked as "For Future Solar Electric."

Electric and Energy Storage Ready:

I & A ENGINEERING
1610 BLOSSOM HILL ROAD, SUITE "6A"
SAN JOSE, CALIFORNIA 95124
TEL: (408) 268-9337
FAX: (408) 268-1135

Barnell Ave.
Morgan Hill, CA 95037

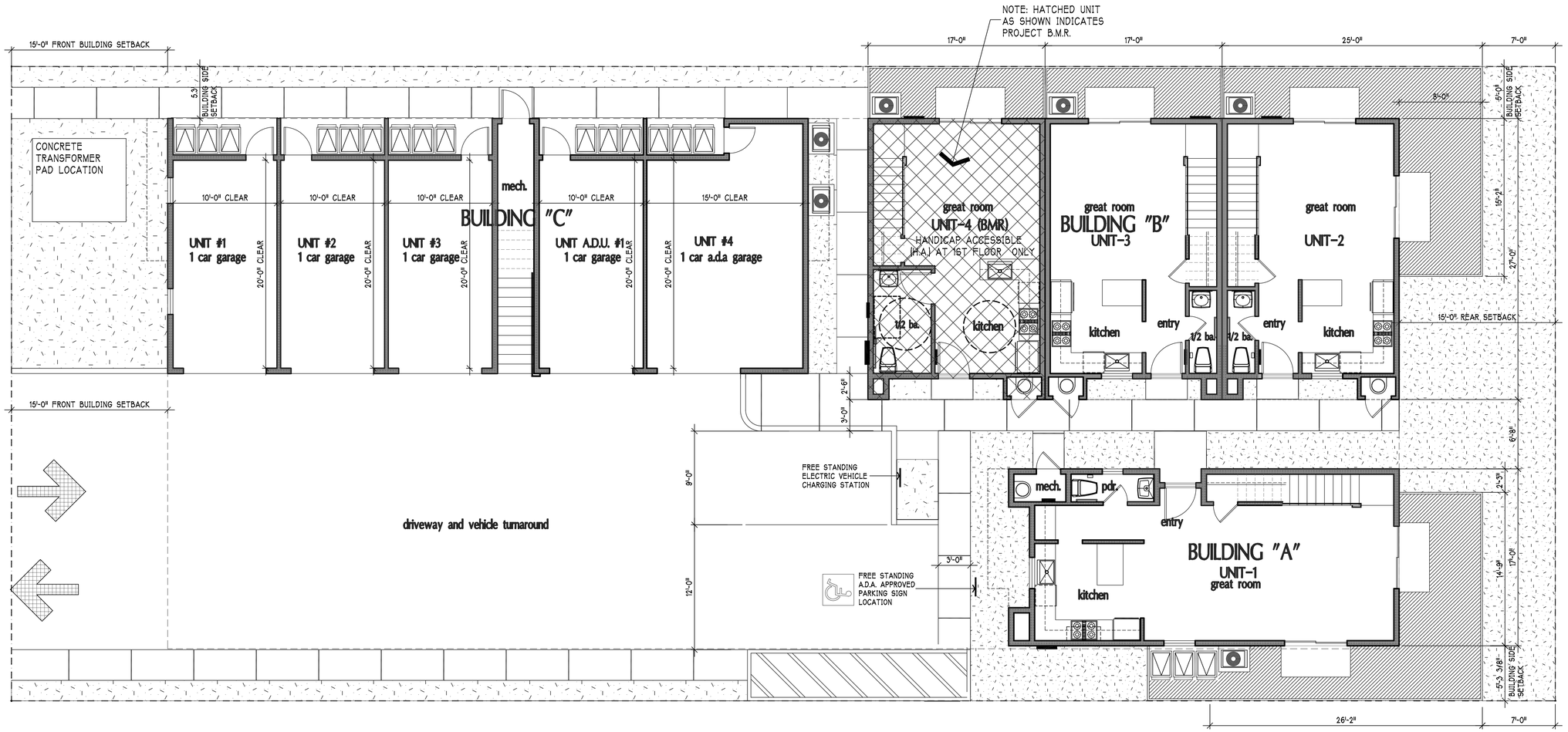
PROJECT: LJ COMMONS 4 PLEX

DRAWING TITLE: UNIT 4 TITLE 24

REV	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		
7		

JOB NO.: 23—113
CAD FILE:
DSGN'D BY: I. R. | DRAWN BY: J. T.
CHK'D BY: I. R. | APP'D BY: I. R.
DATE: 4/17/23 | SCALE: AS NOTED
DRAWING NO.: T24-4-3
SHEET ___ OF ___

B A R N E L L A V E N U E



BUILDING "A":

UNIT "1":

1ST FLOOR LIVING AREA:	612.833 SQUARE FEET
2ND FLOOR LIVING AREA:	625.056 SQUARE FEET
TOTAL UNIT "A" LIVING AREA:	1,237.889 SQUARE FEET
NUMBER OF BEDROOMS:	3 BEDROOMS
NUMBER OF BATHROOMS:	2.5 BATHROOMS
PRIVATE YARD AREA:	255.000 SQUARE FEET

BUILDING "B":

UNIT "2":

1ST FLOOR LIVING AREA:	437.000 SQUARE FEET
2ND FLOOR LIVING AREA:	429.833 SQUARE FEET
TOTAL UNIT "B" LIVING AREA:	866.833 SQUARE FEET
NUMBER OF BEDROOMS:	2 BEDROOMS
NUMBER OF BATHROOMS:	1.5 BATHROOMS
PRIVATE YARD AREA:	245.000 SQUARE FEET

UNIT "3":

1ST FLOOR LIVING AREA:	437.000 SQUARE FEET
2ND FLOOR LIVING AREA:	429.833 SQUARE FEET
TOTAL UNIT "C" LIVING AREA:	866.833 SQUARE FEET
NUMBER OF BEDROOMS:	2 BEDROOMS
NUMBER OF BATHROOMS:	1.5 BATHROOMS
PRIVATE YARD AREA:	85.000 SQUARE FEET

UNIT "4" - B.M.R. (A.D.A):

1ST FLOOR LIVING AREA:	437.000 SQUARE FEET
2ND FLOOR LIVING AREA:	429.833 SQUARE FEET
TOTAL UNIT "D" LIVING AREA:	866.833 SQUARE FEET
NUMBER OF BEDROOMS:	2 BEDROOMS
NUMBER OF BATHROOMS:	1.5 BATHROOMS
PRIVATE YARD AREA:	85.000 SQUARE FEET

BUILDING "C":

A.D.U. UNIT #1:

LIVING AREA:	747.000 SQUARE FEET
NUMBER OF BEDROOMS:	2 BEDROOMS
NUMBER OF BATHROOMS:	2 BATHROOMS
OPEN LANDING AREA:	63.000 SQUARE FEET

A.D.U. UNIT #2:

LIVING AREA:	704.000 SQUARE FEET
NUMBER OF BEDROOMS:	2 BEDROOMS
NUMBER OF BATHROOMS:	1 BATHROOM
OPEN LANDING AREA:	63.000 SQUARE FEET

5 CAR GARAGE DATA:

UNIT #1 - 1 CAR GARAGE:	261.333 SQ.FT. (INCLUDES TRASH STORAGE AREA)
UNIT #2 - 1 CAR GARAGE:	253.167 SQ.FT. (INCLUDES TRASH STORAGE AREA)
UNIT #3 - 1 CAR GARAGE:	261.778 SQ.FT. (INCLUDES TRASH STORAGE AREA)
UNIT #4 (A.D.A.) - 1 CAR GARAGE:	382.500 SQ.FT. (INCLUDES TRASH STORAGE AREA)
A.D.U UNIT #1 - 1 CAR GARAGE:	262.222 SQ.FT. (INCLUDES TRASH STORAGE AREA)
STAIRCASE / MECH. STORAGE:	85.750 SQ.FT. (HEAD ROOM AREA ONLY)
TOTAL GARAGE & MECH. STG. AREA:	1,506.750 SQUARE FEET

SITE DEVELOPMENT PLAN

SCALE: 3/16" = 1'-0"

SUN DIALOG CORP.
409 TENNANT STA#558
MORGAN HILL, CA 95037
PHONE 408-612-1600

LICENSED ARCHITECT
DONGMEI SUN
No. C 30,083
RENEWAL 5-31-25
STATE OF CALIFORNIA

NOT VALID WITHOUT A WET SIGNATURE

DRAWING:
Site Development Plan & Misc. Notes

PROJECT:
Haren Properties, LLC
Gabriel Connors
4 Plex – Barnell Ave.
Morgan Hill, Calif.
County of Santa Clara

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REVISIONS:

DATE: JANUARY 01, 2024

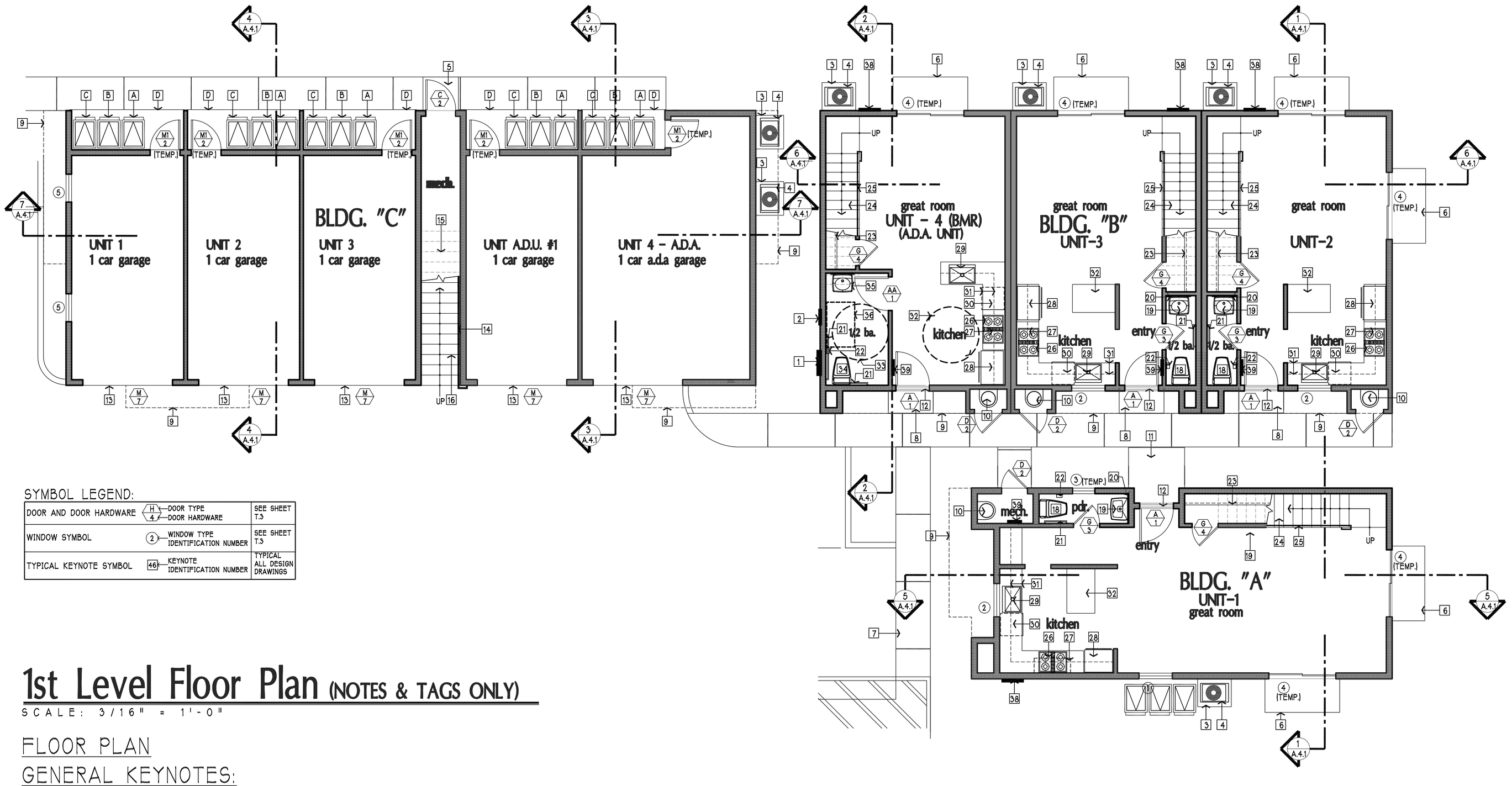
SCALE: AS NOTED

DRAWN BY: GARY E. MOORE

PROJ. MGR. MEI SUN

PROJECT FILE: 0.22~ BARNELL

DRAWING: AS.0



SYMBOL LEGEND:

DOOR AND DOOR HARDWARE	H / 4 — DOOR TYPE / DOOR HARDWARE	SEE SHEET T.3
WINDOW SYMBOL	2 — WINDOW TYPE IDENTIFICATION NUMBER	SEE SHEET T.3
TYPICAL KEYNOTE SYMBOL	46 — KEYNOTE IDENTIFICATION NUMBER	TYPICAL ALL DESIGN DRAWINGS

1st Level Floor Plan (NOTES & TAGS ONLY)

SCALE: 3/16" = 1'-0"

FLOOR PLAN GENERAL KEYNOTES:

EXTERIOR KEYNOTES:

1. MASTER HOUSE AND UNIT POWER PANEL LOCATION (SEE ELECTRICAL DOCUMENTS AS PROVIDED BY I&A ENGINEERING.
2. 200 AMP HOUSE SUB-PANEL LOCATION
3. 2'-6" X 3'-0" HEAT PUMP CONCRETE PAD
4. DECK MOUNT HEAT PUMP LOCATION
5. 3'-0" X 4'-0" CONCRETE LANDING W/ NON-SLIP BROOM FINISH
6. 3'-0" X 6'-8" CONCRETE LANDING W/ NON-SLIP BROOM FINISH
7. 3'-0" WIDE CONCRETE WALKWAY W/ NON-SLIP BROOM FINISH (SEE SHEET "A5.0")
8. 2'-0" X 4'-0" CONCRETE ENTRY LANDING W/ NON-SLIP BROOM FINISH
9. HIDDEN LINE INDICATES AREA OF 2ND LEVEL CANTILEVERED FLOOR AREA ABOVE
10. ELECTRIC WATER HEATER (80 GAL.) LCATION SET W/ APPROVED SIESMIC STRAPS
11. 3'-0" X 5'-0" CONCRETE ENTRY LANDING W/ NON-SLIP BROOM FINISH
12. FRONT ENTRY DOOR BRONZE ANODIZED ALLUMINUM DOOR THRESHOLD
13. GARAGE CONCRETE FLOOR NOSING
- A. GENERAL TRASH STORAGE BIN
- B. GENERAL TRASH RECYCLING BIN
- C. ENVIRONMENTAL WASTE RECYCLING BIN
- D. EDGE OF CONCRETE TRASH DECK W/ BROOM FINISH

MECHANICAL & STORAGE ROOM KEYNOTES:

14. WALL MOUNT METAL HANDRAIL SET 36" ABOVE COMMON STAIR TREAD NOSING.
15. STAIR CASE ASSEMBLY ABOVE COMMON MECHANICAL ROOM
16. OPEN STAIR CASE ASSEMBLY TO A.D.U. ABOVE. - STAIR DESIGN DATA:
    STAIR RUN: 11.00"
    STAIR RISE: 7.75" (MAX. ALLOWABLE)

RENTAL UNIT #1

18. DECK MOUNT TOILET W/ MAX. FLUSH CAPACITY OF 1.28 GALLONS
19. FLOOR MOUNT PEDISTAL SINK LOCATION
20. WALL MOUNT MIRROR LOCATION
21. WALL MOUNT TOWEL BAR LOCATION
22. WALL MOUNT TOILET PAPER LOCATION
23. ENTRY CLOSET POLE & SHELF ASSEMBLY SET BENEATH STAIR CASE
24. STAIR CASE - STAIR DATA:
    STAIR RUN: 10.00"
    STAIR RISE: 7.50"
25. DECORATIVE STAIR HANDRAIL W/ TOP RAIL SET 36" ABOVE COMMON STAIR TREAD NOSING W/ VERTICAL RAILS SET IN SUCH A MANNER SO AS TO PREVENT THE PASSAGE OF A 4" DIA. SPHERE [TYP.]
26. 4 BURNER ELECTRIC RANGE TOP W/ OVEN BELOW
27. RANGE HOOD W/ FAN AND LIGHT
28. FREE STANDING REFRIGERATOR / FREZZER LOCATION
29. SINGLE COMPARTMENT KITCHEN SINK W/ DISPOSAL UNIT
30. DISHWASHER LOCATION
31. UPPER AND LOWER KITCHEN CABINET ASSEMBLY
32. PENNINSULA CABINET ASSEMBLY
- 1A. UNIT "A" 200 AMP ELECTIRAL SUBPANEL LOCATION

RENTAL UNIT #2

18. DECK MOUNT TOILET W/ MAX. FLUSH CAPACITY OF 1.28 GALLONS
19. FLOOR MOUNT PEDISTAL SINK LOCATION
20. WALL MOUNT MIRROR LOCATION
21. WALL MOUNT TOWEL BAR LOCATION
22. WALL MOUNT TOILET PAPER LOCATION
23. ENTRY CLOSET POLE & SHELF ASSEMBLY SET BENEATH STAIR CASE
24. STAIR CASE - STAIR DATA:
    STAIR RUN: 10.00"
    STAIR RISE: 7.50"
25. DECORATIVE STAIR HANDRAIL W/ TOP RAIL SET 36" ABOVE COMMON STAIR TREAD NOSING W/ VERTICAL RAILS SET IN SUCH A MANNER SO AS TO PREVENT THE PASSAGE OF A 4" DIA. SPHERE [TYP.]
26. 4 BURNER ELECTRIC RANGE TOP W/ OVEN BELOW
27. RANGE HOOD W/ FAN AND LIGHT
28. FREE STANDING REFRIGERATOR / FREZZER LOCATION
29. SINGLE COMPARTMENT KITCHEN SINK W/ DISPOSAL UNIT
30. DISHWASHER LOCATION
31. UPPER AND LOWER KITCHEN CABINET ASSEMBLY
32. PENNINSULA CABINET ASSEMBLY

RENTAL UNIT #3

18. DECK MOUNT TOILET W/ MAX. FLUSH CAPACITY OF 1.28 GALLONS
19. FLOOR MOUNT PEDISTAL SINK LOCATION
20. WALL MOUNT MIRROR LOCATION
21. WALL MOUNT TOWEL BAR LOCATION
22. WALL MOUNT TOILET PAPER LOCATION
23. ENTRY CLOSET POLE & SHELF ASSEMBLY SET BENEATH STAIR CASE
24. STAIR CASE - STAIR DATA:
    STAIR RUN: 10.00"
    STAIR RISE: 7.50"
25. DECORATIVE STAIR HANDRAIL W/ TOP RAIL SET 36" ABOVE COMMON STAIR TREAD NOSING W/ VERTICAL RAILS SET IN SUCH A MANNER SO AS TO PREVENT THE PASSAGE OF A 4" DIA. SPHERE [TYP.]
26. 4 BURNER ELECTRIC RANGE TOP W/ OVEN BELOW
27. RANGE HOOD W/ FAN AND LIGHT
28. FREE STANDING REFRIGERATOR / FREZZER LOCATION
29. SINGLE COMPARTMENT KITCHEN SINK W/ DISPOSAL UNIT
30. DISHWASHER LOCATION
31. UPPER AND LOWER KITCHEN CABINET ASSEMBLY
32. PENNINSULA CABINET ASSEMBLY

RENTAL UNIT #4 (A.D.A.)

20. WALL MOUNT MIRROR LOCATION
21. WALL MOUNT TOWEL BAR LOCATION
22. WALL MOUNT TOILET PAPER LOCATION
23. ENTRY CLOSET POLE & SHELF ASSEMBLY SET BENEATH STAIR CASE
24. STAIR CASE - STAIR DATA:
    STAIR RUN: 10.00"
    STAIR RISE: 7.50"
25. DECORATIVE STAIR HANDRAIL W/ TOP RAIL SET 36" ABOVE COMMON STAIR TREAD NOSING W/ VERTICAL RAILS SET IN SUCH A MANNER SO AS TO PREVENT THE PASSAGE OF A 4" DIA. SPHERE [TYP.]
26. A.D.A. ACCESSIBLE 4 BURNER ELECT. RANGE TOP W/ OVEN BELOW
27. RANGE HOOD W/ FAN AND LIGHT
28. FREE STANDING REFRIGERATOR / FREZZER LOCATION
29. A.D.A. ACCESSIBLE SINGLE COMPARTMENT KITCHEN SINK W/ DISPOSAL UNIT
30. DISHWASHER LOCATION
31. UPPER AND LOWER KITCHEN CABINET ASSEMBLY
32. 60" A.D.A. KITCHEN TURNING DIAMETER
33. 60" A.D.A. 1/2 BATHROOM TURNING RADIUS
34. WALL MOUNT A.D.A. ACCESSABLE BATHROOM SINK LOCATION
35. DECK MOUNT A.D.A. ACCESSABLE TOILET W/ MAX. FLUSH CAPACITY OF 1.28 GALLONS
36. 30" X 48" A.D.A. ACCESSABLE CLEAR SPACE IN FRONT OF BOTH WALL MOUNT SINK AND TOILET FRONT NOSING
37. WALL MOUNT TOILET PAPER DISPENSER LOCATION
38. 200 AMP. UNIT POWER PANEL LOCATION
39. 200 AMP SUB-PANEL LOCATION

SUN DIALOG CORP.
409 TENNANT STA#558
MORGAN HILL, CA 95037
PHONE 408-612-1600

LICENSED ARCHITECT
DONGMEI SUN
No. C 30,083
RENEWAL 5-31-25
STATE OF CALIFORNIA

NOT VALID WITHOUT A WET SIGNATURE

DRAWING:
1st Level Floor Plan (notes & tags only)

PROJECT:
Haren Properties, LLC
Gabriel Connors
4 Plex - Barnell Ave.
Morgan Hill, Calif.
County of Santa Clara

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REVISIONS:

DATE: DECEMBER 30, 2023

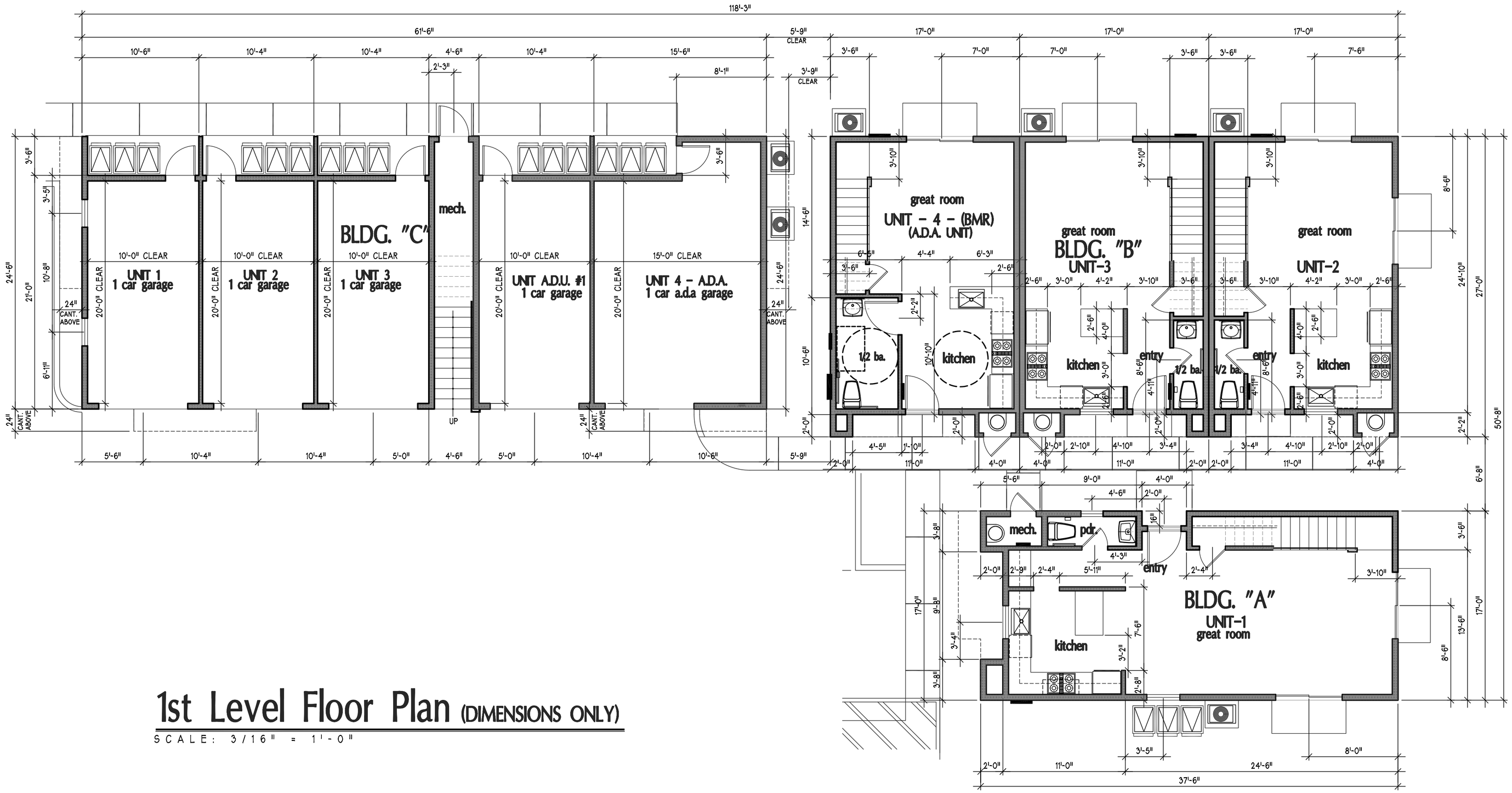
SCALE: AS NOTED

DRAWN BY: GARY E. MOORE

PROJ. MGR. MEI SUN

PROJECT FILE: 0.22~ BARNELL

DRAWING: A.00



1st Level Floor Plan (DIMENSIONS ONLY)

SCALE: 3/16" = 1'-0"

SUN DIALOG CORP.
409 TENNANT STA#558
MORGAN HILL, CA 95037
PHONE 408-612-1600

LICENSED ARCHITECT
DONGMEI SUN
No. C 30,083
RENEWAL 5-31-25
STATE OF CALIFORNIA

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DRAWING:
1st Level Floor Plan
(dimensions only)

PROJECT:
Haren Properties, LLC
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4 Plex - Barnell Ave.
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REVISIONS:

DATE: DECEMBER 30, 2023

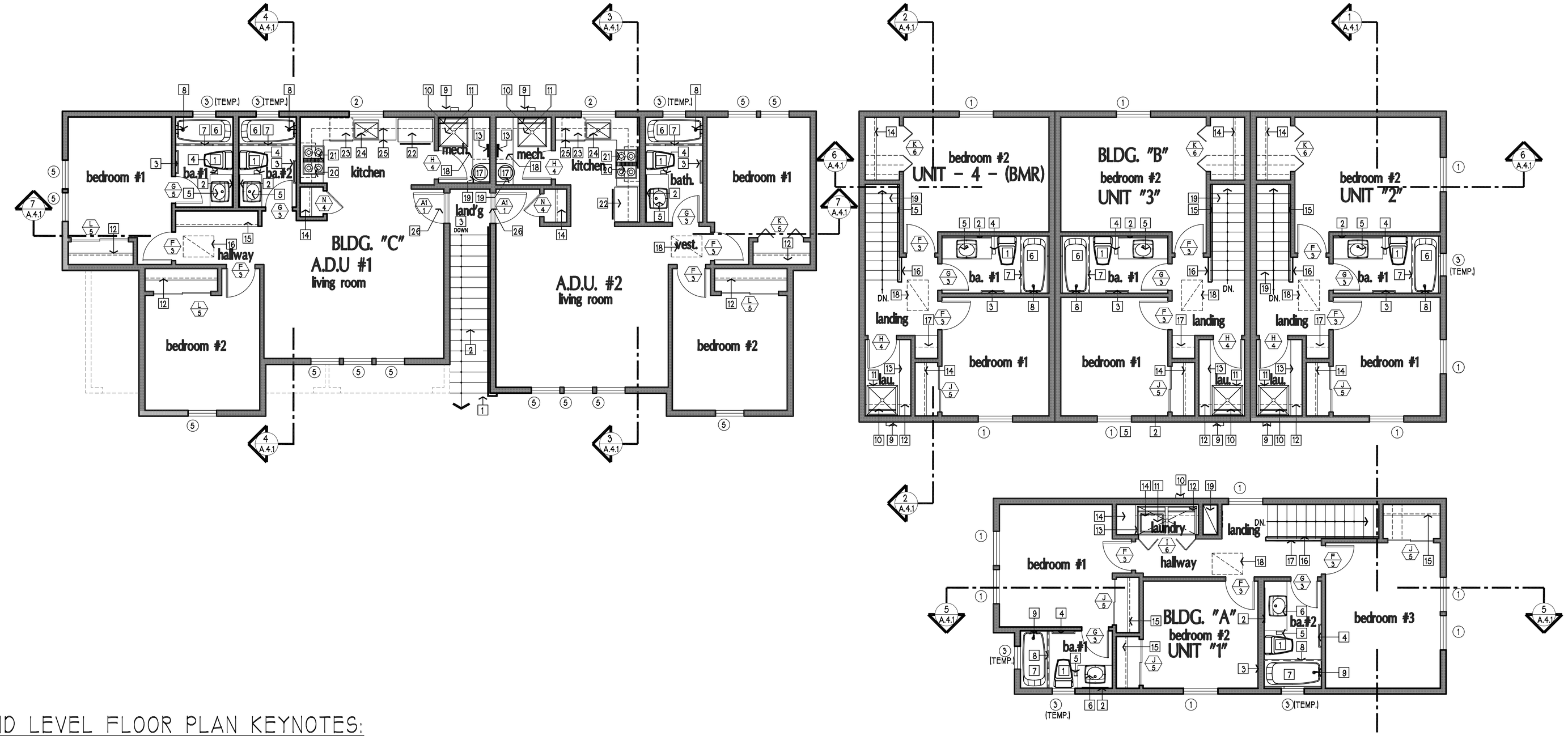
SCALE: AS NOTED

DRAWN BY: GARY E. MOORE

PROJ. MGR. MEI SUN

PROJECT FILE: 0.22~ BARNELL

DRAWING: A.0.1



2ND LEVEL FLOOR PLAN KEYNOTES:

RENTAL UNIT #1:

1. DECK MOUNT TOILET W/ MAX. FLUSH CAPACITY OF 1.28 GALLONS
2. WALL MOUNT MIRROR LOCATION
3. 2X6 STUD FRAMED PLUMBING WALL
4. WALL MOUNT TOWEL BAR LOCATION
5. WALL MOUNT TOILET PAPER LOCATION
6. BATHROOM COUNTER TOP MOUNT SINK LOCATION
7. 2'-6" X 5'-0" ENAMEL COATED CAST IRON TUB W/ SHOWER LOCATION
8. TEMPERED GLASS SHOWER DOOR
9. WALL MOUNT SHOWER HEAD, TUB FILLER AND HANDLE ASSEMBLY'S W/ WATER FLOW RESTRICTOR
10. DRYER VENT LOCATION
11. CLOTHES WASHING MACHINE
12. CLOTHES DRYER LOCATION
13. DECK MOUNT G.I. WASHING MACHINE OVERFLOW PAN W/ DRAIN
14. LAUNDRY ROOM OPEN UPPER SHELVING
15. CLOSET POLE AND SHELF ASSEMBLY
16. DECORATIVE STAIR HANDRAIL W/ TOP RAIL SET 36" ABOVE COMMON STAIR TREAD NOSING W/ VERTICAL RAILS SET IN SUCH A MANNER SO AS TO PREVENT THE PASSAGE OF A 4" DIA. SPHERE [TYP.]
17. DECORATIVE LANDING HANDRAIL W/ TOP RAIL SET 42" ABOVE COMMON FINISH FLOOR W/ VERTICAL RAILS SET IN SUCH A MANNER SO AS TO PREVENT THE PASSAGE OF A 4" DIA. SPHERE [TYP.]
18. 22" X 32" ATTIC ACCESS LOCATION
19. HVAC CHASE LOCATION

RENTAL UNIT #2:

1. DECK MOUNT TOILET W/ MAX. FLUSH CAPACITY OF 1.28 GALLONS
2. WALL MOUNT MIRROR LOCATION
3. WALL MOUNT TOWEL BAR LOCATION
4. WALL MOUNT TOILET PAPER LOCATION
5. BATHROOM COUNTER TOP MOUNT SINK LOCATION
6. 2'-6" X 5'-0" ENAMEL COATED CAST IRON TUB W/ SHOWER LOCATION
7. TEMPERED GLASS SHOWER DOOR
8. WALL MOUNT SHOWER HEAD, TUB FILLER AND HANDLE ASSEMBLY'S W/ WATER FLOW RESTRICTOR
9. DRYER VENT LOCATION
10. STACKED CLOTHES DRYER AND CLOTHES WASHING MACHINE LOCATION
11. 36" X 36" DECK MOUNT G.I. WASHING MACHINE OVERFLOW PAN W/ DRAIN
12. LAUNDRY ROOM OPEN UPPER LINEN CABINET
13. LAUNDRY ROOM UPPER AND LOWER OPEN LINEN AND UTILITY STORAGE
14. CLOSET POLE AND SHELF ASSEMBLY
15. DECORATIVE STAIR HANDRAIL W/ TOP RAIL SET 36" ABOVE COMMON STAIR TREAD NOSING W/ VERTICAL RAILS SET IN SUCH A MANNER SO AS TO PREVENT THE PASSAGE OF A 4" DIA. SPHERE [TYP.]
16. DECORATIVE LANDING HANDRAIL W/ TOP RAIL SET 42" ABOVE COMMON FINISH FLOOR W/ VERTICAL RAILS SET IN SUCH A MANNER SO AS TO PREVENT THE PASSAGE OF A 4" DIA. SPHERE [TYP.]
17. UPPER AND LOWER WALL MOUNT LINEN CABINET ASSEMBLY
18. 22" X 32" ATTIC ACCESS LOCATION
19. STAIR CASE ASSEMBLY TO LOWER FLOOR - DESIGN DATA:
    RUN: 10.0"
    RISE: 7.5"

RENTAL UNIT #3:

1. DECK MOUNT TOILET W/ MAX. FLUSH CAPACITY OF 1.28 GALLONS
2. WALL MOUNT MIRROR LOCATION
3. WALL MOUNT TOWEL BAR LOCATION
4. WALL MOUNT TOILET PAPER LOCATION
5. BATHROOM COUNTER TOP MOUNT SINK LOCATION
6. 2'-6" X 5'-0" ENAMEL COATED CAST IRON TUB W/ SHOWER LOCATION
7. TEMPERED GLASS SHOWER DOOR
8. WALL MOUNT SHOWER HEAD, TUB FILLER AND HANDLE ASSEMBLY'S W/ WATER FLOW RESTRICTOR
9. DRYER VENT LOCATION
10. STACKED CLOTHES DRYER AND CLOTHES WASHING MACHINE LOCATION
11. 36" X 36" DECK MOUNT G.I. WASHING MACHINE OVERFLOW PAN W/ DRAIN
12. LAUNDRY ROOM OPEN UPPER LINEN CABINET
13. LAUNDRY ROOM UPPER AND LOWER OPEN LINEN AND UTILITY STORAGE
14. CLOSET POLE AND SHELF ASSEMBLY
15. DECORATIVE STAIR HANDRAIL W/ TOP RAIL SET 36" ABOVE COMMON STAIR TREAD NOSING W/ VERTICAL RAILS SET IN SUCH A MANNER SO AS TO PREVENT THE PASSAGE OF A 4" DIA. SPHERE [TYP.]
16. DECORATIVE LANDING HANDRAIL W/ TOP RAIL SET 42" ABOVE COMMON FINISH FLOOR W/ VERTICAL RAILS SET IN SUCH A MANNER SO AS TO PREVENT THE PASSAGE OF A 4" DIA. SPHERE [TYP.]
17. UPPER AND LOWER WALL MOUNT LINEN CABINET ASSEMBLY
18. 22" X 32" ATTIC ACCESS LOCATION
19. STAIR CASE ASSEMBLY TO LOWER FLOOR - DESIGN DATA:
    RUN: 10.0"
    RISE: 7.5"

RENTAL UNIT #4:

1. DECK MOUNT TOILET W/ MAX. FLUSH CAPACITY OF 1.28 GALLONS
2. WALL MOUNT MIRROR LOCATION
3. WALL MOUNT TOWEL BAR LOCATION
4. WALL MOUNT TOILET PAPER LOCATION
5. BATHROOM COUNTER TOP MOUNT SINK LOCATION
6. 2'-6" X 5'-0" ENAMEL COATED CAST IRON TUB W/ SHOWER LOCATION
7. TEMPERED GLASS SHOWER DOOR
8. WALL MOUNT SHOWER HEAD, TUB FILLER AND HANDLE ASSEMBLY'S W/ WATER FLOW RESTRICTOR
9. DRYER VENT LOCATION
10. STACKED CLOTHES DRYER AND CLOTHES WASHING MACHINE LOCATION
11. 36" X 36" DECK MOUNT G.I. WASHING MACHINE OVERFLOW PAN W/ DRAIN
12. LAUNDRY ROOM OPEN UPPER LINEN CABINET
13. LAUNDRY ROOM UPPER AND LOWER OPEN LINEN AND UTILITY STORAGE
14. CLOSET POLE AND SHELF ASSEMBLY
15. DECORATIVE STAIR HANDRAIL W/ TOP RAIL SET 36" ABOVE COMMON STAIR TREAD NOSING W/ VERTICAL RAILS SET IN SUCH A MANNER SO AS TO PREVENT THE PASSAGE OF A 4" DIA. SPHERE [TYP.]
16. DECORATIVE LANDING HANDRAIL W/ TOP RAIL SET 42" ABOVE COMMON FINISH FLOOR W/ VERTICAL RAILS SET IN SUCH A MANNER SO AS TO PREVENT THE PASSAGE OF A 4" DIA. SPHERE [TYP.]
17. UPPER AND LOWER WALL MOUNT LINEN CABINET ASSEMBLY
18. 22" X 32" ATTIC ACCESS LOCATION
19. STAIR CASE ASSEMBLY TO LOWER FLOOR - DESIGN DATA:
    RUN: 10.0"
    RISE: 7.5"

A.D.U. #1

1. DECK MOUNT TOILET W/ MAX. FLUSH CAPACITY OF 1.28 GALLONS
2. WALL MOUNT MIRROR LOCATION
3. WALL MOUNT TOWEL BAR LOCATION
4. WALL MOUNT TOILET PAPER LOCATION
5. BATHROOM COUNTER TOP MOUNT SINK LOCATION
6. 2'-6" X 5'-0" ENAMEL COATED CAST IRON TUB W/ SHOWER LOCATION
7. TEMPERED GLASS SHOWER DOOR
8. WALL MOUNT SHOWER HEAD, TUB FILLER AND HANDLE ASSEMBLY'S W/ WATER FLOW RESTRICTOR
9. DRYER VENT LOCATION
10. STACKED CLOTHES WASHING MACHINE AND CLOTHES DRYER LOCATION
11. 36" X 36" DECK MOUNT G.I. WASHING MACHINE OVERFLOW PAN W/ DRAIN
12. CLOSET POLE AND SHELF ASSEMBLY
13. 200 AMP ELECTRICAL SUB-PANEL LOCATION
14. ENTRY CLOSET POLE AND SHELF ASSEMBLY
15. UPPER AND LOWER HALLWAY LINEN CABINET ASSEMBLY
16. 22" X 32" ATTIC ACCESS LOCATION
17. 80 GAL. ELECTRIC WATER HEATER LOCATION SET W/ APPROVED SIESMIC STRAPS
18. MECH. ROOM UPPER AND LOWER CABINET ASSEMBLY
19. 18" HIGH MECHANICAL EQUIPMENT DECK - WRAP AND FINISH W/ 5/8" TYPE "X" GYPSUM WALL BOARD - TAPE & TEXTURE
20. OVERHEAD RANGE HOOD W/ FAN AND LIGHT
21. 4 BURNER ELECTRIC RANGE TOP W/ SELF-CLEANING CONVECTION OVEN BELOW
22. FREE STANDING REFRIGERATOR / FREEZER LOCATION
23. DISHWASHER LOCATION
24. SINGLE COMPARTMENT KITCHEN SINK W/ DISPOSAL UNIT
25. UPPER AND LOWER KITCHEN CABINET ASSEMBLY
26. BRONZE ANODIZED ALUMINUM ENTRY DOOR THRESHOLD

A.D.U. #2

1. DECK MOUNT TOILET W/ MAX. FLUSH CAPACITY OF 1.28 GALLONS
2. WALL MOUNT MIRROR LOCATION
3. WALL MOUNT TOWEL BAR LOCATION
4. WALL MOUNT TOILET PAPER LOCATION
5. BATHROOM COUNTER TOP MOUNT SINK LOCATION
6. 2'-6" X 5'-0" ENAMEL COATED CAST IRON TUB W/ SHOWER LOCATION
7. TEMPERED GLASS SHOWER DOOR
8. WALL MOUNT SHOWER HEAD, TUB FILLER AND HANDLE ASSEMBLY'S W/ WATER FLOW RESTRICTOR
9. DRYER VENT LOCATION
10. STACKED CLOTHES WASHING MACHINE AND CLOTHES DRYER LOCATION
11. 36" X 36" DECK MOUNT G.I. WASHING MACHINE OVERFLOW PAN W/ DRAIN
12. CLOSET POLE AND SHELF ASSEMBLY
13. 200 AMP ELECTRICAL SUB-PANEL LOCATION
14. ENTRY CLOSET POLE AND SHELF ASSEMBLY
15. THIS NUMBER NOT USED
16. 22" X 32" ATTIC ACCESS LOCATION
17. 80 GAL. ELECTRIC WATER HEATER LOCATION SET W/ APPROVED SIESMIC STRAPS
18. MECH. ROOM UPPER AND LOWER CABINET ASSEMBLY
19. 18" HIGH MECHANICAL EQUIPMENT DECK - WRAP AND FINISH W/ 5/8" TYPE "X" GYPSUM WALL BOARD - TAPE & TEXTURE
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21. 4 BURNER ELECTRIC RANGE TOP W/ SELF-CLEANING CONVECTION OVEN BELOW
22. FREE STANDING REFRIGERATOR / FREEZER LOCATION
23. DISHWASHER LOCATION
24. SINGLE COMPARTMENT KITCHEN SINK W/ DISPOSAL UNIT
25. UPPER AND LOWER KITCHEN CABINET ASSEMBLY
26. BRONZE ANODIZED ALUMINUM ENTRY DOOR THRESHOLD

2ND LEVEL LANDING & STAIRS:

1. WALL MOUNT STAIR HANDRAIL SET 36" ABOVE COMMON STAIR TREAD NOSING
2. STAIR CASE ASSEMBLY / STAIR DATA:
   RUN: 11.00"
   RISE: 7.438"
3. WALL MOUNT STAIR HANDRAIL SET 36" ABOVE COMMON STAIR TREAD NOSING

SYMBOL LEGEND:

DOOR AND DOOR HARDWARE	H — DOOR TYPE / 4 — DOOR HARDWARE	SEE SHEET T.3
WINDOW SYMBOL	2 — WINDOW TYPE IDENTIFICATION NUMBER	SEE SHEET T.3
TYPICAL KEYNOTE SYMBOL	46 — KEYNOTE IDENTIFICATION NUMBER	TYPICAL ALL DESIGN DRAWINGS

2nd Level Floor Plan (NOTES & TAGS ONLY)

SCALE: 3/16" = 1'-0"

SUN DIALOG CORP.
409 TENNANT STA#558
MORGAN HILL, CA 95037
PHONE 408-612-1600

LICENSED ARCHITECT
DONGMEI SUN
No. C 30,083
RENEWAL 5-31-25
STATE OF CALIFORNIA

NOT VALID WITHOUT A WET SIGNATURE

DRAWING: 2nd Level Floor Plan (notes & tags only)

PROJECT:
Haren Properties, LLC
Gabriel Connors
4 Plex - Barnell Ave.
Morgan Hill, Calif.
County of Santa Clara

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REVISIONS:

DATE: DECEMBER 30, 2023

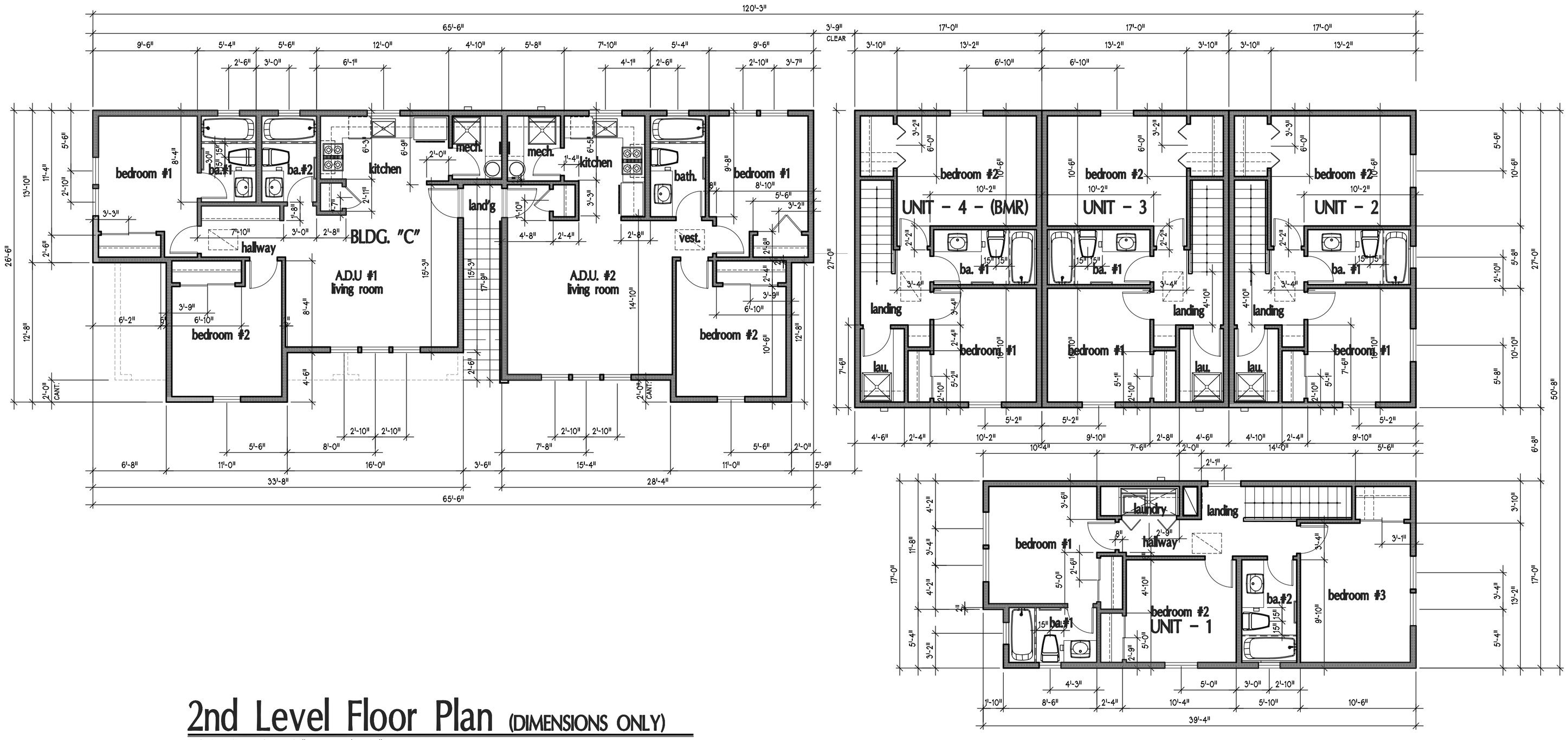
SCALE: AS NOTED

DRAWN BY: GARY E. MOORE

PROJ. MGR. MEI SUN

PROJECT FILE: 0.22~ BARNELL

DRAWING: A.1



2nd Level Floor Plan (DIMENSIONS ONLY)

SCALE: 3/16" = 1'-0"

SUN DIALOG CORP.
409 TENNANT STA#558
MORGAN HILL, CA 95037
PHONE 408-612-1600

LICENSED ARCHITECT
DONGMEI SUN
No. C 30,083
RENEWAL 5-31-25
STATE OF CALIFORNIA

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DRAWING:
2nd Level Floor Plan (dimensions only)

PROJECT:
Haren Properties, LLC
Gabriel Connors
4 Plex – Barnell Ave.
Morgan Hill, Calif.
County of Santa Clara

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PROJ. MGR. MEI SUN

PROJECT FILE: 0.22~ BARNELL

DRAWING: A.1.1

Left Side Elevation (north)

Rear Elevation (west)

Roofing
CertainTeed - Weathered Wood

Stucco
KKM5818 Ketterman

Board & Batten
KM5756 Sunset Meadow

Horizontal Sliding
KM5822 San Francisco Fog

Entry Door
46 Acoustic White

Wall Lantern
Chiasso

Recessed Light
Juno

Outdoor Wall Lamp
Hatteras Bay

Exterior Finish Color Palette

Front Elevation (east)

Right Side Elevation (south)

BUILDING ~ UNIT "A"

Gary Moore & Associates

residential design

60 west main ave. 12a, morgan hill, ca. 95037
3256 rim vista circle, moab, utah, 84532
408.779.1710
e-mail: moore@pacific.net

DRAWING:
Building "A" Design Data

PROJECT:
LJ Commons
Barnell Avenue
Morgan Hill, California
County of Santa Clara

THESE DRAWINGS ARE THE PROPERTY OF GARY MOORE & ASSOCIATES AND ARE INTENDED FOR USE SOLELY ON THE PROJECT TITLED HEREON. THESE DRAWINGS AS PROTECTED UNDER COPYRIGHT LAWS ARE NOT TO BE REPRODUCED IN WHOLE OR PART IN ANY MANNER WITHOUT THE EXPRESSED WRITTEN CONSENT OF THE DESIGNER. USE OF THESE DRAWINGS IS LIMITED TO THE SITE INTENDED AND THEIR USE AT ANY OTHER SITE OR ON OTHER PROJECTS IS PROHIBITED EXCEPT BY PRIOR WRITTEN CONSENT OF THE DESIGNER. ALL REPRODUCTIONS OF THESE DRAWINGS, IN WHOLE OR PART, REMAIN UNDER THE OWNERSHIP OF THE DESIGNER AND SHALL BE RETURNED UPON COMPLETION OF THE PROJECT OR UPON REQUEST OF THE DESIGNER

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REVISIONS:

DATE: October 20, 2023

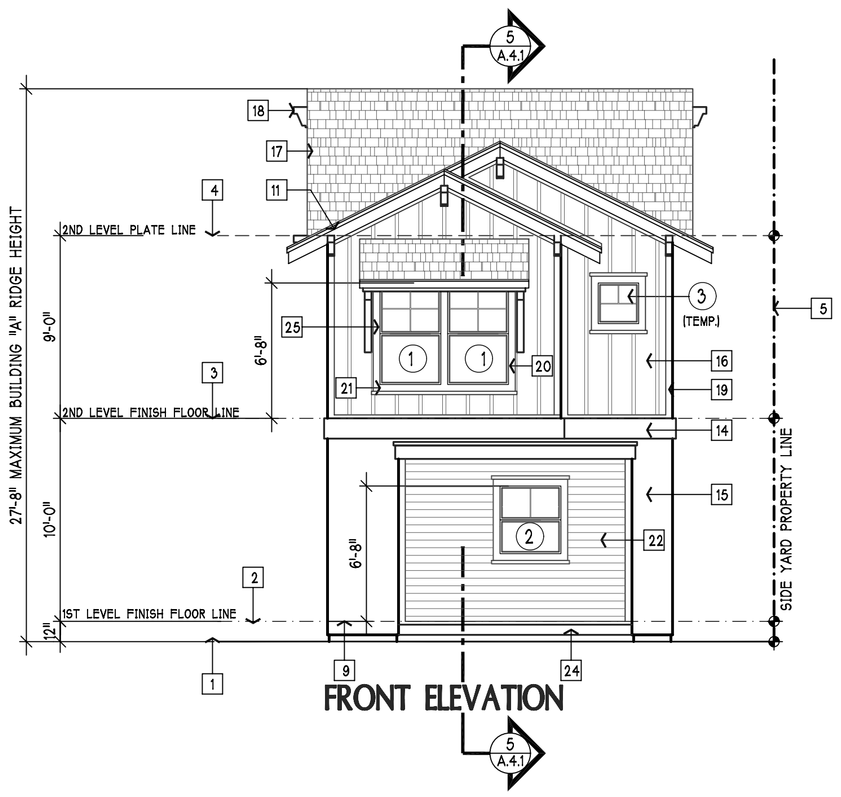
SCALE: AS NOTED

DRAWN BY: GARY E. MOORE

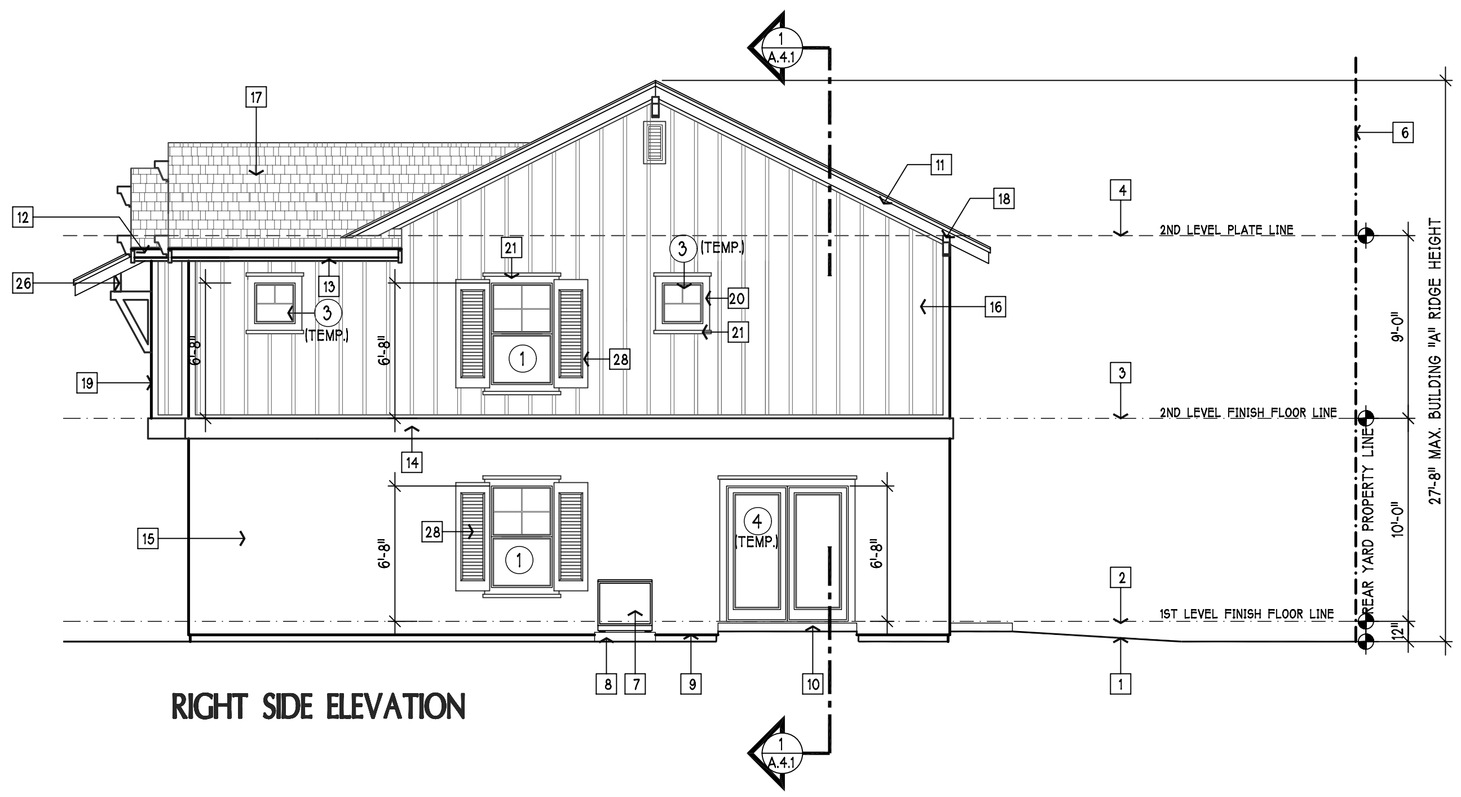
PROJ. MGR. GARY E. MOORE

PROJECT FILE: 0.22~ BARNELL

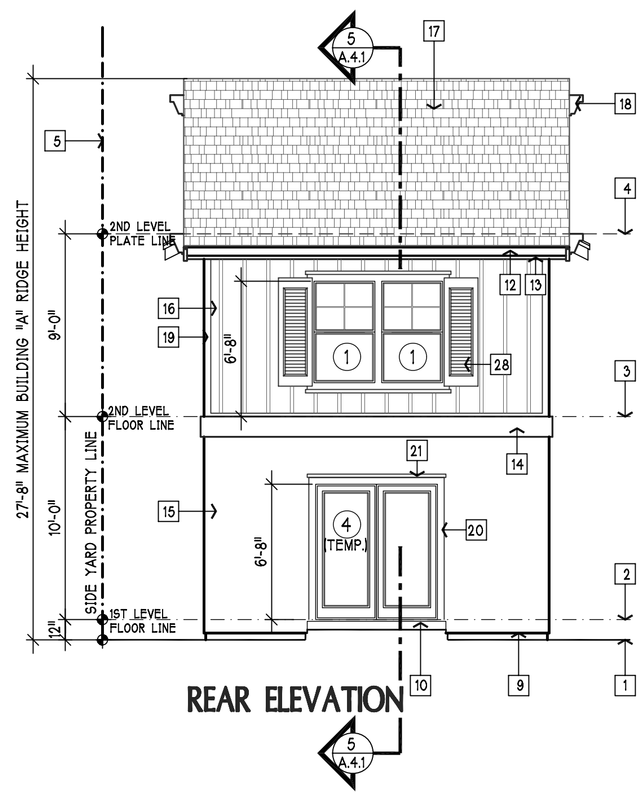
DRAWING: CVR.A



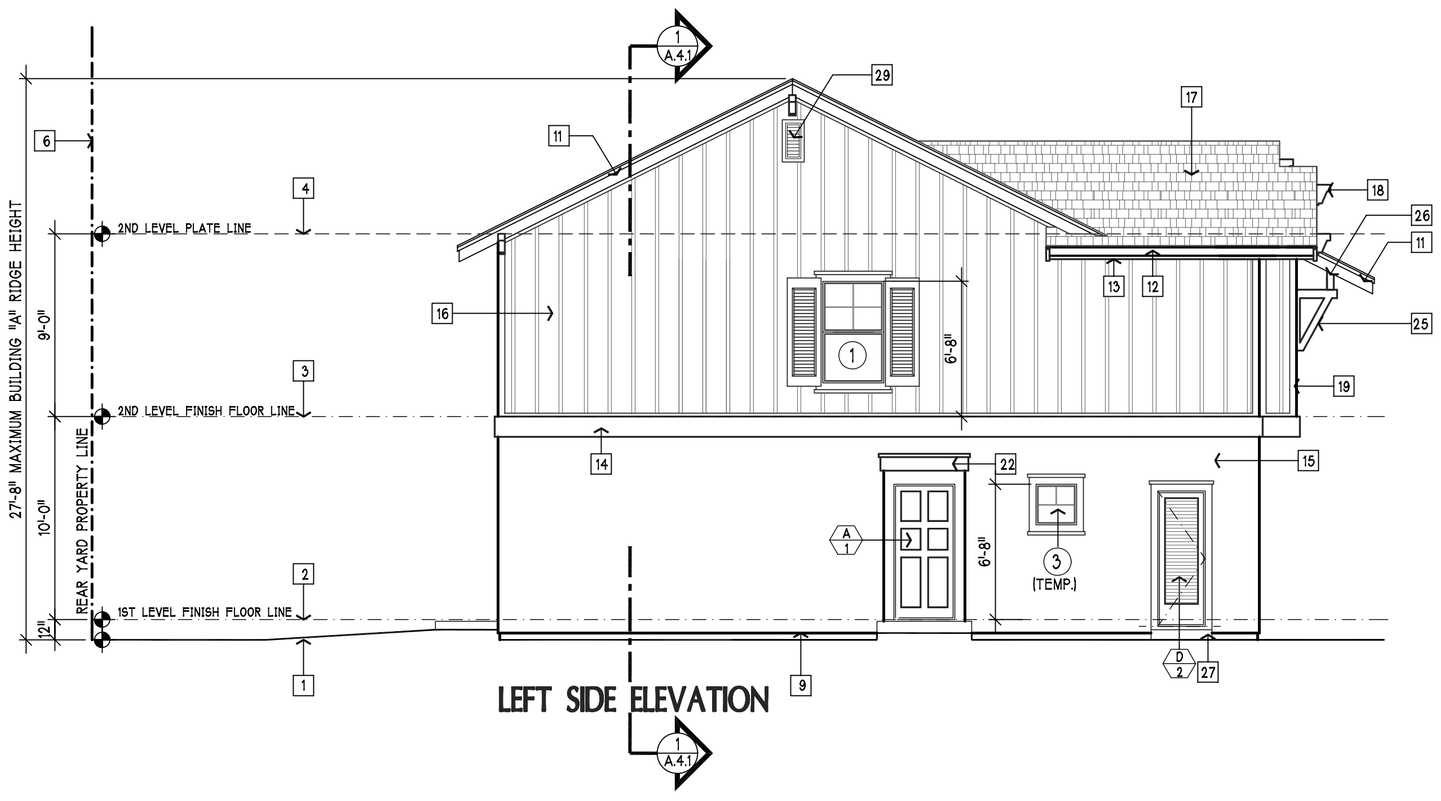
FRONT ELEVATION



RIGHT SIDE ELEVATION



REAR ELEVATION



LEFT SIDE ELEVATION

ELEVATION KEYNOTES:

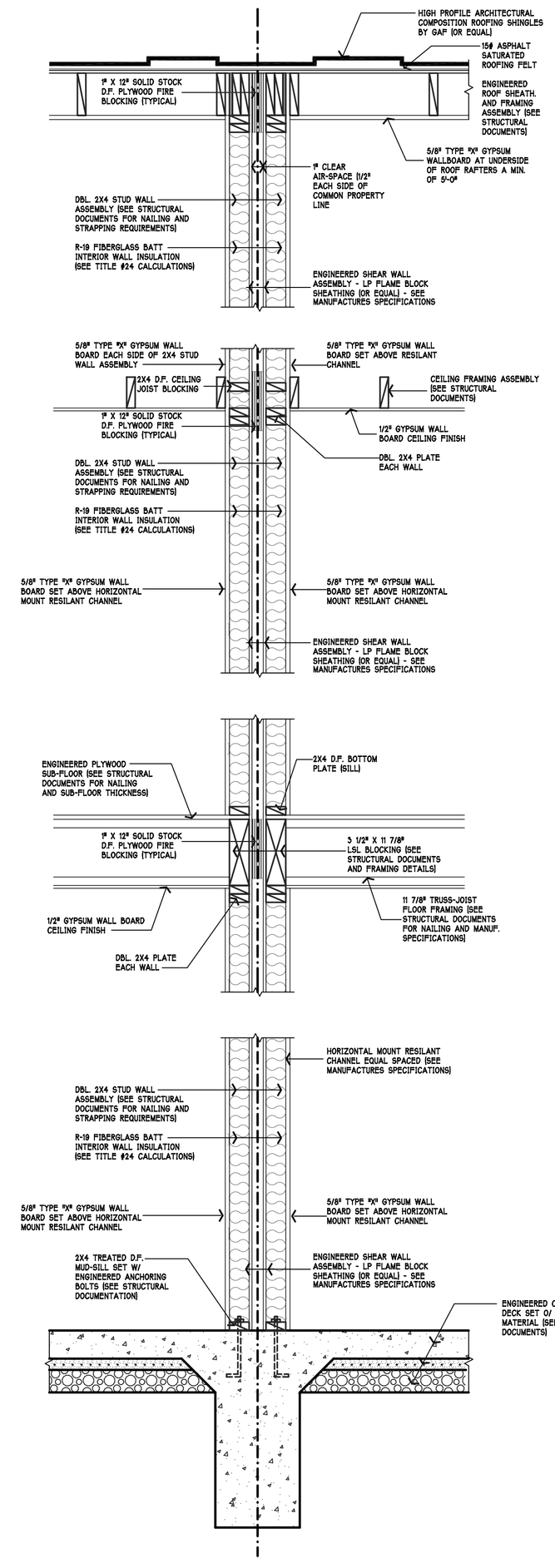
1. EXPECTED FINISH GRADE LINE (VERIFY W/ CIVIL DOCUMENTS)
2. 1ST LEVEL FINISH FLOOR LINE
3. 2ND LEVEL FINISH FLOOR LINE
4. 2ND FLOOR 9'-0" PLATE LINE
5. COMMON SIDE YARD PROPERTY LINE
6. COMMON REAR YARD PROPERTY LINE
7. HVAC "HEAT PUMP" LOCATION
8. 3'-0" X 3'-0" CONCRETE HVAC HEAT PUMP PAD
9. G.I. STUCCO DRIP SCREED SET A MIN. OF 4" ABOVE COMMON FINISH GRADE
10. 3'-0" X 6'-0" CONCRETE STOOP W/ NON-SLIP OR SKID BROOM FINISH
11. BORAL "TRUEXTERIOR TRIM" TO BE: 2X8 BARGE RAFTER SET W/ 1X3 SHINGLE TRIM - BOTH WITH WOOD GRAIN FINISH - PRIMED FOR PAINT
12. 5" G.I. FASCIA GUTTER SET IN BEVEL PATTERN W/ APPROVED G.I. LEAF GUARD
13. BORAL "TRUEXTERIOR TRIM" TO BE: 2X6 FASCIA BOARD W/ WOOD GRAIN FINISH - PRIMED FOR PAINT
14. BORAL "TRUEXTERIOR TRIM" TO BE: 2X10 HORIZONTAL BAND TRIM W/ 1X2 HORIZONTAL CAP TRIM W/ WOOD GRAIN FINISH - PRIMED FOR PAINT
15. 3 COAT (7/8" THK.) CEMENT PLASTER EXTERIOR SET O/ 17GA. SELF-FURRED, PAPER BACKED G.I. STUCCO NETTING W/ DBL. LAYER OF TYPE "D" ASPHALT SATURATED BUILDING PAPER W/ SMOOTH TROWEL FINISH
16. JAMES HARDIE HARDIEPANEL FIBER CEMENT SMOOTH SIDING SET W/ JAMES HARDIE 4/4 .75" X 1.65" VERTICAL BATTS SET AT 16" O.C. W/ WOOD GRAIN FINISH - PRIMED FOR PAINT
17. GAF "TIMBERLINE" HDZ HIGH PROFILE COMPOSITION SHINGLE ROOF
18. 4X10 S4S FANCY CUT D.F. OUTRIGGER
19. 2X4 BORAL "TRUEXTERIOR" TRIM W/ WOOD GRAIN FINISH - PRIMED FOR PAINT
20. 2X4 BORAL "TRUEXTERIOR" DOOR AND WINDOW TRIM W/ WOOD GRAIN FINISH - PRIMED FOR PAINT
21. 2 PC. BORAL "TRUEXTERIOR" DOOR AND WINDOW HEADER AND SILL TRIM W/ WOOD GRAIN FINISH - PRIMED FOR PAINT
22. 2 PC. BORAL "TRUEXTERIOR" HORIZONTAL TRIM W/ WOOD GRAIN FINISH - PRIMED FOR PAINT
23. JAMES HARDIE PRIMED HZ10 FIBER CEMENT 6" LAP SIDING W/ WOOD GRAIN FINISH
24. BORAL "TRUEXTERIOR" 2X6 CEMENT FIBER BELLY BAND TRIM W/ WOOD GRAIN FINISH PRIMED FOR PAINT
25. MULTI-PIECE 2X4 S4S D.F. ROOF BRACKET W/ PAINT FINISH (SEE MISC. FRAMING DETAILS)
26. ENGINEERED 4X S4S D.F. ROOF BEAM W/ PAINT FINISH
27. ENGINEERED 4X S4S D.F. ROOF BEAM W/ PAINT FINISH
28. CLOSED LOUVER WINDOW SHUTTER W/ PAINT FINISH
29. 10" X 10" OPEN G.I. LOUVER GABLE ROOF VENT W/ APPROVED G.I. BUG SCREEN

EXTERIOR FINISH MATERIALS:

1. CEMENT PLASTER:
   3 COAT - 7/8" THK. - CEMENT PLASTER SET O/ 17GA., SELF-FURRED PAPER BACKED G.I. STUCCO NETTING W/ DBL. LAYER OF TYPE "D" ASPHALT SATURATED BUILDING PAPER
2. EXTERIOR PLYWOOD SIDING:
   JAMES HARDIE - HARDIEPANEL FIBER CEMENT SMOOTH SIDING 48" X 120" PRIMED
3. EXTERIOR "VERTICAL" BATTS:
   JAMES HARDIE 4/4 WOOD GRAIN FINISH .75" X 1.65" - PRIMED
4. ALL EXTERIOR VERTICAL AND HORIZONTAL TRIM:
   BORAL "TRUEXTERIOR" FIBER CEMENT TRIM BOTH 1" AND 2" THICKNESS AS SPECIFIED IN BOTH NOTES AND DETAILS W/ WOOD GRAIN FINISH - PRIMED
5. ROOFING:
   GAF "TIMBERLINE" HDZ HIGH PROFILE ARCHITECTURAL COMPOSITION ROOF SHINGLES COLOR: OYSTER GREY - WITH ALGAE PROTECTION

EXTERIOR ELEVATIONS ~ BLDG. "A"

SCALE: 3/16" = 1'-0"



1. DOUBLE 1 HOUR FIRE-WALL ASSEMBLY

SCALE: 1" = 1'-0"

(2) 1 HOUR RATED LOAD BEARING INTERIOR WALL
UL V340 - FIRE RATED DBL. 1 HOUR COMMON FIRE WALL
STC TEST INSUL v8.0.11 - STC: 47

SUN DIALOG CORP.
409 TENNANT STA#558
MORGAN HILL, CA 95037
PHONE 408-612-1600

LICENSED ARCHITECT
DONGMEI SUN
No. C 30,083
RENEWAL 5-31-25
STATE OF CALIFORNIA

NOT VALID WITHOUT A WET SIGNATURE

DRAWING:
Exterior Elevations

PROJECT:
Scott Murry / Gabriel Connors
4 Plex - Barnell Ave.
Morgan Hill, Calif.
County of Santa Clara

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REVISIONS:

DATE: DECEMBER 30, 2023

SCALE: AS NOTED

DRAWN BY: GARY E. MOORE

PROJ. MGR. MEI SUN

PROJECT FILE: 0.22~ BARNELL

DRAWING: A.2

Left Side Elevation (north)

Rear Elevation (west)

Front Elevation (east)

Exterior Finish Color Palette

Right Side Elevation (south)

BUILDING ~ UNIT "B"

Gary Moore & Associates

residential design

60 west main ave. 12.a, morgan hill, ca. 95037
3256 rim vista circle, moab, utah, 84532
408.779.1710
e.mail: moore@pacific.net

DRAWING:
Building "B" Design Data

PROJECT:
LJ Commons
Barnell Avenue
Morgan Hill, California
County of Santa Clara

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REVISIONS:

DATE: October 20, 2023

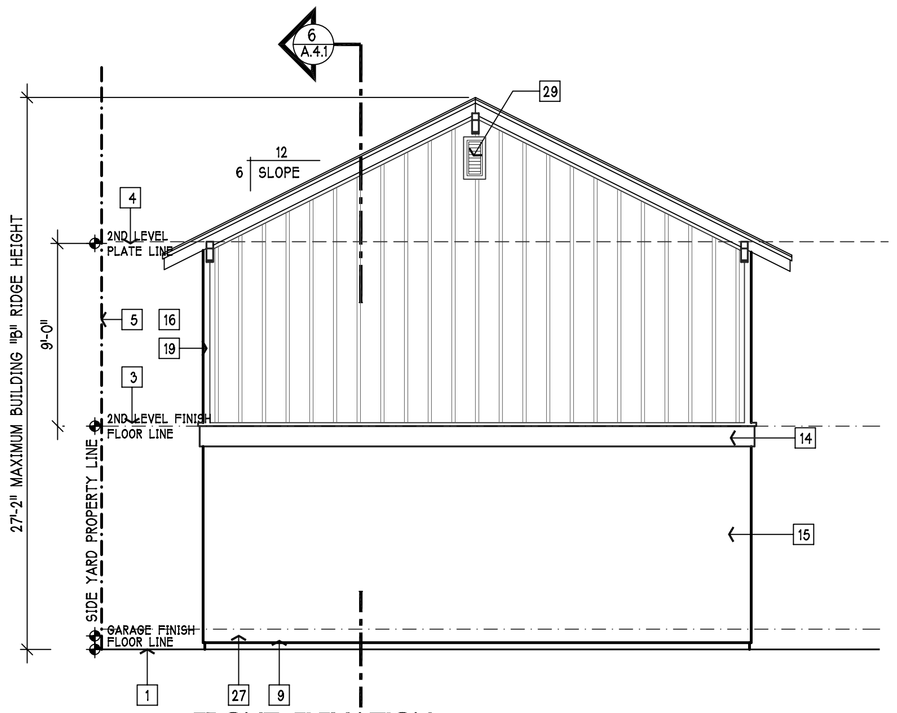
SCALE: AS NOTED

DRAWN BY: GARY E. MOORE

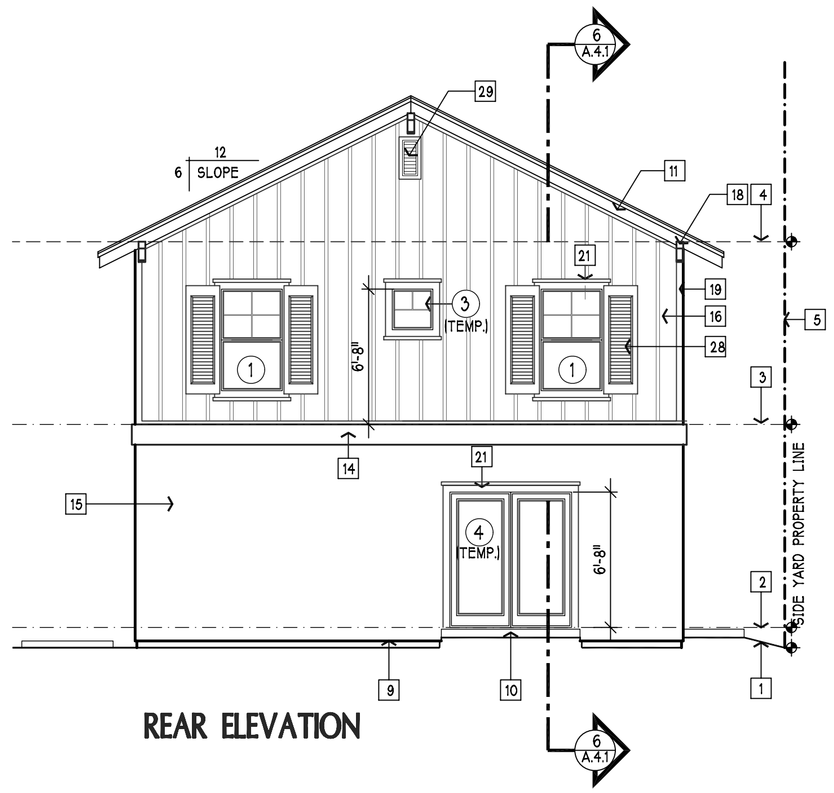
PROJ. MGR. GARY E. MOORE

PROJECT FILE: 0.22~ BARNELL

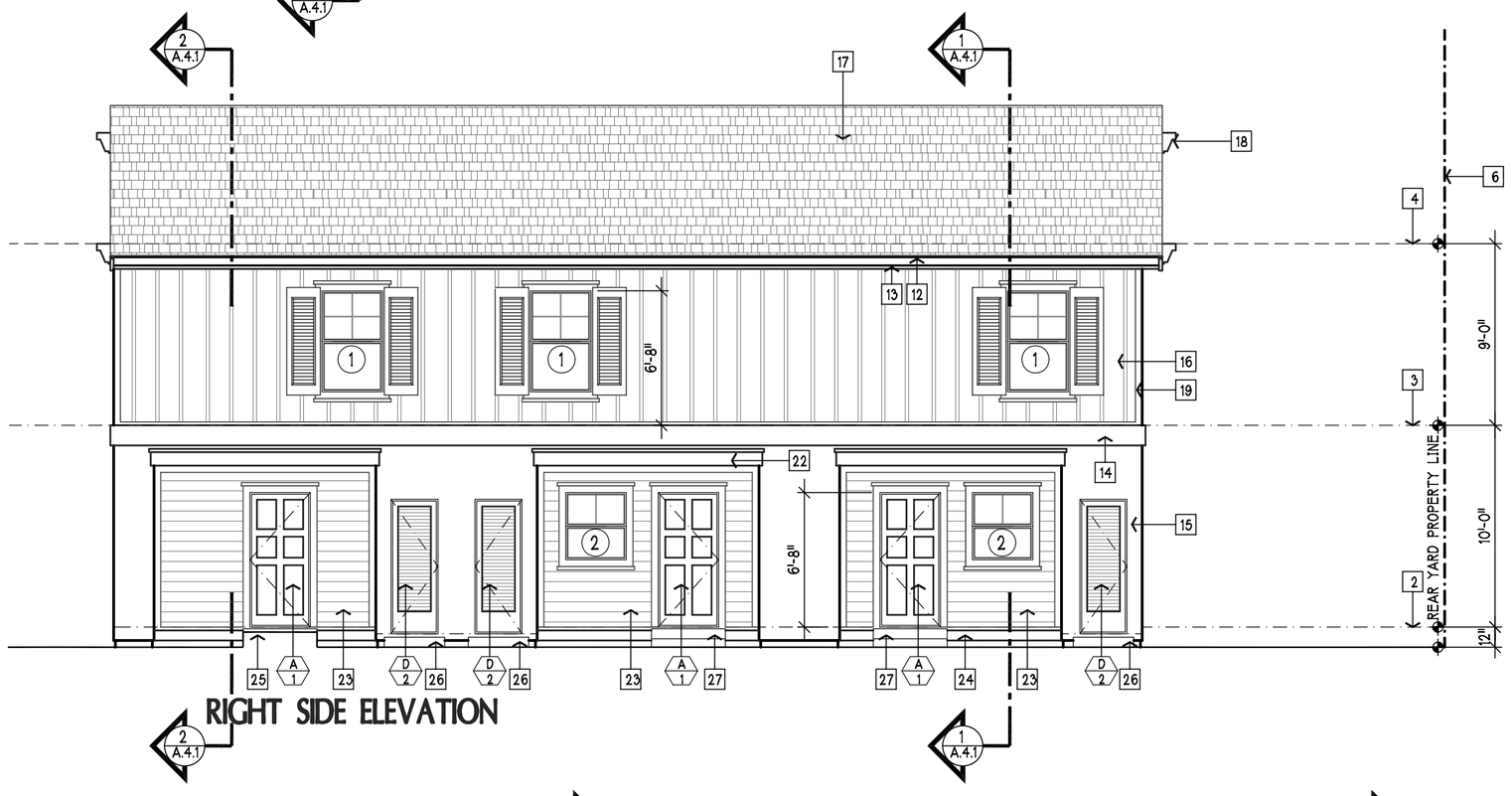
DRAWING: CVR.B



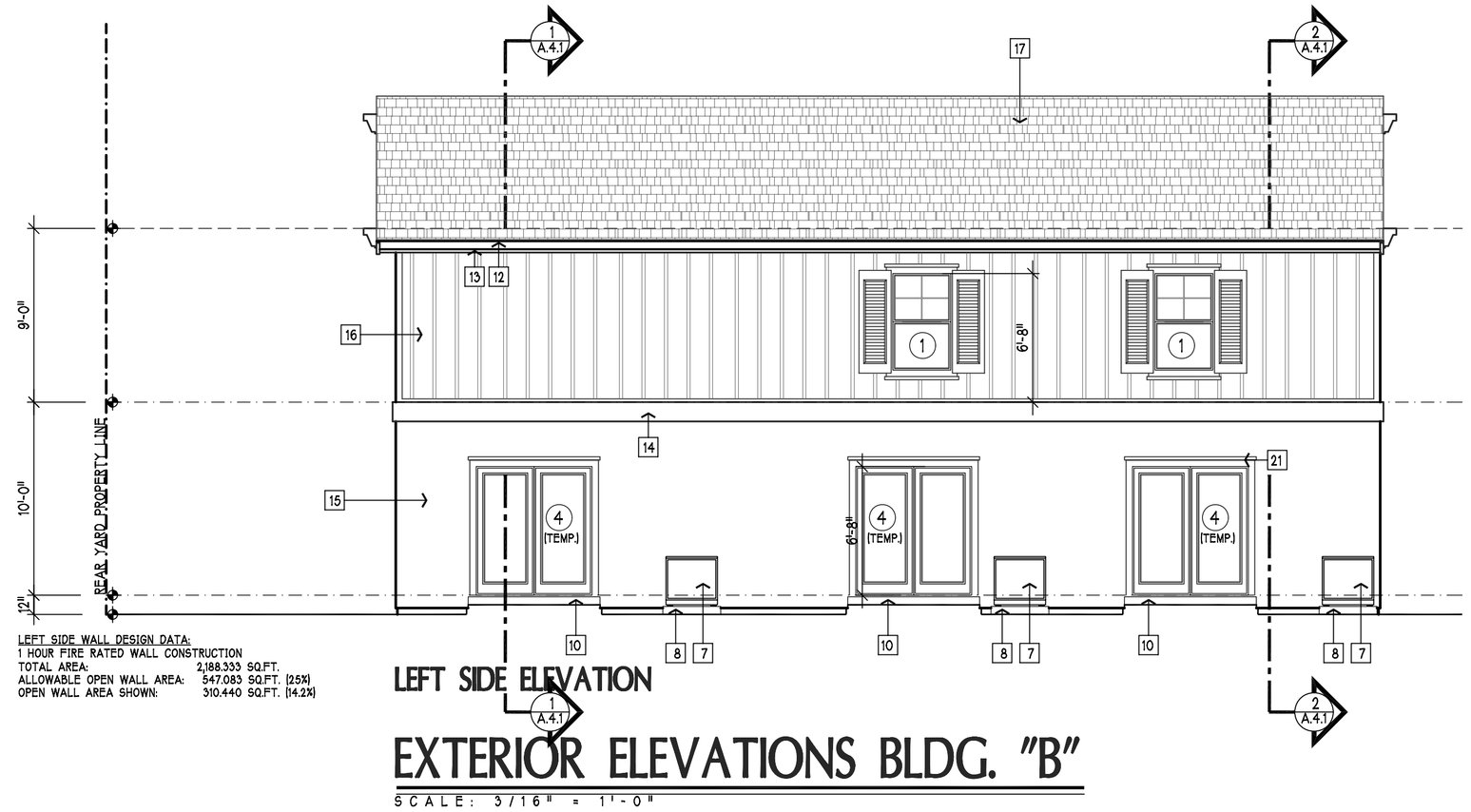
FRONT ELEVATION



REAR ELEVATION



RIGHT SIDE ELEVATION



LEFT SIDE WALL DESIGN DATA:
1 HOUR FIRE RATED WALL CONSTRUCTION
TOTAL AREA: 2,188.333 SQ.FT.
ALLOWABLE OPEN WALL AREA: 547.083 SQ.FT. [25%]
OPEN WALL AREA SHOWN: 310.440 SQ.FT. [14.2%]

LEFT SIDE ELEVATION

EXTERIOR ELEVATIONS BLDG. "B"

SCALE: 3/16" = 1'-0"

ELEVATION KEYNOTES:

1	EXPECTED FINISH GRADE LINE (VERIFY W/ CIVIL DOCUMENTS)
2	1ST LEVEL FINISH FLOOR LINE
3	2ND LEVEL FINISH FLOOR LINE
4	2ND FLOOR 9'-0" PLATE LINE
5	COMMON SIDE YARD PROPERTY LINE
6	COMMON REAR YARD PROPERTY LINE
7	HVAC "HEAT PUMP" LOCATION
8	3'-0" X 3'-0" CONCRETE HVAC HEAT PUMP PAD
9	G.I. STUCCO DRIP SCREED SET A MIN. OF 4" ABOVE COMMON FINISH GRADE
10	3'-0" X 6'-8" CONCRETE STOOP W/ NON-SLIP OR SKID BROOM FINISH
11	BORAL "TRUEXTERIOR TRIM" TO BE: 2X8 RAFTER TAIL SET W/ 1X3 SHINGLE TRIM - BOTH WITH WOOD GRAIN FINISH - PRIMED FOR PAINT
12	5" G.I. FASCIA GUTTER SET IN BEVEL PATTERN W/ APPROVED G.I. LEAF GUARD
13	BORAL "TRUEXTERIOR TRIM" TO BE: 2X6 FASCIA BOARD W/ WOOD GRAIN FINISH - PRIMED FOR PAINT
14	BORAL "TRUEXTERIOR TRIM" TO BE: 2X12 HORIZONTAL BAND TRIM W/ 1X2 HORIZONTAL CAP TRIM W/ WOOD GRAIN FINISH - PRIMED FOR PAINT
15	3 COAT (7/8" THK.) CEMENT PLASTER EXTERIOR SET O/ 17GA. SELF-FURRED, PAPER BACKED G.I. STUCCO NETTING W/ DBL. LAYER OF TYPE "D" ASPHALT SATURATED BUILDING PAPER W/ SMOOTH TROWEL FINISH
16	JAMES HARDIE HARDIEPANEL FIBER CEMENT SMOOTH SIDING SET W/ JAMES HARDIE 4/4 .75" X 1.65" VERTICAL BATTS SET AT 16" O.C. W/ WOOD GRAIN FINISH - PRIMED FOR PAINT
17	GAF "TIMBERLINE" HDZ HIGH PROFILE COMPOSITION SHINGLE ROOF
18	4X10 S4S FANCY CUT D.F. OUTRIGGER
19	2X4 BORAL "TRUEXTERIOR" TRIM W/ WOOD GRAIN FINISH - PRIMED FOR PAINT
20	2X4 BORAL "TRUEXTERIOR" DOOR AND WINDOW TRIM W/ WOOD GRAIN FINISH - PRIMED FOR PAINT
21	2 PC. BORAL "TRUEXTERIOR" DOOR AND WINDOW HEADER AND SILL TRIM W/ WOOD GRAIN FINISH - PRIMED FOR PAINT
22	2 PC. BORAL "TRUEXTERIOR" HORIZONTAL TRIM W/ WOOD GRAIN FINISH - PRIMED FOR PAINT
23	JAMES HARDIE PRIMED HZ10 FIBER CEMENT 6" LAP SIDING W/ WOOD GRAIN FINISH
24	BORAL "TRUEXTERIOR" 2X6 CEMENT FIBER BELLY BAND TRIM W/ WOOD GRAIN FINISH PRIMED FOR PAINT
25	A.D.A. APPROVED CONCRETE ENTRY RAMP AND LANDING W/ NON-SLIP SURFACE FINISH [SEE CIVIL DOCUMENTS FOR RAMP SLOPE DATA]
26	CONCRETE MECHANICAL CLOSET LANDING W/ NON-SLIP BROOM FINISH
27	CONCRETE ENTRY STEPS TO COMMON FINISH GRADE (SET 7" BELOW COMMON FINISH FLOOR)
28	CLOSED LOUVER WINDOW SHUTTER W/ PAINT FINISH
29	10" X 20" OPEN G.I. LOUVER GABLE ROOF VENT W/ APPROVED G.I. BUG SCREEN

EXTERIOR FINISH MATERIALS:

1. CEMENT PLASTER:
   3 COAT - 7/8" THK. - CEMENT PLASTER SET O/ 17GA. SELF-FURRED PAPER BACKED G.I. STUCCO NETTING W/ DBL. LAYER OF TYPE "D" ASPHALT SATURATED BUILDING PAPER
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   JAMES HARDIE - HARDIEPANEL FIBER CEMENT SMOOTH SIDING 48" X 120" PRIMED
3. EXTERIOR "VERTICAL" BATTS:
   JAMES HARDIE 4/4 WOOD GRAIN FINISH .75" X 1.65" - PRIMED
4. ALL EXTERIOR VERTICAL AND HORIZONTAL TRIM:
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5. ROOFING:
   GAF "TIMBERLINE" HDZ HIGH PROFILE ARCHITECTURAL COMPOSITION ROOF SHINGLES COLOR: OYSTER GREY - WITH ALGAE PROTECTION

SUN DIALOG CORP.
409 TENNANT STA#558
MORGAN HILL, CA 95037
PHONE 408-612-1600

LICENSED ARCHITECT
DONGMEI SUN
No. C 30,083
RENEWAL 5-31-25
STATE OF CALIFORNIA

NOT VALID WITHOUT A WET SIGNATURE

DRAWING:
Exterior Elevations (Building "B")

PROJECT:
Haren Properties, LLC
Gabriel Connors
4 Plex – Barnell Ave.
Morgan Hill, Calif.
County of Santa Clara

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REVISIONS:

DATE: DECEMBER 30, 2023

SCALE: AS NOTED

DRAWN BY: GARY E. MOORE

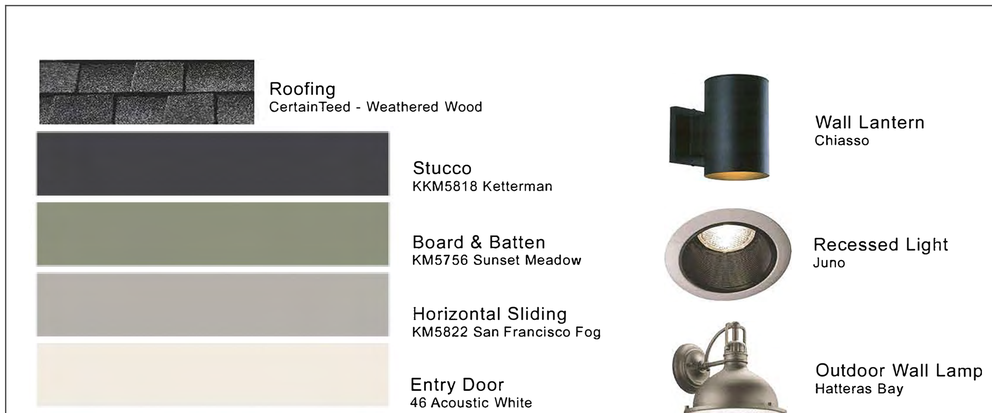
PROJ. MGR. MEI SUN

PROJECT FILE: 0.22~ BARNELL

DRAWING: A.3

Left Side Elevation (north)

Rear Elevation (west)



Exterior Finish Color Palette

Front Elevation (east)

Right Side Elevation (south)

BUILDING ~ UNIT "C"

Gary Moore & Associates
residential design
60 west main ave. 12a, morgan hill, ca. 95037
3256 rim vista circle, moab, utah, 84532
408.779.1710
e-mail: moore@pacific.net

DRAWING:
Building "C" Design Data

PROJECT:
LJ Commons
Barnell Avenue
Morgan Hill, California
County of Santa Clara

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REVISIONS:

DATE: October 20, 2023

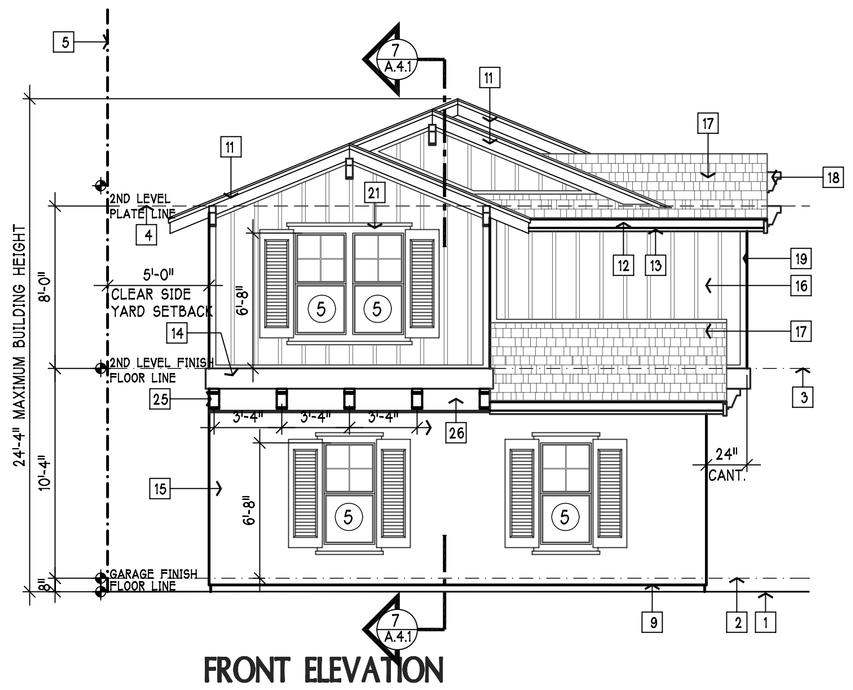
SCALE: AS NOTED

DRAWN BY: GARY E. MOORE

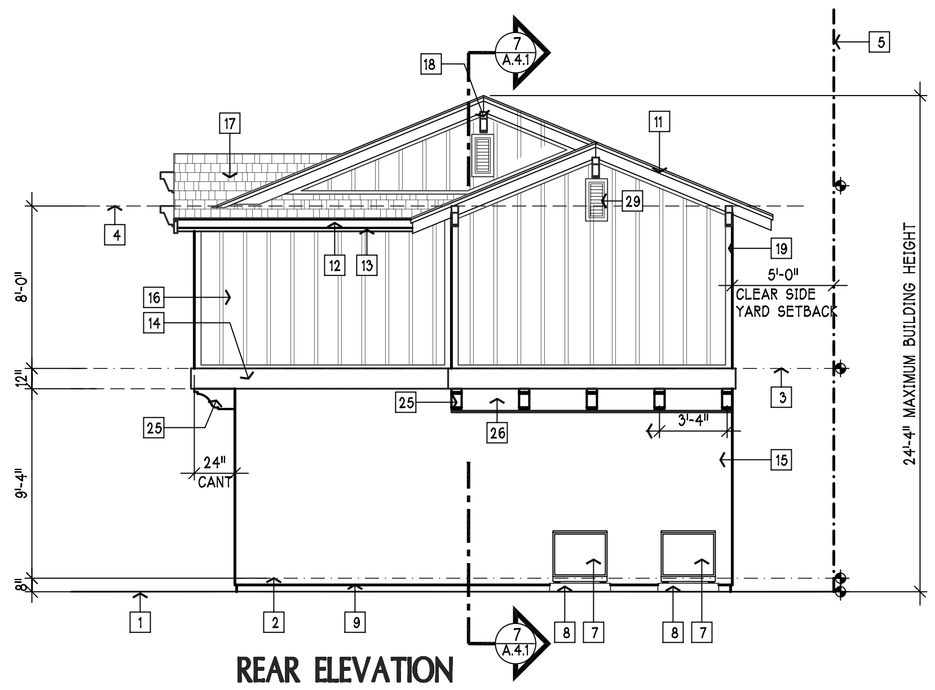
PROJ. MGR. GARY E. MOORE

PROJECT FILE: 0.22~ BARNELL

DRAWING: CVR.C

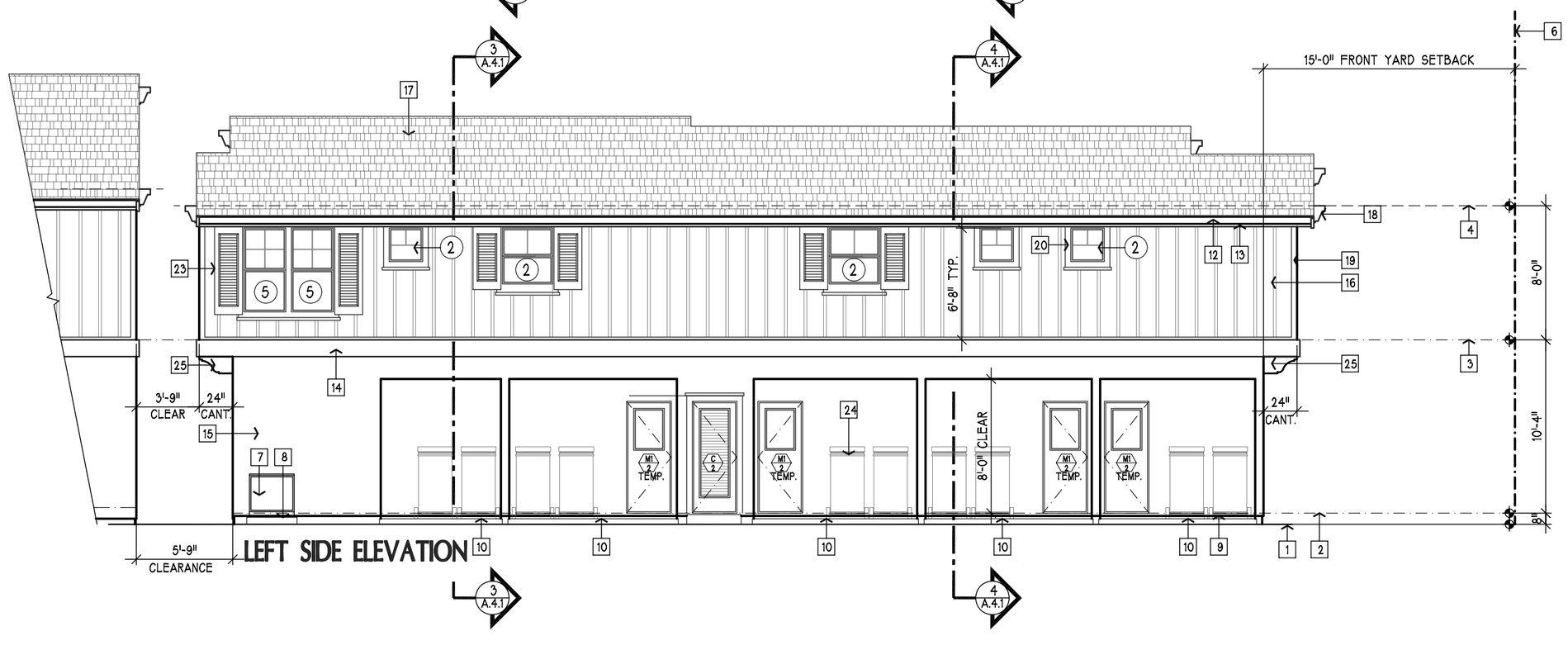


FRONT ELEVATION



REAR ELEVATION

RIGHT SIDE ELEVATION



LEFT SIDE ELEVATION

EXTERIOR ELEVATIONS BLDG. "C"

SCALE: 3/16" = 1'-0"

ELEVATION KEYNOTES:

1. EXPECTED FINISH GRADE LINE (VERIFY W/ CIVIL DOCUMENTS)
2. GARAGE FINISH FLOOR LINE
3. 2ND LEVEL FINISH FLOOR LINE
4. 2ND FLOOR 8'-0" PLATE LINE
5. COMMON SIDE YARD PROPERTY LINE
6. COMMON REAR YARD PROPERTY LINE
7. HVAC "HEAT PUMP" LOCATION
8. 3'-0" X 3'-0" CONCRETE HVAC HEAT PUMP PAD
9. G.I. STUCCO DRIP SCREED SET A MIN. OF 4" ABOVE COMMON FINISH GRADE
10. CONCRETE DECK SET FOR TRASH RECYCLING AND DISPOSAL
11. BORAL "TRUEXTERIOR TRIM" TO BE: 2X8 BARGE RAFTER SET W/ 1X3 SHINGLE TRIM - BOTH WITH WOOD GRAIN FINISH - PRIMED FOR PAINT
12. 5" G.I. FASCIA GUTTER SET IN BEVEL PATTERN W/ APPROVED G.I. LEAF GUARD
13. BORAL "TRUEXTERIOR TRIM" TO BE: 2X6 FASCIA BOARD W/ WOOD GRAIN FINISH - PRIMED FOR PAINT
14. BORAL "TRUEXTERIOR TRIM" TO BE: 2X12 HORIZONTAL BAND TRIM W/ 1X2 HORIZONTAL CAP TRIM W/ WOOD GRAIN FINISH - PRIMED FOR PAINT
15. 3 COAT (7/8" THK.) CEMENT PLASTER EXTERIOR SET O/ 17GA. SELF-FURRED, PAPER BACKED G.I. STUCCO NETTING W/ DBL. LAYER OF TYPE "D" ASPHALT SATURATED BUILDING PAPER W/ SMOOTH TROWEL FINISH
16. JAMES HARDIE HARDIEPANEL FIBER CEMENT SMOOTH SIDING SET W/ JAMES HARDIE 4/4 .79" X 1.65" VERTICAL BATTS SET AT 16" O.C. W/ WOOD GRAIN FINISH - PRIMED FOR PAINT
17. GAF "TIMBERLINE" HDZ HIGH PROFILE COMPOSITION SHINGLE ROOF
18. 4X10 S4S FANCY CUT D.F. OUTRIGGER
19. 2X4 BORAL "TRUEXTERIOR" TRIM W/ WOOD GRAIN FINISH - PRIMED FOR PAINT
20. 2X4 BORAL "TRUEXTERIOR" DOOR AND WINDOW TRIM W/ WOOD GRAIN FINISH - PRIMED FOR PAINT
21. 2 PC. BORAL "TRUEXTERIOR" DOOR AND WINDOW HEADER AND SILL TRIM W/ WOOD GRAIN FINISH - PRIMED FOR PAINT
22. 2 PC. BORAL "TRUEXTERIOR" GARAGE DOOR HEADER TRIM W/ WOOD GRAIN FINISH - PRIMED FOR PAIN
23. CLOSED LOUVER WINDOW SHUTTER W/ PAINT FINISH
24. TRASH RECYCLING BIN LOCATIONS (SHOWN FOR REFERENCE ONLY
25. 6X12 FANCY CUT S4S D.F. CORBEL LOCATION EQUALLY SPACED W/ PAINT FINISH
26. 2 PC. BORAL TRUEXTERIOR HORIZONTAL TRIM W/ WOOD GRAIN FINISH - PRIMED FOR PAINT
27. ENTRY STAIRS TO 2ND LEVEL LIVING AREA W/ PRE-CAST CONCRETE STEP AND TREAD ASSEMBLY W/ NON-SLIP SURFACE FINISH BY EMPIRE PRE-CAST (OR EQUAL)
28. WALL MOUNT METAL STAIR HANDRAIL SET 36" ABOVE COMMON STAIR TREAD NOSING
29. 10" X 20" OPEN G.I. LOUVER GABLE ROOF VENT W/ APPROVED G.I. BUG SCREEN

EXTERIOR FINISH MATERIALS:

1. CEMENT PLASTER:
   3 COAT - 7/8" THK. - CEMENT PLASTER SET O/ 17GA. SELF-FURRED PAPER BACKED G.I. STUCCO NETTING W/ DBL. LAYER OF TYPE "D" ASPHALT SATURATED BUILDING PAPER
2. EXTERIOR PLYWOOD SIDING:
   JAMES HARDIE - HARDIEPANEL FIBER CEMENT SMOOTH SIDING 48" X 120" PRIMED
3. EXTERIOR "VERTICAL" BATTS:
   JAMES HARDIE 4/4 WOOD GRAIN FINISH .75" X 1.65" - PRIMED
4. ALL EXTERIOR VERTICAL AND HORIZONTAL TRIM:
   BORAL "TRUEXTERIOR" FIBER CEMENT TRIM BOTH "F AND 2" THICKNESS AS SPECIFIED IN BOTH NOTES AND DETAILS W/ WOOD GRAIN FINISH - PRIMED
5. ROOFING:
   GAF "TIMBERLINE" HDZ HIGH PROFILE ARCHITECTURAL COMPOSITION ROOF SHINGLES COLOR: OYSTER GREY - WITH ALGAE PROTECTION

SUN DIALOG CORP.
409 TENNANT STA#558
MORGAN HILL, CA 95037
PHONE 408-612-1600

LICENSED ARCHITECT
DONGMEI SUN
No. C 30,083
RENEWAL 5-31-25
STATE OF CALIFORNIA

NOT VALID WITHOUT A WET SIGNATURE

DRAWING:
Exterior Elevations (Building "C")

PROJECT:
Haren Properties, LLC
Gabriel Connors
4 Plex – Barnell Ave.
Morgan Hill, Calif.
County of Santa Clara

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REVISIONS:

DATE: DECEMBER 30, 2023

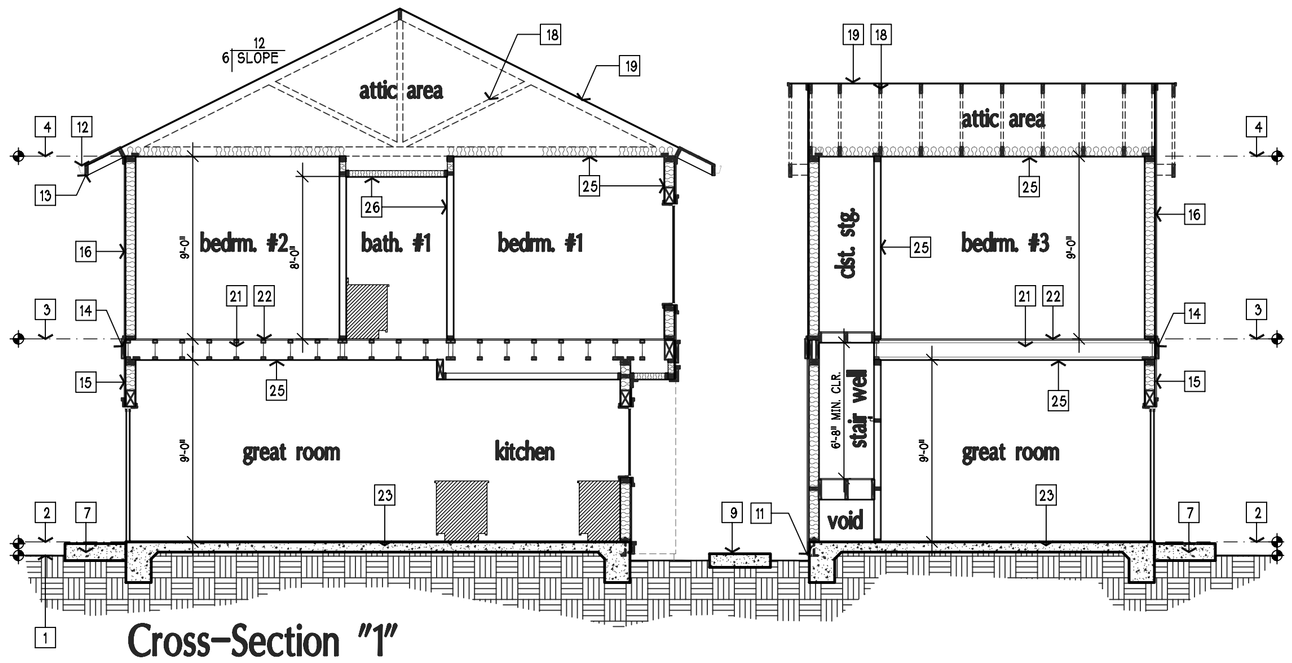
SCALE: AS NOTED

DRAWN BY: GARY E. MOORE

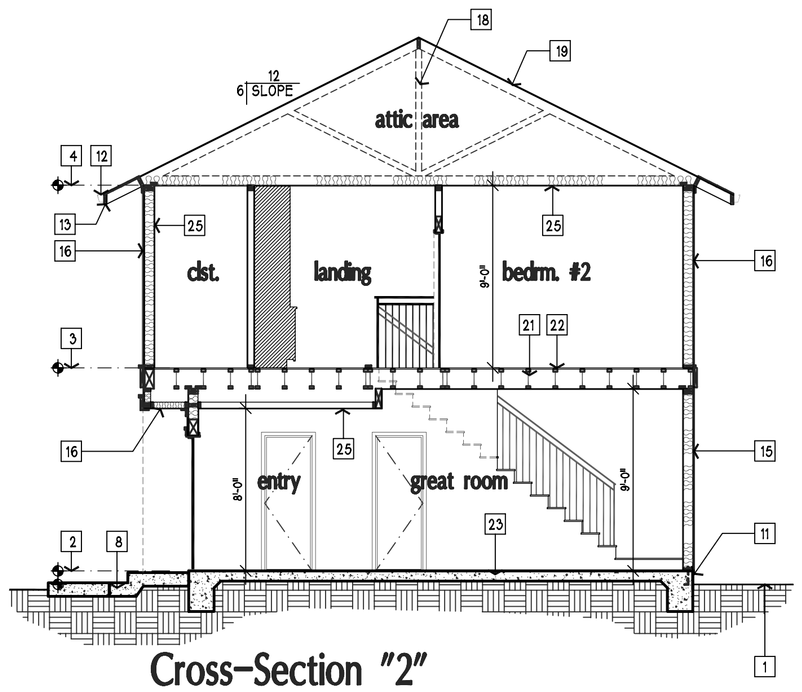
PROJ. MGR. MEI SUN

PROJECT FILE: 0.22~ BARNELL

DRAWING: **A.4**



Cross-Section "1"



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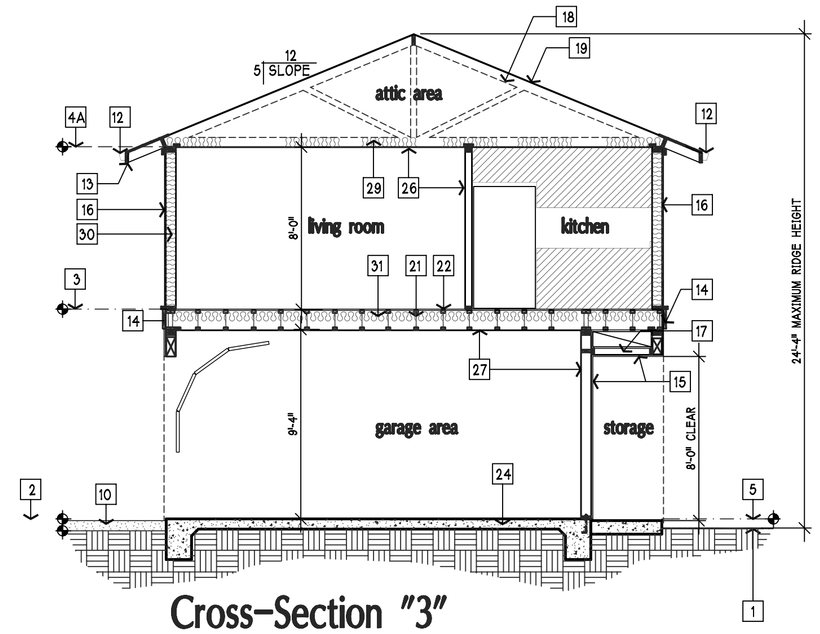

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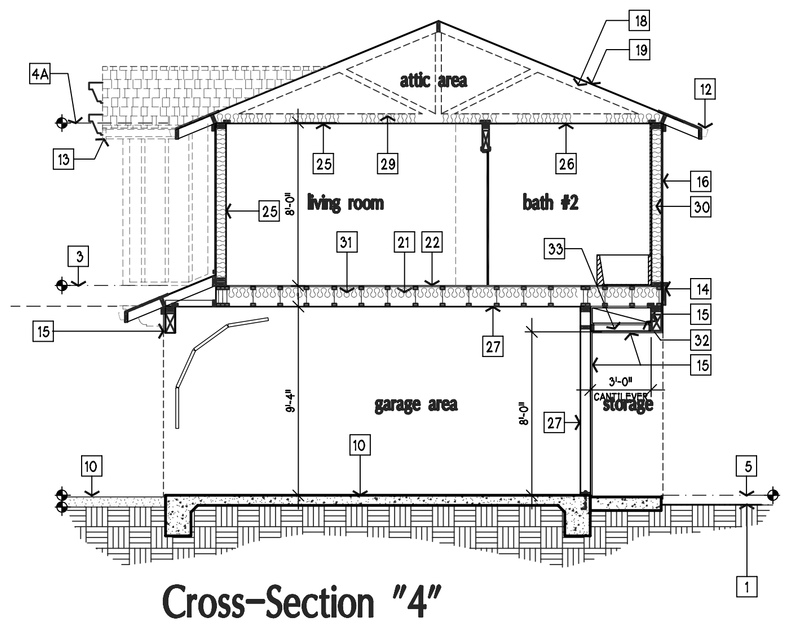

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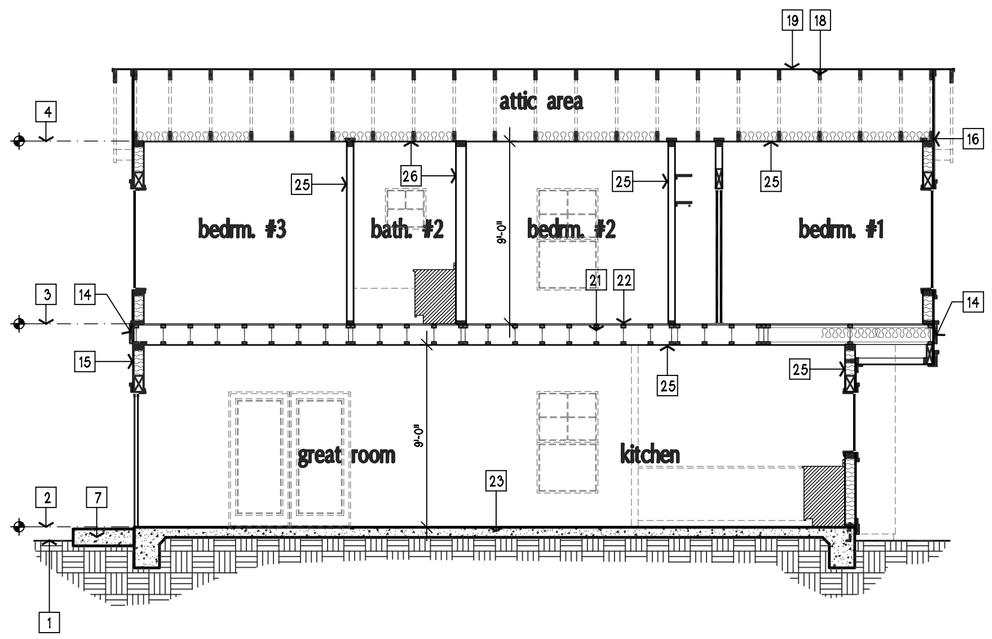

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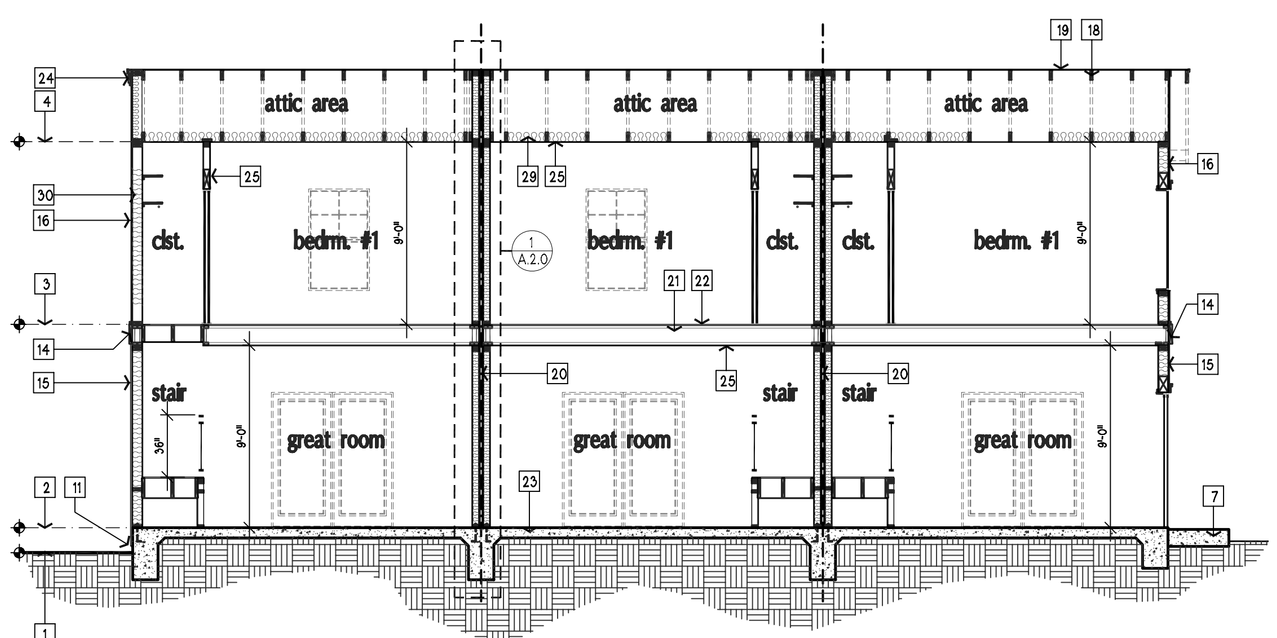

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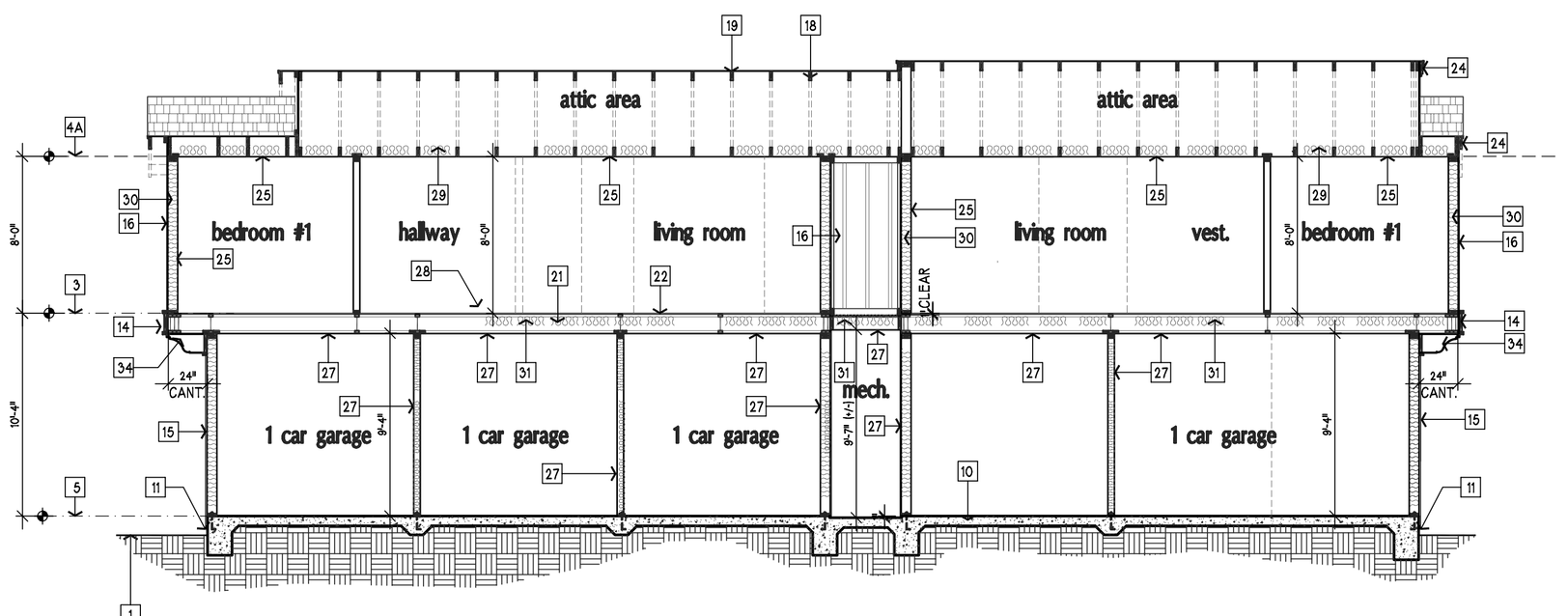

CROSS-SECTIONAL ELEVATIONS

SCALE: 3/16" = 1'-0"

CROSS-SECTION KEYNOTES:

1	EXPECTED FINISH GRADE LINE [VERIFY W/ CIVIL DOCUMENTS]
2	1ST LEVEL FINISH FLOOR LINE
3	2ND LEVEL FINISH FLOOR LINE
4	2ND FLOOR 9'-0" PLATE LINE
4A	2ND FLOOR 8'-0" PLATE LINE
5	GARAGE FINISH FLOOR LINE
6	CONCRETE DECK W/ NON-SLIP BROOM FINISH
7	CONCRETE STOOP W/ NON-SLIP OR SKID BROOM FINISH
8	TYPICAL CONCRETE ENTRY WALK AND STEPS TO COMMON LIVING UNIT
9	CONCRETE WALKWAY W/ NON-SLIP BROOM FINISH [TYPICAL]
10	ENGINEERED CONCRETE GARAGE AND PARKING DRIVEWAY [SEE STRUCTURAL DOCS.]
11	G.I. STUCCO DRIP SCREED LOCATION SET A MIN. OF 4" ABOVE COMMON FINISH GRADE
12	5" G.I. FASCIA GUTTER SET IN BEVEL PATTERN W/ APPROVED G.I. LEAF GUARD
13	2X6 S4S D.F. FASCIA BOARD
14	BORAL TRUEXTERIOR HORIZONTAL TRIM: 2X10 BAND TRIM W/ 2X3 CAP TRIM
15	3 COAT (1"MP THK) CEMENT PLASTER EXTERIOR SET O/ 17GA. SELF-FURRED, PAPER BACKED G.I. STUCCO NETTING W/ DBL. LAYER OF TYPE "D" ASPHALT SATURATED BUILDING PAPER W/ SMOOTH TROWEL FINISH
16	JAMES HARDIE EXTERIOR WALL PANEL SET W/ 2" FIBER CEMENT BATTS SET AT 16" O.C.
17	HVAC MECHANICAL PLENUM SOFFIT AS SHOWN W/ CEMENT PLASTER FINISH
18	ENGINEERED ROOF TRUSS FRAMING SYSTEM [SUBMITTED UNDER SEPERATE PERMIT]
19	ENGINEERED ROOF SHEATHING [SEE STRUCTURAL DOCUMENTATION]
20	COMMON UNIT FIRE AND SOUND WALL [SEE FRAMING DETAILS AS NOTED]
21	ENGINEERED FLOOR FRAMING SYSTEM [SEE STRUCTURAL DOCUMENTATION]
22	ENGINEERED FLOOR SHEATHING [SEE STRUCTURAL DOCUMENTATION]
23	ENGINEERED CONCRETE FLOOR & FOUNDATION [SEE STRUCTURAL DOCUMENTATION]
24	FLUSH MOUNT BORAL TRUEXTERIOR 2X8 BARGE RAFTER ASSEMBLY W/ WOOD GRAIN FINISH - PRIMED
25	1/2" GYPSUM WALL BOARD WALL AND CEILING W/ TAPE AND TEXTURE FINISH
26	1/2" GYPSUM WALL BOARD WALL AND CEILING W/ TAPE & STIPPLE FINISH
27	5/8" TYPE "X" GYPSUM WALL BOARD WALL AND CEILING W/ TAPE AND STIPPLE FINISH
28	26GA. G.I. ROOF / WALL FLASHING
29	FIBERGLASS BATT ATTIC INSULATION SEE TITLE #24 FOR "R" VALUES
30	FIBERGLASS BATT EXTERIOR WALL INSULATION SEE TITLE #24 FOR "R" VALUES
31	FIBERGLASS FLOOR INSULATION SEE TITLE #24 FOR "R" VALUES
32	ENGINEERED STRUCTURAL BEAM SEE STRUCTURAL DOCUMENTS
33	2X4 D.F. DROPPED CEILING SOFFIT W/ CEMENT PLASTER FINISH [SEE STRUCTURAL DOCUMENTS]
34	6 X 12 S4S FANCY CUT D.F. CORBEL EQUALLY SPACED - SEE FRAMING DETAILS

NOTE: ALL PROJECT CROSS-SECTIONAL ELEVATIONS ARE DIAGRAMTIC ONLY. FOR FRAMING METHODS, BEAM AND JOIST SIZING SEE STRUCTURAL DRAWINGS.

ALL OPENINGS AROUND GAS VENTS, DUCTS AND PIPES AT CEILING AND FLOOR LEVELS SHALL HAVE FIREBLOCKING AS PER 2001 C.B.C. SECTION 708.2.1.

NOTE:
THERMAL AND ACOUSTICAL INSULATION LOCATED ON OR WITHIN THE FLOOR-CEILING OR, ROOF-CEILING ASSEMBLIES, CRAWL-SPACES OR PARTITIONS SHALL HAVE A FLAME SPREAD RATING OF 25 OR LESS AND A SMOKE DENSITY RATING OF 450 OR LESS. [AS PER 2001 C.B.C. SECTION 707.]

EXTERIOR FINISH MATERIALS:

1. CEMENT PLASTER:
   3 COAT - 7/8" THK. - CEMENT PLASTER SET O/ 17GA, SELF-FURRED PAPER BACKED G.I. STUCCO NETTING W/ DBL. LAYER OF TYPE "D" ASPHALT SATURATED BUILDING PAPER
2. EXTERIOR PLYWOOD SIDING:
   JAMES HARDIE - HARDIEPANEL FIBER CEMENT SMOOTH SIDING 48" X 120" PRIMED
3. EXTERIOR "VERTICAL" BATTS:
   JAMES HARDIE 4/4 WOOD GRAIN FINISH .75" X 1.65" - PRIMED
4. ALL EXTERIOR VERTICAL AND HORIZONTAL TRIM:
   BORAL "TRUEXTERIOR" FIBER CEMENT TRIM BOTH 1" AND 2" THICKNESS AS SPECIFIED IN BOTH NOTES AND DETAILS W/ WOOD GRAIN FINISH - PRIMED
5. ROOFING:
   GAF "TIMBERLINE" HDZ HIGH PROFILE ARCHITECTURAL COMPOSITION ROOF SHINGLES
   COLOR: OYSTER GREY - WITH ALGAE PROTECTION

SUN DIALOG CORP.
409 TENNANT STA#558
MORGAN HILL, CA 95037
PHONE 408-612-1600

LICENSED ARCHITECT
DONGMEI SUN
No. C 30,083
RENEWAL 5-31-25
STATE OF CALIFORNIA

NOT VALID WITHOUT A WET SIGNATURE

DRAWING:
Cross-Sectional Elevations

PROJECT:
Haren Properties, LLC
Gabriel Connors
4 Plex - Barnell Ave.
Morgan Hill, Calif.
County of Santa Clara

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REVISIONS:

DATE: DECEMBER 30, 2023

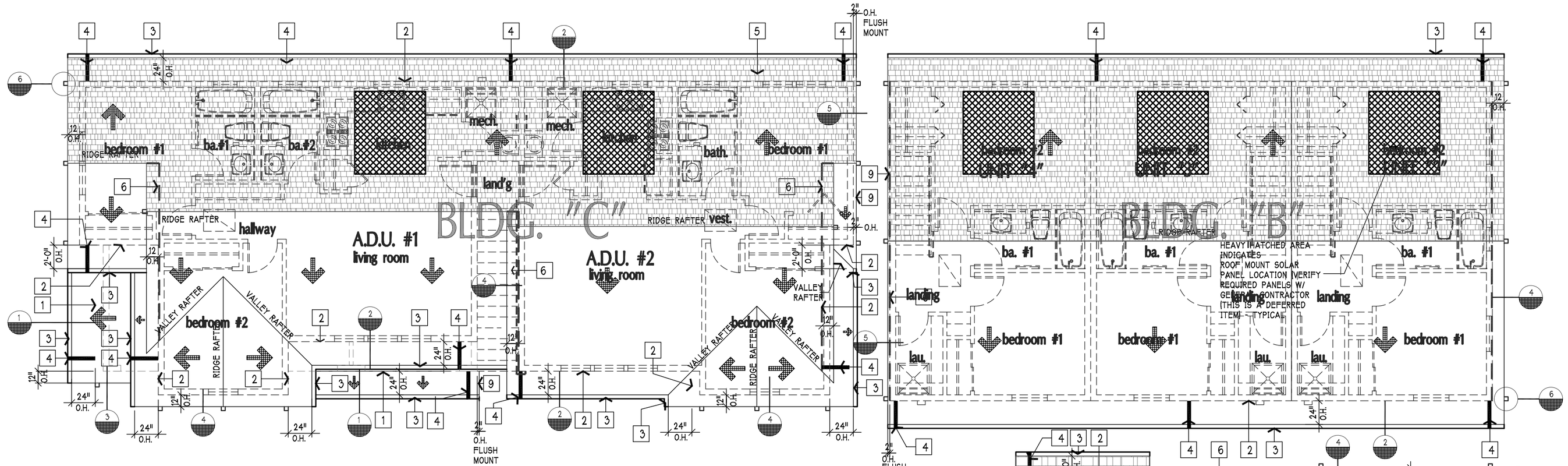
SCALE: AS NOTED

DRAWN BY: GARY E. MOORE

PROJ. MGR. MEI SUN

PROJECT FILE: 0.22~ BARNELL

DRAWING: **A.4.1**



ATTIC VENTILATION SCHEDULE:

GARAGE ATTIC AREA:

ROOF AREA
TO BE VENTED: 245.000/150 = 1.633 SQ. FT. OF VENT REQUIRED
1.633 SQ. FT. X 144 SQ. IN. = 235.152 SQ. IN. OF VENT REQUIRED

$\frac{235.152}{75}$ = 3.135 VENTS
(4 VENTS REQUIRED)

PROVIDE: (4) - 5.5" X 22" X #14 WIRE MESH VENTS = 300.000 SQ. IN. OF FREEN VENT AREA (4.000 SQ. FT.)

ATTIC VENTILATION SCHEDULE:

BUILDING "A" ATTIC AREA:

ROOF AREA
TO BE VENTED: 658.889/150 = 4.393 SQ. FT. OF VENT REQUIRED
4.393 SQ. FT. X 144 SQ. IN. = 632.592 SQ. IN. OF VENT REQUIRED

$\frac{632.592}{75}$ = 8.435 VENTS
(9 VENTS REQUIRED)

PROVIDE: (9) - 5.5" X 22" X #14 WIRE MESH VENTS = 675.000 SQ. IN. OF FREE VENT AREA (4.688 SQ. FT.)

ATTIC VENTILATION SCHEDULE:

BUILDING "B" ATTIC AREA:

ROOF AREA
TO BE VENTED: 2,446.639/150 = 16.311 SQ. FT. OF VENT REQUIRED
16.311 SQ. FT. X 144 SQ. IN. = 2,348.784 SQ. IN. OF VENT REQUIRED

$\frac{2,348.784}{75}$ = 31.317 VENTS
(32 VENTS REQUIRED)

PROVIDE: (32) - 5.5" X 22" X #14 WIRE MESH VENTS = 2,400.000 SQ. IN. OF FREE VENT AREA: (16.667 SQ. FT.)

GENERAL ROOFING NOTES:

1. ALL FASCIA GUTTERS ARE TO BE : 26 GA. - 5" - GALV. IRON MATERIAL SET IN "BEVEL" PATTERN.
2. ALL D.S. (DOWNSPOUTS) ARE TO BE: 26 GA. GALV. IRON SET IN "RECTANGULAR" SHAPE.
3. ALL DOWNSPOUTS ARE TO EMPTY TO CONCRETE SPLASH BLOCKS. (SEE CIVIL ENGINEERS SITE GRADING AND DRAINAGE PLAN).
4. ALL PLATELINES (-) ARE AS INDICATED ON THIS DRAWING AND THE EXTERIOR ELEVATIONS. THE GENERAL CONTRACTOR SHALL FAMILIARIZE HIMSELF W/ THE VARIOUS PLATE HEIGHTS, AND SHALL ADJUST PLATES AS REQUIRED.
5. FINISH ROOFING MATERIAL IS TO BE GAF (OR EQUAL) HIGH PROFILE ARCHITECTURAL GRADE COMPOSITION ROOFING SHINGLE.
6. ARROWS INDICATE DIRECTION OF ROOF SLOPE (=>)
7. ROOF SLOPE BUILDING "A" & "B" = 6:12 SLOPE ROOF SLOPE BUILDING "C" = 5:12 SLOPE
8. ROOF OVERHANGS (O.H.) ARE TO BE 24" (OR AS NOTED)
9. GABLE ROOF EAVES ARE TO HAVE A 12" OVERHANG (O.H.) (OR AS NOTED)
10. PROVIDE TYPE 30 NON-PERFERATED ASPHALT SATURATED FELT UNDERLAYMNET FOR THE TILE ROOF AS PER C.B.C. TABLE 15-D-1.

ROOFING KEYNOTES:

1. 9'-0" PLATE HEIGHT SET ABOVE COMMON 1ST FLOOR LIVING AREA FINISH FLOOR (9'-4" ABOVE COMMON GARAGE FINISH FLOOR)
2. 9'-0" PLATE HEIGHT SET ABOVE COMMON 2ND LEVEL LIVING AREA FINISH FLOOR.
3. G.I. FASCIA GUTTER (BEVEL PATTERN) SET W/ APPROVE WEATHER RESISTANT LEAF GUARD W/ PAINT FINISH
4. G.I. DOWN SPOUT LOCATION SET IN RECTANGULAR SHAPE W/ PAINT FINISH (SEE NOTES ABOVE)
5. 5.5" X 22" X #14 WIRE MESH EAVE VENT W/ APPROVED BUG SCREEN
6. HEAVY DASHED LINE INDICATES ROOF GABLE WALL LOCATION
7. SHED ROOF 4X4 S4S D.F. SUPPORT BRACKET
8. ENGINEERED 4X S4S D.F. SHED ROOF SUPPORT BEAM (SEE STRUCTURAL DOCUMENTS)
9. FLUSH MOUNT 2X10 FIBER-CEMENT BASE BARGE RAFTER AND SHINGLE TRIM ASSEMBLY

SUN DIALOG CORP.
409 TENNANT STA#558
MORGAN HILL, CA 95037
PHONE 408-612-1600

LICENSED ARCHITECT
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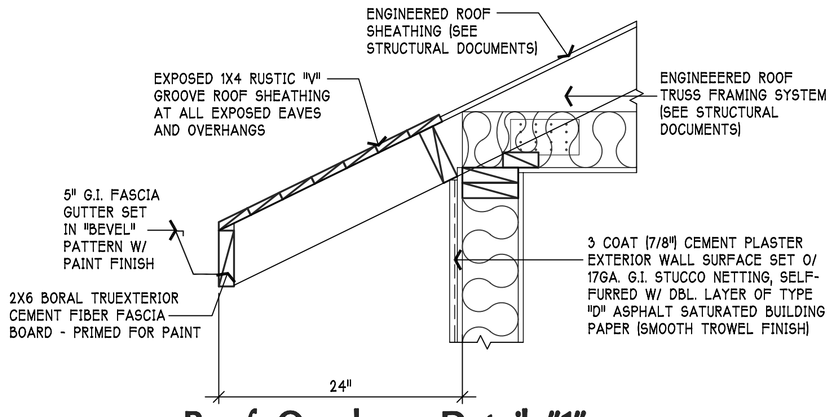
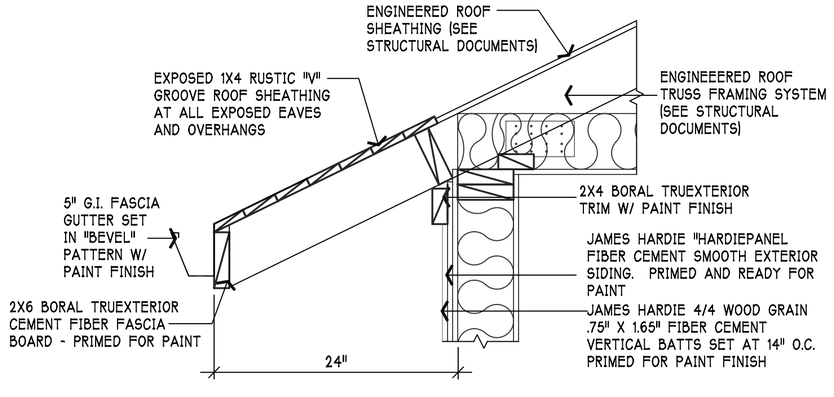
Roof Plan

SCALE: 3/16" = 1'-0"



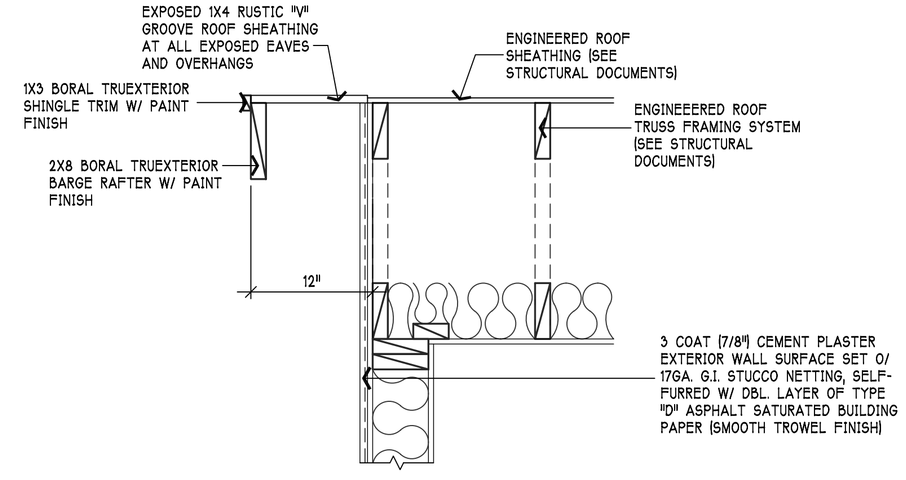
Roof Overhang Detail "1"



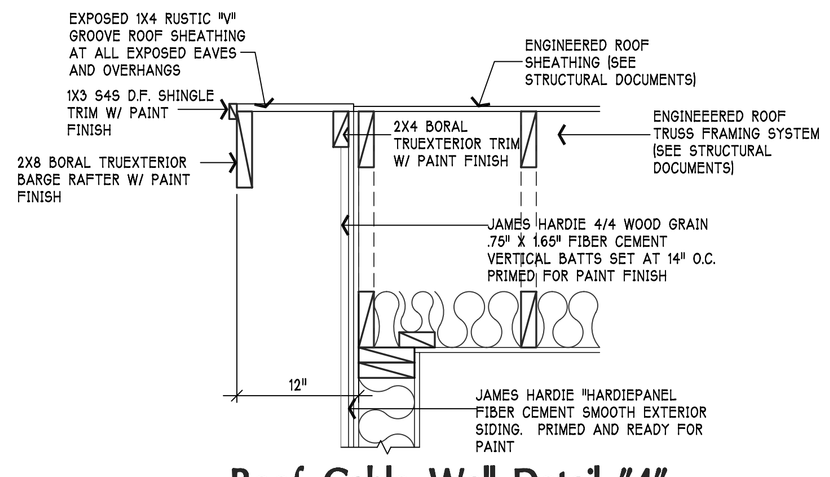
Roof Overhang Detail "2"

MISC. FRAMING DETAILS

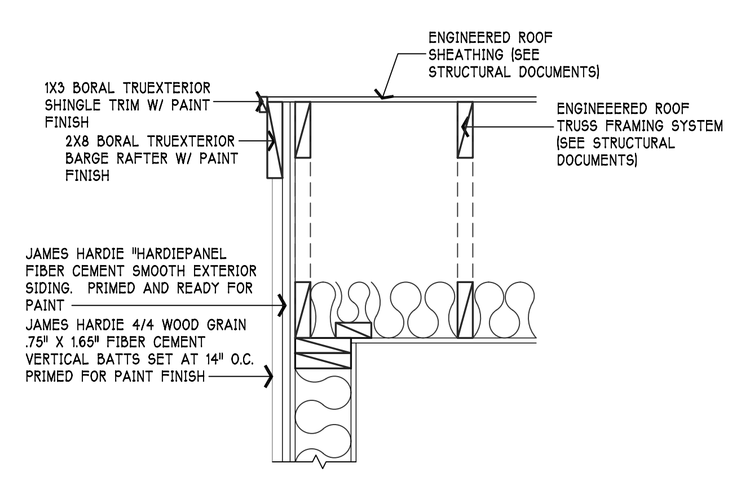
SCALE: "AS NOTED"



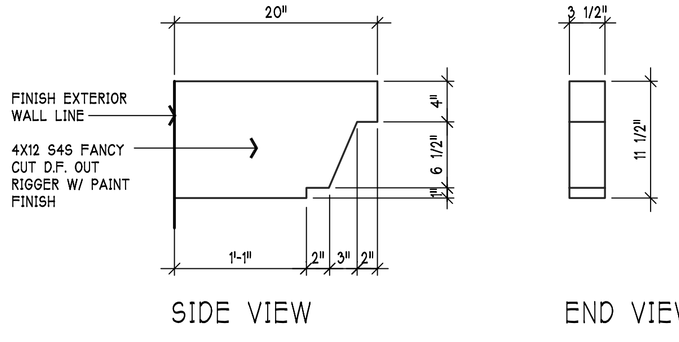
Roof Gable Wall Detail "3"



Roof Gable Wall Detail "4"



Flush Mount Fire Rated Barge Rafter Framing Detail "5"



Outrigger Elevational details "6" & "6.1"

DRAWING:
Roof Plan, Misc. Notes & Details

PROJECT:
Haren Properties, LLC
Gabriel Connors
4 Plex - Barnell Ave.
Morgan Hill, Calif.
County of Santa Clara

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DATE: DECEMBER 30, 2023

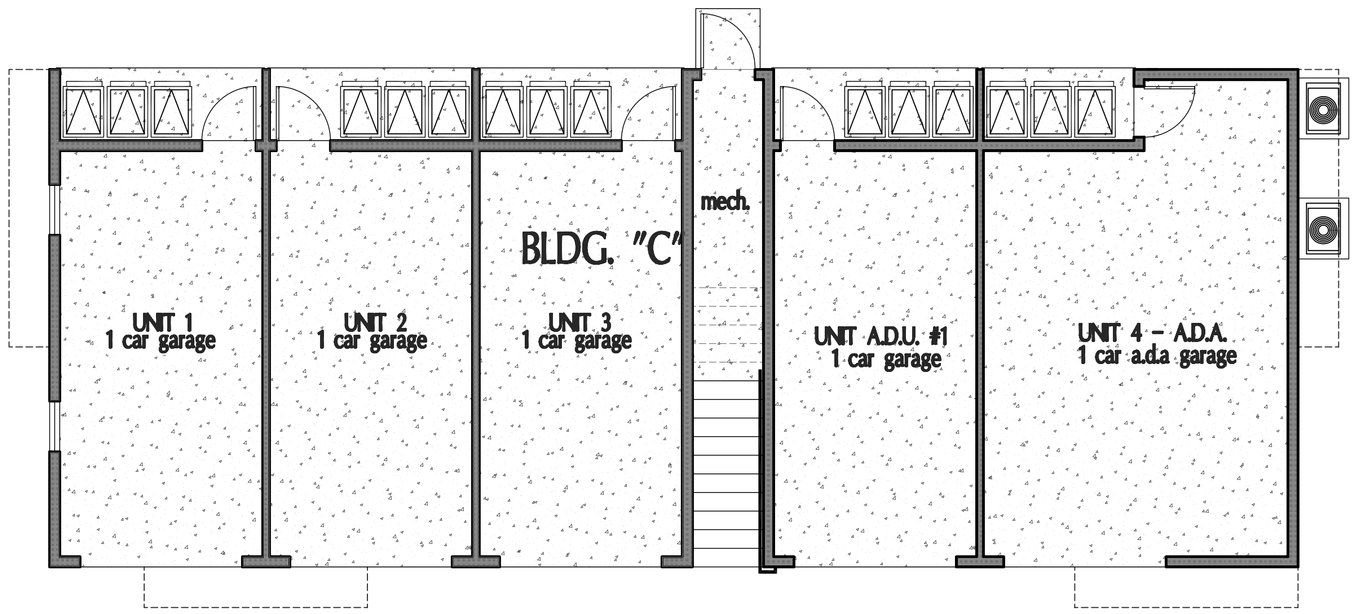
SCALE: AS NOTED

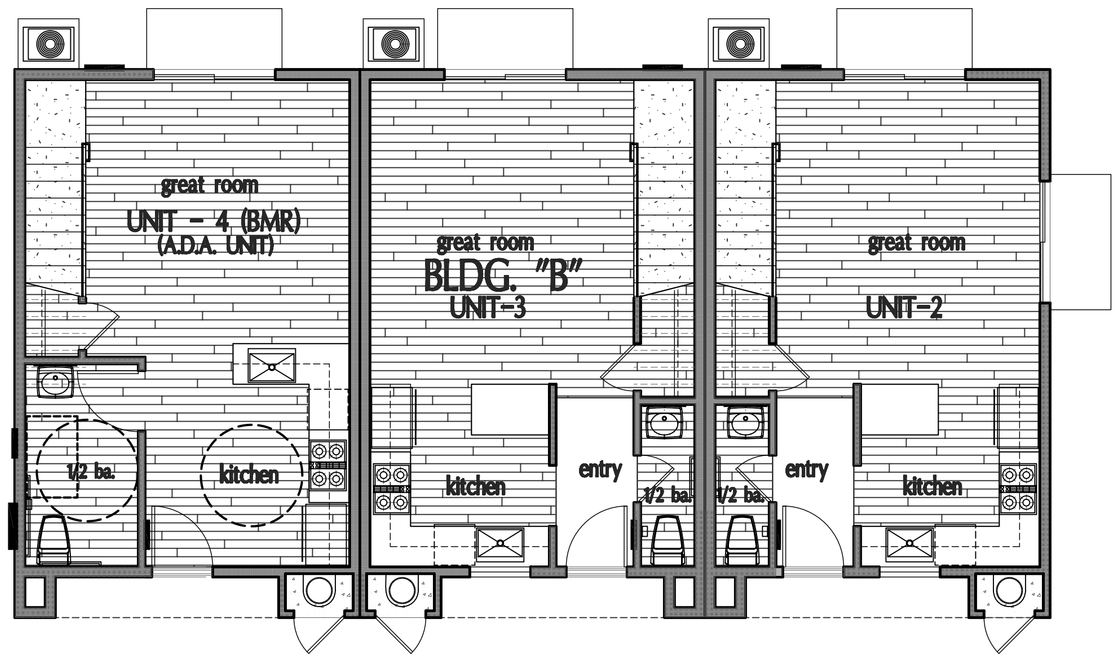
DRAWN BY: GARY E. MOORE

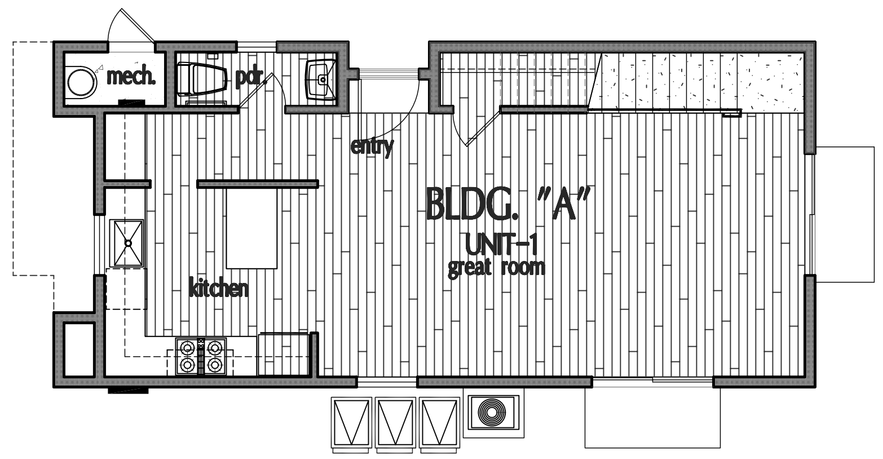
PROJ. MGR. MEI SUN

PROJECT FILE: 0.22~ BARNELL

DRAWING: **A.5**

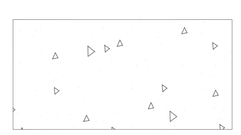




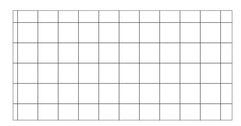


1ST LEVEL FLOOR FINISH PLAN

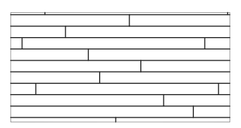
SCALE: 3/16" = 1'-0"



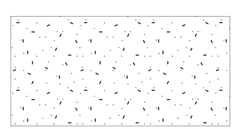
CONCRETE DECK
SEALED CONCRETE GARAGE FLOOR W/ NON-SLIP BROOM FINISH (OR EQUAL)



TRAVERTINE TILE FLOOR
TIGHT SET W/ 1/8" GROUT JOINT. COLOR AND PATTERN SELECTION BY HOME OWNER. SET IN MASTIC OVER HARDY BACKER-BOARD

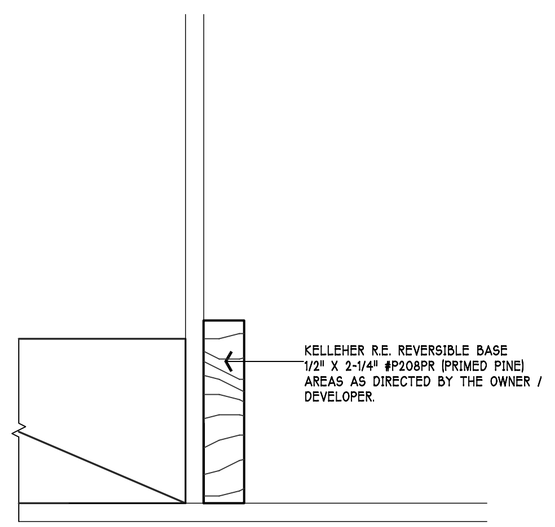


VINYL FLOORING
SIMULATED WOOD PLANK VINYL FLOORING - MANUFACTURE AND COLOR SELECTION BY THE DEVELOPER



STAIR FINISH FLOOR
STAIR FINISH MATERIAL SELECTION BY THE HOME OWNER IS TO HAVE AN NON-SLIP OR SKID TEXTURED SURFACE FINISH - VERIFY WITH THE CONTRACTOR (DEVELOPER)

FLOOR FINISH LEGEND



1 BASE BOARD SECTION DETAIL
NOT TO SCALE

TYPICAL BASEBOARD DETAIL

SUN DIALOG CORP.
409 TENNANT STA#558
MORGAN HILL, CA 95037
PHONE 408-612-1600

LICENSED ARCHITECT
DONGMEI SUN
No. C 30,083
RENEWAL 5-31-25
STATE OF CALIFORNIA

NOT VALID WITHOUT A WET SIGNATURE

DRAWING:
1st Level Floor Finish Plan & Notes

PROJECT:
Haren Properties, LLC
Gabriel Connors
4 Plex - Barnell Ave.
Morgan Hill, Calif.
County of Santa Clara

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DATE: DECEMBER 30, 2023

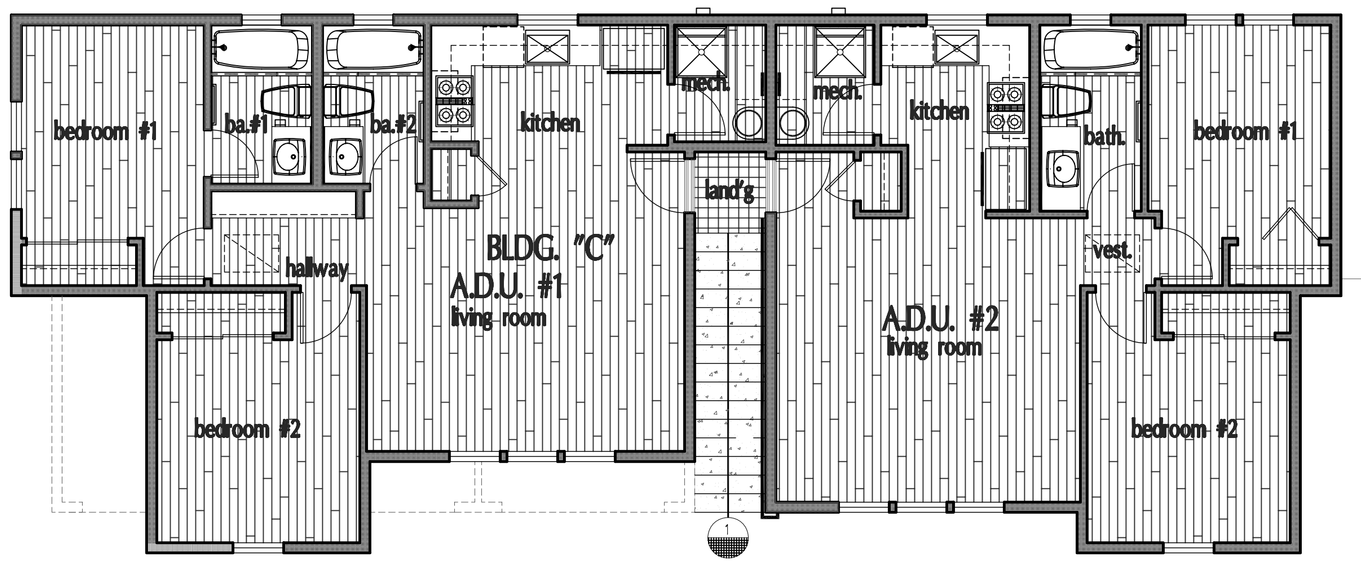
SCALE: AS NOTED

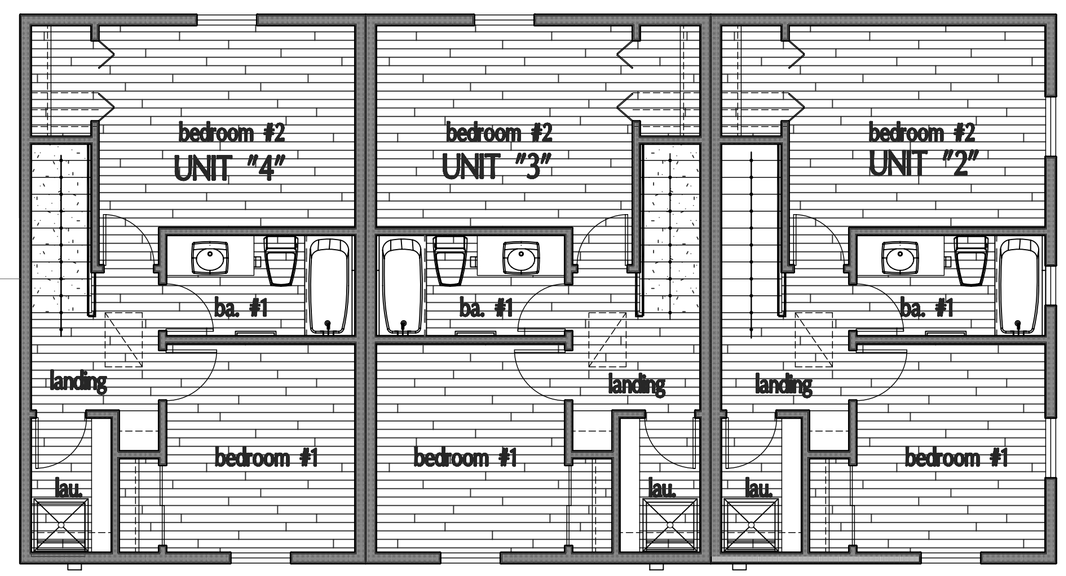
DRAWN BY: GARY E. MOORE

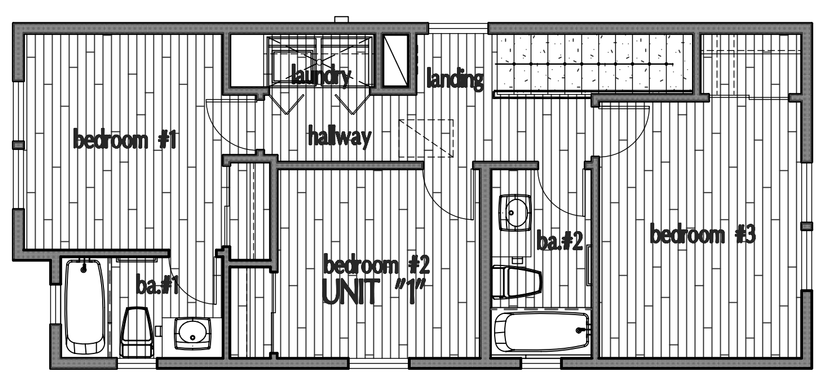
PROJ. MGR. MEI SUN

PROJECT FILE: 0.22~ BARNELL

DRAWING: A.6





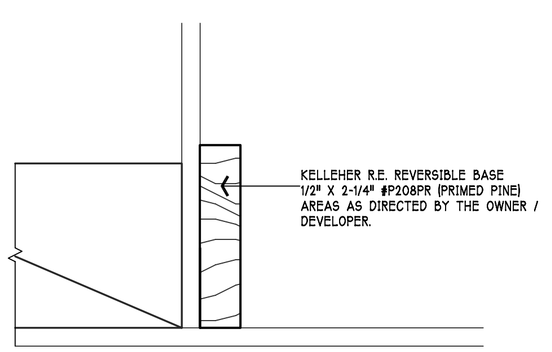


TILE FLOOR:
DAL-TILE [OR EQUAL] DECK LANDING FINISH W/ NON-SLIP SURFACE FINISH - SET O/ APPROVED MASTIC AND BITUTHANE PLYABLE MOISTURE BARRIER - GROUT JOINT TO BE 1/2" - BOTH GROUT AND TILE COLOR SELECTION BY THE OWNER DEVELOPER.

VINYL FLOORING
SIMULATED WOOD PLANK VINYL FLOORING - MANUFACTURE AND COLOR SELECTION BY THE DEVELOPER

STAIR FINISH:
PRE-CAST LIGHT WEIGHT CONCRETE STAIR TREAD AND NOSING W/ NON-SLIP SURFACE FINISH BY EMPIRE-PRE-CAST [COLOR TO BE SELECTED BY OWNER / DEVELOPER]

FLOOR FINISH LEGEND

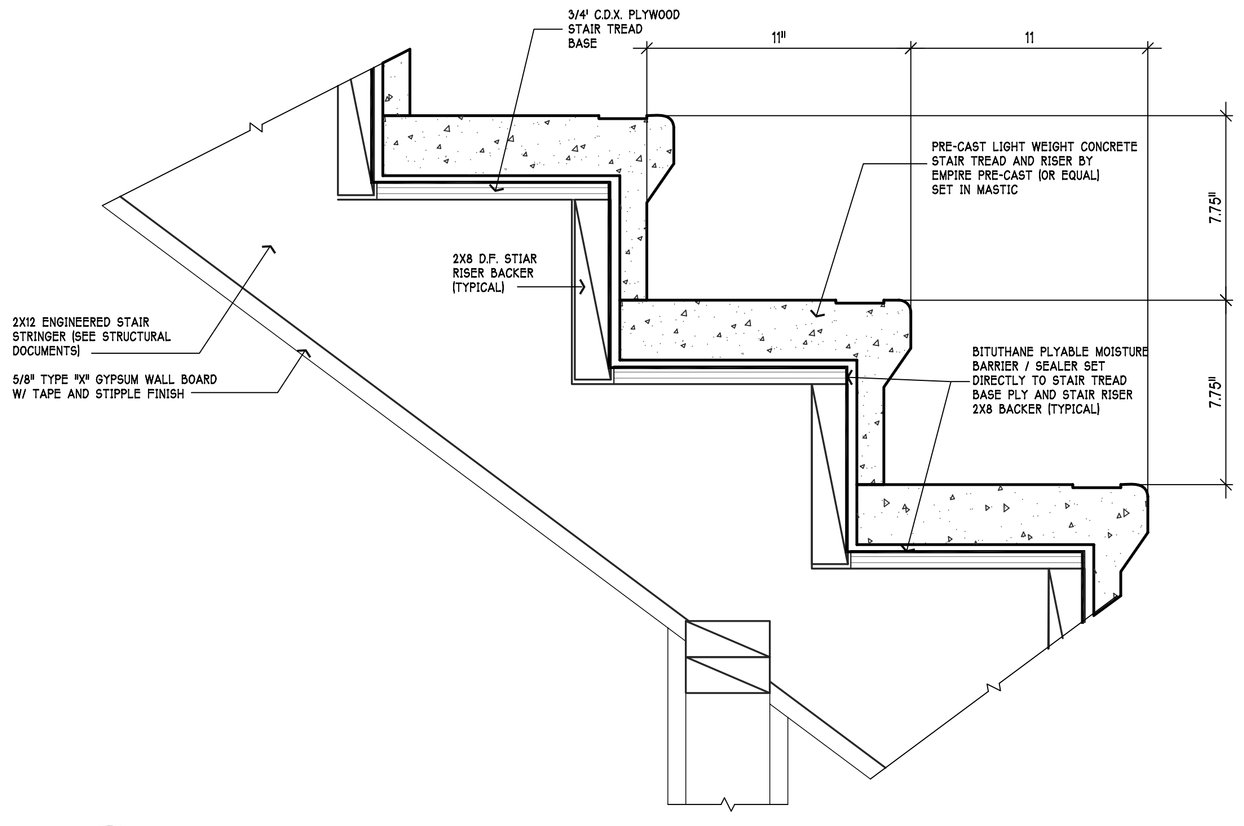


1 BASE BOARD SECTION DETAIL
NOT TO SCALE

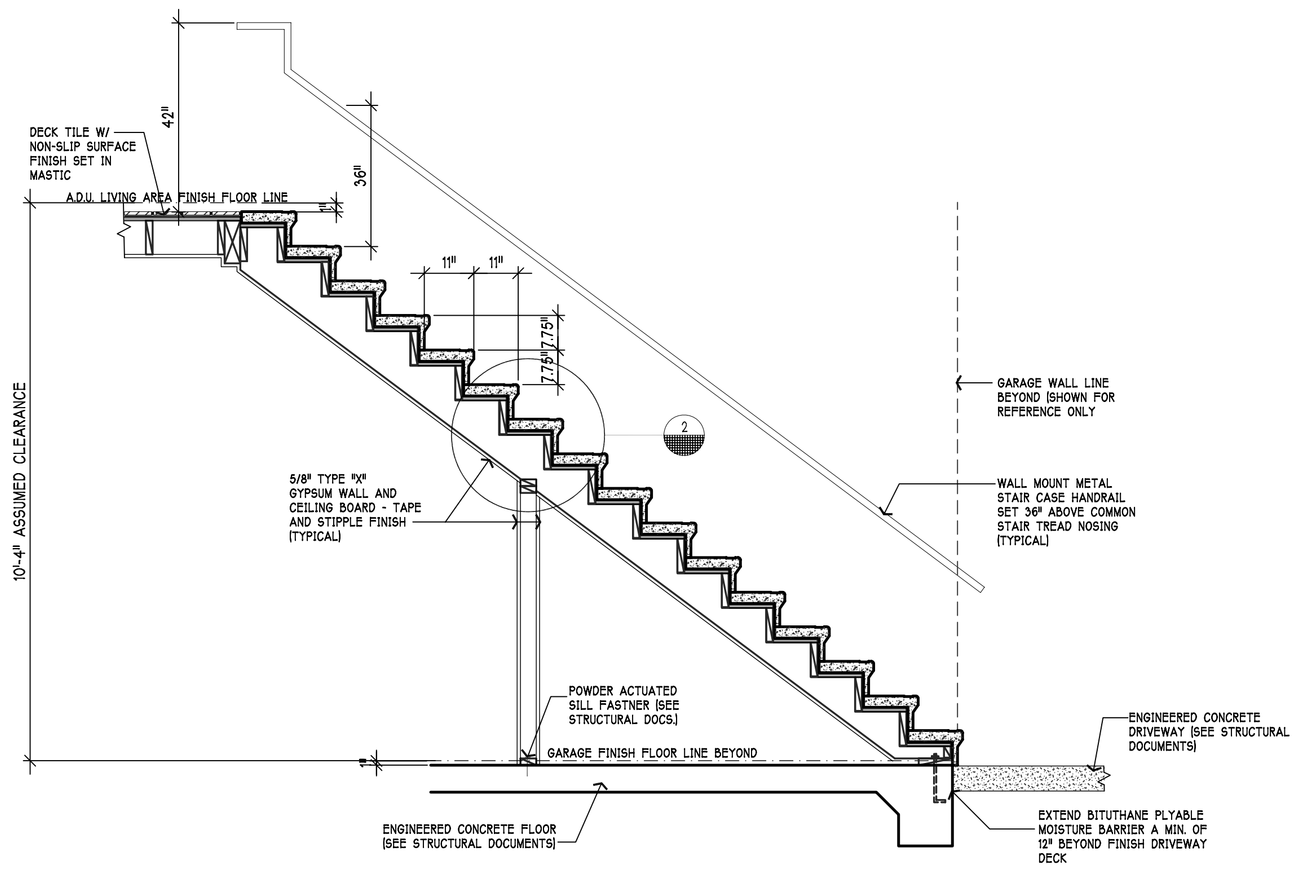
TYPICAL BASEBOARD DETAIL

2ND FLOOR REFLECTED CEILING PLAN

SCALE: 3/16" = 1'-0"



2 A.D.U. STAIR CASE ASSEMBLY
NOT TO SCALE



1 A.D.U. ACCESS STAIR SECTIONAL PROFILE
NOT TO SCALE

A.D.U. ACCESS STAIR FRAMING DETAILS

DETAILS NOT TO SCALE

SUN DIALOG CORP.
409 TENNANT STA#558
MORGAN HILL, CA 95037
PHONE 408-612-1600

LICENSED ARCHITECT
DONGMEI SUN
No. C 30,083
RENEWAL 5-31-25
STATE OF CALIFORNIA

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DRAWING:
2nd Floor Reflected Ceiling Plan & Notes

PROJECT:
Haren Properties, LLC
Gabriel Connors
4 Plex – Barnell Ave.
Morgan Hill, Calif.
County of Santa Clara

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DATE: DECEMBER 30, 2023

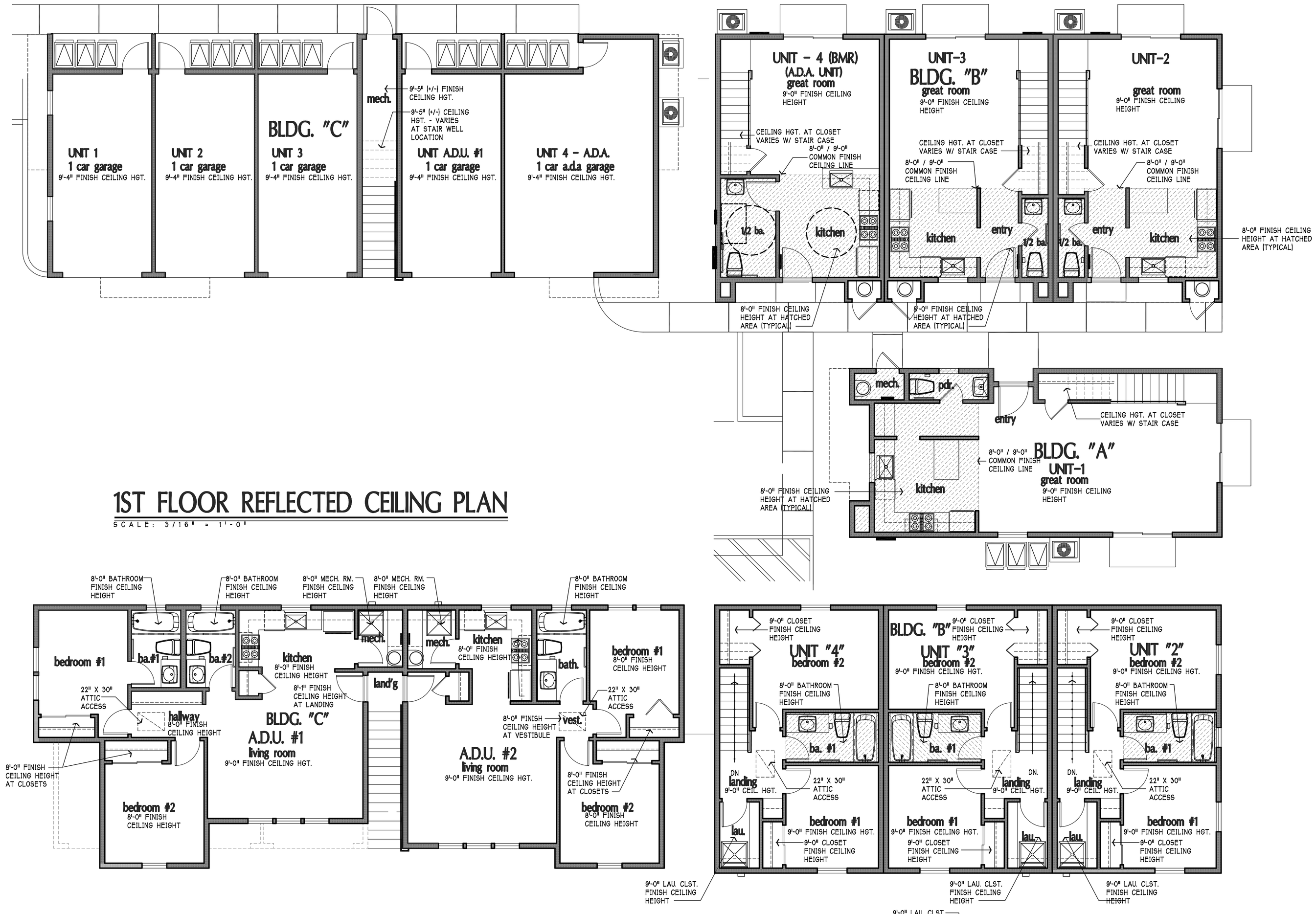
SCALE: AS NOTED

DRAWN BY: GARY E. MOORE

PROJ. MGR. MEI SUN

PROJECT FILE: 0.22~ BARNELL

DRAWING: A.6.1



1ST FLOOR REFLECTED CEILING PLAN

SCALE: 3/16" = 1'-0"

2ND FLOOR REFLECTED CEILING PLAN

SCALE: 3/16" = 1'-0"

REFLECTED CEILING PLAN

SCALE: 3/16" = 1'-0"

SUN DIALOG CORP.
409 TENNANT STA#558
MORGAN HILL, CA 95037
PHONE 408-612-1600

LICENSED ARCHITECT
DONGMEI SUN
No. C 30,083
RENEWAL 5-31-25
STATE OF CALIFORNIA

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DRAWING:
1st & 2nd Floor Reflected Ceiling Plans & Notes

PROJECT:
Haren Properties, LLC
Gabriel Connors
4 Plex - Barnell Ave.
Morgan Hill, Calif.
County of Santa Clara

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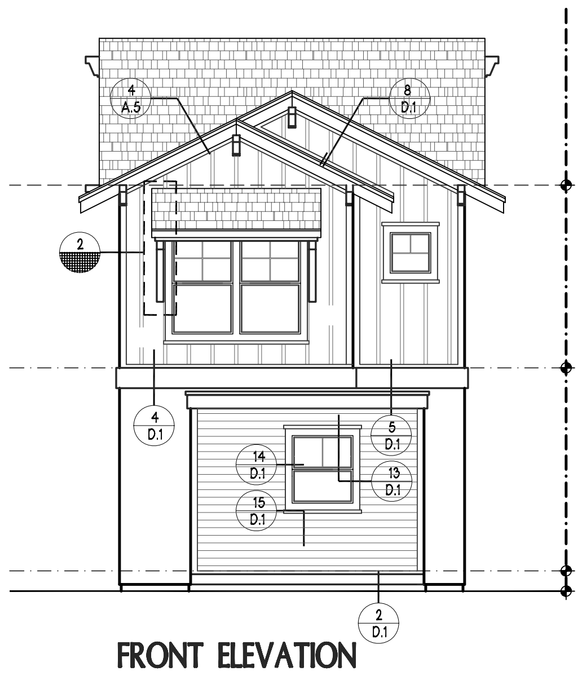
SCALE: AS NOTED

DRAWN BY: GARY E. MOORE

PROJ. MGR. MEI SUN

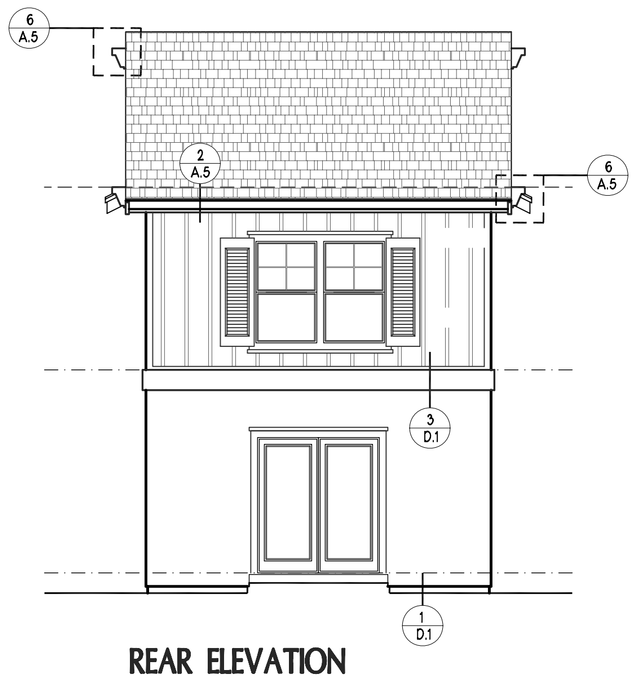
PROJECT FILE: 0.22~ BARNELL

DRAWING: A.7

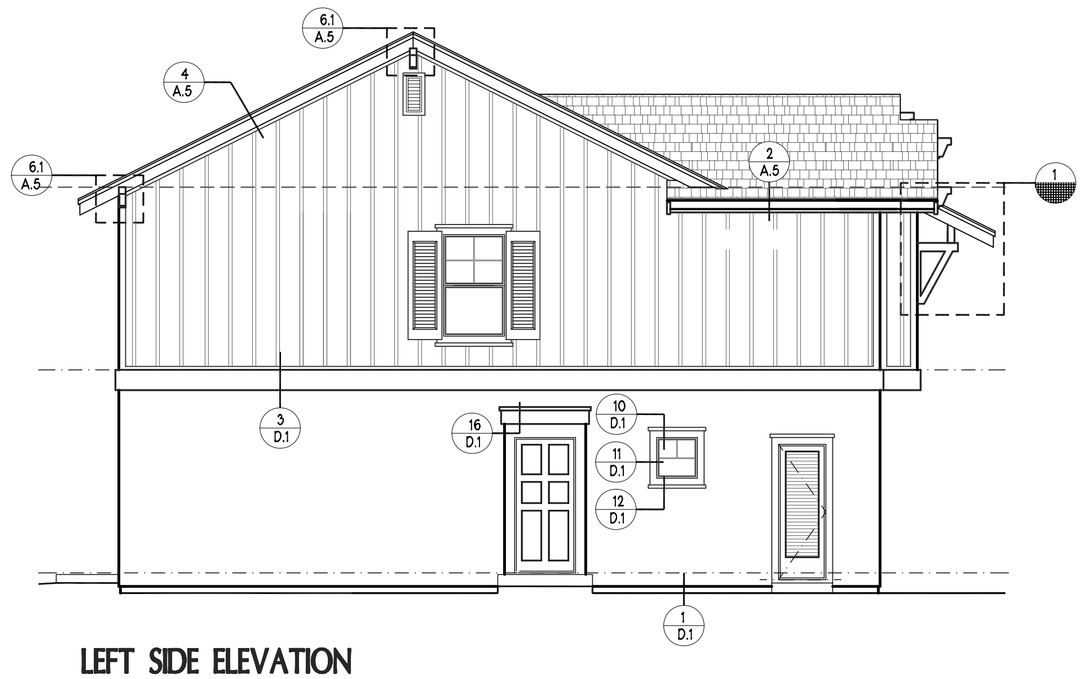


FRONT ELEVATION

RIGHT SIDE ELEVATION



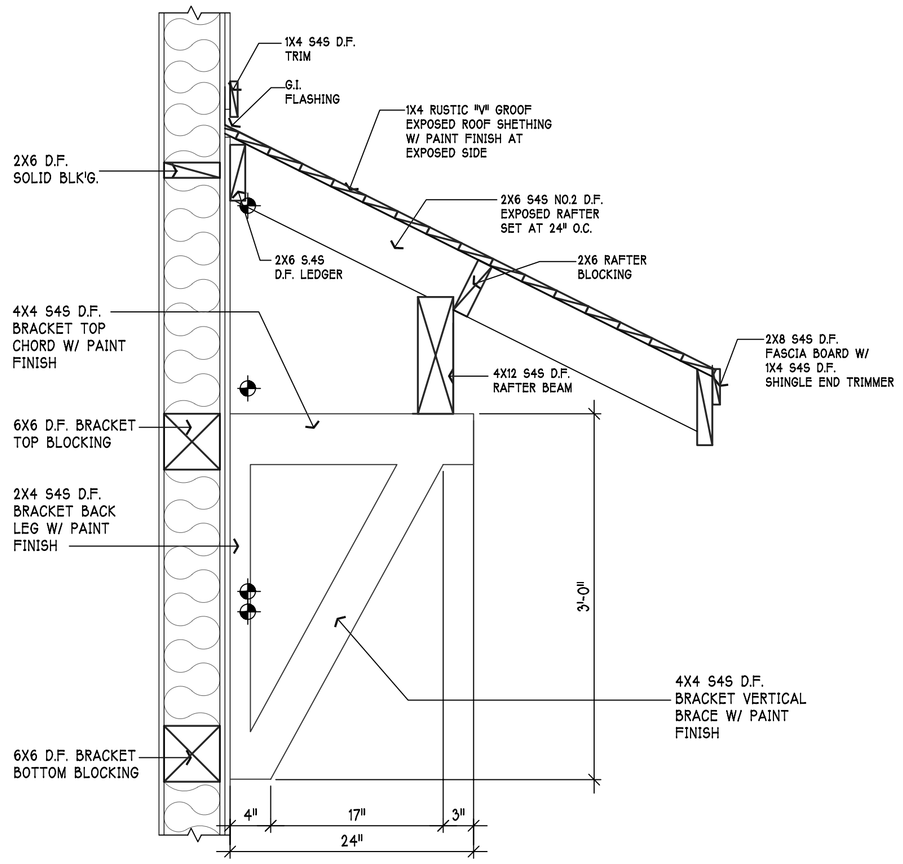
REAR ELEVATION



LEFT SIDE ELEVATION

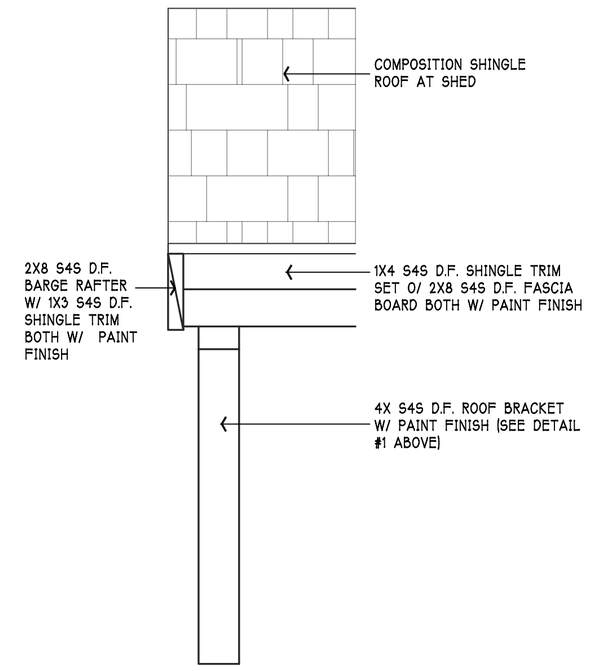
BLDG. "A" EXTERIOR ELEVATIONS (detail tags only)

SCALE: 3/16" = 1'-0"



Shed Roof Framing Detail "1"

NOT TO SCALE



Shed Roof Framing Detail "2"

NOT TO SCALE

SUN DIALOG CORP.
409 TENNANT STA#558
MORGAN HILL, CA 95037
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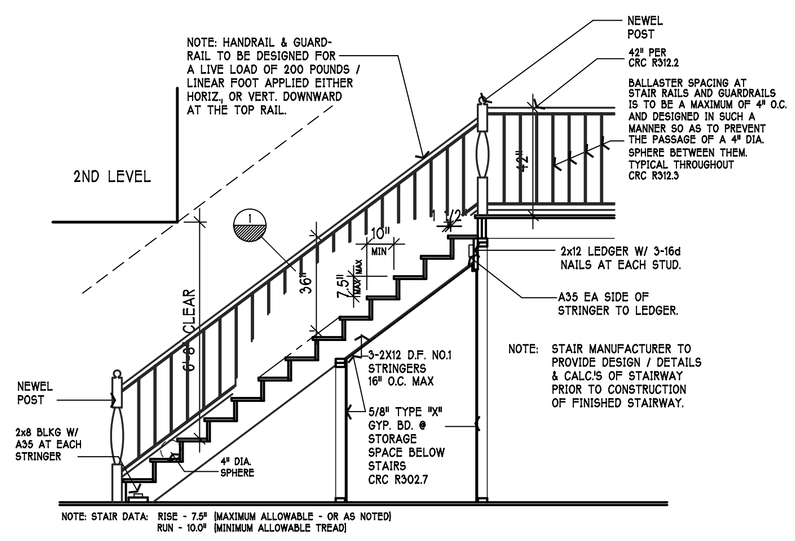
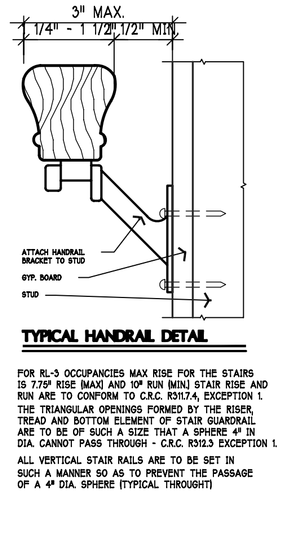


Typical Stair Framing Detail

NOT TO SCALE



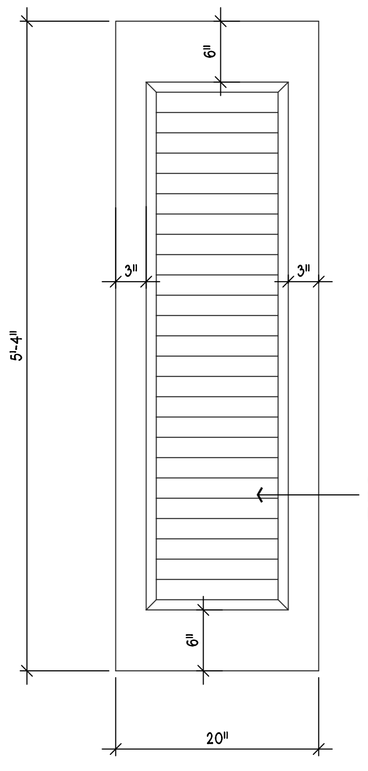
Stair Handrail Framing Detail

NOT TO SCALE

NOTE: GUARDRAILS (STAIR RAILINGS) C.R.C. - R 312 - SHALL BE INSTALLED ALONG OPEN-SIDED WALKING SURFACES, INLCUDING STAIRS, RAMPS, AND LANDINGS, THAT ARE LOCATED MORE THAN 30" ABOVE THE FLOOR OR GRADE BELOW AT ANY POINT WITHIN 36" HORIZONTALLY TO THE EDGE OF THE OPEN SIDE. (C.R.C. R 312.1)

STAIR AND HANDRAIL DETAILS

NOT TO SCALE



Shutter "A"

Shutter Elevational Detail

SCALE: "AS NOTED"

DRAWING:
Exterior Elevations (Exterior Detail Tags) & Misc. Framing Details

PROJECT:
Scott Murry / Gabriel Connors
4 Plex - Barnell Ave.
Morgan Hill, Calif.
County of Santa Clara

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DATE: DECEMBER 30, 2023

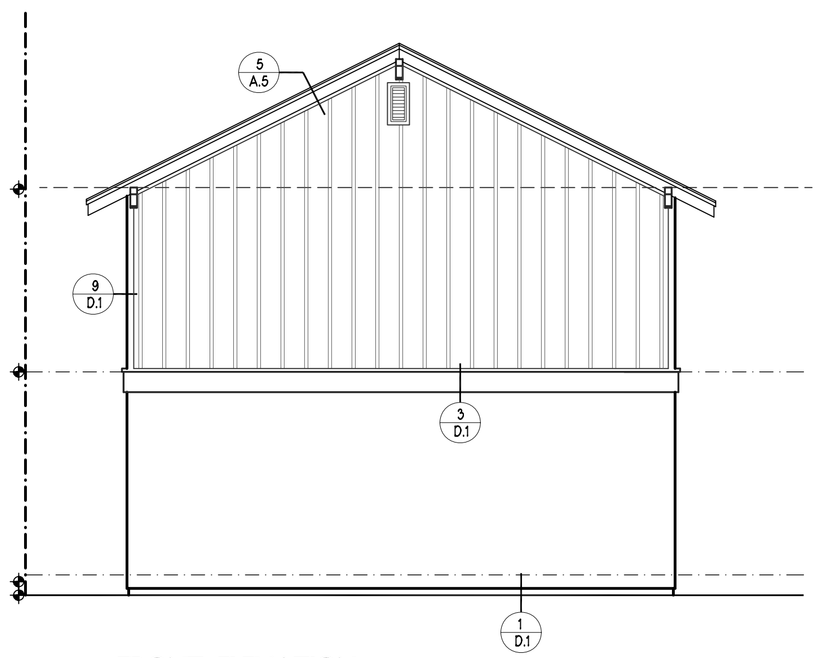
SCALE: AS NOTED

DRAWN BY: GARY E. MOORE

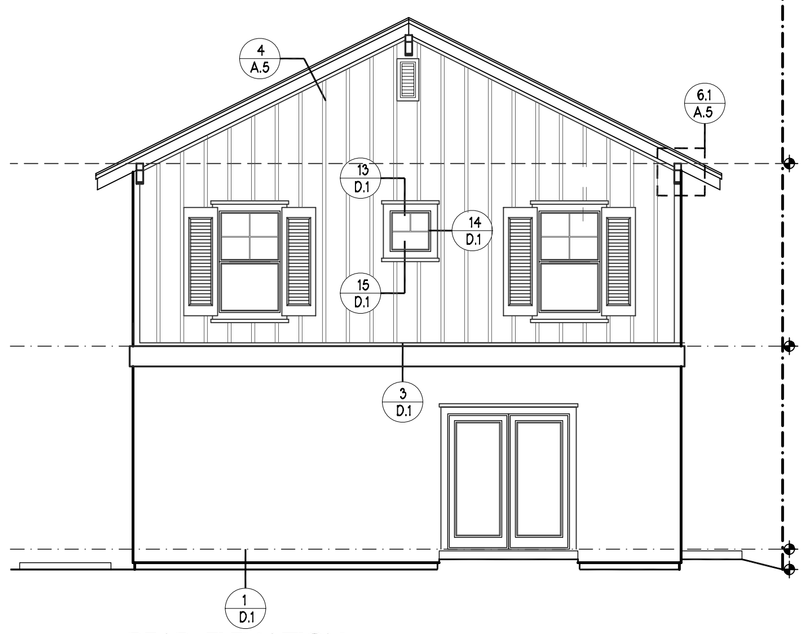
PROJ. MGR. MEI SUN

PROJECT FILE: 0.22~ BARNELL

DRAWING: D.0



FRONT ELEVATION



REAR ELEVATION

RIGHT SIDE ELEVATION

LEFT SIDE ELEVATION

BLDG. "B" ~ EXTERIOR ELEVATIONS (detail tags only)

SCALE: 3/16" = 1'-0"

SUN DIALOG CORP.
409 TENNANT STA#558
MORGAN HILL, CA 95037
PHONE 408-612-1600

LICENSED ARCHITECT
DONGMEI SUN
No. C 30,083
RENEWAL 5-31-25
STATE OF CALIFORNIA

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DRAWING:
Bldg. "B" ~ Exterior Elevations (detail tags only)
PROJECT:
Haren Properties, LLC
Gabriel Connors
4 Plex – Barnell Ave.
Morgan Hill, Calif.
County of Santa Clara

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DATE: DECEMBER 30, 2023

SCALE: AS NOTED

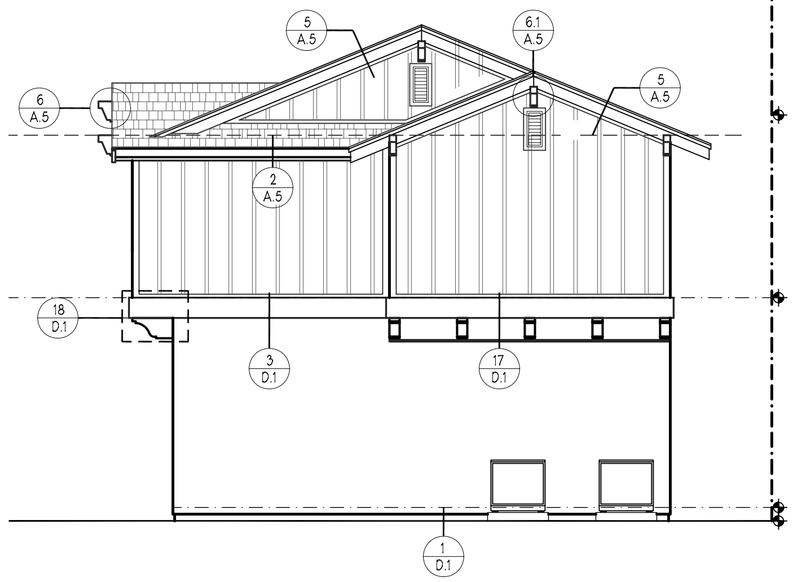
DRAWN BY: GARY E. MOORE

PROJ. MGR. MEI SUN

PROJECT FILE: 0.22~ BARNELL

DRAWING: D.0.1

FRONT ELEVATION



REAR ELEVATION

RIGHT SIDE ELEVATION

LEFT SIDE ELEVATION

EXTERIOR ELEVATIONS BLDG. "C" (detail tags only)

SCALE: 3/16" = 1'-0"

SUN DIALOG CORP.
409 TENNANT STA#558
MORGAN HILL, CA 95037
PHONE 408-612-1600

LICENSED ARCHITECT
DONGMEI SUN
No. C 30,083
RENEWAL 5-31-25
STATE OF CALIFORNIA

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DRAWING:
Exterior Elevations (Building "C") Detail Tags Only

PROJECT:
Haren Properties, LLC
Gabriel Connors
4 Plex – Barnell Ave.
Morgan Hill, Calif.
County of Santa Clara

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REVISIONS:

DATE: DECEMBER 30, 2023

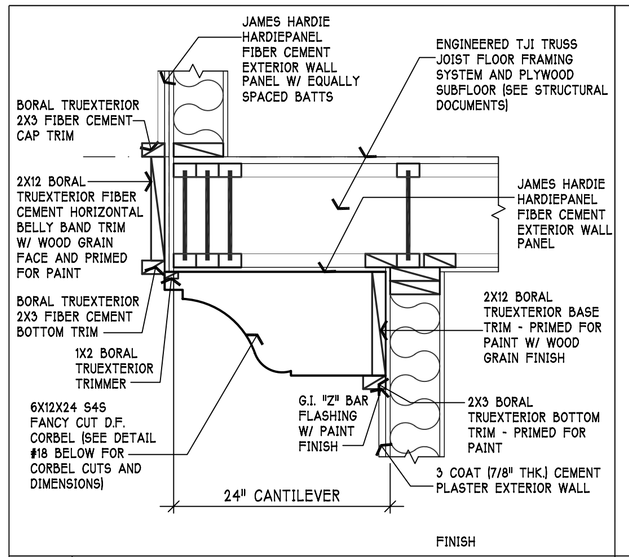
SCALE: AS NOTED

DRAWN BY: GARY E. MOORE

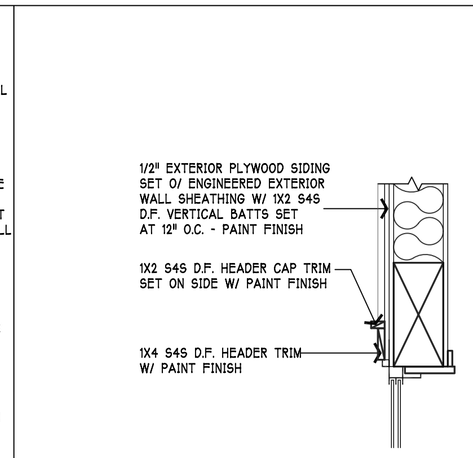
PROJ. MGR. MEI SUN

PROJECT FILE: 0.22~ BARNELL

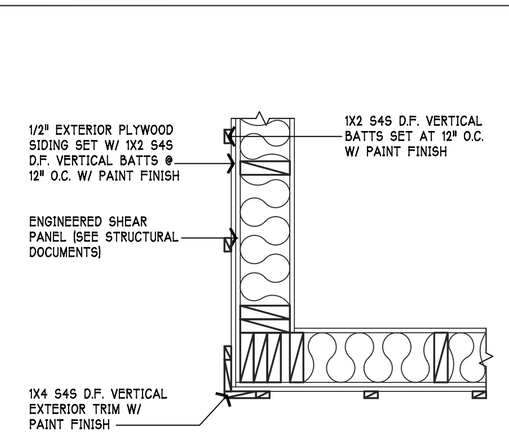
DRAWING: D.0.2



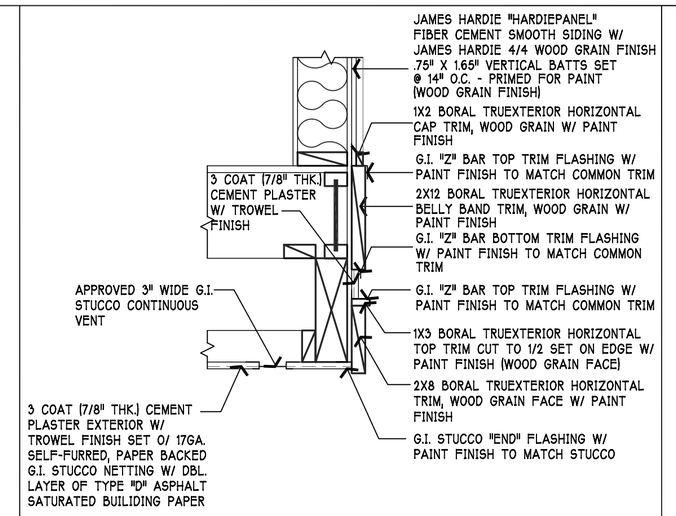
17. 24" CANTILEVER TRIM DETAIL (SCALE: 1" = 1'-0")



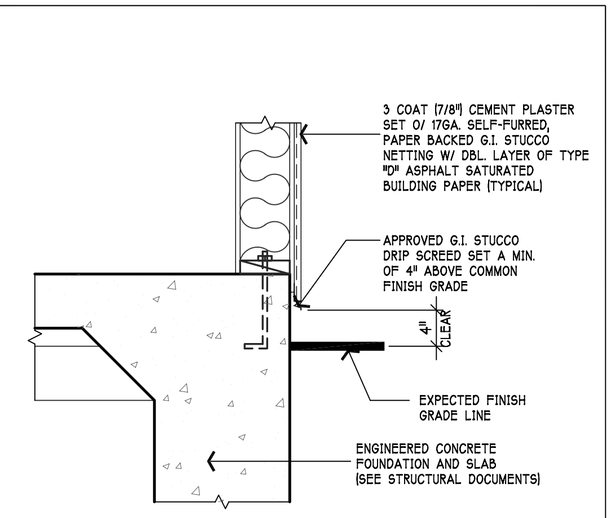
13. WINDOW HEADER TRIM DETAIL (SCALE: 1" = 1'-0")



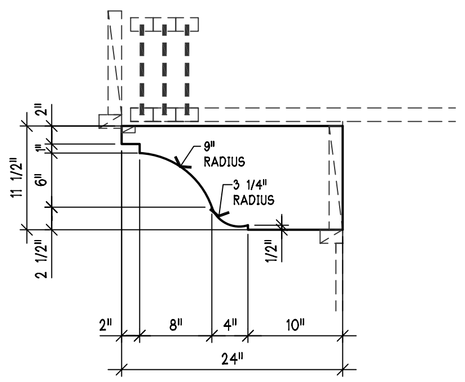
9. EXTERIOR TRIM FRAMING DETAIL (SCALE: 1" = 1'-0")



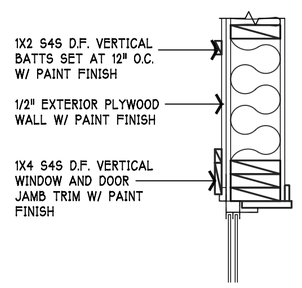
5. HORIZONTAL TRIM DETAIL (SCALE: 1" = 1'-0")



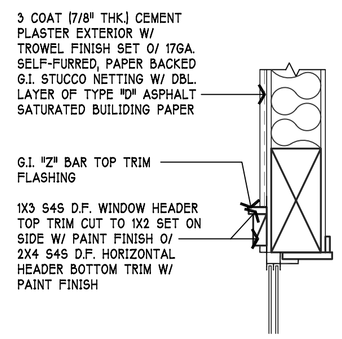
1. DRIP SCREED DETAIL (SCALE: 1" = 1'-0")



18. CORBEL ELEVATIONAL PROFILE (SCALE: 1" = 1'-0")



14. WINDOW JAMB TRIM DETAIL (SCALE: 1" = 1'-0")



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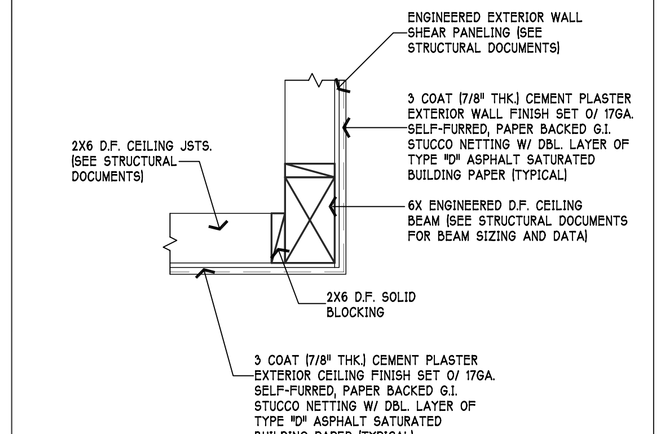
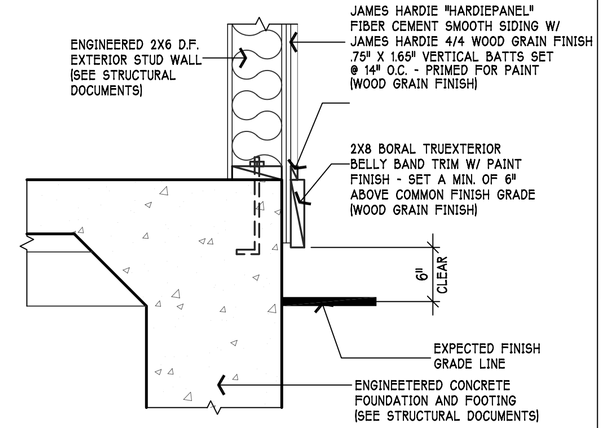


6. CEILING BEAM FRAMING DETAIL (SCALE: 1" = 1'-0")



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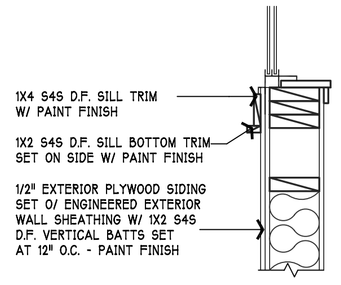
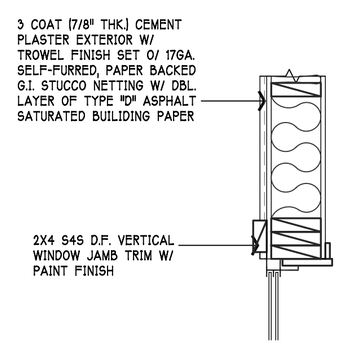
19. THIS DETAIL NOT USED (SCALE: 1" = 1'-0")



15. WINDOW SILL TRIM DETAIL (SCALE: 1" = 1'-0")



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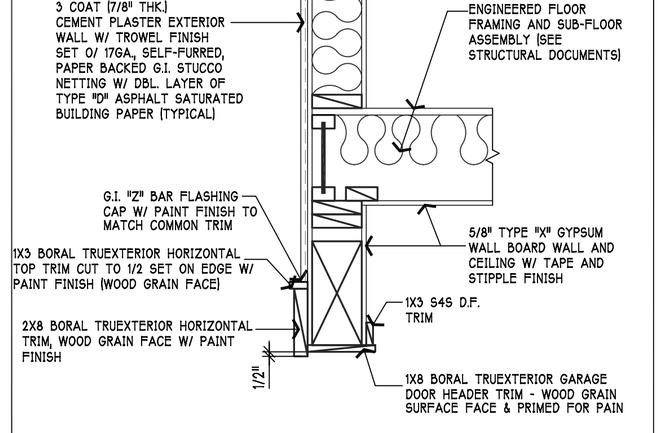
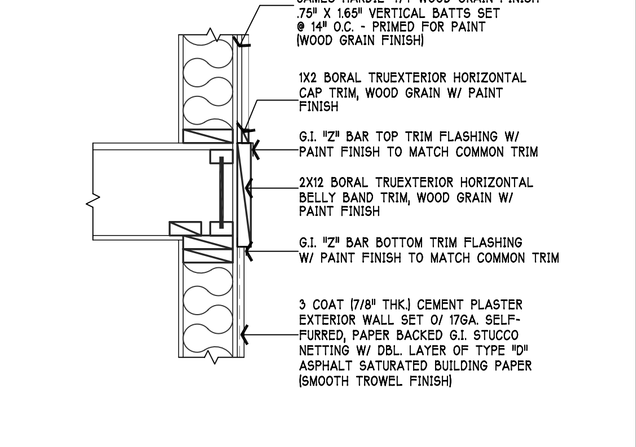
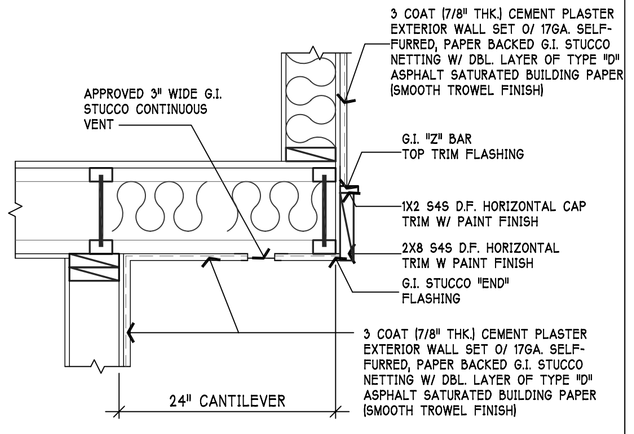


7. GARAGE DOOR TRIM DETAIL (SCALE: 1" = 1'-0")

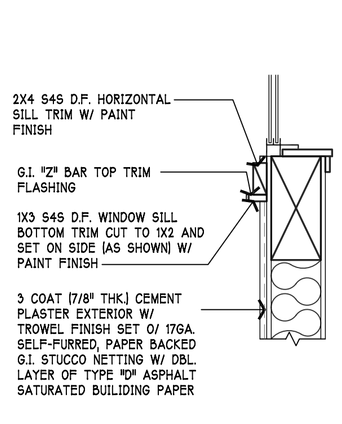


3. HORIZONTAL TRIM DETAIL (SCALE: 1" = 1'-0")

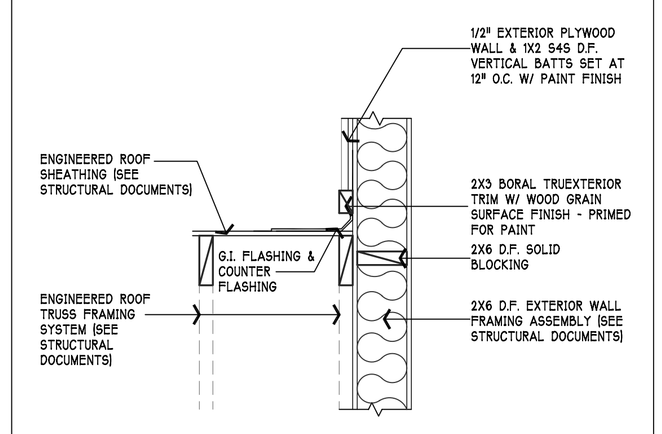
20. THIS DETAIL NOT USED (SCALE: 1" = 1'-0")



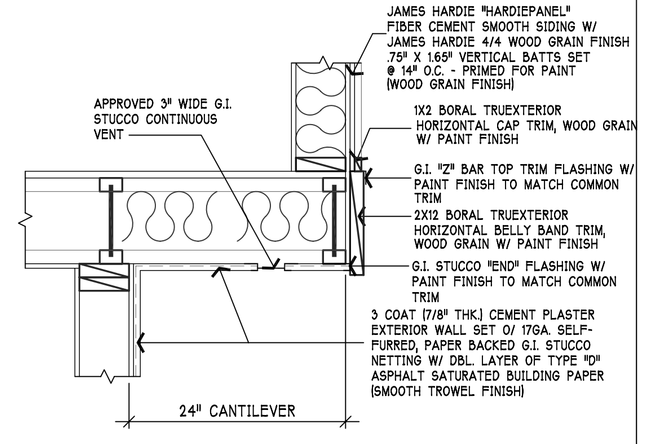
16. HORIZONTAL TRIM DETAIL (SCALE: 1" = 1'-0")



12. WINDOW SILL TRIM DETAIL (SCALE: 1" = 1'-0")



8. EXTERIOR WALL TRIM DETAIL (SCALE: 1" = 1'-0")



4. HORIZONTAL TRIM DETAIL (SCALE: 1" = 1'-0")

SUN DIALOG CORP.
409 TENNANT STA#558
MORGAN HILL, CA 95037
PHONE 408-612-1600

LICENSED ARCHITECT
DONGMEI SUN
No. C 30,083
RENEWAL 5-31-25
STATE OF CALIFORNIA

NOT VALID WITHOUT A WET SIGNATURE

DRAWING:
misc. framing details

PROJECT:
Haren Properties, LLC
Gabriel Connors
4 Plex - Barnell Ave.
Morgan Hill, Calif.
County of Santa Clara

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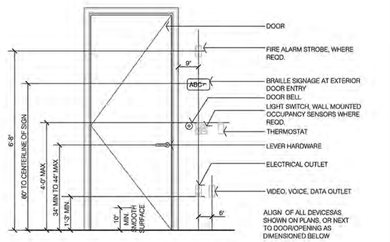
SCALE: AS NOTED

DRAWN BY: G.E. MOORE

PROJ. MGR. MEI SUN

PROJECT FILE: 0.22~BARNELL

DRAWING: **D.1**



12. A.D.A. DEVICE MOUNTING HEIGHTS NOT TO SCALE

A.D.A. GENERAL NOTES:

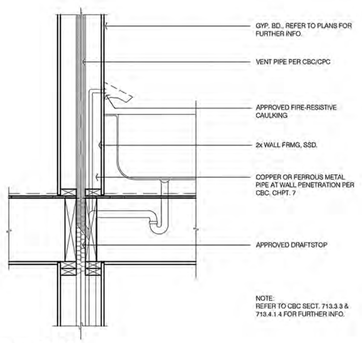
CALIFORNIA BUILDING CODE - SECTION 11A HOUSING ACCESSIBILITY
SECT. 1127A.2 TOILET FACILITIES
WHEN COMMON USE TOILET FACILITIES ARE PROVIDED FOR RESIDENTS OR GUESTS, AT LEAST ONE PERCENT OF THE TOTAL NUMBER OF FIXTURES BUT NOT LESS THEAN ONE OF EACH TYPE SHALL COMPLY WITH THIS SECTION.
SECT. 1127A.2.1 MULTIPLE ACCOMMODATION TOILET FACILITIES:
1. WHEELCHAIR TURNING SPACE. TURNING SPACE OF SUFFICIENT SIZE TO INSCRIBE A CIRCLE WITH A DIAMETER NOT LESS THAN 60 INCHES [1524 MM] OR A T-SHAPED SPACE SHALL BE PROVIDED WITHIN THE TOILET FACILITY. THE WHEELCHAIR TURNING SPACE SHALL COMPLY WITH SECTION 1138A1.3 OTHER THAN THE DOOR TO THE ACCESSIBLE WATER CLOSET COMPARTMENT, A DOOR POISTION, MAY ENCROACH INTO THIS SPACE NOT MORE THAN 12 INCHES. [305 MM].
2. CLEAR SPACE OF FIXTURES. DOORS SHALL NOT SWING INTO THE CLEAR FLOOR SPACE REQUIRED FOR ANY FIXTURE. REQUIRED CLEAR FLOOR SPACE, CLEARANCE OF FIXTURES, AND TURNING SPACE SHALL BE PERMITTED TO OVERLAP.
3. ACCESSIBLE WATER CLOSET COMPARTMENT. ACCESSIBLE WATER CLOSET COMPARTMENTS SHALL BE 60" [1524 mm] WIDE MINIMUM MEASURED PERPENDICULAR TO THE SIDE WALL, 56 INCHES [1422 mm] DEEP MINIMUM FOR WALL HUNG WATER CLOSETS AND 59 INCHES [1499 mm] DEEPMINIMUM FOR FLOOR MOUNTED WATER CLOSETS MEASURED PERPENDICULAR TO THE REAR WALL.
- WATER CLOSET FIXTURES LOCATED IN ACCESSIBLE WATER CLOSET COMPARTMENTS SHALL BE POSITIONED WITH A WALL OR PARTITION WITH A WALL OR PARTITION TO THE REAR AND TO ONE SIDE. THE CENTERLINE OF THE WATER CLOSET SHALL BE 17" [432mm] MINIMUM TO 18 INCHES [457mm] MAXIMUM FROM THE SIDE WALL OR PARTION.
- CLEARANCE AROUND A WATER CLOSET SHALL BE 60 INCHES [1524mm] MINIMUM MEASURED PERENDICULAR FROM THE SIDE WALL AND 56 INCHES [1422mm] MINIMUM MEASURED PERPENDICULAR FROM THE REAR WALL. THE REQUIRED CLEARANCE AROUND THE WATER CLOSET SHALL BE PERMITTED TO OVERLAP THE WATER CLOSET, ASSOCIATED GRAB BARS, DISPENSERS, SANITARY NAPKIN DISPOSAL UNITS, COAT HOOKS, SHELVES ACCESSIBLE ROUTES, CLEAR FLOOR SPACE AND CLEARANCES REQUIRED AT OTHE RFIXTURES, AND THE TURNING SPACE. NO OTHER FIXTURES OR OBSTRUCTIONS SHALL BE LOCATED WITHIN THE REQUIRED WATER CLOSET CLEARANCE.
- A MINIMUM 48 INCHES [1219mm] DEEP AND 60 INCHES [1524mm] WIDE CLEAR MANUVERING SPACE SHALL BE PROVIDED IN FRONT OF THE WATER CLOSET IF THE COMPARTMENT HAS AN END-OPENING DOOR [FACING THE WATER CLOSET]. A MINIMUM 60 INCHES [1524mm] DEEP AND 60 INCHES [1524mm] WIDE CLEAR MANUVERING SPACE SHALL BE PROVIDED IN A COMPARTMENT WITH THE DOOR LOCATED AT THE SIDE.
4. GRAB BARS. GRAB BARS SHALL BE PROVIDED ON THE SIDE WALL CLOSEST TO THE WATER CLOSET AND ON THE REAR WALL. GRAB BARS SHALL COMPLY WITH THIS SECTION AND SECTION 1127A.4.
- THE SIDE WALL GRAB BAR SHALKL BE 42 INCHES 1067mm] LONG MINIMUM, LOCATED 12 INCHES [305mm] MAXIMUM FROM THE REAR WALL AND EXTEND 54 INCHES 1372mm] MINIMUM FROM THE REAR WALL. THE FRONT END OF THE SIDE GRAB BAR SHALL BE POSITIONED 24 INCHES [610mm] MINIMUM IN FRONT OF THE WATER CLOSET.
- THE REAR WALL GRAB BAR SHALL BE 36 INCHES [914mm] LONG MINIMUM AND EXTEND FROM THE CENTERLINE OF THE WATER CKLOSET 12 INCHES [305mm] MINIMUM ON ONE SIDE AND 24 INCHES [610mm] MINIMUM ON THE OTHER SIDE.
EXPECTIONS:
1. THE REAR GRAB BAR SHALL BE PERMITTED TO BE 24 INCHES [610mm] LONG MINIMUM, CENTERED ON THE WATER CLOSET, WHEN WALL SPACE DOES NOT PERMIT A LENGTH OF 36 INCHES [914mm] MINIMUM DUE TO THE LOCATION OF A RECESSED FIXTURE ADJACENT TO THE WATER CLOSET.
2. WHEN THE ENFORING AGENCY REQUIRES FLUSH CONTROLS FOR FLUSH VALVES TO BE LOCATED IN A POSITION THAT CONFLICTS WITH THE LOCATION OF THE REAR GRAB BAR, THEN THE REAR GRAB BAR SHALL BE PERMITTED TO BE SPLIT OR SHIFTED TO THE OPEN SIDE OF THE TOILET AREA.

RATED WALL PENETRATION NOTES:

GENERAL:
1. MATERIALS USED IN THE FIRE SAFING SYSTEMS ARE TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS PROVIDED WITH THE MATERIALS AND SHALL BE UL LISTED AS FIRE RATED PRODUCTS.
2. PER CBC 713.3.1.2 THE F RATINGS OF TROUGH HORIZOHNTAL PENETRATION OF FIRE STOPS SHALL NOT BE LESS THAN THE FIRE RESISTANCE OF THE ASSEMBLY PENETRATED AND SHALL BE SUITABLE FOR THE METHOD OF, AND MATERIALS SURROUNDING THE PENETRATION AND PENETRATING ITEM. THERE SHALL BE NO FLOOR PENETRATIONS FOR THIS PROJECT.
3. FIRE SAFING SYSTEMS ARE SPECIFIC AND EACH VARING CONDITION OF A FIRE RATED WALL OR FLOOR ASSEMBLY. THE PENETRATING ITEM(S), AND THE MATERIALS SELECTED TO PREVENT THE SPREAD OF FIRE THROUGH THE ENETRATION, THE SAFING MATERIALS DESIGNATED FOR USE IN FIRE ASSEMBLIES ARE NOT PROVIDED WITH SPECIFIC FIRE RATINGS. SAFEING MATERIALS SHALL BE SELECTED PER EACH MANUFACTURES TECHNICAL PRODUCT LITERATURE FOR EACH CONDITION ENCOUNTERED AND DOCUMENTED IN SHOP DRAWINGS FOR REVIEW BY THE MANUFACTURER, CONTRACTOR, BUILDING DEPARTMENT AND ARCHITECT OR PROJECT DESIGNER.

ACCEPTABLE MANUFACTURES OF FIRE STOPPING PRODUCTS SHALL BE AS FOLLOWS:
A. 3M FIRE PROTECTION PRODUCTS.
B. HILTI CONSTRUCTION CHEMICALS, INC.
C. SEE SPECIFICATIONS FOR ADDITIONAL ACCEPTABLE MANUFACTURERS.

PRODUCTS SHALKL BE LISTED WITH A RECOGNIZED TESTING AGENCY SUCH AS ICBO, UNDERWRITER LABRATORIES OR WARNOCK HERSEY, "OR EQUAL" MANUFACTURERS WILL BE CONSIDERED IF TESTING AGENCY APPROVALS ARE PROVIDED.
4. DETAILS SHOWN ARE EXEMPLARY ONLY, AS EXACT CONDITIONS ARE UNKNOWN. ALL PENETRATIONS SHALL MEET THE CONDITIONS SET FORTH IN CBC SECTION 713.
5. DETAILS SHOWN ARE TYPICAL DETAILS. IF FIELD CONDTIONS DO NOT MATCH REQUIREMENTS OF TYPICAL DETAILS, APPROVED ALTERNATE DETAILS SHALL BE UTILIZED. FIELD CONDITIONS AND DIMENSIONS NEED TO BE VERIFIED FOR COMPLIANCE WITH THE DETAILS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING: *MINIMUM AND MAXIMUM WIDTH OF JOINTS *TYPE AND THICKNESS OF FIRE-RATEDCONSTRUCTION. THE MINIMUM ASSEMBLY RATING OF THE FIRESTOP ASSEMBLY SHALL MEET OR EXCEED THE HIGHTEST RATING OF THE ADJACENT CONSTRUCTION.
6. IF ALTERNATE DETAILS MATCHING THE FIELD CONDTIONS ARE NOT AVAILABLE, MANUFACTURERS ENGINEERING JUDGMENT DRAWINGS ARE ACCEPTABLE. DRAWINGS SHALL FOLLOW THE INTERNATIONAL FIRESTOP COUNCIL [IFC] GUIDELINES FOR EVALUATING FIRESTOP SYSTEMS ENGINEERING JUDGEMENTS.
7. REFERENCES:
* 2013 UNDERWRITER'S LABROATORIES FIRE RESISTANCE DIRECTORY, VOLUMES 1 & 2.
* NFPA 101 LIFE SAFETY CODE
* NFPA 70 - NATIONAL ELECTRIC CODE
* ALL GOVERNING LOCAL AND REGIONAL BUILDING CODES.
8. FIRESTOPOE SYSTEM INSTALLATION MUST MEET REQUIREMENTS OF ASTM E-814 (UL 1479) TESTED ASSEMBLIES THAT PROVIDE A FIRE RATING EQUAL TO THAT OF CONSTRUCTION BEING PENETRATED.
9. ALL RATED THROUGH-PENETRATION ASSEMBLIES SHALLK BE PROMINENTLY LABELED WITH THE FOLLOWING INFORMATION:
* ATTENTION: FIRE RATED ASSEMBLY
* UL SYSTEM # *PRODUCT(S) USED
* HOURLY RATING [F-RATING]
* NSTALLATION DATE
10. FOR OUTLET BOXES REQUIRING PROTECTION, USE ONLY WALL OPPENING PROTECTIVE MATERIALS, CATEGORY CLIV AS CLASSIFIED BY UNDERWRITER'S LABORATORIES, FIRE RESISTANCE DIRECTORY (VOLUME 1.)



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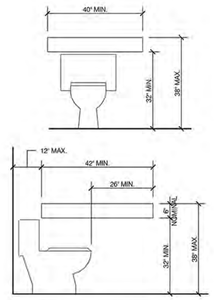
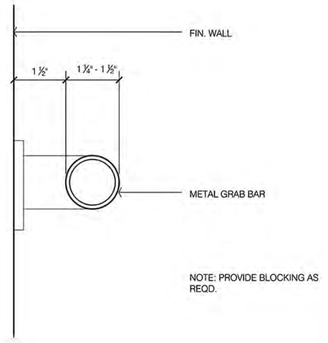


WATER CLOSET IN ADAPTABLE POWDER ROOM

NOT TO SCALE



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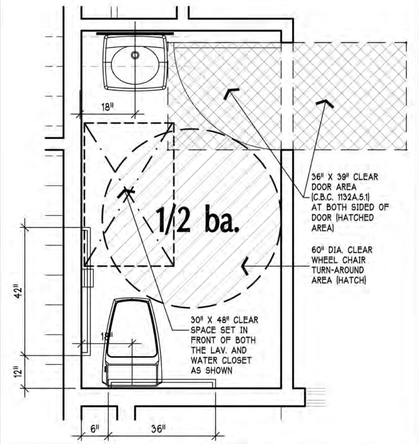
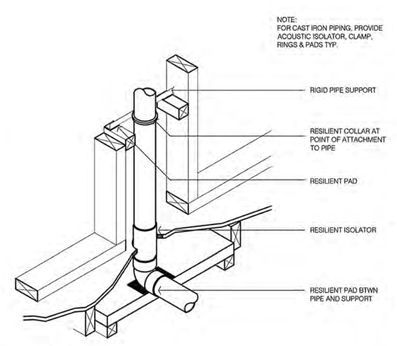
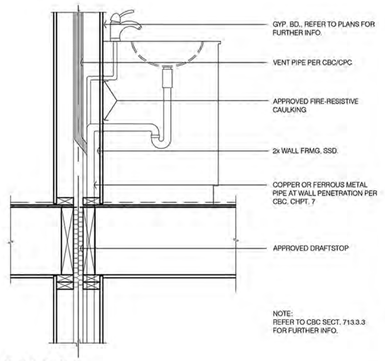


9. TUB PIPE AT RATED WALL NOT TO SCALE



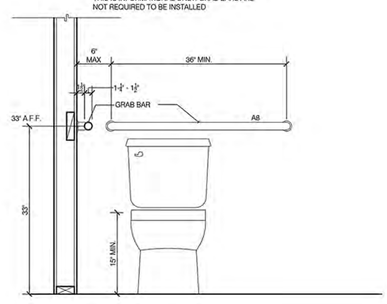
NOT TO SCALE

6. REQUIRED GRAB BAR BACKING NOT TO SCALE



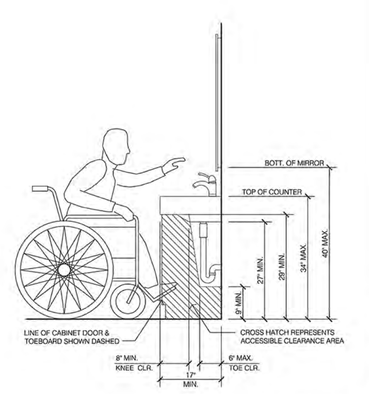
NOT TO SCALE

3. A.D.A. GRAB BAR REQUIREMENTS NOT TO SCALE

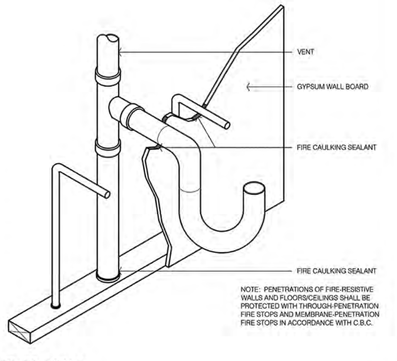


NOT TO SCALE

1. 1/2 BATH A.D.A. FLOOR PLAN (SCALE: 1" = 1'-0")

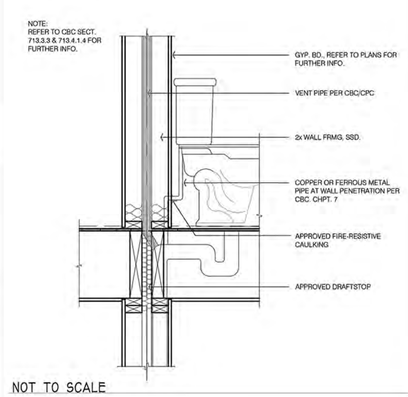


10. SOUND CONTROL PIPE SUPPORT NOT TO SCALE



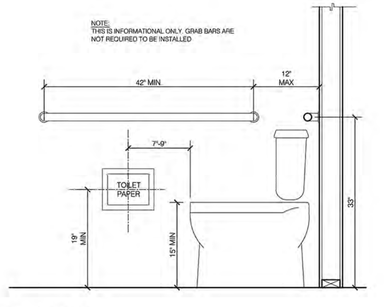
NOT TO SCALE

7. LAVATORY PIPE AT RATED WALL NOT TO SCALE



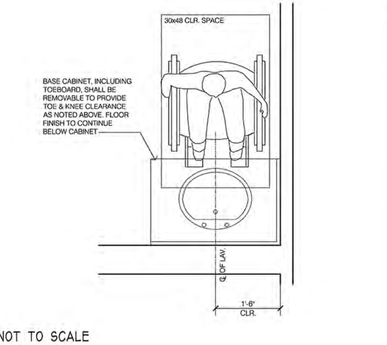
NOT TO SCALE

4. A.D.A. GRAB BAR AT WATER CLST. NOT TO SCALE



NOT TO SCALE

NOTE:
EXPOSED HOT WATER LINES SHALL BE INSULATED



NOT TO SCALE

11. PIPE PENETRATION AT RATED WALL NOT TO SCALE

8. TOILET PIPE AT RATED WALL NOT TO SCALE

5. A.D.A. GRAB BARS AT WATER CLOSET W/ T.P. HOLDER NOT TO SCALE

2. A.D.A. 1/2 BATH "CLEARANCE" NOT TO SCALE

SUN DIALOG CORP.
409 TENNANT STA#558
MORGAN HILL, CA 95037
PHONE 408-612-1600

LICENSED ARCHITECT
DONGMEI SUN
No. C 30,083
RENEWAL 5-31-25
STATE OF CALIFORNIA

NOT VALID WITHOUT A WET SIGNATURE

DRAWING:
a.d.a details, notes, rated fire wall penetrations and details
PROJECT:
Haren Properties, LLC
Gabriel Connors
4 Plex - Barnell Ave.
Morgan Hill, Calif.
County of Santa Clara

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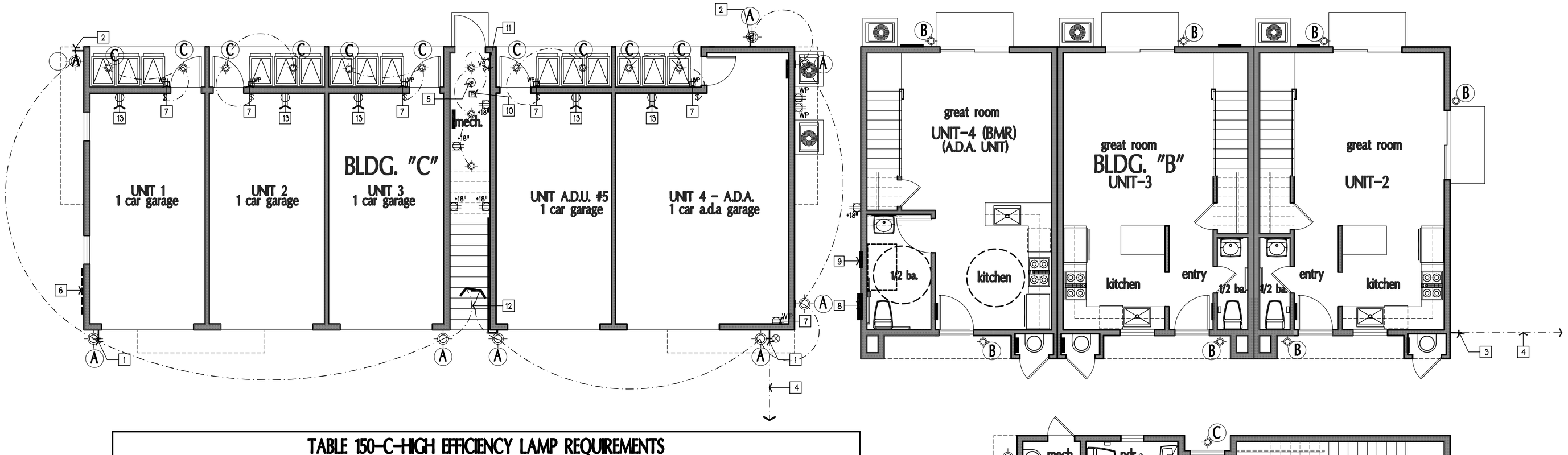
REVISIONS:

DATE: DECEMBER 30, 2023
SCALE: AS NOTED
DRAWN BY: G.E. MOORE
PROJ. MGR. MEI SUN
PROJECT FILE: 0.22~BARNELL
DRAWING: **D.2**



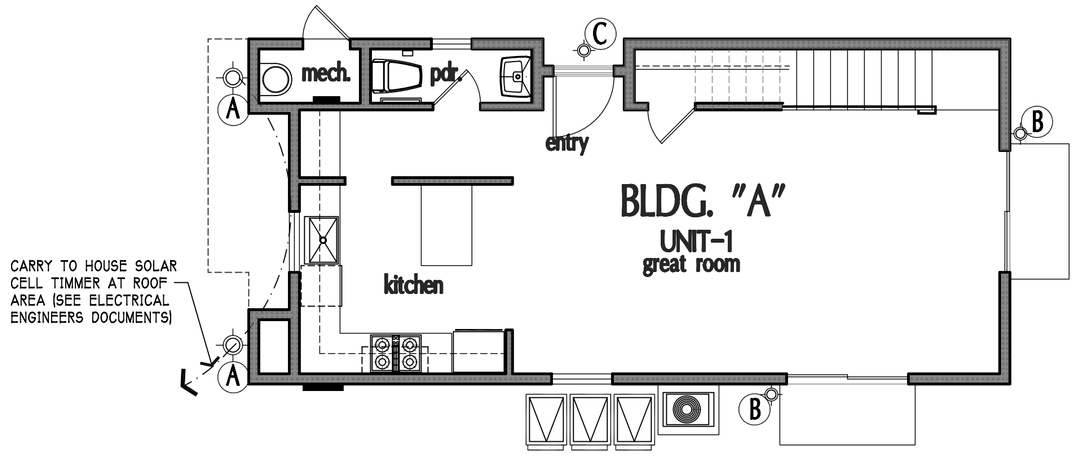


TABLE 150-C-HIGH EFFICIENCY LAMP REQUIREMENTS

LAMP POWER RATING	MINIMUM LAMP EFFICACY
15 WATTS OR LESS	40 LUMENS PER WATT
OVER 15 WATTS TO 40 WATTS	50 LUMENS PER WATT
OVER 40 WATTS	60 LUMENS PER WATT

ELECTRICAL SCHEDULE

SYM.	DESCRIPTION	REMARKS
	120V DUPLEX OUTLET	
	120V DUPLEX OUTLET (SPLIT WIRE)	
GFI	120V DUPLEX OUTLET W/ G.F.I.	
GFI/WP	120V DUPLEX OUTLET W/ G.F.I/W.P PROTECTED	
AFI	220V DUPLEX OUTLET W/ ARC FAULT PROTECTOR	
	220V DUPLEX OUTLET	
	GAS JET	
	GAS KEY	
	CEILING MNT. INCANDESCENT FIXTURE	
	WALL MNT. INCANDESCENT FIXTURE	
	CEILING MOUNT L.E.D. FIXTURE	
	WALL MOUNT L.E.D. FIXTURE	
	RECESSED L.E.D. DOWN LIGHT (26 watt ENERGY STAR)	
	RECESSED INCANDESCENT DOWN LIGHT	
	RECESSED FLORESCENT WALL WASHER (26 watt ENERGY STAR)	
$	SINGLE POLE SWITCH	
$D	SINGLE POLE SWITCH W/ DIMMER	
$VS	SINGLE POLE SWITCH W/ OCCUPANCY/VACANCY SENSOR	
$3	2 WAY SWITCH	
$3D	2 WAY SWITCH W/ DIMMER	
$3VS	2 WAY SWITCH W/ OCCUPANCY/VACANCY SENSOR	

SYM.	DESCRIPTION	REMARKS
OC	OCCUPANCY/VACANCY SENSOR	
T	THERMOSTAT	
SD	APPROVED SMOKE DETECTOR	
	INCANDESCENT TRAC-LIGHTING	
	HOSE BIBB	
	T.V. JACK (CABLE READY)	
	FLOOR OR CL'G MNT. HEAT REGISTER	
	UNDER COUNTER HEAT REGISTER	
CAR	WALL MOUNT COLD AIR RETURN (N.T.S.)	
	CEILING MOUNT COLD AIR RETURN (N.T.S.)	
E	EXHAUST FAN	
F/L	EXHAUST FAN W/ INCANDESCENT LIGHT FIXTURE	
	PHONE JACK	
	DOOR CHIMES	
MC	OUTDOOR MOTION SENSOR FITTED W/ PHOTOCELL	
FLUR	WALL MOUNT "FLORESCENT" LIGHT FIXTURE	
	24" UNDER CNTR FLORESCENT LIGHT W/ DEDICATED SWITCH	
•	MINI-RECESSED LIGHT FIXTURE	
$A+S+	DEDICATED SINGLE POLE "ALARM" DEACTIVATION SWITCH	
$3VS	3 WAY SWITCH W/ OCCUPANCY/VACANCY SENSOR	
J		

HOUSE ELECTRICAL & PLUMBING KEYNOTES:

1. HOUSE HOSE BIBB SET W/ BACK FLOW PREVENTER, WATER SHUT-OFF VALVE AND ROUGH PLUMBED FOR LANDSCAPE IRRIGATION SYSTEM (SEE LANDSCAPE ARCHITECTS DOCUMENTS)
2. HOUSE HOSE BIBB SET W/ BACK FLOW PREVENTER
3. HOUSE HOSE BIBB SET W/ BACK FLOW PREVENTER, ROUGH PLUMBED FOR LANDSCAPE IRRIGATION SYSTEM (SEE LANDSCAPE ARCHITECTS DOCUMENTS
4. LANDSCAPE WATER LINE - SIZED AND DESIGNED BY THE LANDSCAPE ARCHITECT (SEE LANDSCAPE ARCHITECT DOCUMENTS)
5. CEILING MOUNT COMBINATION SMOKE & CARBON MONOXIDE DETECTOR HARD WIRE W/ EMERGENCY BACK-UP BATTERY
6. WALL MOUNT SELF-ILLUMINATED LOW-VOLTAGE STREET IDENTIFICATION NUMBER LOCATION
7. 110V WALL MOUNT DUPLEX OUT-LET MOISTURE RESISTENT W/ PROTECTIVE COVER
8. MAIN POWER PANEL LOCATION FOR ALL UNITS AND HOUSE (200 AMP POWER PANEL EACH UNIT)
9. 200 AMP HOUSE SUB-ELECTRICAL PANEL LOCATION
10. CEILING MOUNT NU-TONE VENTING FAN TO REMAIN IN THE ON POSITION WHILE ROOM IS OCCUPIED
11. DEDICATED SINGLE POLE SWITCH TO CEILING MOUNT VENTING FAN. SET 72" ABOVE COMMON FINISH FLOOR
12. CARRY TO CEILING MOUNT LIGHT FIXTURES AT STAIRS AND STAIR LANDING & ENTRY
13. 220V DEDICATED LEVEL 2 ELECTRICAL VEHICLE CHARGING OUTLET LOCATION

EXTERIOR LIGHTING SCHEDULE:

FIXTURE LOCATION:	MANUFACTURE & TYPE:	QUANTITY:
(A) WALL MOUNT WALL LIGHT	HATTARAS BAY BY KICHLER BRONZE 49067OZ - 10.25" DIA. OUTDOOR LIGHT. TITLE #24 COMPLIANT STYLE "CONTEMPORARY" BULB. DARK SKY COMPLIANT	8 FIXTURES
(B) WALL MOUNT WALL LIGHT	CHIASSO ALUMINUM 5" W X 7.25" H. POWDER COAT "BLACK" OUTDOOR LIGHT. TITLE #24 COMPLIANT STYLE "CONTEMPORARY" BULB. DARK SKY COMPLIANT	12 FIXTURES
(C) RECESSED DOWN-LIGHT	JUNO 4" LINE VOLTAGE NON-IC NON-REMODEL RECESSED LIGHT HOUSING W/ E SERIES 4" LED BLACK BAFFLE W/ NORA 4" BLACK ADJUSTABLE STEPPED BAFFLE TRIM BULB. DARK SKY COMPLIANT	1 FIXTURE

1ST LEVEL "HOUSE" LIGHTING PLAN

SCALE: 3/16" = 1'-0" (INCLUDES HOSEBIBB LOCATIONS AND MECHANICAL ROOM ELECTRICAL PLAN)

SUN DIALOG CORP.
409 TENNANT STA#558
MORGAN HILL, CA 95037
PHONE 408-612-1600

LICENSED ARCHITECT
DONGMEI SUN
No. C 30,083
RENEWAL 5-31-25
STATE OF CALIFORNIA

NOT VALID WITHOUT A WET SIGNATURE

DRAWING:
1st Floor Electrical Lighting Plan

PROJECT:
Haren Properties, LLC
Gabriel Connors
4 Plex - Barnell Ave.
Morgan Hill, Calif.
County of Santa Clara

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DATE: DECEMBER 30, 2023

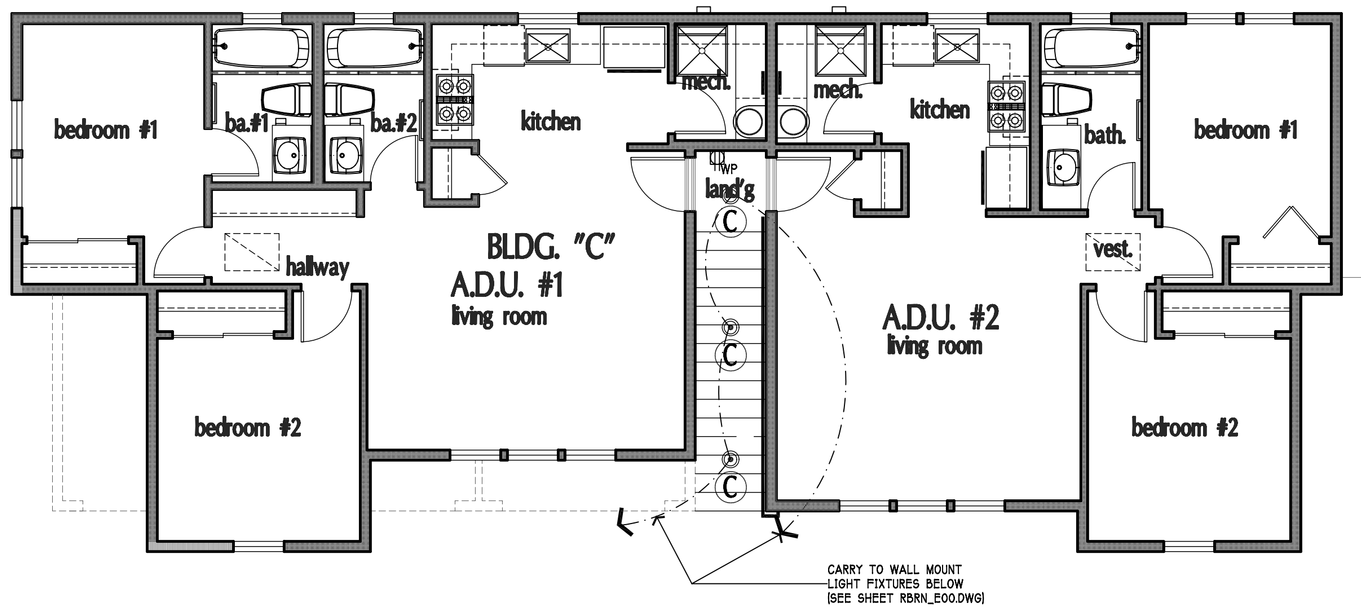
SCALE: AS NOTED

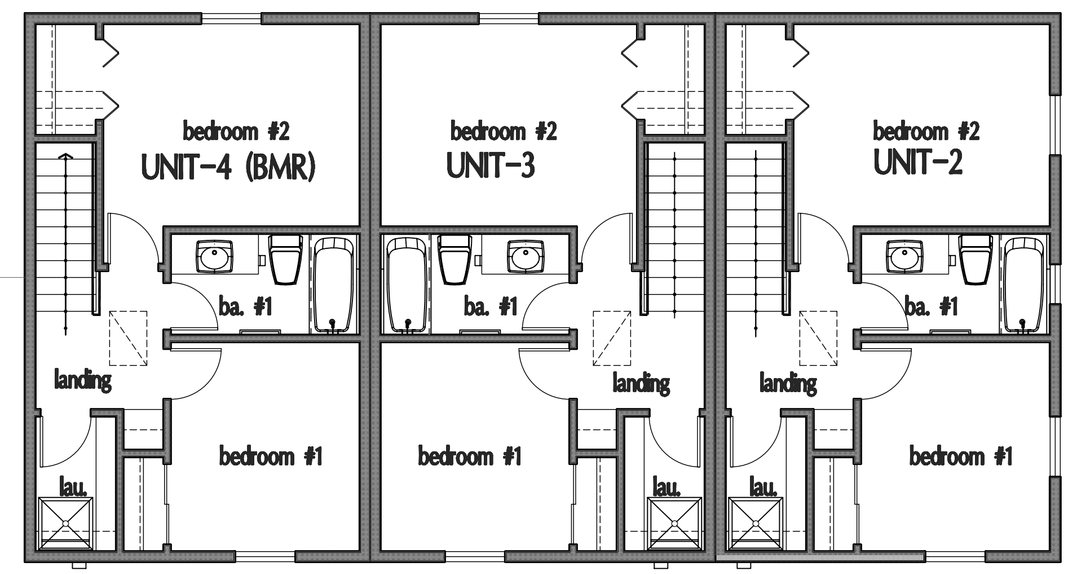
DRAWN BY: GARY E. MOORE

PROJ. MGR. MEI SUN

PROJECT FILE: 0.22~ BARNELL

DRAWING: E.0





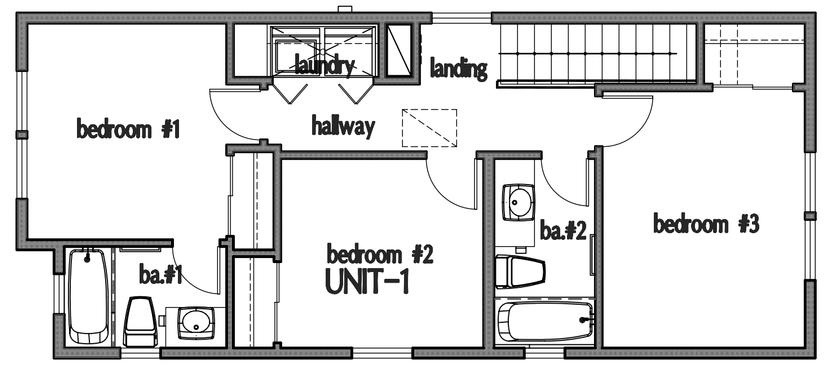


TABLE 150-C-HIGH EFFICIENCY LAMP REQUIREMENTS

LAMP POWER RATING	MINIMUM LAMP EFFICACY
15 WATTS OR LESS	40 LUMENS PER WATT
OVER 15 WATTS TO 40 WATTS	50 LUMENS PER WATT
OVER 40 WATTS	60 LUMENS PER WATT

ELECTRICAL SCHEDULE

SYM.	DESCRIPTION	REMARKS
	120V DUPLEX OUTLET	
	120V DUPLEX OUTLET (SPLIT WIRE)	
GFI	120V DUPLEX OUTLET W/ G.F.I.	
GFIWP	120V DUPLEX OUTLET W/ G.F.I/W.P PROTECTED	
AFI	220V DUPLEX OUTLET W/ ARC FAULT PROTECTOR	
	220V DUPLEX OUTLET	
	GAS JET	
	GAS KEY	
	CEILING MNT. INCANDESCENT FIXTURE	
	WALL MNT. INCANDESCENT FIXTURE	
	CEILING MOUNT L.E.D. FIXTURE	
	WALL MOUNT L.E.D. FIXTURE	
	RECESSED L.E.D. DOWN LIGHT (26 watt ENERGY STAR)	
	RECESSED INCANDESCENT DOWN LIGHT	
	RECESSED FLORESCENT WALL WASHER (26 watt ENERGY STAR)	
$	SINGLE POLE SWITCH	
$D	SINGLE POLE SWITCH W/ DIMMER	
$VS	SINGLE POLE SWITCH W/ OCCUPANCY/VACANCY SENSOR	
$3	2 WAY SWITCH	
$3D	2 WAY SWITCH W/ DIMMER	
$3VS	2 WAY SWITCH W/ OCCUPANCY/VACANCY SENSOR	

SYM.	DESCRIPTION	REMARKS
OC	OCCUPANCY/VACANCY SENSOR	
T	THERMOSTAT	
SD	APPROVED SMOKE DETECTOR	
	INCANDESCENT TRAC-LIGHTING	
	HOSE BIBB	
	T.V. JACK (CABLE READY)	
	FLOOR OR CL'G MNT. HEAT REGISTER	
	UNDER COUNTER HEAT REGISTER	
CAR	WALL MOUNT COLD AIR RETURN (N.T.S.)	
CAR	CEILING MOUNT COLD AIR RETURN (N.T.S.)	
F	EXHAUST FAN	
F/L	EXHAUST FAN W/ INCANDESCENT LIGHT FIXTURE	
	PHONE JACK	
	DOOR CHIMES	
MC	OUTDOOR MOTION SENSOR FITTED W/ PHOTOCELL	
FLOR	WALL MOUNT "FLORESCENT" LIGHT FIXTURE	
	24" UNDER CNTR FLORESCENT LIGHT W/ DEDICATED SWITCH	
	MINI-RECESSED LIGHT FIXTURE	
$A+54"	DEDICATED SINGLE POLE "ALARM" DEACTIVATION SWITCH	
$4VS	3 WAY SWITCH W/ OCCUPANCY/VACANCY SENSOR	
J		

EXTERIOR LIGHTING SCHEDULE:

FIXTURE LOCATION:	MANUFACTURE & TYPE:	QUANTITY:
(A) WALL MOUNT WALL LIGHT	HATTARAS BAY BY KICHLER BRONZE 490670Z - 10.25" DIA. OUTDOOR LIGHT. TITLE #24 COMPLIANT STYLE "CONTEMPORARY" BULB. DARK SKY COMPLIANT	0 FIXTURES
(B) WALL MOUNT WALL LIGHT	CHIASSO ALUMINUM 5" W X 7.25" H. POWDER COAT "BLACK" OUTDOOR LIGHT. TITLE #24 COMPLIANT STYLE "CONTEMPORARY" BULB. DARK SKY COMPLIANT	5 FIXTURES
(C) RECESSED DOWN-LIGHT	JUNO 4" LINE VOLTAGE NON-IC NON-REMODEL RECESSED LIGHT HOUSING W/ E SERIES 4" LED BLACK BAFFLE W/ NORA 4" BLACK ADJUSTABLE STEPPED BAFFLE TRIM BULB. DARK SKY COMPLIANT	0 FIXTURES

2ND LEVEL "HOUSE" ELECTRICAL PLAN

SCALE: 3/16" = 1'-0"

SUN DIALOG CORP.
409 TENNANT STA#558
MORGAN HILL, CA 95037
PHONE 408-612-1600

LICENSED ARCHITECT
DONGMEI SUN
No. C 30,083
RENEWAL 5-31-25
STATE OF CALIFORNIA

NOT VALID WITHOUT A WET SIGNATURE

DRAWING:
2nd Floor Exterior Lighting Plan & Notes

PROJECT:
Haren Properties, LLC
Gabriel Connors
4 Plex – Barnell Ave.
Morgan Hill, Calif.
County of Santa Clara

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DATE: DECEMBER 30, 2023

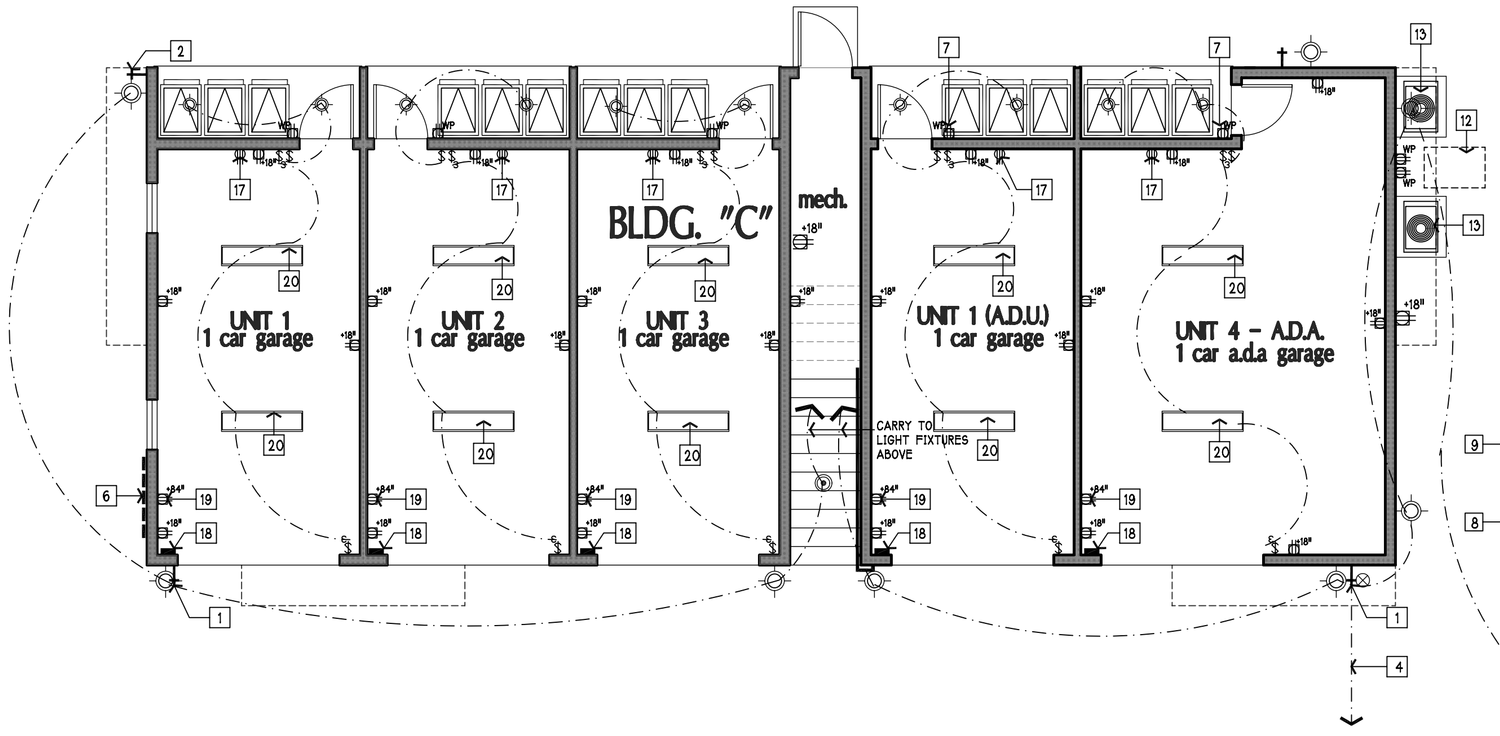
SCALE: AS NOTED

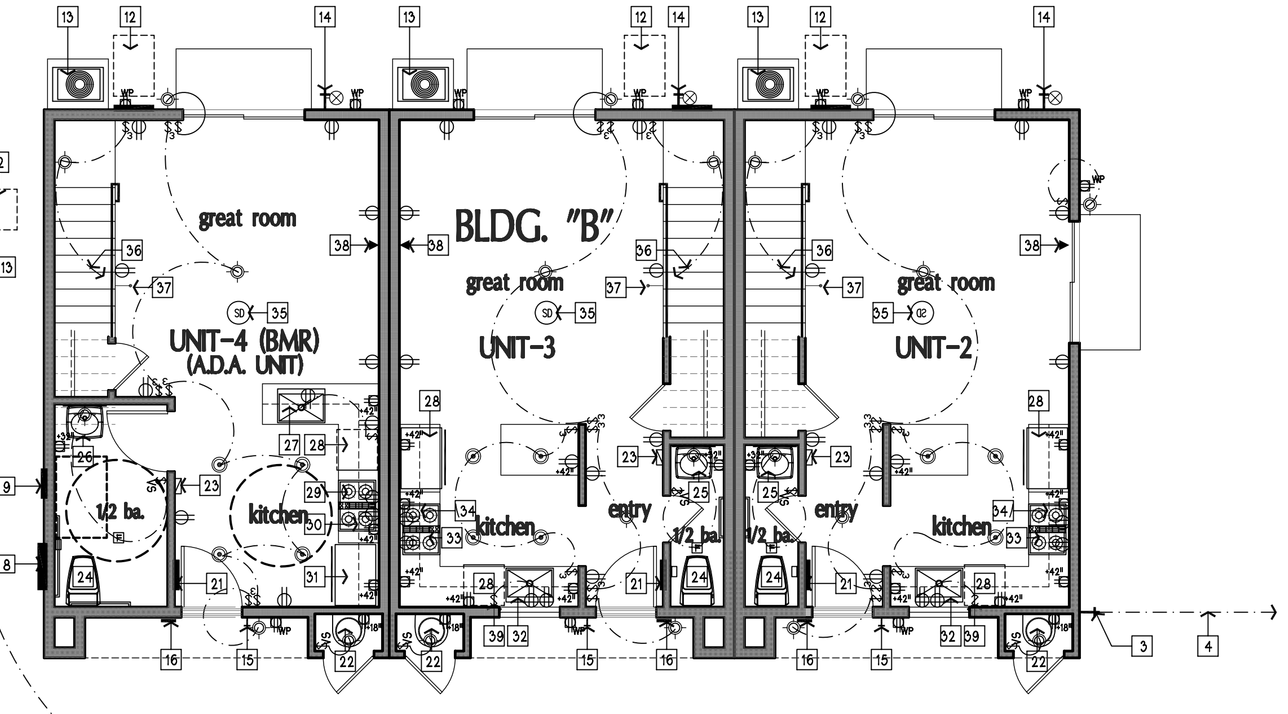
DRAWN BY: GARY E. MOORE

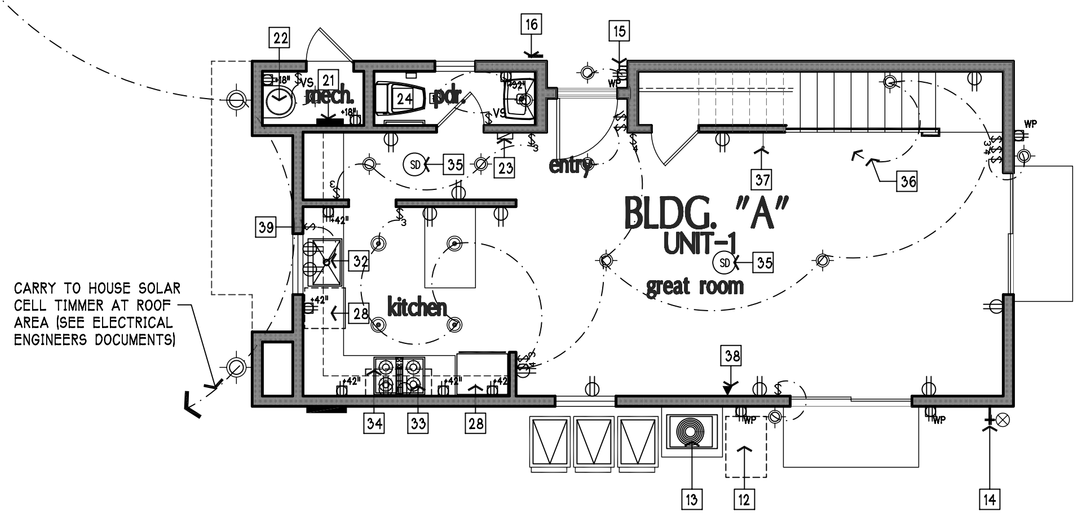
PROJ. MGR. MEI SUN

PROJECT FILE: 0.22~ BARNELL

DRAWING: **E.0.1**







NOTE: SEE PLUMBING, ELECTRICAL AND MECHANICAL DRAWINGS AS SUPPLIED BY I & A ENGINEERING FOR ALL WASTE LINE LOCATIONS, WASTE LINE "KNOCK-OUTS", FOR CEILING MOUNT HVAC REGISTER AND HVAC THERMOSTAT LOCATIONS AND ALL OTHER ELECTRICAL, MECHANICAL AND PLUMBING NOTES, AND DESIGN DATA NOT SHOWN ON THIS SHEET.

1st Floor Electrical & Mechanical Plan

SCALE: 3/16" = 1'-0"

TABLE 150-C-HIGH EFFICIENCY LAMP REQUIREMENTS

LAMP POWER RATING	MINIMUM LAMP EFFICACY
15 WATTS OR LESS	40 LUMENS PER WATT
OVER 15 WATTS TO 40 WATTS	50 LUMENS PER WATT
OVER 40 WATTS	60 LUMENS PER WATT

ELECTRICAL SCHEDULE

SYM.	DESCRIPTION	REMARKS
	120V DUPLEX OUTLET	
	120V DUPLEX OUTLET (SPLIT WIRE)	
	120V DUPLEX OUTLET W/ G.F.I.	
GFWP	120V DUPLEX OUTLET W/ G.F.I/W.P PROTECTED	
AFP	220V DUPLEX OUTLET W/ ARC FAULT PROTECTOR	
	220V DUPLEX OUTLET	
	GAS JET	
	GAS KEY	
	HOSE BIBB	
T	THERMOSTAT	
	CEILING MOUNT L.E.D. FIXTURE	
	WALL MOUNT L.E.D. FIXTURE	
	RECESSED L.E.D. DOWN LIGHT (26 watt ENERGY STAR)	
	RECESSED L.E.D. DOWN LIGHT	
	RECESSED FLORESCENT WALL WASHER (26 watt ENERGY STAR)	
$	SINGLE POLE SWITCH	
$D	SINGLE POLE SWITCH W/ DIMMER	
$VS	SINGLE POLE SWITCH W/ OCCUPANCY/VACANCY SENSOR	
$3	2 WAY SWITCH	
$3D	2 WAY SWITCH W/ DIMMER	
$3VS	2 WAY SWITCH W/ OCCUPANCY/VACANCY SENSOR	

SYM.	DESCRIPTION	REMARKS
	APPROVED COMBINATION SMOKE & CARBON MONOXIDE DETECTOR	
	L.E.D. TRAC-LIGHTING	
	T.V. JACK (CABLE READY)	
CAR	WALL MOUNT COLD AIR RETURN (N.T.S.)	
CAR	CEILING MOUNT COLD AIR RETURN (N.T.S.)	
F	EXHAUST FAN	
F/L	EXHAUST FAN W/ L.E.D. LIGHT FIXTURE	
	PHONE JACK	
	DOOR CHIMES	
•	MINI-RECESSED LIGHT FIXTURE	
$VS	3 WAY SWITCH W/ OCCUPANCY/VACANCY SENSOR	
J	JUNCTION BOX	
$D	3 WAY SWITCH W/ DIMMER	
	CEILING MOUNT LOW-VOLTAGE PENDENT LIGHT SET W/ L.E.D. LAMP	
	CEILING MOUNT LOW-VOLTAGE EYEBALL "WALL WASHER" LOCATION	
	UNDERCOUNTER LOW-VOLTAGE LIGHTING	
	WALL MOUNT NIGHT SECURITY LIGHT - LOW VOLTAGE & LIGHT SENSITIVE	
USB	110V OUTLET W/ USB PORT (VERIFY W/ OWNER)	

NOTE: THIS PROJECT IS AN ALL ELECTRIC RESIDENTIAL DEVELOPMENT - PLEASE NOTE THAT GAS APPLIANCES AND FIXTURES ARE NOT PERMITTED!

ELECTRICAL & MECHANICAL KEYNOTES:

1. HOSE BIBB LOCATION W/ BACK-FLOW PREVENTER AND SHUT-OFF VALVE
2. HOSE BIBB LOCATION W/ BACK-FLOW PREVENTER
3. HOSE BIBB LOCATION W/ BACK-FLOW PREVENTER AND ROUGH PLUMBED FOR LANDSCAPE IRRIGATION
4. LANDSCAPE IRRIGATION LINE SEE LANDSCAPE DOCUMENTS)
5. MECHANICAL ROOM CEILING MOUNT SMOKE AND CARBON MONOXIDE DETECTOR W/ BATTERY BACK-UP
6. WALL MOUNT SELF-ILLUMINATED, LOW-VOLTAGE STREET IDENTIFICATION NUMBERS
7. WATER PROOF 110 VOLT DUPLEX OUTLET W/ PROTECTIVE COVER
8. WALL MOUNT MULTI-PANEL ELECTRICAL PANEL LOCATION (6-200 AMP. PANELS
9. 200 AMP HOUSE ELECTRICAL SUB-PANEL LOCATION
10. CEILING MOUNT NU-TONE VENTING FAN LOCATION
11. DEDICATED SINGLE POLE SWITCH TO MECHANICAL ROOM CEILING FAN
12. 24" X 36" CLEAR HEAT-PUMP SERVICE AREA
13. HVAC HEAT PUMP LOCATION (VERIFY AT JOB SITE)
14. INDIVIDUAL LIVING UNIT HOSE-BIBB LOCATION SET W/ BACK-FLOW PREVENTER
15. SELF-ILLUMINATED WALL MOUNT DOOR BELL BUTTON LOCATION
16. WALL MOUNT - SELF-ILLUMINATED UNIT IDENTIFICATION NUMBER LOCATION
17. DEDICATED 220/240 V. OUTLET FOR ELECTRIC VEHICAL CHARGING STATION
18. WALL MOUNT GARAGE DOOR OPENER LOCATION W/ REMOTE CONTROL
19. WALL MOUNT DEDICATED 110V OUTLET FOR DOOR CHIMB TRANSFORMER ASSEMBLY
20. CEILING MOUNT 1ST X 4'-0" DOUBLE LAMP FLORESCNET LIGHT FIXTURE
21. WALL MOUNT 220 AMP. ELECTRICAL SUB-PANEL LOCATION
22. DECK MOUNT ELECTRIC WATER HEATER LOCATION SET W/ APPROVED SIESMIC STRAPS
23. WALL MOUNT NU-TONE MULTI-TONE DOOR CHIMB (SELECTION BY OWNER)
24. DECK MOUNT TOILET W/ MAX. FLUSH CAPACITY OF 1.28 GAL.
25. PEDISTAL BATHROOM SINK (DECK MOUNT)
26. WALL MOUNT A.D.A. APPROVED BATHROOM SINK LOCATION
27. SINGLE COMPARTMENT KITCHEN SINK A.D.A. COMPLIANT W/ CONTINUOUS FEED DISPOSAL UNIT
28. DISHWASHER LOCATION
29. 4 BURNER ELECTRIC RANGE TOP W/ OVEN BELOW - A.D.A. COMPLIANT
30. HOOD ABOVE W/ FAN AND LIGHT (A.D.A. COMPLIANT)
31. DECK MOUNT REFRIGERATOR / FREEZER LOCATION
32. SINGLE COMPARTMENT KITCHEN SINK W/ CONTINUOUS FEED DISPOSAL UNIT
33. 4 BURNER ELECTRIC RANGE W/ OVEN BELOW
34. HOOD ABOVE W/ FAN AND LIGHT
35. CEILING MOUNT COMBINATION SMOKE AND CARBON MONOXID DETECTOR W/ EMERGENCY BATTERY BACK UP (HARD WIRED)
36. CARRY TO LIGHT AND 3 POLE SWITCH AT TOP OF STAIR WAY (SEE SHEET "E.2")
37. WALL MOUNT T.V. JACK LOCATION (VERIFY AT JOB SITE W/ OWNER)
38. WALL MOUNT PHONE JACK LOCATION (VERIFY AT JOB SITE W/ OWNER)
39. DEDICATED SINGLE POLE SWITCH FOR DISPOSAL UNIT

SUN DIALOG CORP.
409 TENNANT STA#558
MORGAN HILL, CA 95037
PHONE 408-612-1600

LICENSED ARCHITECT
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STATE OF CALIFORNIA

NOT VALID WITHOUT A WET SIGNATURE

DRAWING:
1st Level Electrical / Mechanical Plan, Misc. Notes & Details

PROJECT:
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Gabriel Connors
4 Plex - Barnell Ave.
Morgan Hill, Calif.
County of Santa Clara

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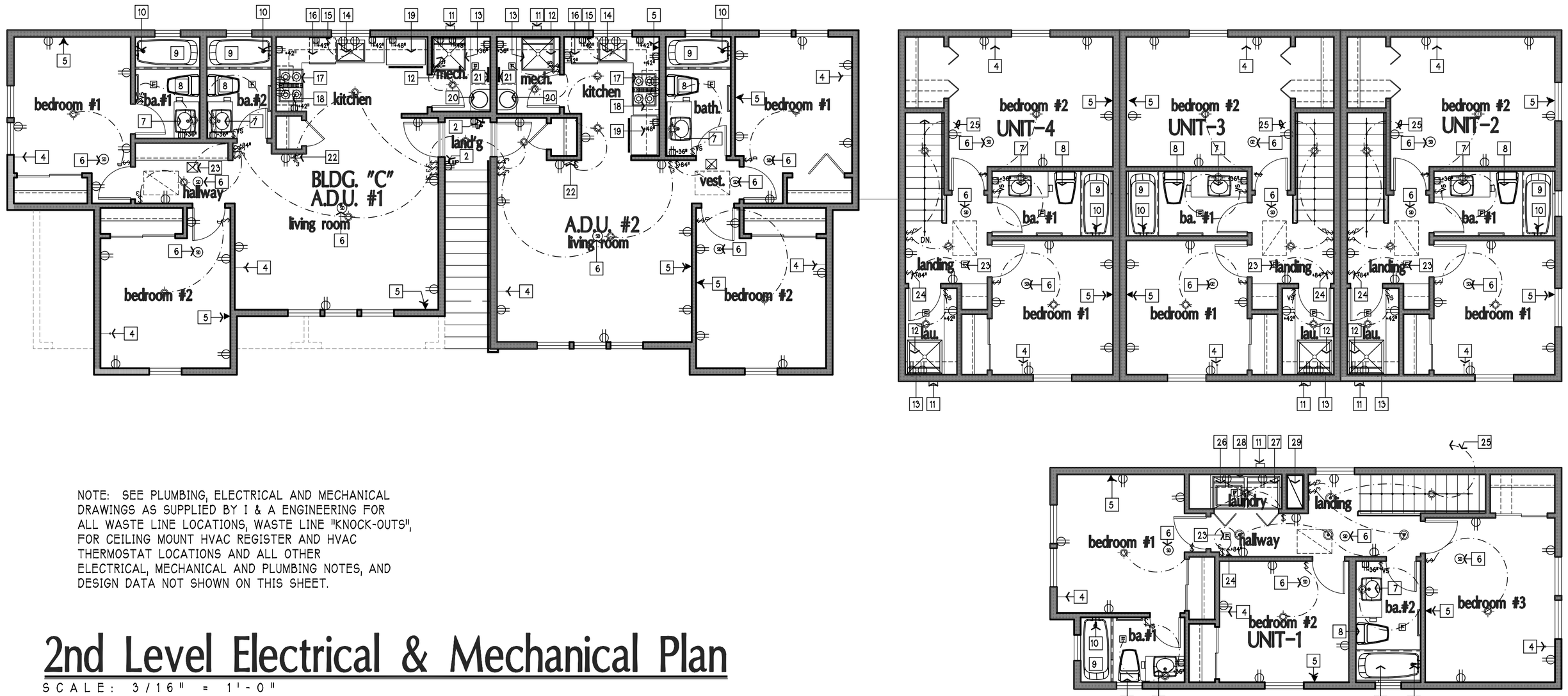
PROJECT FILE: 0.22~ BARNELL

DRAWING: E.1



NOTE: SEE PLUMBING, ELECTRICAL AND MECHANICAL DRAWINGS AS SUPPLIED BY I & A ENGINEERING FOR ALL WASTE LINE LOCATIONS, WASTE LINE "KNOCK-OUTS", FOR CEILING MOUNT HVAC REGISTER AND HVAC THERMOSTAT LOCATIONS AND ALL OTHER ELECTRICAL, MECHANICAL AND PLUMBING NOTES, AND DESIGN DATA NOT SHOWN ON THIS SHEET.

2nd Level Electrical & Mechanical Plan

SCALE: 3/16" = 1'-0"

TABLE 150-C-HIGH EFFICIENCY LAMP REQUIREMENTS

LAMP POWER RATING	MINIMUM LAMP EFFICACY
15 WATTS OR LESS	40 LUMENS PER WATT
OVER 15 WATTS TO 40 WATTS	50 LUMENS PER WATT
OVER 40 WATTS	60 LUMENS PER WATT

ELECTRICAL SCHEDULE

SYM.	DESCRIPTION	REMARKS
⊖	120V DUPLEX OUTLET	
⊖	120V DUPLEX OUTLET (SPLIT WIRE)	
⊖GFI	120V DUPLEX OUTLET W/ G.F.I.	
⊖GFWP	120V DUPLEX OUTLET W/ G.F.I/W.P PROTECTED	
⊖AFI	220V DUPLEX OUTLET W/ ARC FAULT PROTECTOR	
⊖	220V DUPLEX OUTLET	
	GAS JET	
	GAS KEY	
	HOSE BIBB	
T	THERMOSTAT	
	CEILING MOUNT L.E.D. FIXTURE	
	WALL MOUNT L.E.D. FIXTURE	
	RECESSED L.E.D. DOWN LIGHT [26 watt ENERGY STAR]	
	RECESSED L.E.D. DOWN LIGHT	
	RECESSED FLORESCENT WALL WASHER [26 watt ENERGY STAR]	
$	SINGLE POLE SWITCH	
$D	SINGLE POLE SWITCH W/ DIMMER	
$VS	SINGLE POLE SWITCH W/ OCCUPANCY/VACANCY SENSOR	
$3	2 WAY SWITCH	
$3D	2 WAY SWITCH W/ DIMMER	
$3VS	2 WAY SWITCH W/ OCCUPANCY/VACANCY SENSOR	

SYM.	DESCRIPTION	REMARKS
	APPROVED COMBINATION SMOKE & CARBON MONOXIDE DETECTOR	
V	L.E.D. TRAC-LIGHTING	
T.V.	T.V. JACK [CABLE READY]	
CAC	WALL MOUNT COLD AIR RETURN [N.T.S.]	
CAC	CEILING MOUNT COLD AIR RETURN [N.T.S.]	
F	EXHAUST FAN	
FLX	EXHAUST FAN W/ L.E.D. LIGHT FIXTURE	
	PHONE JACK	
	DOOR CHIMES	
•	MINI-RECESSED LIGHT FIXTURE	
$3VS	3 WAY SWITCH W/ OCCUPANCY/VACANCY SENSOR	
J	JUNCTION BOX	
$3D	3 WAY SWITCH W/ DIMMER	
	CEILING MOUNT LOW-VOLTAGE PENDENT LIGHT SET W/ L.E.D. LAMP	
	CEILING MOUNT LOW-VOLTAGE EYEBALL "WALL WASHER" LOCATION	
	UNDERCOUNTER LOW-VOLTAGE LIGHTING	
	WALL MOUNT NIGHT SECURITY LIGHT - LOW VOLTAGE (LIGHT SENSITIVE)	
USB	110V OUTLET W/ USB PORT [VERIFY W/ OWNER]	

NOTE: THIS PROJECT IS AN ALL ELECTRIC RESIDENTIAL DEVELOPMENT - PLEASE NOTE THAT GAS APPLIANCES AND FIXTURES ARE NOT PERMITTED!

ELECTRICAL & MECHANICAL KEYNOTES:

1. HOSE BIBB LOCATION SET W/ APPROVED BACKFLOW PREVENTER
2. WALL MOUNT LOW-VOLTAGE, SELF-ILLUMINATED DOOR BELL BUTTON LOCATION
3. WALL MOUNT LOW-VOLTAGE, SELF-ILLUMINATED UNIT IDENTIFICATION NUMBER LOCATION
4. WALL MOUNT T.V. JACK LOCATION (VERIFY LOCATION W/ OWNER)
5. WALL MOUNT PHONE JACK LOCATION (VERIFY LOATION W/ OWNER)
6. CEILING MOUNT COMBINATION SMOKE AND CARBON MONOXIDE DETECTOR - HARD WIRE W/ EMERGENCY BATTERY BACK UP.
7. BATHROOM SINK LOCATION
8. DECK MOUNT TOILET W/ MAX. FLUSH CAPACITY OF 1.28 GALLONS
9. 30" X 60" ENAMEL CAST IRON TUB W/ SHOWER
10. WALL MOUNT SHOWER AND TUB HANDLE AND FILLER ASSEMBLY W/ WATER FLOW RESTRICTER
11. DRYER OUTSIDE VENT LOCATION
12. STACKED CLOTHES WASHER AND DRYER LOCATION [ELECTRIC ONLY]
13. FLOOR MOUNT G.I. WASHER OVER FLOW PAN W/ DIRECT DRAIN
14. SINGLE COMPARTMENT KITCHEN SINK W/ CONTINUOUS FEED DISPOSAL UNIT
15. DEDICATED SINGLE POLE SWITCH TO DISPOSAL UNIT
16. DISH WASHER LOCATION
17. 4 BURNER ELECTRIC RANGE TOP W/ ELECTRICA OVEN BELOW
18. CEILING MOUNT ELECTRIC RANGE HOOD AND FAN ASSEMBLY
19. REFRIGERATOR / FREEZER LOCATION
20. DECK MOUNT ELECTRIC WATER HEATER LOCATION SET W/ APPROVED SIESMIC STRAPS
21. 200 AMP ELECTRICAL SUB-PANEL LOCATION
22. WALL MOUNT MULTI-CHIMB DOOR BELL ASSEMBLY BY NU-TONE (OR EQUAL) - SELECTION BY OWNER
23. CEILING MOUNT WHOLE HOUSE FAN BY NU-TONE (OR EQUAL)
24. DEDICATED SINGLE POLE SWITCH FOR WHOLE HOUSE FAN - TO BE ON 24/7 WHILE HOME IS OCCUPIED [SET 84" ABOVE COMMON FINISH FLOOR]
25. CARRY TO LIGHT AND THREE POLE SWITCH BELOW AT FOOT OF STAIR
26. ELECTRIC CLOTHES WASHING MACHINE LOCATION
27. ELECTRIC CLOTHES DRYER LOCATION
28. FLOOR MOUNT G.I. WASHING MACHINE OVER FLOW PAN W/ DIRECT DRAIN CONNECTION TO WASTE LINE
29. OPTIONAL HVAC CHASE LOCATION (DETERMINE AT JOB SITE)

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LICENSED ARCHITECT
DONGMEI SUN
No. C 30,083
RENEWAL 5-31-25
STATE OF CALIFORNIA

NOT VALID WITHOUT A WET SIGNATURE

DRAWING:
2nd Level Electrical / Mechanical Plan, Misc. Notes & Details

PROJECT:
Haren Properties, LLC
Gabriel Connors
4 Plex - Barnell Ave.
Morgan Hill, Calif.
County of Santa Clara

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REVISIONS:

DATE: DECEMBER 30, 2023

SCALE: AS NOTED

DRAWN BY: GARY E. MOORE

PROJ. MGR. MEI SUN

PROJECT FILE: 0.22~ BARNELL

DRAWING: E.2

GENERAL ELECTRICAL NOTES:

1. ELECTRICAL, LIGHTING & MECHANICAL DEVICES SHOWN ON DRAWINGS INDICATES ARCHITECTURAL DESIGN INTENT ONLY. THE ELECTRICAL & MECHANICAL SUB-CONTRACTOR IS TO MEET WITH THE OWNERS FOR FINAL APPROVAL AND / OR REVISIONS.
2. SPAS, HOT TUBS AND HYDROMASSAGE BATHTUBS SHALL COMPLY WITH C.E.C. ARTICLE 680, IV.
   (a) RECEPTACLES ON THE PROPERTY SHALL BE LOCATED AT LEAST 5 FEET FROM THE INSIDE WALL OF THE SPA OR HOT TUB.
   (b) ALL 125 VOLT RECEPTACLES WITHIN TWO FEET OF THE INSIDE WALLS OF A SPA OR TUB SHALL BE PROTECTED BY A GROUND-FAULT CIRCUIT-INTERUPTER INCLUDING RECEPTACLES PROVIDING POWER TO THE SPA HOT TUB.
   (c) LIGHTING FIXTURES AND LIGHTING OUTLETS LOCATED OVER THE SPA OR HOT TUB OR WITHIN 5 FEET SHALL BE A MINIMUM OF 7 FOOT 6 INCHES ABOVE THE MAXIMUM WATER LEVEL AND SHALL BE PROTECTED BY A GROUND-FAULT CIRCUIT INTERUPTER.(SEE EXCEPTION)
   (d) WALL SWITCHES SHALL BE LOCATED AT LEAST 5 FEET MEASURED NOTE
   (e) BONDING AND GROUNDING SHALL COMPLY WITH NEC C.E.C. 680.26.
   (f) HYDROMASSAGE BATHTUBS AND THEIR ASSOCIATED ELECTRICAL COMPONENTS SHALL BE SUPPLIED BY A CIRCUIT PROTECTED BY A GROUND-FAULT CIRCUIT-INTERRUPTER. NEC 680-70
3. VERIFY PHONE & T.V. JACK LOCATIONS WITH OWNER PRIOR TO INSTALLATION
4. ALL ELECTRICAL FIXTURES & APPLIANCES MAKE AND MODELS PER OWNERS SPECIFICATIONS.
5. ALL KITCHEN & BATH LIGHTING FIXTURES SHALL COMPLY WITH C.E.C. AND T-24 REQUIREMENTS. TYPE AND SIZE REQUIREMENTS. CONTRACTOR SHALL SUPPLY BUILDING INSPECTOR WITH MODEL NUMBERS AND SPECIFICATIONS PRIOR TO FINAL INSPECTION.
6. ALL HIGH EFFICIENCY LAMP RATINGS SHALL COMPLY W/ TABLE 150-C AS SNOWN ON SHEETS "E.1" & "E.2"
7. THE CONTRACTOR IS TO PROVIDE A COMPLETE & OPERATING FACUUM SYSTEM (IF APPLICABLE TO THESE DRAWINGS). W/ DEDICATED CIRCUITING FOR THE CENTRAL VAC.
8. ROUGH WIRE AND STUBB-OUT FOR FUTURE LANDSCAPE LIGHTING (PROVIDE CIRCUIT & CONDUIT) VERIFY WITH OWNER
9. SEE OWNER FOR LOW VOLTAGE SWITCHING.
10. LIGHTS IN CLOSETS MUST HAVE AN ENCLOSED BULB TYPICAL PER C.E.C. 410.16.
11. LIGHTS OVER SHOWER AND TUBS MUST CONFORM TO C.E.C. 410.10 (D)
12. (a) PROVIDE AC/DC SMOKE DETECTORS WITHIN EACH SLEEPING ROOM & CENTRALLY LOCATED IN CORRIDOR OR AREA GIVING ACCESS TO EACH SEPARATE SLEEPING AREA. ALL SMOKE DETECTORS TO BE INTERCONNECTED AND BE WIRED TO THE HOUSE PRIMARY WIRING AND SHALL ALSO HAVE BATTERY BACK-UP (TYPICAL)
    (b) SMOKE DETECTORS SHALL SOUND AN ALARM AUDIBLE IN ALL SLEEPING AREAS OF THE RESIDENCE PER C.R.C. R 314.
13. ALL ELECTRICAL OUTLETS @ KITCHEN & BATH AREAS ARE TO MEET C.E.C. 210.52 (B)(C)(D).
14. ALL RECESSED FIXTURES IN CEILINGS THAT ARE TO BE INSULATED MUST BE I.C. TYPE FIXTURE PER C.E.C. 410.116
15. PROVIDE SEPARATE 20 AMP CIRCUIT MINIMUM TWO (2) FOR SMALL KITCHEN APPLIANCES PER C.E.C. 210.52 (B)(1)(3) & C.E.C. 210.50(C).
16. PROVIDE 220 VOLT OUTLET W/ SEPERATE 30 AMP DEDICATED CIRCUIT FOR DRYER PER C.E.C. 220.54.
17. RECEPTACLE OUTLET LOCATIONS SHALL COMPLY WITH C.E.C. 210.52.
18. OUTLETS ALONG HOUSE/GARAGE COMMON WALL SHALL COMPLY WITH C.E.C. 210.
19. PROVIDE MOTION ACTIVATED EXTERIOR & SECURITY LIGHTING - VERIFY WITH OWNER
20. APPROVED ADDRESS NUMBERS SHALL BE VISIBLE, LEGIBLE, AND ILLUMINATED FROM STREET FRONTAGE AND SHALL BE CONTRASTED WITH THE BACKGROUND (WHERE APPLICABLE AND/OR REQUIRED)
21. ALL EXTERIOR RECEPTACLES OUTLETS ARE TO BE C.E.C. 210.8(A)(3) & C.E.C. 406.8 GFI/WP PROTECTED.
22. ALL RECEPTACLE OUTLETS AT KITCHEN COUNTERTOPS SHALL BE GFI PROTECTED PER C.E.C. 210.8 (A)(6)
23. ALL BRANCH CIRCUIT THAT SUPPLY 125 - VOLT, SINGLE PHASE, 15 - AND 20 - AMP RECEPTACLE OUTLETS INSTALLED IN DWELLING UNIT FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, PARLORS, LIBRARIES, DENS, BEDROOMS, SUN ROOMS, RECREATION ROOMS, CLOSETS, HALLWAYS OR SIMILAR ROOMS OR AREAS SHALL BE ARC-FAULT CIRCUIT INTERRUPTER (AFCI) PROTECTED PER C.E.C.210.12(A).
24. THE BATHROOM RECEPTACLE(S) REQUIRED IN THE C.E.C. SECT. 210.8(A)(1) MUST BE SUPPLIED BY A 20 AMPERE CIRCUIT THAT DOES NOT SUPPLY ANY OTHER LOAD.
25. ALL 124-VOLT, 15-AND 20-AMPERE RECEPTICALE OUTLETS SHALL BE LISTED TAMPER-RESISTANT RECEPTICALES PER C.E.C.406.12.

GENERAL MECHANICAL NOTES:

1. THE PLUMBING CONTRACTOR IS TO MEET W/ THE OWNER PRIOR TO THE SELECTION AND INSTALLATION OF ALL INDIVIDUAL CONTROL VALVES.
2. TYPE "M" COPPER TUBING SHALL NOT BE USED FOR WATER PIPING
3. WATER HEATER TO BE SET W/ (2) APPROVED SEISMIC STRAPS. ONESET WITHIN UPPER 1/3 OF STORAGE TANK AND ONE SET WITHIN LOWER 1/3 OF TANK VERTICAL DIMENSION. LOWER POINT TO BE SET MIN. 4" ABOVE CONTROLS PER C.P.C. 508.2
4. IN SHOWERS & TUB/SHOWER COMBINATIONS, CONTROL VALVES MUST BE PRESSURE BALANCED OR THERMOSTATIC MIXING VALVES PER C.P.C. 418.0.
5. NO UNDERFLOOR CLEANOUT SHALL BE LOCATED MORE THAN 20 FEET FROM AN ACCESS DOOR, TRAP DOOR , OR CRAWL HOLE PER C.P.C. 702.9.
6. PLUMBING DRAIN WASTE AND VENT AND/OR MECHANICAL DUCTING ALONG WITH ELECTRICAL PANEL/WIRING SIZING CALCULATIONS MAY BE REQUIRED TO BE PROVIDED IF THE FIELD INSPECTOR REQUESTS THESE ITEMS.
7. SHALL HAVE A MAX. FLOW RATE OF 2.2. GPM PER C.P.C. 402.1
8. WATER CLOSETS AND ASSOCIATED FLUSHOMETER VALVES, IF ANY SHALL USE NO MORE THAN 1.6 GALLONS PER FLUSH AND SHALL MEET PERFORMANCE STANDARDS BY A.N.S.I.S. A112.19.2 H&S CODE, C.P.C. 402.2.
9. MECHANICAL CONTRACTOR TO INSTALL A COMPLETE & OPERATING HEAT SYSTEM TO MEET ALL APPLICABLE CODE REQUIREMENTS PER C.B.C. SECT. 1204 & C.M.C. CHAPTERS 4,5,7,9 & 13.
10. MECHANICAL CONTRACTOR SHALL DETERMINE LOCATIONS OF THERMOSTATS & COLD AIR RETURNS.
11. ALL 1ST FLOOR HEAT REGISTERS ARE TO BE FLOOR MOUNT AND ALL 2ND FLOOR HEAT REGISTERS BEING CEILING MOUNT ONLY.
12. PROVIDE COMBUSTION AIR FOR FUEL-BURNING EQUIPMENT PER C.M.C. CHAPTER 7 & C.P.C. 507.0.
13. CONTRACTOR TO PROVIDE COMPLETE & OPERATING VACUUM SYSTEM - VERIFY WITH OWNER (PROVIDE DEDICATED WIRING FOR CENTRAL VAC)
14. ALL HOSE BIBBS SHALL HAVE NON-REMOVABLE TYPE BACK-FLOW PREVENTION DEVICE. PER C.B.C. 603.4.7.
15. IF HOUSE IS TO HAVE PROPANE GAS-PROVIDE FOR DRAINAGE OF L.P. GAS TO EXTERIOR (TYPICAL)
16. ALL VENT TERMINATIONS MUST BE 10' AWAY OR 3' ABOVE ANY OPENING TYPICAL.
17. WATER HEATERS & FURNACES TO BE C.E.C. CERTIFIED. WATER HEATERS TO HAVE PRESSURE & TEMPERATURE RELIEF DEVICES & DISCHARGE TO OUTSIDE PER C.P.C. 508.5.
18. ELECTRICAL, MECHANICAL AND PLUMBING ARE SUBJECT TO FIELD INSPECTIONS.
19. METAL UNDERGROUND GAS PIPING SYSTEM AND ALUMINIUM ELECTRODES SHALL NOT BE USED AS GROUNDING ELECTRODES PER C.E.C. 250.52(B).
20. WHERE INSTALLED IN OR ATTACHED TO A BUILDING OR STRUCTURE, METAL PIPING SYSTEM(S), INCLUDING GAS PIPING, SHALL BE BONDED TO THE SERVICE EQUIPTMENT ENCLOSURE, THE GROUNDED CONDUCTOR AT THE SERVICE, THE GROUNDING ELECTRODE CONDUCTOR AT THE SERVICE, OR TO THE ONE OR MORE GROUNDING ELECTRODES USED. SIZE BONDING JUMPER(S) IN ACCORDANCE WITH C.E.C. ARTICLE 250.
21. EACH DISCONNECTING MEANS SHALL BE LEGIBLY MARKED TO INDICATE ITS PURPOSE UNLESS LOCATED AND ARRANGED SO THE PURPOSE IS EVIDENT. THE MARKING SHALL BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED. MARKINGS SHALL BE READILY VISIBLE PER C.E.C. 110.22.

GENERAL NOTES:

"OCCUPANCE/VACANCY SENSOR" MUST BE FITTED TO THE FOLLOWING FEATURES OR AS SPECIFIED IN THE 2019 EDITION OF THE CBC TITLE #24.
A. MUST BE MANUAL-ON/AUTOMATIC-OFF.
B. TIME DELAY CANNOT BE GREATER THEN 30 MINUTES.
C. SET DEVICE CANNOT BE LOCKED IN A PERMANENT "ON" STATE. (NO "ON" OVERRIDE)
D. OUTDOOR SENSORS CAN BE AUTOMATIC-ON/OFF, BUT MUST ALSO INCLUDE A PHOTOCELL THAT KEEPS THE LIGHTS OFF DURNING THE DAY LIGHT HOURS.
2. "DIMMER SWITCHES" MUST BE FITTED W/ THE FOLLOWING FEATURES:
   A. DIMMING SLIDE
   B. SEPERATE ON/OFF SWITCH
3. FLORESCENT AND INCANDESCENT LIGHT FIXTURES "MUST" BE CONTROLLED SEPARATELY.
4. ALL RECESSED LIGHTS SHALL BE APPROVED FOR ZERO CLEARANCE INSULATION COVER (IC) AND ARE CERTIFIED AIRTIGHT TO ASTM E283 AND LABELED AS AIR TIGHT (AT) TO LESS THAN 2CFM AT 75 PASCALS. PER C.E.C. 150(K)8.

SMOKE & CARBON MONOXIDE DETECTOR NOTES:

COMBINATION SMOKE AND CARBON MONOXIDE DETECTORS SHALL BE HARD-WIRED & WITH BATTERY BACKUP, AND ARE REQUIRED IN THE FOLLOWING SPACES:
1. ALL BEDROOM AREAS
2. IN ALL HALLWAYS AND CORRIDORS LEADING TO BEDROOMS.
3. ABOVE STAIRS, WHEN A BEDROOM IS LOCATED ON THE 2ND FLOOR.

C.B.C. R 315 & C.M.C. 403.8. APPLIES TO ALL NEW RESIDENTIAL BUILDINGS AND RESIDENTIAL ADDITIONS, ALTERATIONS AND REPAIRS, WHICH EXCEED $1,000.00. ROOMS USED FOR SLEEPING PURPOSES SHALL BE PROVIDED WITH LISTED SMOKE DETECTORS AS SHOWN IN THIS DRAWING. DECTECTORS SHALL BE MOUNTED ON THE CEILING OR WALL IN THE FOLLOWING LOCATIONS:
1. EACH ROOM USED FOR SLEEPING PURPOSES
2. CORRIDOR OR AREAS LEADING TO SLEEPING ROOM.
3. AT THE CEILING OF THE UPPER LEVEL IN CLOSE PROXIMITY TO THE STAIRWAY.
4. IN ROOMS WHERE THE CEILING HEIGHT EXCEEDS THAT OF THE HALLWAY BY 24" THAT IS OPEN TO THE HALLWAY SERVING THE BEDROOM.
5. ON EACH FLOOR, INCLUDING BASEMENTS. REQUIRED SMOKE DETECTORS SHALL RECEIVE THEIR POWER FROM THE BUILDING ELECTRICAL SYSTEM WITH BATTERY BACKUP. THE SMOKE DETECTORS SHALL BE INTERCONNECTED TO SOUND AN AUDIBLE ALARM IN ALL SLEEPING AREAS. WHEN THE RESIDENTIAL ADDITION, ALTERATION OR REPAIR DOES NOT EXCEED $1,000.00 OR PLANS ARE NOTE REQUIRED FOR PERMIT ISSUANCE, THE REQUIRED SMOKE DETECTORS MAY RECEIVE THEIR POWER SUPPLY FROM A BATTERY.

NOTE: FOR CAL-GREEN COMPLIANCE PLEASE SEE SHEET "GB.1"

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LICENSED ARCHITECT
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STATE OF CALIFORNIA

NOT VALID WITHOUT A WET SIGNATURE

ALTERNATE CALCULATION SHEET FOR DRYER VENT SHOWN (NO.2) - 2019 CMC 504.4

Dryer Vent Calculations, Underfloor, Engineered Equivalent:
NOTE: Ducts in crawl spaces or attics are to be insulated with 1-inch, .75 pcf fiberglass duct wrap.

"DUCT LENGTH SHALL COMPLY W/ CMC 2019 SECT. 504.4.2.1 LENGTH LIMITATIONS"

SECTION	ITEM	SIZE (INCHES)	LENGTH (FEET)	f'/FEET or "C"	VELOCITY (fpm)	VELOCITY PRESSURE (inhes W.G.)	PRESSURE DROP (inches W.G.)
A-B	DUCT	4	1.0	0.0100	1,400	-	0.01
B	ELL	4 TO 3 BY 4	-	0.4200	1,400	0.12	0.05
B-C	DUCT	3 BY 4	2.5	0.0100	1,400	-	0.02
C	ELL	3 BY 4 TO 4	-	0.4200	1,400	0.12	0.05
C-D	TRANSITION	4 TO 6	-	0.1900	1,400	0.12	0.02
D-E	DUCT	6	20.0	0.0032	875	-	0.06
E-F	TRANSITION	6 TO 4	-	0.0500	1,400	0.12	0.01
F	OUTLET	4	-	0.5500	1,400	0.12	0.07
			23.5				0.29

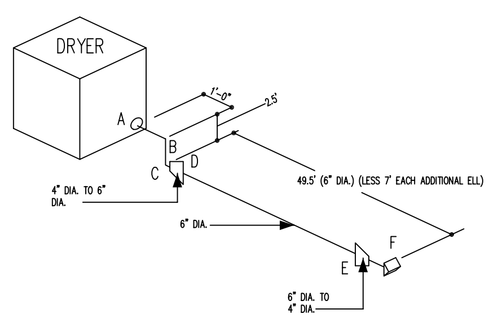
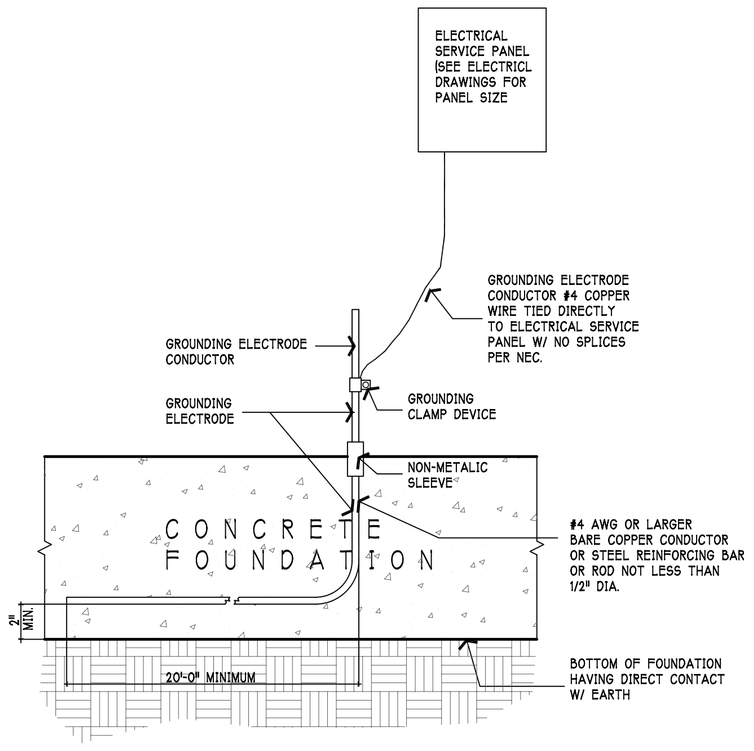
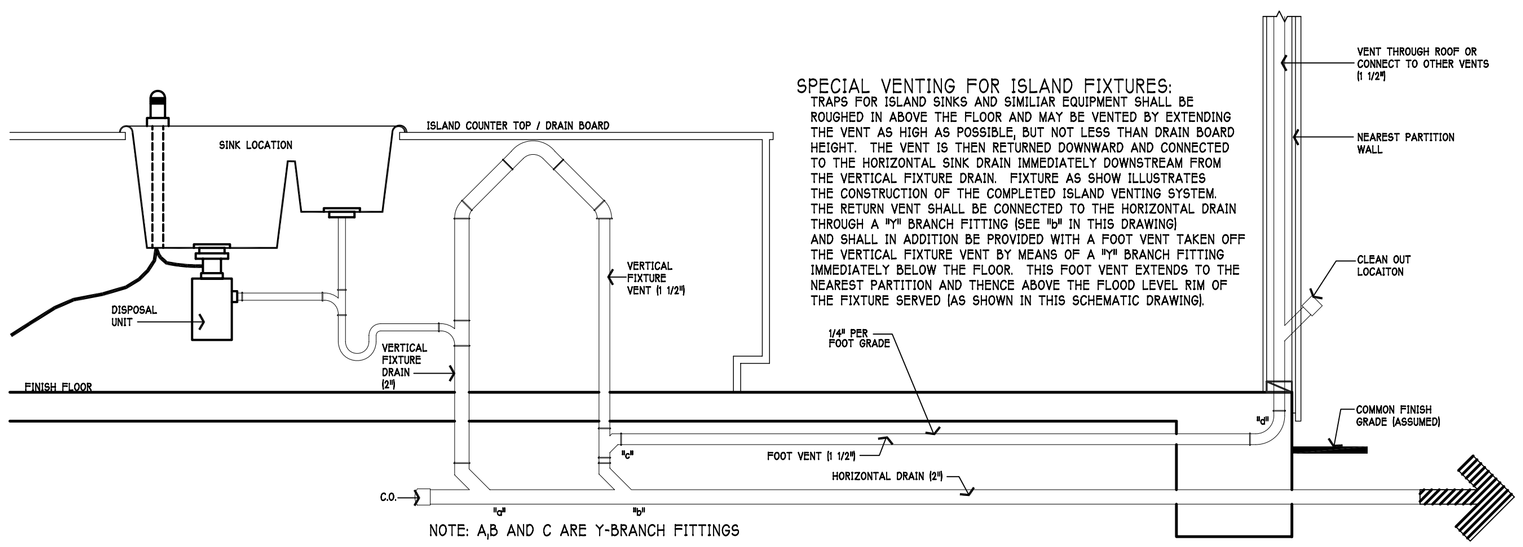


FIG. NO. 2 - Engineered dryer vent equivalent to U.M.C. (not to scale)



U-FER GRND / POWER BOX ELEVATION

NOT TO SCALE



NOTE: A,B AND C ARE Y-BRANCH FITTINGS

SPECIAL VENTING FOR ISLAND FIXTURES:
TRAPS FOR ISLAND SINKS AND SIMILIAR EQUIPMENT SHALL BE ROUGHED IN ABOVE THE FLOOR AND MAY BE VENTED BY EXTENDING THE VENT AS HIGH AS POSSIBLE, BUT NOT LESS THAN DRAIN BOARD HEIGHT. THE VENT IS THEN RETURNED DOWNWARD AND CONNECTED TO THE HORIZONTAL SINK DRAIN IMMEDIATELY DOWNSTREAM FROM THE VERTICAL FIXTURE DRAIN. FIXTURE AS SHOW ILLUSTRATES THE CONSTRUCTION OF THE COMPLETED ISLAND VENTING SYSTEM. THE RETURN VENT SHALL BE CONNECTED TO THE HORIZONTAL DRAIN THROUGH A "Y" BRANCH FITTING (SEE "B" IN THIS DRAWING) AND SHALL IN ADDITION BE PROVIDED WITH A FOOT VENT TAKEN OFF THE VERTICAL FIXTURE VENT BY MEANS OF A "Y" BRANCH FITTING IMMEDIATELY BELOW THE FLOOR. THIS FOOT VENT EXTENDS TO THE NEAREST PARTITION AND THENCE ABOVE THE FLOOD LEVEL RIM OF THE FIXTURE SERVED (AS SHOWN IN THIS SCHEMATIC DRAWING).

ISLAND SINK VENTING DETAIL / SCHEMATIC

NOT TO SCALE

NOTE: OPTIONAL ISLAND SINK VENTING SYSTEM TO BE AN AIR ADMITTANCE VALVE.

Electrical, Mechanical Notes & Misc. Details

"NOT TO SCALE"

DRAWING: Misc. Electrical, Mechanical Notes & Details

PROJECT:

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Gabriel Connors
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Morgan Hill, Calif.
County of Santa Clara

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REVISIONS:

DATE: DECEMBER 30, 2023

SCALE: AS NOTED

DRAWN BY: G.E. MOORE

PROJ. MGR. MEI SUN

PROJECT FILE: 0.22-BARNELL

DRAWING: E.3

Luminaire Schedule							
Symbol	Qty	Label	Arrangement	LMF	Lum. Lumens	Lum. Watts	Part Number
	3	2M-E	Single	1.000	4550	53	STR-LWY-2M-HT-03-E-__-__-525-40K

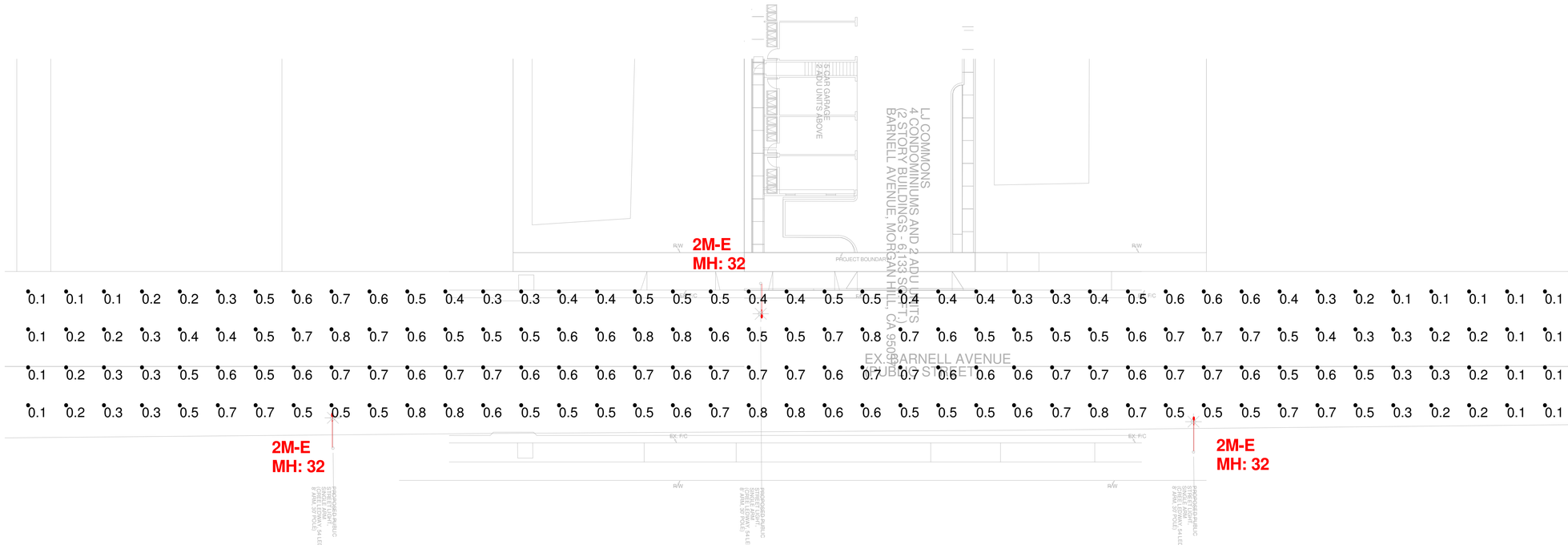
Calculation Summary (Footcandles calculated using LMF: 1.00)						
Label	Units	Avg	Max	Min	Avg/Min	Max/Min
BARNELL AVE	Fc	0.48	0.8	0.1	4.80	8.00

Poles to be provided by others.

8' Mounting Arm

Additional Equipment:

*** CUSTOMER TO VERIFY ORDERING INFORMATION AND CATALOGUE NUMBER PRIOR TO PLACING ORDER ***



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9201 Washington Ave, Racine, WI 53406 - (800) 236-6800
https://www.creelighting.com - Email: applications@creelighting.com

Illumination results shown on this lighting design are based on project parameters provided to Cree Lighting used inconjunction with luminaire test procedures conducted under laboratory conditions. Actual project conditions differing from these design parameters may affect field results. The customer is responsible for verifying dimensional accuracy along with compliance with any applicable electrical, lighting,or energy code.

Project Name: LJ Commons Streetlighting Parnell Ave Morgan Hill, CA

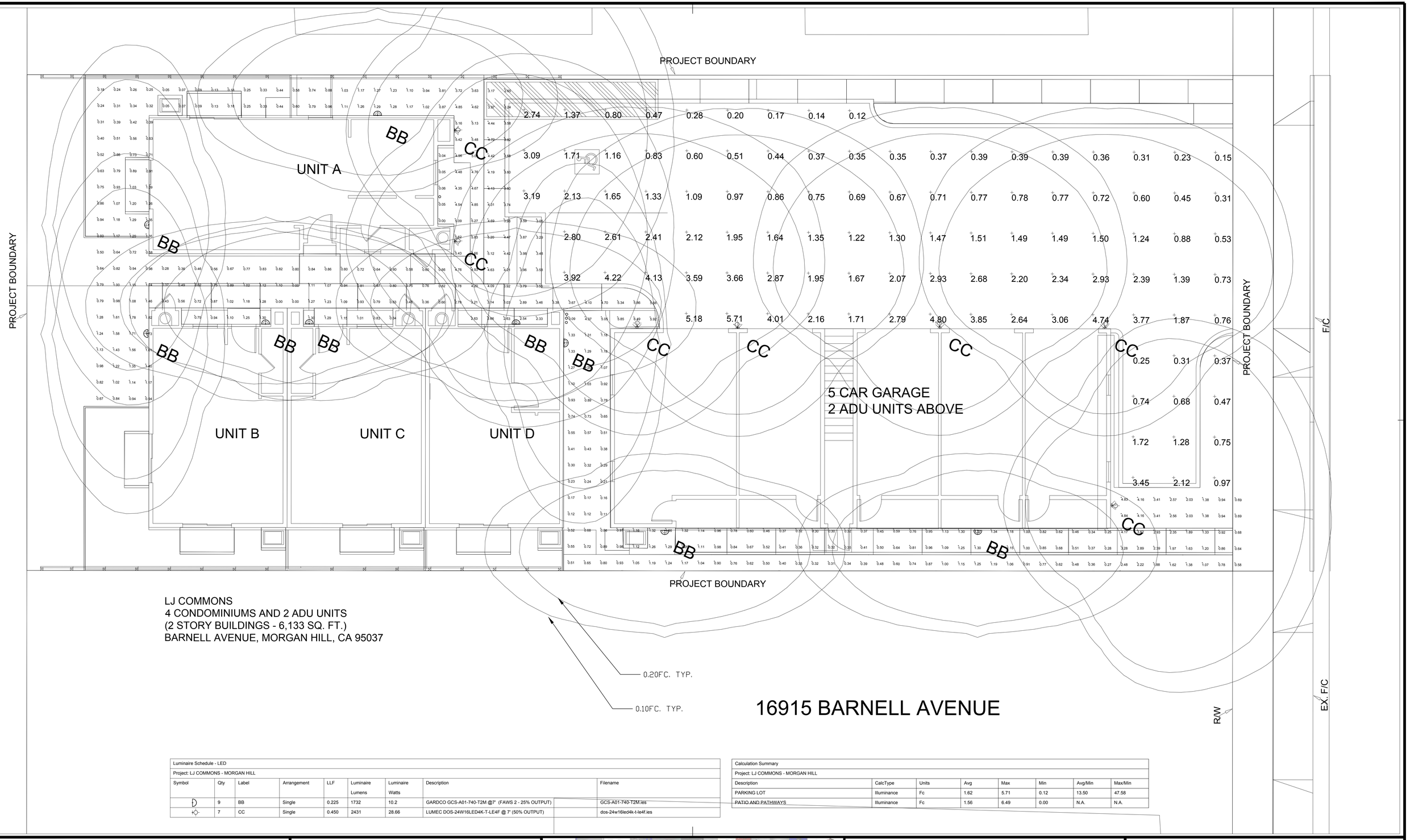
CASE #: 00579184 ‖ Footcandles calculated at grade ‖ Filename: 231027AM1CIS.AGI

Layout By:
Chris Schlitz

Date:10/27/2023

Scale 1" = 16'

0 32 64



LJ COMMONS
4 CONDOMINIUMS AND 2 ADU UNITS
(2 STORY BUILDINGS - 6,133 SQ. FT.)
BARNELL AVENUE, MORGAN HILL, CA 95037

0.20FC. TYP.

0.10FC. TYP.

16915 BARNELL AVENUE

Luminaire Schedule - LED								
Project: LJ COMMONS - MORGAN HILL								
Symbol	Qty	Label	Arrangement	LLF	Luminaire Lumens	Luminaire Watts	Description	Filename
	9	BB	Single	0.225	1732	10.2	GARDCO GCS-A01-740-T2M @7' (FAWS 2 - 25% OUTPUT)	GCS-A01-740-T2M.ies
	7	CC	Single	0.450	2431	28.66	LUMEC DOS-24W16LED4K-T-LE4F @ 7' (50% OUTPUT)	dos-24w16led4k-t-le4f.ies

Calculation Summary							
Project: LJ COMMONS - MORGAN HILL							
Description	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
PARKING LOT	Illuminance	Fc	1.62	5.71	0.12	13.50	47.58
PATIO AND PATHWAYS	Illuminance	Fc	1.56	6.49	0.00	N.A.	N.A.

ALL VALUES SHOWN ARE MAINTAINED HORIZONTAL FOOTCANDLES AT GRADE

PHOTOMETRIC DATA USED AS INPUT FOR THESE CALCULATIONS IS BASED ON ESTABLISHED IES PROCEDURES AND PUBLISHED LAMP, RATINGS, FIELD PERFORMANCE WILL DEPEND ON ACTUAL LAMP, BALLAST, ELECTRICAL, AND SITE CHARACTERISTICS.

Calculations have been performed according to IES standards and good practice. Some differences between measured values and calculated results may occur due to tolerances in calculation methods, testing procedures, component performance, measurement techniques and field conditions such as voltage and temperature variations. Input data used to generate the attached calculations such as room dimensions, reflectances, furniture and architectural elements significantly affect the lighting calculations. If the real environment conditions do not match the input data, differences will occur between measured values and calculated values.

Associated Lighting Representatives, Inc.

ASSOCIATED LIGHTING REPRESENTATIVES, INC
7777 PARDEE LANE
P.O. BOX 2265
OAKLAND, CA 94621
PHONE: (510) 638-0158 - FAX (510) 638-2908

REPORT FOR: TARRAR UTILITY CONSULTANTS
BY: APPLICATIONS ENGINEERING; RAMON ZAPATA
SALES REPRESENTATIVE: ALR; KRISTIAN REYES

AGI32 VERSION 20.1
AGI (C) 2021 LIGHTING ANALYSTS, INC.
10268 W. CENTENNIAL ROAD, SUITE 202
LITTLETON, CO 80127

PROJECT DESCRIPTION

LJ COMMONS
CITY OF MORGAN HILL

DRAWING NO. / INPUT FILE

22374REY-R1.DWG / 22374REY-R1.A32

SCALE	SHEET	DATE	REV
1" = 5'	1 OF 1	10.24.2023	1

HAREN PROPERIES, LLC
LJ COMMONS
MORGAN HILL SANTA CLARA COUNTY CALIFORNIA

LUMEC by ⓘignify

Urban

Domus

DOS Small

Project: LJ COMMONS
Location: MORGAN HILL
Cat.No: DOS-24W16LED4K-T-LE4F
Type: WALL MOUNTED LIGHT
Lamps: Qty: 7
Notes:

The **Domus Series** of products – **Domus, Domus 55**, and **Domus Small** – are all designed to complement each other and bring balance to any environment. Their charm is undeniable. Simplicity, refinement, and elegance, all fuse together to create harmonious beauty through designed equilibrium.

Ordering guide example: DOS-30W16LED4K-T-LE4F-240-HS-DALI -DBA-1A-BKTX

Prefix	Lamp or LED	Lamp Type	Optical (Lens)	Ballast	Luminaire Option	Driver Options	Adaptor	Mounting	Configuration	Pole*	Finish
DOS Domus Small LED	24W16LED4K	T	LE2F Type 2	120 120V	HS House Side Shield	AST Adjustable Start Time	MAS Adaptor for an existing mounting supplied by others for 1-1/4 NPT nipple	DBA	1A		BKTX Textured Midnight Blue
	30W16LED4K		LE3F Type 3	208 208V	SPD Surge Protection, 20KV,20KA 120-277	CLO Constant Light Output		DBB	2		BLTX Textured Ocean Blue
	30W32LED4K		LE4F Type 4	240 240V		DALI Digitally Adressable Lighting Interface DynaDimmer		DBC	M		BRTX Textured Royal Blue
	51W32LED4K		LESF Type 5	277 277V		OTL Over The Life		DBF			BSTX Textured Sandstone
	24W16LED3K					CSM/P Dimming Level determined by user					BKTX Textured Black
	30W16LED3K					Economy Profile					BRTX Textured Bronze
	30W32LED3K					C5M0225 C5M0350 C5M0475					GMTX Textured Blue Green
	51W32LED3K					Medium Profile					FMTX Textured Forest Green
						C5M0M25 C5M0M50 C5M0M75					DMTX Textured Dark Forest Green
						Safety Profile					GRTX Textured Green
						C5M0S25 C5M0S50 C5M0S75					GR Gray Sandtex
											DTXTX Textured Medium Grey
											NP Natural Aluminum
											BLKTX Textured Black
											ROXTX Textured Rustic
											TG Hammertone Gold
											TS Hammertone Silver
											WHTX Textured White

* Consult signify.com/outdoor/luminaires for details and the complete line of Signify poles and brackets.
1. Not available with HS option.

DOS-LED 01/19 page 1 of 4

DOS Domus Small
Urban Luminaire

LED light engine technical information for DOS

LED = Lumileds Luxeon T, CRI = 70, CCT = 3000K (3045K +/- 175K or 2870K to 3220K), System (LED + driver) rated life = 100,000 hrs[1]

LED Module	Typical delivered lumens	Typical system wattage[2]	Typical current @ 120V	@ 208V	@ 240V	@ 277V	LED current	HID Replacement[3]	Luminaire Efficacy Rating (Lm/W)	BUG rating
24W16LED3K-T-LE2F	2277	29	0.25	0.15	0.13	0.12	530	70-100	79	B1-U0-G0
24W16LED3K-T-LE3F	2981	29	0.25	0.15	0.13	0.12	530	70-100	76	B1-U0-G0
24W16LED3K-T-LE4F	2132	29	0.25	0.15	0.13	0.12	530	70-100	74	B1-U0-G1
24W16LED3K-T-LESF	2042	29	0.25	0.15	0.13	0.12	530	70-100	71	B2-U0-G0
30W16LED3K-T-LE2F	2865	38	0.32	0.19	0.17	0.15	700	70-100	76	B1-U0-G1
30W16LED3K-T-LE3F	2744	38	0.32	0.19	0.17	0.15	700	70-100	73	B1-U0-G1
30W16LED3K-T-LE4F	2683	38	0.32	0.19	0.17	0.15	700	70-100	71	B1-U0-G1
30W16LED3K-T-LESF	2546	38	0.32	0.19	0.17	0.15	700	70-100	68	B2-U0-G1
51W32LED3K-T-LE2F	3113	36	0.31	0.19	0.17	0.16	350	70-100	87	B1-U0-G1
51W32LED3K-T-LE3F	2982	36	0.31	0.19	0.17	0.16	350	70-100	83	B1-U0-G1
51W32LED3K-T-LE4F	2915	36	0.31	0.19	0.17	0.16	350	70-100	82	B1-U0-G1
51W32LED3K-T-LESF	2766	36	0.31	0.19	0.17	0.16	350	70-100	77	B2-U0-G1
51W32LED3K-T-LE2F	4815	53	0.47	0.27	0.24	0.22	530	100-150	85	B1-U0-G1
51W32LED4K-T-LE3F	4326	54	0.47	0.27	0.24	0.22	530	100-150	80	B1-U0-G1
51W32LED4K-T-LE4F	4238	54	0.47	0.27	0.24	0.22	530	100-150	79	B1-U0-G1
51W32LED4K-T-LESF	4013	54	0.47	0.27	0.24	0.22	530	100-150	74	B3-U0-G1

LED = Lumileds Luxeon T, CRI = 70, CCT = 4000K (3985K +/- 275K or 3710K to 4260K), System (LED + driver) rated life = 100,000 hrs[1]

LED Module	Typical delivered lumens	Typical system wattage[2]	Typical current @ 120V	@ 208V	@ 240V	@ 277V	LED current	HID Replacement[3]	Luminaire Efficacy Rating (Lm/W)	BUG rating
24W16LED4K-T-LE2F	2596	29	0.25	0.15	0.13	0.12	530	70-100	91	B1-U0-G1
24W16LED4K-T-LE3F	2467	29	0.25	0.15	0.13	0.12	530	70-100	87	B1-U0-G0
24W16LED4K-T-LE4F	2431	29	0.25	0.15	0.13	0.12	530	70-100	85	B1-U0-G1
24W16LED4K-T-LESF	2331	29	0.25	0.15	0.13	0.12	530	70-100	81	B3-U0-G0
30W16LED4K-T-LE2F	3267	38	0.32	0.19	0.17	0.15	700	70-100	87	B1-U0-G1
30W16LED4K-T-LE3F	3129	38	0.32	0.19	0.17	0.15	700	70-100	83	B1-U0-G1
30W16LED4K-T-LE4F	3059	38	0.32	0.19	0.17	0.15	700	70-100	81	B1-U0-G1
30W16LED4K-T-LESF	2903	38	0.32	0.19	0.17	0.15	700	70-100	77	B2-U0-G1
51W32LED4K-T-LE2F	3550	36	0.31	0.19	0.17	0.16	350	70-100	99	B1-U0-G1
51W32LED4K-T-LE3F	3400	36	0.31	0.19	0.17	0.16	350	70-100	95	B1-U0-G1
51W32LED4K-T-LE4F	3324	36	0.31	0.19	0.17	0.16	350	70-100	93	B1-U0-G1
51W32LED4K-T-LESF	3155	36	0.31	0.19	0.17	0.16	350	70-100	88	B2-U0-G1
51W32LED4K-T-LE2F	5149	53	0.47	0.27	0.24	0.22	530	100-150	96	B1-U0-G1
51W32LED4K-T-LE3F	4932	54	0.47	0.27	0.24	0.22	530	100-150	91	B1-U0-G1
51W32LED4K-T-LE4F	4822	54	0.47	0.27	0.24	0.22	530	100-150	90	B1-U0-G1
51W32LED4K-T-LESF	4576	54	0.47	0.27	0.24	0.22	530	100-150	85	B3-U0-G1

1. L_{70} = 100,000 hrs (at ambient temperature = 25°C).
2. System wattage or total luminaire wattage includes the LED module and the LED driver.
3. These guidelines show typical replacements for the HID wattage ranges shown. Replacements should always be confirmed with a photometric layout.

Note: Due to rapid and continuous advances in LED technology, LED luminaire data is subject to change without notice and at the discretion of Signify.

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DOS-LED 01/19 page 4 of 4

1 EXTERIOR LIGHT, WALL MOUNT DETAIL
SL1 NOT TO SCALE

GARDCO by ⓘignify

Wall Mount

GeoForm

GCS LED wall sconce

Project: LJ COMMONS
Location: MORGAN HILL
Cat.No: GCS-A01-740-T2M-120
Type: WALL MOUNTED LIGHT
Lamps: Qty: 8
Notes:

Gardco GeoForm cylinder small LED wall sconce features a compact geometric design that will complement a range of architectural styles. GeoForm is available with two light engines: highly efficient precision plus optics which feature type 2, 3, and 4 distributions, as well as light effects optics which offer wall wash, spot, and pencil beam distributions. GeoForm with light effects may be inverted for a wet location uplight option. A diffuse lens is also available for over doorway applications. Emergency battery backup option provides path-of-egress illumination, and multiple control options further enhance energy savings.

Ordering guide **example:** GCS-A03-830-T3M-UNV-MG

Luminaire	Configuration (cont. fixture)	Color Temperature	Distribution	Voltage	Drawing Control (ph)[1]	Electrical	Emergency	Finish
GCS GeoForm Cylinder Small	A01	740	T2M	120	none	none	none	Textured
	Cylinder fixture only			120 120V	Leave Blank (0-10V dimming driver standard)	Leave blank (10kV 4A surge protection standard)	Leave blank	BK Black
	A01[2] 1,500 lumens	830 80CRI 3000K	T2M Type 2	208 208V			EM[4] Emergency Battery Pack (0-40°C)	WH White
	A02[2] 2,500 lumens	840 80CRI 4000K	T3M Type 3	240 240V	DLEA[3] Dimming Leads Externally Accessible (controls by others)	SP2 Surge Protector (10kV/10kA (option)		BZ Bronze
	A03 4,000 lumens	740 70CRI 4000K	T4M Type 4	277 277V				DG Dark Gray
	A04 5,000 lumens	750 70CRI 5000K		UNV 120-277V	FAWS[3] Field Adjustable Wattage Selector	FS1 Single Fuse (120, 277, or 347VAC)		MG Medium Gray
	A05 6,000 lumens			347 347V		FS2 Double Fuse (208V, 240V, or 480V)		Customer specified
	A06 8,000 lumens			480 480V		PCB[4] Photocontrol Button (120-277V)		OC Specify optional color or RAL, contact factory
	Wall wash fixture only			MVU 347-480V				SC Special Color (must supply color chip, requires factory quote)
	B01[2] 700 lumens	830 80CRI 3000K	WAW Wall Wash					
	B02[2] 1,100 lumens	840 80CRI 4000K	SPT Spot					
	B03[2] 2,200 lumens		PEN Pencil Beam					

1. Only available in 120–277V or UNV.
2. Only one option can be selected from Dimming Controls column.
3. Not available with Emergency battery pack.
4. 120–277V only. Luminaire must be ordered with DLEA option if using WAP.
5. Only available in 120–277, must specify voltage.
6. Not available with "Light Effects" B01, B02, B03.

Luminaire Accessories (order separately)

GF-WS-BK	Wall Mounted Box for surface conduit, painted black
GF-INV	Inversion Mounting kit (required with inverted mounting)

GCS_GeoForm_Cylinder_Small 02/23 page 1 of 5

GCS GeoForm cylinder small
Wall sconce

GCS Lumen values

3000K, 80CRI

Ordering Code	CCT	CRI	Average System Wattage	Type 2M Lumen Output	Type 2M BUG Rating	Type 2M Efficacy (LPW)	Type 3M Lumen Output	Type 3M BUG Rating	Type 3M Efficacy (LPW)	Type 4M Lumen Output	Type 4M BUG Rating	Type 4M Efficacy (LPW)
GCS-A01-830	3000	80	10	1483	B1-U0-G1	145	1503	B1-U0-G1	147	1467	B0-U0-G1	144
GCS-A02-830	3000	80	17	2478	B1-U0-G1	147	2511	B1-U0-G1	149	2452	B1-U0-G1	145
GCS-A03-830	3000	80	25	3552	B1-U0-G1	143	3570	B1-U0-G1	145	3485	B1-U0-G1	142
GCS-A04-830	3000	80	34	4601	B1-U0-G1	137	4664	B1-U0-G1	139	4553	B1-U0-G1	136
GCS-A05-830	3000	80	41	5501	B2-U0-G2	134	5575	B2-U0-G2	136	5443	B1-U0-G1	132

4000K, 80CRI

Ordering Code	CCT	CRI	Average System Wattage	Type 2M Lumen Output	Type 2M BUG Rating	Type 2M Efficacy (LPW)	Type 3M Lumen Output	Type 3M BUG Rating	Type 3M Efficacy (LPW)	Type 4M Lumen Output	Type 4M BUG Rating	Type 4M Efficacy (LPW)
GCS-A01-840	4000	80	10	1537	B1-U0-G1	151	1558	B1-U0-G1	153	1521	B0-U0-G1	149
GCS-A02-840	4000	80	17	2569	B1-U0-G1	152	2604	B1-U0-G1	154	2542	B1-U0-G1	151
GCS-A03-840	4000	80	25	3682	B1-U0-G1	148	3701	B1-U0-G1	150	3613	B1-U0-G1	147
GCS-A04-840	4000	80	34	4771	B1-U0-G1	142	4835	B2-U0-G2	144	4721	B1-U0-G1	141
GCS-A05-840	4000	80	41	5703	B2-U0-G2	139	5780	B2-U0-G2	141	5643	B1-U0-G2	137

4000K, 70CRI

Ordering Code	CCT	CRI	Average System Wattage	Type 2M Lumen Output	Type 2M BUG Rating	Type 2M Efficacy (LPW)	Type 3M Lumen Output	Type 3M BUG Rating	Type 3M Efficacy (LPW)	Type 4M Lumen Output	Type 4M BUG Rating	Type 4M Efficacy (LPW)
GCS-A01-740	4000	70	10	1732	B1-U0-G1	172	1756	B1-U0-G1	172	1714	B1-U0-G1	168
GCS-A02-740	4000	70	17	2895	B1-U0-G1	171	2934	B1-U0-G1	174	2865	B1-U0-G1	170
GCS-A03-740	4000	70	25	4115	B1-U0-G1	167	4171	B1-U0-G1	170	4072	B1-U0-G1	166
GCS-A04-740	4000	70	34	5378	B2-U0-G2	160	5449	B2-U0-G2	163	5320	B1-U0-G1	159
GCS-A05-740	4000	70	41	6427	B2-U0-G2	156	6514	B2-U0-G2	158	6359	B1-U0-G2	155

6000K, 70CRI

Ordering Code	CCT	CRI	Average System Wattage	Type 2M Lumen Output	Type 2M BUG Rating	Type 2M Efficacy (LPW)	Type 3M Lumen Output	Type 3M BUG Rating	Type 3M Efficacy (LPW)	Type 4M Lumen Output	Type 4M BUG Rating	Type 4M Efficacy (LPW)
GCS-A01-760	6000	70	10	1663	B1-U0-G1	163	1686	B1-U0-G1	166	1646	B1-U0-G1	161
GCS-A02-760	6000	70	17	2780	B1-U0-G1	165	2818	B1-U0-G1	167	2751	B1-U0-G1	163
GCS-A03-760	6000	70	25	3952	B1-U0-G1	161	4005	B1-U0-G1	163	3915	B1-U0-G1	159
GCS-A04-760	6000	70	34	5163	B2-U0-G2	154	5233	B2-U0-G2	156	5109	B1-U0-G1	153
GCS-A05-760	6000	70	41	6172	B2-U0-G2	150	6255	B2-U0-G2	152	6107	B1-U0-G2	149

Light Effects Optics 3000K, 80 CRI

Ordering Code	CCT	CRI	Average System Wattage	Wall Wash (WAW) Lumen Output	Wall Wash (WAW) Efficacy (LPW)	Spot (SPT) Lumen Output	Spot (SPT) Efficacy (LPW)	Pencil Beam (PEN) Lumen Output	Pencil Beam (PEN) Efficacy (LPW)
GCS-B01-830	3000	80	8	699	88	767	97	65	8
GCS-B02-830	3000	80	18	1397	78	1534	86	133	7
GCS-B03-830	3000	80	30	2446	82	2685	90	232	8

Light Effects Optics 4000K, 80 CRI

Ordering Code	CCT	CRI	Average System Wattage	Wall Wash (WAW) Lumen Output	Wall Wash (WAW) Efficacy (LPW)	Spot (SPT) Lumen Output	Spot (SPT) Efficacy (LPW)	Pencil Beam (PEN) Lumen Output	Pencil Beam (PEN) Efficacy (LPW)
GCS-B01-840	4000	80	8	734	92	805	101	70	9
GCS-B02-840	4000	80	18	1467	82	1611	90	139	8
GCS-B03-840	4000	80	30	2568	86	2819	94	244	8

GCS_GeoForm_Cylinder_Small 02/23 page 3 of 5

2 EXTERIOR LIGHT, WALL MOUNT DETAIL
SL1 NOT TO SCALE

LEGEND

ESL	EXISTING STREET LIGHT CONDUIT
SL	PROPOSED STREET LIGHT CONDUIT
X'(XX"S.L. COND.)	STREET LIGHTING CONDUIT LABEL, X' INDICATES CONDUIT LENGTH, (XX"S.L. COND.) INDICATES CONDUIT SIZE
X'(XX)	STREET LIGHTING WIRE LABEL, X' INDICATES WIRE LENGTH, (XX) INDICATES WIRE TYPE.
(2W)	2–#8 CU. WIRE (SEE NOTE 15)
(3W)	3–#8 CU. WIRE (SEE NOTE 15)
(3WG)	2–#8 CU. WIRE & 1–#8 BARE CU. GROUND (UNLESS OTHERWISE NOTED); SEE NOTE 15 & GROUNDING DETAIL
(4WG)	3–#8 CU. WIRE & 1–#8 BARE CU. GROUND (UNLESS OTHERWISE NOTED); SEE NOTE 15 & GROUNDING DETAIL
	EXISTING TRAFFIC SIGNAL
	STREET LIGHTING PULL BOX STATE TYPE #3 1/2, 10" x 17" x 12"
	STREET LIGHTING GROUND BOX STATE TYPE #5, 13" x 24" x 12"
	PROPOSED EXTERIOR LIGHT, WALL MOUNT (BY OTHERS)
	PROPOSED EXTERIOR LIGHT, WALL MOUNT (BY OTHERS)
	EXISTING STREET LIGHT, SINGLE ARM
X	CIRCUIT NUMBER/PHASE (SEE ELECTRIC SOURCE DETAILS)
(XXXX)	POLE NUMBER
POS	STREET LIGHT POINT OF SERVICE
F/C	FACE OF CURB

CONSTRUCTION LABOR AND MATERIAL RESPONSIBILITY

STREET LIGHTING SYSTEM (PUBLIC)

	P.G.&E.	CONTRACTOR
WIRE:		
FURNISH		●
INSTALL		●
CONDUIT:		
FURNISH		●
INSTALL		●
BASES:		
FURNISH		●
INSTALL		●
LUMINAIRES:		
FURNISH		●
INSTALL		●
SPLICE BOXES:		
FURNISH		●
INSTALL		●
EXCAVATE		●
POLES & ARMS:		
FURNISH		●
INSTALL		●

SCHEDULE: LS2A
INSTALL IN JOINT TRENCH: YES
INSTALL IN SEPARATE TRENCH: NO
CONDUIT SIZE: 1 1/2"
CONDUIT TYPE: SCH. 40
WIRE SIZE: #8 TYPE: CU

ADDITIONAL NOTES:
–DEVELOPER TO SUPPLY AND INSTALL ELECTRIC FACILITIES UNDER THE COMPETITIVE BIDDING PROVISIONS OF PG&E GREEN BOOK RULES 15, 16 AND 20.
–STREET LIGHTS TO BE MAINTAINED BY LANDSCAPING DISTRICT #X–X', UPON TRACT ACCEPTANCE.
–SEE JOINT TRENCH COMPOSITE FOR TRENCH.

STREET LIGHTING SYSTEM (PRIVATE)

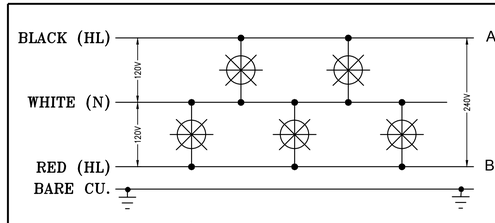
	P.G.&E.	CONTRACTOR
WIRE:		
FURNISH		●
INSTALL		●
CONDUIT:		
FURNISH		●
INSTALL		●
BASES:		
FURNISH		●
INSTALL		●
LUMINAIRES:		
FURNISH		●
INSTALL		●
SPLICE BOXES:		
FURNISH		●
INSTALL		●
EXCAVATE		●
POLES & ARMS:		
FURNISH		●
INSTALL		●

SCHEDULE: LS3
INSTALL IN JOINT TRENCH: NO
INSTALL IN SEPARATE TRENCH: YES
CONDUIT SIZE: 2"
CONDUIT TYPE: SCH. 40
WIRE SIZE: VARIES TYPE: CU

ADDITIONAL NOTES:
–PRIVATE LIGHTS TO BE MAINTAINED BY H.O.A (HOMEOWNER ASSOCIATION) UPON TRACT ACCEPTANCE.

VOLTAGE DROP CALCULATIONS

LOCATION	DISTANCE	LOAD WATT	LOAD VOLT/AMP	VOLTAGE 120/240	WIRE SIZE	% VOLTAGE DROP	CIRCUIT #



120/240 VOLT WIRING DIAGRAM
SEE GENERAL NOTE #4
NOT TO SCALE

STREET LIGHTING NOTES

1. ALL MATERIAL AND WORKMANSHIP SHALL FULLY CONFORM WITH THE NATIONAL ELECTRIC CODE AND STANDARD SPECIFICATIONS AND DETAILS OF THE CITY OF MORGAN HILL.
2. THE ELECTRICAL CONTRACTOR SHALL INSTALL THE UNDERGROUND SERVICE FROM THE LUMINAIRE TO PG&E SERVICE POINT AND TERMINATE CONDUIT AND WIRES AT BOX AS DIRECTED BY THE CITY.
3. KEEP STREET LIGHTS A MINIMUM OF 3 FEET AWAY FROM THE EDGE OF DRIVEWAYS, SEWER AND WATER LATERALS AND 5 FEET AWAY FROM FIRE HYDRANTS & CATCH BASINS.
4. TWO OR MORE STREET LIGHTS ON THE SAME CIRCUIT SHALL BE WIRED TO BALANCE THE LOAD. (SEE WIRING DIAGRAM), UNLESS OTHERWISE NOTED.
5. CONDUIT AND FITTINGS: ALL CONDUIT AND FITTINGS SHALL BE U.L. APPROVED SCHEDULE 40 P.V.C., USE MINIMUM 1 1/2" SCH. 40 P.V.C. CONDUIT AND FITTINGS BELOW GRADE, UNLESS OTHERWISE NOTED OR REQUIRED. MINIMUM RADIUS BENDS SHALL BE 18". FOR ABOVE GROUND INSTALLATION USE METALLIC RIGID STEEL CONDUIT. PROVIDE PULL WIRE IN EMPTY CONDUITS. ALL CROSSINGS TO BE PERPENDICULAR TO STREET.
6. CONDUIT DEPTH: 24" UNDER SIDEWALK: 24" UNDER PLANTER STRIP: 30" UNDER PAVEMENT.
7. CABLE: CABLE SHALL BE U.L. A.W.G. NO. 8, 7–STRAND SOFT COPPER, TYPE THW OR THWN WITH MINIMUM OF 3/64" (40 MIL) POLYVINYL CHLORIDE INSULATION, UNLESS OTHERWISE NOTED. U.L. LISTED 600 VOLT, NO. 10 IN POLE MAY BE USED (40 MIL INSULATION).
8. SPLICE BOXES: SPLICE BOXES SHALL BE NO. 3–1/2 STATE TYPE WITH LID AND BRASS HOLD DOWN BOLTS, UNLESS OTHERWISE NOTED. LIDS TO BE INSCRIBED 'STREET LIGHTING'. SPLICE BOXES SHALL NOT BE MORE THAN 200 FEET APART ON LONG RUNS. SPLICE BOXES TO BE SET ON A CONCRETE FOOTING WHEN SUBJECT TO TRAFFIC LOAD.
9. FUSES: EACH POLE SHALL BE FUSED WITH WATERPROOF IN–LINE FUSE HOLDERS AT EACH ADJACENT BOX WITH 5 AMP FUSE. FOR DUPLEX LIGHTS, EACH LUMINAIRE SHALL BE FUSED SEPARATELY.
10. SPLICING: ALL SPLICES SHALL BE MADE IN HAND HOLES OR SPLICE BOXES ONLY. SPLICES SHALL BE MADE WITH "STACK –ON" CRIMP JOINTS, "SCOTCH LOCK" FASTENERS, OR APPROVED EQUAL. ON SPLICES MADE BELOW GRADE, WRAP WITH MOISTURE PROOF INSULATION THICKNESS.
11. POLE NUMBERS: OBTAIN AND PLACE POLE NUMBERS ON ALL STREET LIGHT STANDARDS AS REQUIRED. COORDINATE WITH PG&E AND/OR CITY FOR THEIR REQUIREMENTS.
12. TRENCH: CONDUIT CAN BE PLACED IN JOINT TRENCH. THE CONDUIT LAYOUT IS SHOWN SCHEMATICALLY. SEE COMPOSITE DRAWING FOR TRENCH AND BOX LOCATIONS. ANY INCIDENTAL TRENCHING NOT PROVIDED BY TRENCHING AGENT IS CONTRACTOR'S RESPONSIBILITY.
13. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY FIELD CHANGES MADE WITHOUT FIRST NOTIFYING TARRAR UTILITY CONSULTANTS.
14. TARRAR UTILITY CONSULTANTS ASSUMES NO RESPONSIBILITY FOR ANY VARIANCE BETWEEN THESE PLANS AND THE ACTUAL FIELD CONDITIONS. CONTRACTOR SHOULD REVIEW PROJECT SITE PRIOR TO SUBMITTING ITS BID.
15. CONTRACTOR TO CONSULT WITH LOCAL AGENCIES FOR THEIR CIRCUIT GROUNDING REQUIREMENTS. IF GROUND WIRE IS REQUIRED IN CONDUIT, INSTALL ACCORDINGLY.
16. LEGEND SYMBOLS ARE SHOWN IN STREET AREA FOR CLARITY. INSTALL BEHIND CURB AND/OR SIDEWALK PER THE CITY SPECIFICATIONS KEEP CLEAR OF DRIVEWAYS AND PATHWAYS (TYPICAL).
17. CENTERLINE OF STREET LIGHTS SHALL BE LOCATED ON THE LOT LINE UNLESS OTHERWISE NOTED ON THESE PLANS.
18. ANY CHANGES OR MODIFICATIONS TO PROPOSED STREET LIGHT LOCATIONS SHALL BE APPROVED, IN WRITING, BY THE CITY PRIOR TO INSTALLATION.
19. SET ALL STREET LIGHTS TO ULTIMATE FINISHED GRADE. CONSULT WITH CITY FOR PROPER PHYSICAL PROTECTION AND/OR SIGNING AND STRIPING ADJACENT TO ANY STREET LIGHTS INSTALLED IN THEIR ULTIMATE LOCATIONS THAT ARE NOT PROTECTED BY A VERTICAL CURB. BERM AND COMPACT EARTH TO FINISHED GRADE A MINIMUM OF 5' AROUND STREET LIGHT BASES AT THESE LOCATIONS.
20. CONTACT U.S.A. (2) FULL WORKING DAYS PRIOR TO STARTING WORK IF EXISTING UTILITIES CONFLICT WITH POLE LOCATION, FIELD ADJUST TO CLEAR EXISTING UTILITIES A MINIMUM OF 3'–0".
21. STREET LIGHT CONDUIT BENDS SHALL HAVE A MINIMUM 18" RADIUS. UNLESS OTHERWISE SHOWN ON THE PLANS, NO BEND SHALL BE INSTALLED IN THE STREET LIGHT SYSTEM WITHOUT PRIOR APPROVAL OF THE CITY INSPECTOR.
22. ALL BOXES ARE TO BE INSTALLED WITHIN THE R/W AND/OR P.U.E. AREA.

FOR REVIEW ONLY

813 First Street
Brentwood, CA 94513
(925) 240-2595
(925) 240-7013 fax
www.tarrar.com

TARRAR UTILITY CONSULTANTS

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- Estimating
- Joint Trench
- Street Lighting
- Fiber Optic
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- PG&E Gas Design
- PG&E Elec Design
- M.E.P. Design
- Cost Analysis
- Due Diligence

STREET LIGHTING GENERAL NOTES AND DETAILS
HAREN PROPERIES, LLC
LJ COMMONS
MORGAN HILL CALIFORNIA

NO.	REVISIONS	BY	DATE

DATE: September 2023 DATE LAST WORKED ON: 10/26/2023
SCALE: NOT TO SCALE DRAWN: SM CHECKED: KT
JOB NO.: 223134 PRELIMINARY NOT FOR CONSTRUCTION
INTENT TO CONSTRUCT

811 CALL BEFORE YOU DIG UNDERGROUND SERVICE ALERT

SHEET SL1 OF SL4 SHEETS

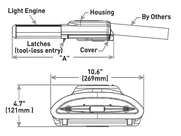
LEDway® Series

LEDway® LED Street Light

Rev. Date: V5 06/24/2020

Product Description

Luminaire housing is all aluminum construction. Standard luminaire utilizes terminal block for power input suitable for #2-#14 AWG wire. Luminaire is designed to mount on a 2" (51mm) IP, 2.375" (60mm) O.D. horizontal tenon and/or a 1.25" (32mm) IP, 1.66" (42mm) O.D. horizontal tenon (minimum 8" [203mm] in length) and is adjustable +/- 5° to allow for luminaire leveling (two axis T-level included).
Applications: Roadway, parking lots, walkways and general area spaces



Performance Summary

- Patented NanoOptic® Product Technology
- Assembled in the U.S.A. of U.S. and imported parts
- **CRI:** Minimum 70 CRI
- **CCT:** 4000K (+/- 300K), 5700K (+/- 500K) standard
- **Limited Warranty*:** 10 years on luminaire/10 years on Colorfast DeltaGuard® finish

*See http://creelighting.com/warranty for warranty terms

Accessories

Field-Installed

Bird Spikes for Light Engine
XA-BRDSPK30
- 20-30 LED
XA-BRDSPKA0
- 40-60 LED
XA-BRDSPK90
- 70-90 LED
XA-BRDSPK120
- 100-120 LED

Bird Spikes for Housing
XA-BRDSPKHSG
Shorting Cap
XA-XSLSHRT

External Backlight Shield
XA-XSLBLS30
- 20-30 LED
XA-XSLBLS40
- 40-60 LED
XA-XSLBLS90
- 70-90 LED
XA-XSLBLS120
- 100-120 LED

Ordering Information

Example: STR-LWY-2M-HT-02-E-UL-SV-700

STR-LWY		HT		E				
Product	**Optic**	**Mounting**	**LED Count (x10)**	**Series**	**Voltage**	**Color Options***	**Drive Current**	**Options**
STR-LWY	**2M** Type II Medium **2S** Type II Short **3M** Type III Medium **4M** Type IV Medium **5M** Type V Medium	**HT** Horizontal Tenon	**02** **03** **04** **05** **06** **07** **08** **09** **10** **11** **12**	**E**	**UL** Universal 120-277V **UH** Universal 347-480V	**BK** Black **BZ** Bronze **SV** Silver	**525** 525mA **700** 700mA	**DIM 0-10V Dimming** - Control by others - Refer to Dimming spec sheet for details - Can't exceed specified drive current **R NEMA® Photocell Receptacle** - 3-pin receptacle per ANSI C136.10 - Intended for downlight applications with maximum 45° tilt - Requires photocell or shorting cap (by others) **UTL Utility** - Includes exterior wattage label that reflects watts for the drive current selected. The ability to exceed selected drive current will be disabled **40K 4000K Color Temperature** - Minimum 70 CRI - Nominal color temperature per luminaire **TBL Amber Friendly LEDs** - Available only with 350mA only - Available only with 40, 60, 100, 120 LED counts - Lumen multiplier from 5700K, 525mA : 0.29 (350mA) - Power multiplier from 525mA: 0.50 - 600nm dominant wavelength - Additional shielding (by others) may be required for Florida Fish and Wildlife Conservation Commission compliance

* Light engine portion of extrusion is not painted and will remain natural aluminum regardless of color selection.

c UL us

US: creelighting.com (800) 236-6800
Canada: creelighting-canada.com (800) 473-1234

CREE LIGHTING

LED Count (x10)	Dim. "A"	Weight
02	17.5" (443mm)	13.0 lbs. (5.9kg)
03	17.5" (443mm)	13.5 lbs. (6.1kg)
04	22.0" (559mm)	16.5 lbs. (7.5kg)
05	22.0" (559mm)	17.0 lbs. (7.7kg)
06	22.0" (559mm)	17.5 lbs. (7.9kg)
07	26.8" (681mm)	22.0 lbs. (10.0kg)
08	26.8" (681mm)	22.5 lbs. (10.2kg)
09	26.8" (681mm)	22.5 lbs. (10.2kg)
10	33.1" (842mm)	27.5 lbs. (12.5kg)
11	33.1" (842mm)	28.0 lbs. (12.7kg)
12	33.1" (842mm)	28.0 lbs. (12.7kg)

LEDway® LED Street Light

Product Specifications

CONSTRUCTION & MATERIALS
- Housing is all aluminum construction
- Terminal block for power input suitable for #2-#14 AWG wire
- HT Mount is designed to mount on a 2" (51mm) IP, 2.375" (60mm) O.D. horizontal tenon and/or a 1.25" (32mm) IP, 1.66" (42mm) O.D. horizontal tenon (minimum 8" [203mm] in length) and is adjustable +/- 5° to allow for luminaire leveling (two axis T-level included)
- Exclusive Colorfast DeltaGuard® finish features an E-Coat epoxy primer with an ultra-durable powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion. Black, bronze, and silver are available
- **Weight:** See Dimensions and Weight chart on page 1

ELECTRICAL SYSTEM
- **Input Voltage:** 120-277V or 347-480V, 50/60Hz, Class 1 drivers
- **Power Factor:** > 0.9 at full load
- **Total Harmonic Distortion:** < 20% at full load
- Quick disconnect harness suitable for mate and break under load provided on power feed to driver for ease of maintenance
- Integral 10kV surge suppression protection standard
- To address inrush current, slow blow fuse or type C/D breaker should be used
- **10V Source Current:** 20-60 LED: 0.15mA; 80-120 LED: 0.30mA

REGULATORY & VOLUNTARY QUALIFICATIONS
- cULus Listed
- Suitable for wet locations
- Meets CALTrans 611 Vibration testing and GR-63-CORE Section 4.4.1/5.4.2
  Earthquake Zone 4
- Certified to ANSI C136.31-2001, 3G bridge and overpass vibration standards
- ANSI C136.2 10kV surge protection, tested in accordance with IEEE/ANSI C62.41.2
- Luminaire and finish are endurance tested to withstand 5,000 hours of elevated
  ambient salt fog as defined in ASTM Standard B 117
- Meets Buy American requirements within ARRA
- Meets FCC Part 15, Subpart B, Class A limits for conducted and radiated emissions
- ⚠ **CA RESIDENTS WARNING:** Cancer and Reproductive Harm – www.p65warnings.ca.gov

Electrical Data*

LED Count (x10)	System Watts 120-277V	System Watts 347-480V	Total Current (A) 120V	208V	240V	277V	347V	480V
525mA								
02	35	39	0.30	0.18	0.16	0.15	0.12	0.10
03	53	55	0.45	0.26	0.23	0.21	0.16	0.13
04	66	71	0.56	0.33	0.29	0.26	0.21	0.16
05	86	87	0.72	0.42	0.37	0.33	0.25	0.19
06	100	103	0.84	0.49	0.43	0.38	0.30	0.22
07	120	124	1.01	0.60	0.54	0.49	0.37	0.28
08	139	140	1.17	0.69	0.62	0.56	0.41	0.31
09	149	156	1.26	0.74	0.66	0.59	0.46	0.34
10	167	172	1.41	0.83	0.73	0.65	0.50	0.38
11	182	188	1.54	0.89	0.79	0.70	0.55	0.41
12	197	204	1.67	0.96	0.85	0.75	0.59	0.44
700mA								
02	47	51	0.39	0.23	0.21	0.19	0.15	0.12
03	70	73	0.59	0.34	0.30	0.27	0.21	0.16
04	91	93	0.77	0.45	0.39	0.35	0.27	0.20
05	113	115	0.96	0.55	0.48	0.43	0.33	0.25
06	134	135	1.13	0.65	0.57	0.50	0.39	0.29
07	163	165	1.37	0.80	0.71	0.63	0.48	0.36
08	182	186	1.54	0.90	0.79	0.70	0.54	0.40
09	203	207	1.72	0.99	0.87	0.78	0.60	0.45
10	227	229	1.92	1.11	0.97	0.86	0.67	0.49
11	248	250	2.10	1.21	1.05	0.93	0.73	0.53
12	267	274	2.26	1.30	1.13	1.00	0.80	0.58

* Electrical data at 25°C (77°F). Actual wattage may differ by +/- 10% when operating between 120-277V or 347-480V +/- 10%.

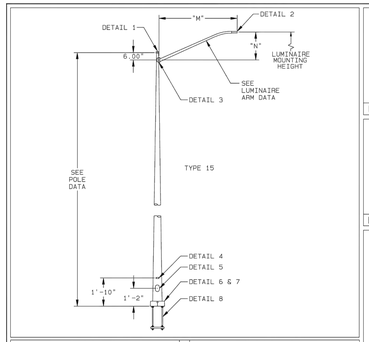
LEDway® Ambient Adjusted Lumen Maintenance†

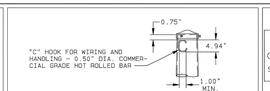
Ambient	CCT	Initial LMF	25K hr Reported‡ LMF	50K hr Reported‡ LMF	75K hr Estimated‡ LMF	100K hr Estimated‡ LMF
5°C (41°F)	30K/40K/50K/57K	1.04	1.01	0.99	0.98	0.96
	TRL	1.06	1.06	1.06	1.06	1.06
10°C (50°F)	30K/40K/50K/57K	1.03	1.00	0.98	0.97	0.95
	TRL	1.04	1.04	1.04	1.04	1.04
15°C (59°F)	30K/40K/50K/57K	1.02	0.99	0.97	0.96	0.94
	TRL	1.03	1.03	1.03	1.03	1.03
20°C (68°F)	30K/40K/50K/57K	1.01	0.98	0.96	0.95	0.93
	TRL	1.01	1.01	1.01	1.01	1.01
25°C (77°F)	30K/40K/50K/57K	1.00	0.97	0.95	0.94	0.92
	TRL	1.00	1.00	1.00	1.00	1.00

† Lumen maintenance values at 25°C (77°F) are calculated per IES TM-21 based on IES LM-80 report data for the LED package and in-situ luminaire testing. Luminaire ambient temperature factors (LATF) have been applied to all lumen maintenance factors. Please refer to the Temperature Zone Reference Document for outdoor average nighttime ambient temperatures.
‡ In accordance with IES TM-21, Reported values represent interpolated values based on time durations that are up to 6x the tested duration in the IES LM-80 report for the LED.
* Estimated values are calculated and represent time durations that exceed the 6x test duration of the LED.

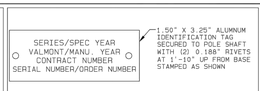
US: creelighting.com (800) 236-6800
Canada: creelighting-canada.com (800) 473-1234

CREE LIGHTING

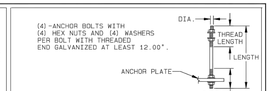




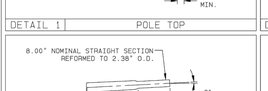
DETAIL 1 POLE TOP



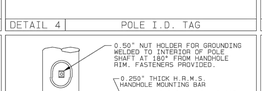
DETAIL 4 POLE I.D. TAG



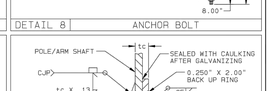
DETAIL 8 ANCHOR BOLT



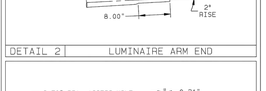
DETAIL 2 LUMINAIRE ARM END



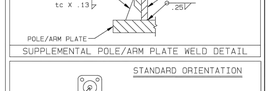
DETAIL 5 HANDHOLE



SUPPLEMENTAL POLE/ARM PLATE WELD DETAIL



DETAIL 3 LUMINAIRE ARM ATTACHMENT



RADIAL INDEX

MATERIAL DATA

COMPONENT	ASTM DESIGNATION	MIN. YIELD (KSI)
TAPERED TUBES	A595 GR. A	55
BASE PLATE	A572 GR.50	50
SLIPFLEX PLATES	A572 GR.50	50
GUSSETS	A572 GR.50	50
LUM. CONN.BOLTS	F3125 GR.A325	---
PIPE / TUBING	A501, OR A500 GR. B	36
ANCHOR BOLTS	F1554 GR.55	55
HARDWARE COATING	HOT DIP ZINC	---

FINISH DATA

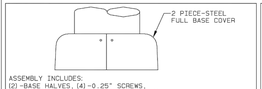
SYSTEM: GALVANIZED – NO AEROSOL REPAIR
BASE COAT: HOT-DIP GALVANIZED TO ASTM A123
PRIME COAT: NONE
FINISH COAT: NONE
COLOR: NONE
SPEC: F-944

POLE DATA

POLE TYPE	POLE TUBE LENGTH "A" (FT)	POLE TUBE BASE DIA (IN)	POLE TUBE TOP DIA. (IN)	POLE TUBE THICKNESS (IN)	POLE BASE SQUARE "S" (IN)	POLE BASE BOLT CIRCLE "Y" (IN)	POLE BASE THK. "Z" (IN)	POLE BASE SLOT (IN)	ANCHOR BOLT DIA. (IN)	ANCHOR BOLT LENGTH (IN)	ANCHOR BOLT THREAD LENGTH (IN)
15	30.00	6.00	3.80	0.119	12.00	11.50	1.500	1.13 x 1.69	1.00	36.00	10.00

LUMINAIRE ARM DATA

PROJECTED LENGTH "H" (FT)	RISE "N" (FT)	ARM BASE DIA. (IN)	THICKNESS (IN)	LUMINAIRE MOUNTING HEIGHT
6.33	2.00	3.36	0.119	31.50
8.33	2.50	3.65	0.119	32.00
10.33	3.25	3.95	0.119	32.75
12.33	4.25	4.27	0.119	33.75
15.33	4.75	4.68	0.119	34.25



DETAIL 6 STEEL FULL BASE COVER

DETAIL 7 POLE BASE PLATE

ALTHOUGH RARE, VIBRATIONS SEVERE ENOUGH TO CAUSE DAMAGE CAN OCCASIONALLY OCCUR IN STRUCTURES OF ALL TYPES. BECAUSE THEY ARE INFLUENCED BY MANY INTERACTING VARIABLES, VIBRATIONS ARE GENERALLY UNPREDICTABLE. THE USER'S MAINTENANCE PROGRAM SHOULD INCLUDE OBSERVATION FOR EXCESSIVE VIBRATION AND EXAMINATION FOR ANY STRUCTURAL DAMAGE OR BOLT LOOSENING. THE VALMONT WARRANTY SPECIFICALLY EXCLUDES FATIGUE FAILURE OR SIMILAR PHENOMENA RESULTING FROM INDUCED VIBRATION, HARMONIC OSCILLATION OR RESONANCE ASSOCIATED WITH MOVEMENT OF AIR CURRENTS AROUND THE PRODUCT.
VIBRATION DISCLAIMER

DESIGN CRITERIA
2013 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS.

WIND VELOCITY:
100 MPH ISOTACH

LOADING CRITERIA
MAXIMUM FIXTURE EPA = 3.34 FT²
MAXIMUM FIXTURE WEIGHT = 55.0 LBS
DESIGN/LOADING CRITERIA

REV	DRAWN BY–DATE	CHECK BY–DATE	DESCRIPTION
B	BDS 08/26/20	BDS 08/26/20	REVISED HANDHOLE ORIENTATION WAS 270 DEGREES
A	BDS 06/30/20	BDS 06/30/20	REVISED BASE PLATE SIZE WAS 12.00" B.C.
---	NAS 08/08/16	NAS 08/08/16	--- --- --- --- --- --- --- --- --- ---

TITLE: CITY OF MORGAN HILL
CALTRANS TYPE 15
CALTRANS 2010 REVISED STANDARD PLANS

VALMONT INDUSTRIES, INC. RESERVES THE RIGHT TO INSTALL VARIOUS, ENGINEER APPROVED, MATERIAL HANGING ACCOMMODATIONS TO FACILITATE THE MANUFACTURING PROCESS.

valmont
Valley,NE 68064
(402) 359-2201

PAGE NUMBER: 1 OF 1
DRAWING NUMBER: DB01176 REV: B

1 PUBLIC LUMINAIRE DETAIL SL2
NOT TO SCALE

2 PUBLIC STREET LIGHT DETAIL SL2
NOT TO SCALE

FOR REVIEW ONLY

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Brentwood, CA 94513
(925) 240-2595
(925) 240-7013 fax
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- Fiber Optic
- T-24
- PG&E Gas Design
- PG&E Elec Design
- M.E.P. Design
- Cost Analysis
- Due Diligence

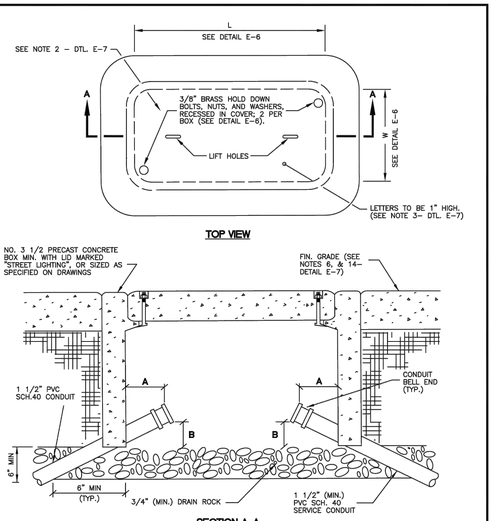
STREET LIGHTING GENERAL NOTES AND DETAILS
HAREN PROPERIES, LLC
LJ COMMONS
MORGAN HILL CALIFORNIA

NO.	REVISIONS	BY	DATE

DATE: September 2023 | DATE LAST WORKED ON: 10/26/2023
SCALE: NOT TO SCALE | DRAWN: SM | CHECKED: KT
JOB NO.: 223134 | PRELIMINARY NOT FOR CONSTRUCTION
INTENT TO CONSTRUCT

811 CALL BEFORE YOU DIG UNDERGROUND SERVICE ALERT

SHEET SL2 OF SL4 SHEETS

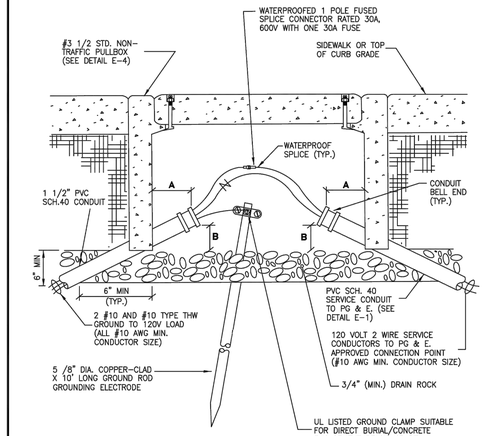


DIMENSION
A: 1" MIN. 2" MAX. (TYP.– ALL CONDUITS)
B: 1" MIN. 2" MAX. (TYP.– ALL CONDUITS)

NOTE:
APPLICATION: PLACED IN CONDUIT RUNS IN AREAS WHERE BOX IS NOT SUBJECT TO VEHICULAR TRAFFIC LOAD. SEE DETAILS E–6 AND E–7 FOR PULL BOX DETAILS AND NOTES.

City of Morgan Hill, Public Works Department			DRAWING NO.
Jim Ashcraft, CITY ENGINEER	4/1/96 DATE	REVISED	CONCRETE PULLBOX NON–TRAFFIC	E-4

1 SL2 **PUBLIC PULL BOX DETAIL**
NOT TO SCALE

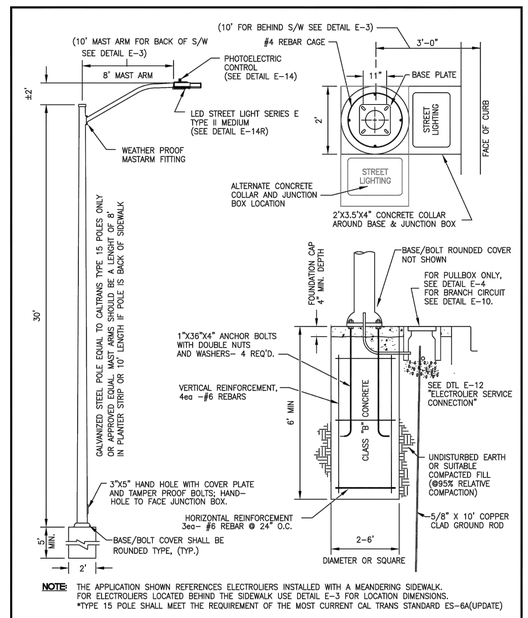


DIMENSION
A: 1" MIN. 2" MAX. (TYP.– ALL CONDUITS)
B: 1" MIN. 2" MAX. (TYP.– ALL CONDUITS)

NOTES:
1. SEE DETAILS E–6, AND E–7 NOTES.
2. PROVIDE 3' OF SLACK IN ALL CONDUCTORS IN ACCORDANCE WITH SPECIFICATIONS. (SLACK NOT SHOWN.)

City of Morgan Hill, Public Works Department			DRAWING NO.
Jim Ashcraft, CITY ENGINEER	4/1/96 DATE	6/8/00 REVISED	UNDERGROUND STREETLIGHT 120V SERVICE CONNECTION	E-8

2 SL2 **PUBLIC GROUND BOX DETAIL**
NOT TO SCALE



NOTE: THE APPLICATION SHOWN REFERENCES ELECTROLIERS INSTALLED WITH A MEANDERING SIDEWALK. FOR ELECTROLIERS LOCATED BEHIND THE SIDEWALK USE DETAIL E–3 FOR LOCATION DIMENSIONS.
*TYPE 15 POLE SHALL MEET THE REQUIREMENT OF THE MOST CURRENT CAL TRANS STANDARD ES–6A(UPDATE)

City of Morgan Hill, Public Works Department			DRAWING NO.
Jim Ashcraft, CITY ENGINEER	4/1/96 DATE	11/21/17 REVISED	ELECTROLIER & BASE	E–11

3 SL2 **PUBLIC ELECTROLIER AND BASE DETAIL**
NOT TO SCALE

ELECTRICAL SECTION

GENERAL

All electrical equipment, materials, and workmanship shall be in accordance with the Standard Specifications, State of California, Department of Transportation, Caltrans (CSS), the National Electrical Manufacturers Association (NEMA), the Underwriters' Laboratories Inc. (UL), the Electrical Testing Laboratories (ETL), the National Electrical Testing Association (NETA), the Electronic Industries Association (EIA), the National Electric Code (NEC), the American Society for Testing and Materials (ASTM), where applicable and and except as modified herein.

ELECTROLIERS

(a) Electroliers. Electroliers shall consist of a 30' single arm galvanized steel pole (standard) equivalent to a CALTRANS type 15, and an LED Streetlight Series E, Type II Medium or approved equal, furnished and installed in accordance with City of Morgan Hill Standard Details for Construction.
For electrolier spacing and luminaire wattage requirement, see Detail E–17.

(b) Conduit. All conduit shall be 1 1/2" Schedule 40 Polyvinyl Chloride (PVC), and conform to ASTM D 2241. Rigid conduit may be required by the City Engineer.

(c) Trenching for Conduits. Conduit trenches shall be dug to 24" min. depth. Conduit shall be placed directly behind the back of curb (6" Max., from back of curb to center of conduit). In cases where there will be an attached sidewalk, the backfill material shall be sand with the concrete sidewalk poured over the trench location. In cases where there will be a detached sidewalk, the conduit shall be covered by 3 inches of concrete. For electrolier conduit designed to occupy PG&E's joint trench, see paragraph h.

(d) Conductors. All conductors shall be #8 AWG typeTHW (#10 AWG allowed in pole only) unless otherwise specified, and be UL listed for 600V operation. All wire shall be stranded copper in accordance with ASTM B 3 and B 8. All conductor insulation shall be standard type THW in accordance with ASTM D 2219 and ASTM D 2220.

(e) Fuses. Fuses shall be standard midget ferrule type, with "Non–Time Delay" feature, and shall be 13/22" x 1 1/2". All lighting service conductors shall be fused at the service connection point (30 AMP Max) and at all electroliers with a 10 Amp fuse accesible from the hand hole opening on the standard.

(f) Service Connection Point Pull boxes for streetlight service connection points shall be installed adjacent to P.G.&E. secondary box designated for service connection.

(g) Pull Boxes. Pull boxes shall be precast of reinforced portland cement concrete in accordance with CSS Section 86–2.06A. Any pull box made of non portland cement concrete material shall conform to ASTM D 635. All individual pull boxes for electroliers shall be placed directly in front of the standard and parallel to the face of curb.

City of Morgan Hill, Public Works Department			DRAWING NO.
Jim Ashcraft, CITY ENGINEER	4/1/96 DATE	3/10/15 REVISED	GENERAL NOTES	E–I

4 SL2 **PUBLIC GENERAL NOTES DETAIL**
NOT TO SCALE

DEVELOPER INSTALL OPTION

(h) Electrolier Conduit Location. If developer elects to install the substruture for PG&E, Cable, and Telephone ("Private Utilities"), electrolier conduit may occupy the joint trench only upon approval the City Engineer. Otherwise, electrolier conduit shall be located and installed per the Electrical Section General Notes and standard details E–1 and E–2.

(i) Plan Submittal Developer shall submit to the Public Works Department two (2) sets of a substructure plan for review after PG&E review and approval. The Public Works Department shall only review the plan for possible conflicts with existing "Public Utilities" and approved subdivision improvements. Changes to the plans shall be directed as they relate to utility conflicts and all matters related to electroliers. It is developer's responsibility to ensure that the substructure plans meet PG&E's, GTE's and Charter Communication's standards. The plans shall contain, as a minimum, the following information:

(1) STREET LIGHTING PLAN– shows all proposed electroliers, boxes and conduit related to the subdivision's street lighting system as well as their location in respects to sidewalks, driveway approaches and handicap ramps.

(2) JOINT TRENCH PLAN– using the "Overall Utility Plan" as the background, shows joint trench locations, electroliers, existing and proposed "Public" and "Private" utilites.

(3) DETAILS SHEET– shows all applicable City of Morgan Hill Standard Details, to include trench restoration and backfill details.

(4) PRIMARY ELECTRICAL, GAS, CABLE & TELEPHONE PLANS– information shown per respective utility's standards.

(j) Commencement of Work Developer's substructure contractor shall not commence work until the above plans have been reviewed by the Public Works Department and an encroachment permit issued specifically for such work.

City of Morgan Hill, Public Works Department			DRAWING NO.
Jim Ashcraft, CITY ENGINEER	4/1/96 DATE	3/15/07 REVISED	GENERAL NOTES	E–II

5 SL2 **PUBLIC GENERAL NOTES DETAIL**
NOT TO SCALE

FOR REVIEW ONLY

813 First Street
Brentwood, CA 94513
(925) 240-2595
(925) 240-7013 fax
www.tarrar.com

TARRAR UTILITY CONSULTANTS

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- Estimating
- Joint Trench
- Street Lighting
- Fiber Optic
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- PG&E Gas Design
- PG&E Elec Design
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STREET LIGHTING GENERAL NOTES AND DETAILS
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SHEET SL3 OF SL4 SHEETS

A
A–2 — WALL MOUNTED, DUAL HEAD EMERGENCY LIGHT FIXTURE WITH BATTERY PACK CAPITAL LETTER WITH THE NUMBER INDICATES ASSOCIATED PANEL AND CIRCUIT NUMBER.

A–2 X — A–2 X — CEILING MOUNTED EXIT SIGN, NUMBER OF FACES AND ARROWS AS INDICATED, DARKENED SEGMENT INDICATES FACE OF SIGN. CAPITAL LETTER WITH THE NUMBER INDICATES ASSOCIATED PANEL AND CIRCUIT NUMBER.

COMBINED WALL MOUNTED EMERGENCY LIGHT AND EXIT LIGHTS.

a — a — FLUORESCENT LIGHTING OUTLET AND FIXTURE, LOWERCASE LETTER INDICATES ASSOCIATED CONTROL SWITCH OR OCCUPANCY SENSOR.

a — FLUORESCENT LIGHTING OUTLET AND FIXTURE, LOWERCASE LETTER INDICATES ASSOCIATED CONTROL SWITCH OR OCCUPANCY SENSOR.

A–2 — INCANDESCENT, COMPACT FLUORESCENT OR H.I.D. POLE MOUNTED PARKING AREAS LIGHTING CAPITAL LETTER WITH THE NUMBER INDICATES ASSOCIATED PANEL AND CIRCUIT NUMBER. CAPITAL LETTER ONLY INDICATES FIXTURE TYPE.

BRANCH CIRCUIT PANEL, SURFACE OR FLUSH MOUNTED

TELEPHONE/DATA PATCH PANEL OR CONTROL PANEL, SURFACE OR FLUSH MOUNTED

S — SINGLE POLE SWITCH

S_3 — THREE–WAY WALL SWITCH

S_4 — FOUR–WAY WALL SWITCH

S_K — SINGLE POLE SWITCH, W/KEY

S_T — THERMAL TRIP SWITCH

S_D — DIMMER SWITCH, RATING AS SHOWN

A-1;5 — DUPLEX RECEPTACLE TO PANEL A–1, CIRCUIT 5

E–3 — CEILING FLUSH MOUNTED DUPLEX RECEPTACLE

E–3 — TWO DUPLEX RECEPTACLES MOUNTED IN ONE 2–GANG BOX

3 — 110VAC FLOOR FLUSH MOUNTED DUPLEX RECEPTACLE, 1" UNDER SLAB CONDUIT TO ASSOCIATED CIRCUIT AS SHOWN

TELEPHONE/DATA OUTLETS, FLOOR FLUSH MOUNTED

TELEPHONE/ DATA OUTLETS – ONE GANG 2" WIDE RING AND PULL ROPE STRING INTO ACCESSIBLE CEILING SPACE OR 3/4" CONDUIT IN INSULATED AND RATED WALLS WITH 2 RJ 45 TEL/DATA JACK AND ONE TWISTED PAIR CAT 3 AND ONE CAT 5 /DATA CABLE TO TELEPHONE/DATA PATCH PANEL

TELEPHONE– ONE GANG 2" WIDE RING AND PULL ROPE STRING INTO ACCESSIBLE CEILING SPACE OR 3/4" CONDUIT IN INSULATED AND RATED WALLS WITH 2 RJ 45 TELEPHONE JACK AND ONE TWISTED PAIR CAT 3 AND TELEPHONE CABLE TO TELEPHONE PATCH PANEL

DATA OUTLETS – ONE GANG 2" WIDE RING AND PULL ROPE STRING INTO ACCESSIBLE CEILING SPACE OR 3/4" CONDUIT IN INSULATED AND RATED WALLS WITH 2 RJ 45 /DATA JACK AND ONE TWISTED PAIR ONE CAT 5 DATA CABLE TO DATA PATCH PANEL

F — DIRECTIONAL PHOTOCELL ON THE ROOF FOR EXTERIOR LIGHTING FIXTURES

TV — TV OUTLET–ONE GANG JB WITH 3/4"C STUBBED UP 6" ABOVE CEILING INTO ACCESSIBLE CEILING SPACE

JUNCTION BOX

M — EXHAUST FAN, RECESSED IN CEILING

WIRES IN CONDUIT, CONCEALED ABOVE CEILING OR IN WALLS.

WIRES IN CONDUIT, CONCEALED UNDER FLOOR OR UNDERGROUND.

A–1 — HOMERUN OF CONDUIT AND WIRES TO CIRCUIT #1 IN PANEL "A"

CROSS HATCHES INDICATE NO. OF #12 AWG WIRES IN CONDUIT
LONG CROSS HATCH INDICATES #12 AWG NEUTRAL. LONG
CROSS HATCH WITH BULLET END INDICATES #12 GROUND WIRE, UON

CONDUIT STUB–OUT

T — TELEPHONE SYSTEM CONDUIT WITH PULL WIRE (1"C MINIMUM)

FLEXIBLE CONDUIT

MEDICAL GRADE–DUPLEX RECEPTACLE, NUMBER INDICATES ASSOCIATED CIRCUIT

MEDICAL GRADE RECEPTACLES, 208V, 1 Ø, NUMBER INDICATES ASSOCIATED CIRCUIT

Ø — PHASE

220 — 220V ELECTRICAL RECEPTACLE

X–RAY RECEPTACLE

X–RAY REMOTE EXPOSURE STATION

FACP — FIRE ALARM CONTROL PANEL

FAA — FIRE ALARM ANNUNCIATOR

SFD — SMOKE FIRE DAMPER

SD — DUCT SMOKE DETECTOR

F — SYNC. FIRE ALARM STROBE

F — SYNC. FIRE ALARM HORN/STROBE COMBINATION

F — FIRE ALARM MANUAL PULL STATION.

CM — CONTROL MODULE – (INTERFACE MODULE FOR NON–ADDRESSABLE FIRE ALARM DEVICES.

MM — MONITORING MODULE – (INTERFACE MODULE FOR NON–ADDRESSABLE FIRE ALARM DEVICES.

MAGNETIC DOOR HOLDER, FLUSH WALL MTD. U.O.N.

H — LOCAL ALARM HORN

B — FIRE ALARM BELL

FLOW SWITCH

TAMPER SWITCH

POST INDICATOR VALVE

THERMAL OVERLOAD TRIP DEVICE

MOLDED–CASE CIRCUIT BREAKER NON–DRAWOUT TYPE

FUSE

TRANSFORMER

F — DISCONNECT SWITCH F= FUSED

B — DOORBELL RINGER

DOORBELL PUSH BUTTON

CONDUIT UP

CONDUIT DOWN

M — FAN COIL/HEAT PUMP

S_M — MANUAL MOTOR STARTER SWITCH WITH THERMAL OVERLOAD TRIP DEVICE AND HAND–OFF–AUTO SWITCHES USE NEMA 3R FOR ROOF

1 — REVISION REFERENCE MARKER

1 / E2–L — DETAIL REFERENCE MARKER, DETAIL #1 ON SHEET E2–L SHOWN

AC / 1 — MECHANICAL EQUIPMENT DESIGNATION

A — LIGHT FIXTURE TYPE DESIGNATION

1 — SHEET NOTE REFERENCE MARKER, NOTE #1 SHOWN

VFD — VARIABLE FREQUENCY DRIVE

OC — CEILING MOUNTED OCCUPANCY SENSOR

OC — CEILING MOUNTED OCCUPANCY SENSOR W/POWER SUPPLY

OC — WALL MOUNTED OCCUPANCY SENSOR W/LIGHT SWITCH

P — PHOTOCELL SWITCH

SELECTER SWITCH

FULL VOLTAGE, NON–REVERSING MAGNETIC MOTOR STARTER

NOTES:

1. POWER, TELEPHONE AND DATA OUTLETS SHALL BE INSTALLED NOT LESS THAN 15" ABOVE FINISHED FLOOR, UNLESS OTHERWISE INDICATED.
2. LIGHT SWITCH SHALL BE INSTALLED NOT HIGHER THAN 48" ABOVE FINISHED FLOOR – TO TOP OF OUTLET BOX.
3. PROVIDE LABEL ON THE ELECTRICAL EQUIPMENT (SWITCH BOARD, PANEL BOARD, GENERATOR, ETC.) THAT WARN QUALIFIED PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS,
4. PROVIDE TAMPER PROOF RECEPTACLE OUTLET FOR ALL AREAS IN THE BUILDING.

AUTO	AUTOMATIC
AUX	AUXILIARY
AWG	AMERICAN WIRE GAUGE
BKR	CIRCUIT BREAKER
C	CONDUIT
CB	CIRCUIT BREAKER
CC	CLOSING COIL
CKT	CIRCUIT
CND	CONDUIT
CPT	CONTROL POWER TRANSFORMER
CR	CONTROL RELAY
CS	CONTROL SWITCH
CSS	CURRENT SENSING SWITCH
CT	CURRENT TRANSFORMER
DCS	DISTRIBUTED CONTROL SYSTEM
DDC	DIRECT DIGITAL CONTROL (SYSTEM)
DI	DIGITAL INPUT
DISC	DISCONNECT SWITCH
DO	DIGITAL OUTPUT
E,(E)	EXISTING
EVC	ELECTRIC VEHICLE CHARGER
F	FUSE
FSS	FUSED SAFETY SWITCH
G	GREEN GROUND CONDUCTOR, GENERATOR
GFI/GFCI	GROUND FAULT INTERRUPTER
GND	GROUND
H	HIGH
HOA	HAND/OFF/AUTO
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HZ	HERTZ (CYCLES PER SECOND)
JB	JUNCTION BOX
KAIC	KILOAMPERES INTERRUPTING CURRENT
KCMIL	THOUSAND CIRCULAR MILS
KVA	KILOVOLT–AMPERES
KW	KILOWATTS
LED	LIGHT EMITTING DIODE
LF	LINEAR FOOT
M	MOTOR, MOTOR CONTACT
MAN	MANUAL
MAX	MAXIMUM
MD	MOTION DETECTOR
NEC	NATIONAL ELECTRICAL CODE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NC	NORMALLY CLOSED
NFSS	NON–FUSED SAFETY SWITCH
NO	NORMALLY OPEN
OC	OCCUPANCY SENSOR
OL'S	OVERLOADS
P	POLE
PH	PHASE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PPE	PERSONAL PROTECTIVE EQUIPMENT
SB	ELECTRICAL SUBSTATION
SF	SQUARE FEET
SS	SELECTOR SWITCH
S/S	START/STOP
SW	SWITCH
TB	TERMINAL BLOCK
TC	TRIPPING COIL
TDOD	TIME DELAY ON DE–ENERGIZATION
TDOE	TIME DELAY ON ENERGIZATION
U/G	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
V	VOLTS, VOLTMETER
VA	VOLT–AMPS
VFD	VARIABLE FREQUENCY DRIVE
VIB	VIBRATION SWITCH
W	WIRE
WP	WEATHERPROOF
W.A.V.E.	WATER, AIR, VACUUM, ELECTRIC

DRAWING LIST

1. E0–1 SYMBOLS, ABBREVIATIONS AND GENERAL NOTES
2. E2–1 1ST FLOOR PLAN– PANELS LOCATION
3. E2–2 2ND FLOOR PLAN– PANELS LOCATION
4. E3–2 SINGLE LINE DIAGRAM AND LOAD CALCULATION

I & A ENGINEERING
1610 BLOSSOM HILL ROAD, SUITE "6A"
SAN JOSE, CALIFORNIA 95124
TEL: (408) 268-9337
FAX: (408) 268-1135

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Barnell Ave.
Morgan Hill, CA 95037

PROJECT: LJ COMMONS 4 PLEX

DRAWING TITLE: SYMBOLS AND LEGENDS, AND GENERAL NOTES

REV	DATE	DESCRIPTION
1		
2		
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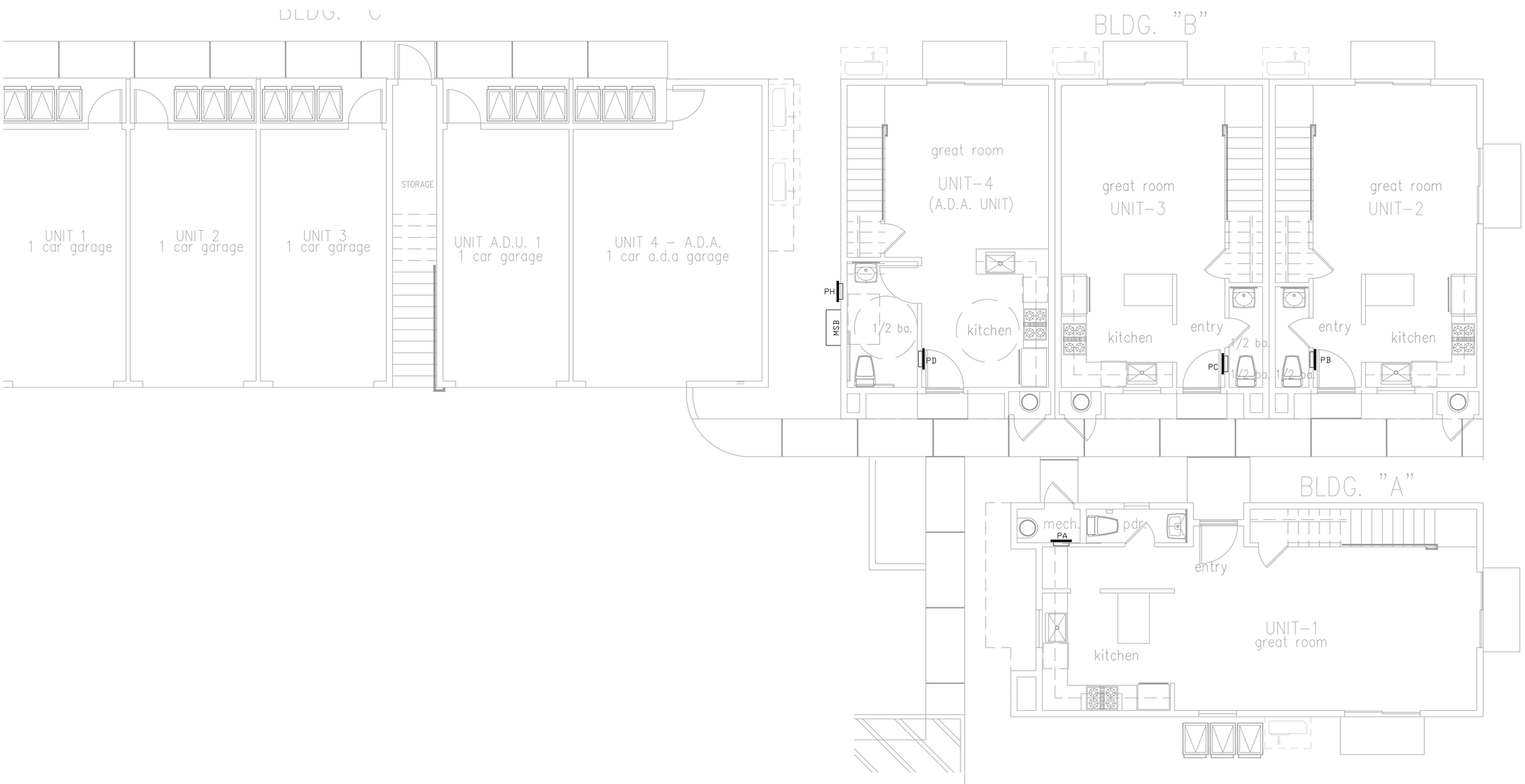
7		

JOB NO.: 23–113
CAD FILE:
DSGN'D BY: I. R.
DRAWN BY: M. A.
CHK'D BY: K. G.
APP'D BY: K. G.
DATE: 4/17/23
SCALE: AS NOTED
DRAWING NO.: E0-1
SHEET * OF *



1 FIRST FLOOR PLAN – PANEL LOCATIONS

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

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1610 BLOSSOM HILL ROAD, SUITE "6A"
SAN JOSE, CALIFORNIA 95124
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Morgan Hill, CA 95037

PROJECT: LJ COMMONS 4 PLEX

DRAWING TITLE: FIRST FLOOR PLAN
PANEL LOCATION

REV	DATE	DESCRIPTION
1		
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JOB NO.: 23–113
CAD FILE:
DSGN'D BY: I. R.
DRAWN BY: H. N.
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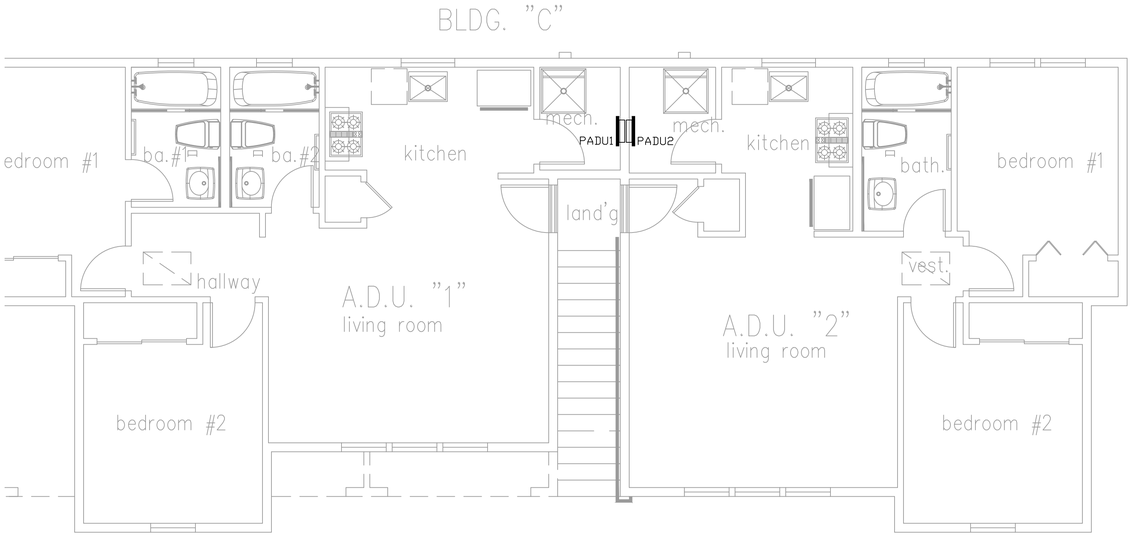
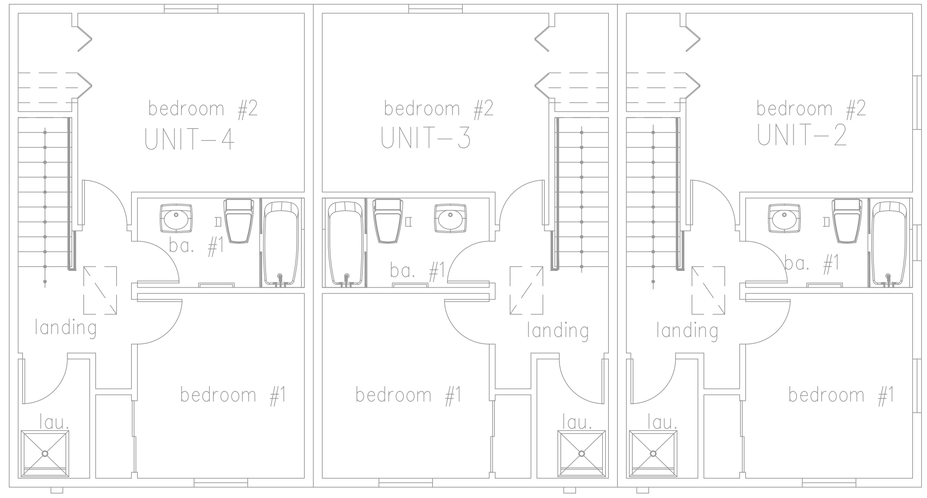
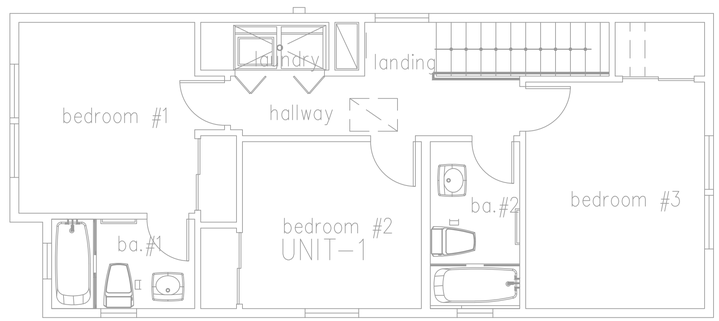
SCALE: AS NOTED
DRAWING NO.: E2-1
SHEET * OF *







1 SECOND FLOOR PLAN – PANEL LOCATIONS
SCALE: 1/4"= 1'-0"

I & A ENGINEERING
1610 BLOSSOM HILL ROAD, SUITE "6A"
SAN JOSE, CALIFORNIA 95124
TEL: (408) 268-9337
FAX: (408) 268-1135

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Morgan Hill, CA 95037

PROJECT: LJ COMMONS 4 PLEX

DRAWING TITLE: SECOND FLOOR PLAN
PANEL LOCATION

REV	DATE	DESCRIPTION
1		
2		
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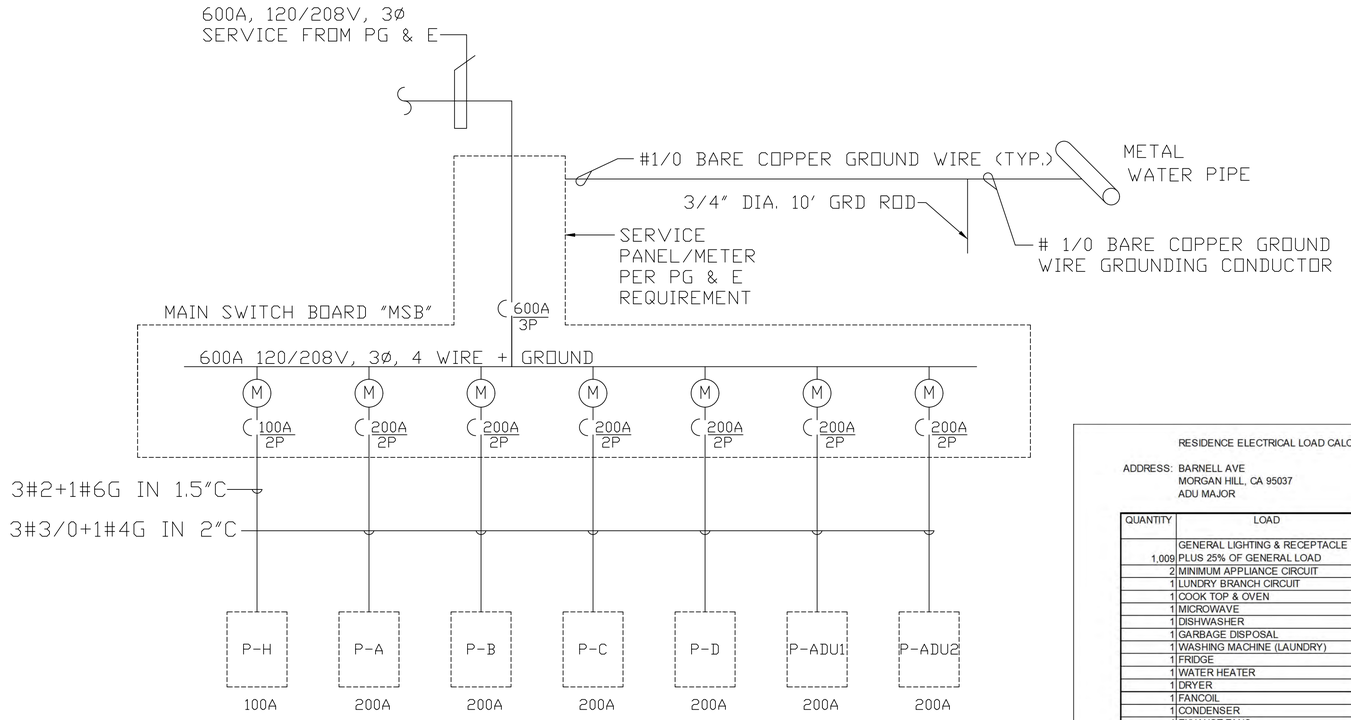
JOB NO.: 23-113
CAD FILE:
DSGN'D BY: I. R.
DRAWN BY: H. N.
CHK'D BY: I. R.
APP'D BY: I. R.
DATE: 4/17/23
SCALE: AS NOTED
DRAWING NO.:

E2-2

SHEET * OF *



8 SINGLE LINE DIAGRAM

SCALE: NOT TO SCALE

RESIDENCE ELECTRICAL LOAD CALCULATION

ADDRESS: BARNELL AVE
MORGAN HILL, CA 95037
TOTAL BUILDING
WHOLE BUILDING

QUANTITY	LOAD	MINIMUM WATT	RATING	COLUMN 1	COLUMN 2
1	UNIT A LOAD	53,821			53,821
1	UNIT B LOAD	50,300			50,300
1	UNIT C LOAD	49,784			49,784
1	UNIT D LOAD	50,784			50,784
1	ADU MINOR LOAD	43,533			43,533
1	ADU MAJOR LOAD	51,839			51,839
1	HOUSE GENERAL LIGHTING	1	PER FT2	5,990	
	TOTAL WATTAGE			5990	300060

(COLUMN 1)X%100	5,990
(COLUMN2) X%44	132,026
TOTAL WATTS	138,016
SERVICE AMPS TOTAL WATTS/208 3PH	384
BREAKER SIZE 80% LOAD	600 A 3P

7 LOAD CALCULATION—TOTAL

RESIDENCE ELECTRICAL LOAD CALCULATION

ADDRESS: BARNELL AVE
MORGAN HILL, CA 95037
ADU MAJOR

QUANTITY	LOAD	MINIMUM WATT	RATING	COLUMN 1	COLUMN 2
1,009	GENERAL LIGHTING & RECEPTACLE PLUS 25% OF GENERAL LOAD	3	PER FT2	3783.75	
2	MINIMUM APPLIANCE CIRCUIT	1,500	EACH	3000	
1	LUNDRY BRANCH CIRCUIT	1,500	EACH	1500	
1	COOK TOP & OVEN	12,000	EACH	12000	
1	MICROWAVE	1,600	EACH	1600	
1	DISHWASHER	1,200	EACH	1200	
1	GARBAGE DISPOSAL	800	EACH	800	
1	WASHING MACHINE (LAUNDRY)	1,200	EACH	1200	
1	FRIDGE	1,000	EACH	1000	
1	WATER HEATER	6,000	EACH	6000	
1	DRYER	4,500	EACH	4500	
1	FANCOIL	700	EACH		700
1	CONDENSER	7,000	EACH		7000
4	EXHAUST FANS	100	EACH		400
1	EV CHARGER	6,650	EACH		6650
	TOTAL WATTAGE			36583.75	14750

FIRST 10,000 WATTS @ 100%	10,000
(COLUMN 1 - 10,000)X%40	10,634
COLUMN 2 X%100	14,750
TOTAL WATTS	35,384
SERVICE AMPS TOTAL WATTS/208	170
BREAKER SIZE	200 A 2P

5 LOAD CALCULATION—ADU MAJOR

RESIDENCE ELECTRICAL LOAD CALCULATION

ADDRESS: BARNELL AVE
MORGAN HILL, CA 95037
ADU MINOR

QUANTITY	LOAD	MINIMUM WATT	RATING	COLUMN 1	COLUMN 2
702	GENERAL LIGHTING & RECEPTACLE PLUS 25% OF GENERAL LOAD	3	PER FT2	2632.5	
2	MINIMUM APPLIANCE CIRCUIT	1,500	EACH	3000	
1	LUNDRY BRANCH CIRCUIT	1,500	EACH	1500	
1	COOK TOP & OVEN	12,000	EACH	12000	
1	MICROWAVE	1,600	EACH	1600	
1	DISHWASHER	1,200	EACH	1200	
1	GARBAGE DISPOSAL	800	EACH	800	
1	WASHING MACHINE (LAUNDRY)	1,200	EACH	1200	
1	FRIDGE	1,000	EACH	1000	
1	WATER HEATER	6,000	EACH	6000	
1	DRYER	4,500	EACH	4500	
1	FANCOIL	700	EACH		700
1	CONDENSER	7,000	EACH		7000
4	EXHAUST FANS	100	EACH		400
1	EV CHARGER	7,200	EACH		0
	TOTAL WATTAGE			35432.5	8100

FIRST 10,000 WATTS @ 100%	10,000
(COLUMN 1 - 10,000)X%40	10,173
COLUMN 2 X%100	8,100
TOTAL WATTS	28,273
SERVICE AMPS TOTAL WATTS/208	136
BREAKER SIZE	200 A 2P

6 LOAD CALCULATION—ADU MINOR

RESIDENCE ELECTRICAL LOAD CALCULATION

ADDRESS: BARNELL AVE
MORGAN HILL, CA 95037
UNIT A

QUANTITY	LOAD	MINIMUM WATT	RATING	COLUMN 1	COLUMN 2
1,499	GENERAL LIGHTING & RECEPTACLE PLUS 25% OF GENERAL LOAD	3	PER FT2	5621.25	
2	MINIMUM APPLIANCE CIRCUIT	1,500	EACH	3000	
1	LUNDRY BRANCH CIRCUIT	1,500	EACH	1500	
1	COOK TOP & OVEN	12,000	EACH	12000	
1	MICROWAVE	1,600	EACH	1600	
1	DISHWASHER	1,200	EACH	1200	
1	GARBAGE DISPOSAL	800	EACH	800	
1	WASHING MACHINE (LAUNDRY)	1,200	EACH	1200	
1	FRIDGE	1,000	EACH	1000	
1	WATER HEATER	6,000	EACH	6000	
1	DRYER	4,500	EACH	4500	
1	FANCOIL	700	EACH		700
1	CONDENSER	7,000	EACH		7000
5	EXHAUST FANS	100	EACH		500
1	EV CHARGER	6,650	EACH		6650
	TOTAL WATTAGE			38421.25	14850

FIRST 10,000 WATTS @ 100%	10,000
(COLUMN 1 - 10,000)X%40	11,369
COLUMN 2 X%100	14,850
TOTAL WATTS	36,219
SERVICE AMPS TOTAL WATTS/208	174
BREAKER SIZE	200 A 2P

1 LOAD CALCULATION—UNIT 1

RESIDENCE ELECTRICAL LOAD CALCULATION

ADDRESS: BARNELL AVE
MORGAN HILL, CA 95037
UNIT 2

QUANTITY	LOAD	MINIMUM WATT	RATING	COLUMN 1	COLUMN 2
1,129	GENERAL LIGHTING & RECEPTACLE PLUS 25% OF GENERAL LOAD	3	PER FT2	4233.75	
2	MINIMUM APPLIANCE CIRCUIT	1,500	EACH	3000	
1	LUNDRY BRANCH CIRCUIT	1,500	EACH	1500	
1	COOK TOP & OVEN	12,000	EACH	12000	
1	MICROWAVE	1,600	EACH	1600	
1	DISHWASHER	1,200	EACH	1200	
1	GARBAGE DISPOSAL	800	EACH	800	
1	WASHING MACHINE (LAUNDRY)	1,200	EACH	1200	
1	FRIDGE	1,000	EACH	1000	
1	WATER HEATER	6,000	EACH	6000	
1	DRYER	4,500	EACH	4500	
1	FANCOIL	700	EACH		700
1	CONDENSER	5,000	EACH		5000
4	EXHAUST FANS	100	EACH		400
1	EV CHARGER	6,650	EACH		6650
	TOTAL WATTAGE			37033.75	12750

FIRST 10,000 WATTS @ 100%	10,000
(COLUMN 1 - 10,000)X%40	10,814
COLUMN 2 X%100	12,750
TOTAL WATTS	33,564
SERVICE AMPS TOTAL WATTS/208	161
BREAKER SIZE	200 A 2P

2 LOAD CALCULATION—UNIT 2

RESIDENCE ELECTRICAL LOAD CALCULATION

ADDRESS: BARNELL AVE
MORGAN HILL, CA 95037
UNIT 3

QUANTITY	LOAD	MINIMUM WATT	RATING	COLUMN 1	COLUMN 2
1,129	GENERAL LIGHTING & RECEPTACLE PLUS 25% OF GENERAL LOAD	3	PER FT2	4233.75	
2	MINIMUM APPLIANCE CIRCUIT	1,500	EACH	3000	
1	LUNDRY BRANCH CIRCUIT	1,500	EACH	1500	
1	COOK TOP & OVEN	12,000	EACH	12000	
1	MICROWAVE	1,600	EACH	1600	
1	DISHWASHER	1,200	EACH	1200	
1	GARBAGE DISPOSAL	800	EACH	800	
1	WASHING MACHINE (LAUNDRY)	1,200	EACH	1200	
1	FRIDGE	1,000	EACH	1000	
1	WATER HEATER	6,000	EACH	6000	
1	DRYER	4,500	EACH	4500	
1	FANCOIL	700	EACH		700
1	CONDENSER	5,000	EACH		5000
4	EXHAUST FANS	100	EACH		400
1	EV CHARGER	6,650	EACH		6650
	TOTAL WATTAGE			37033.75	12750

FIRST 10,000 WATTS @ 100%	10,000
(COLUMN 1 - 10,000)X%40	10,814
COLUMN 2 X%100	12,750
TOTAL WATTS	33,564
SERVICE AMPS TOTAL WATTS/208	161
BREAKER SIZE	200 A 2P

3 LOAD CALCULATION—UNIT 3

RESIDENCE ELECTRICAL LOAD CALCULATION

ADDRESS: BARNELL AVE
MORGAN HILL, CA 95037
UNIT 4

QUANTITY	LOAD	MINIMUM WATT	RATING	COLUMN 1	COLUMN 2
1,249	GENERAL LIGHTING & RECEPTACLE PLUS 25% OF GENERAL LOAD	3	PER FT2	4683.75	
2	MINIMUM APPLIANCE CIRCUIT	1,500	EACH	3000	
1	LUNDRY BRANCH CIRCUIT	1,500	EACH	1500	
1	COOK TOP & OVEN	12,000	EACH	12000	
1	MICROWAVE	1,600	EACH	1600	
1	DISHWASHER	1,200	EACH	1200	
1	GARBAGE DISPOSAL	800	EACH	800	
1	WASHING MACHINE (LAUNDRY)	1,200	EACH	1200	
1	FRIDGE	1,000	EACH	1000	
1	WATER HEATER	6,000	EACH	6000	
1	DRYER	4,500	EACH	4500	
1	FANCOIL	700	EACH		700
1	CONDENSER	5,000	EACH		5000
4	EXHAUST FANS	100	EACH		400
1	EV CHARGER	6,650	EACH		6650
	TOTAL WATTAGE			37483.75	12750

FIRST 10,000 WATTS @ 100%	10,000
(COLUMN 1 - 10,000)X%40	10,994
COLUMN 2 X%100	12,750
TOTAL WATTS	33,744
SERVICE AMPS TOTAL WATTS/208	162
BREAKER SIZE	200 A 2P

4 LOAD CALCULATION—UNIT 4

I & A ENGINEERING
1610 BLOSSOM HILL ROAD, SUITE "6A"
SAN JOSE, CALIFORNIA 95124
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FAX: (408) 268-1135

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Morgan Hill, CA 95037

PROJECT: LJ COMMONS 4 PLEX

DRAWING TITLE: SINGLE LINE DIAGRAM AND LOAD CALCULATION

REV	DATE	DESCRIPTION
1		
2		
3		
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JOB NO.: 23—113
CAD FILE:
DSGN'D BY: I. R.
DRAWN BY: M. A.
CHK'D BY: K. G.
APP'D BY: K. G.
DATE: 4/17/23
SCALE: AS NOTED

DRAWING NO.: E3-1

SHEET * OF *

SYMBOLS AND LEGEND

SYMBOLS	ABBR.	DESCRIPTION
———	S OR W	SOIL OR WASTE PIPE ABOVE FLOOR
— — — —	S OR W	SOIL OR WASTE PIPE BELOW FLOOR OR GRADE
– – – – – – – –	SD	STORM DRAIN PIPE ABOVE FLOOR
– – – – – – – –	SD	STORM DRAIN PIPE BELOW FLOOR OR GRADE
– – – – – – – –	V	VENT
—— – ——	CW	COLD WATER
—— - - ——	HW	HOT WATER (120°F)
—— - - ——	HWR	HOT WATER RETUEN
——GAS——	G	NATURAL GAS (8"W.C.)
		AUTOMATIC GAS SHUT OFF VALVE
	CV	COCK VALVE
	BV	BALL VALVE
	HB	HOSE BIBB
	TPRV	PRESSURE AND TEMPERATURE RELIEF VALVE
	PRV	PRESSURE REDUCING VALVE
	PG	PRESSURE GAUGE W/ISOLATION VALVE
	WHA	WATER HAMMER
———	IW	INDIRECT WASTE
—— ID ——	ID	INDIRECT DRAIN
	FS	FLOOR SINK
———	D	DRAIN LINE
	FD	FLOOR DRAIN
//////////		EXISTING PIPE TO BE REMOVED
	FCO WCO	FLOOR CLEANOUT OR WALL CLEANOUT
	POC	POINT OF CONNECTIONS
	CHV	CHECK VALVE
	WH	WATER HEATER
	W/	WITH
	AP	ACCESS PANEL
	CLG	CEILING DOWN
	DN	DOWN
	GC	GAS COCK
	VTR	VENT THRU ROOF
	(E)	EXISTING
	(N)	NEW
	OD	OVERFLOW DRAIN
	AFF	ABOVE FINISHED FLOOR
	FF	FINISHED FLOOR
	GF	GROUND FLOOR

WATER HAMMER ARRESTER SCHEDULE

MARK	MAKE	MODEL No.	TYPE	FIXTURE UNIT RANGE	I.P.S.	REMARKS
WHA-1	J.R. SMITH	5050	HYDROTROL	1-11	3/4"	INSTALLED IN UPRIGHT POSITION AT EVERY TOILETS, KITCHEN, ETC.
WHA-2	"	5010	"	12-32	1"	FIXTURE CONNECTION
WHA-3	"	5020	"	33-60	1"	ON HOT AND COLD WATER PIPES.

NOTES:

PROVIDE WATER HAMMER ARRESTER FOR EACH WATER CONNECTION TO SANITARY FIXTURES, KITCHEN EQUIPMENT AND KITCHEN FIXTURES.

DRAWING LIST

1. P0-1 SYMBOLS, ABBREVIATIONS AND GENERAL NOTES
2. P1-1 FIRST FLOOR PLAN- COLD AND HOT WATER PIPING
3. P1-2 SECOND FLOOR PLAN- COLD AND HOT WATER PIPING
4. P2-1 FIRST FLOOR PLAN- SEWER AND VENT PIPING
5. P2-2 SECOND FLOOR PLAN- SEWER AND VENT PIPING
6. P3-1 DETAILS
7. P4-1 PLUMBING CALCULATION-UNIT 1
8. P4-2 PLUMBING CALCULATION-UNIT 2
9. P4-3 PLUMBING CALCULATION-UNIT 3
10. P4-4 PLUMBING CALCULATION-UNIT 4
11. P4-5 PLUMBING CALCULATION-ADU 1
12. P4-6 PLUMBING CALCULATION-ADU 2

SYSTEM	PIPING SCHEDULE 2" DIA. AND SMALLER MATERIAL	2" DIA. AND SMALLER FITTING	2-1/2" DIA. AND LARGER MATERIAL	2-1/2" DIA. AND LARGER FITTING	INSULATION INDOOR	INSULATION OUTDOOR
ABOVE GROUND DOMESTIC COLD WATER	TYPE L COPPER ASTM 888	WROUGHT COPPER	TYPE L COPPER ASTM 888	WROUGHT COPPER	N/A	N/A
UNDERGROUND DOMESTIC COLD WATER	TYPE L COPPER ASTM 888	WROUGHT COPPER	TYPE L COPPER ASTM 888	WROUGHT COPPER	N/A	N/A
DOMESTIC HOT WATER	TYPE K COPPER ASTM 888	WROUGHT COPPER	TYPE K COPPER ASTM 888	WROUGHT COPPER	1-1/2" THICK PRE-MOLDED PIPE INSULATION WITH VAPOR BARRIER AND STAINLESS STEEL JACKET	1-1/2" THICK PRE-MOLDED PIPE INSULATION WITH VAPOR BARRIER AND STAINLESS STEEL JACKET
CONDENSATE DRAIN	TYPE M COPPER ASTM 888	WROUGHT COPPER	TYPE M COPPER ASTM 888	WROUGHT COPPER	1" THICK PRE-MOLDED PIPE INSULATION WITH VAPOR BARRIER AND STAINLESS STEEL JACKET	1" THICK PRE-MOLDED PIPE INSULATION WITH VAPOR BARRIER AND STAINLESS STEEL JACKET
SEWER AND VENT	CAST IRON	NO-HUB CAST IRON	CAST IRON	NO-HUB CAST IRON	N/A	N/A
ABOVE GROUND INDOOR GAS PIPING	SCHEDULE 40 BLACK STEEL	SCHEDULE 40 SCREWED BLACK STEEL	SCHEDULE 40 BLACK STEEL	SCHEDULE 40 SCREWED BLACK STEEL	N/A	N/A
ABOVE GROUND OUTDOOR GAS PIPING	SCHEDULE 40 GALVANIZED STEEL	SCHEDULE 40 SCREWED GALVANIZED STEEL	SCHEDULE 40 GALVANIZED STEEL	SCHEDULE 40 SCREWED GALVANIZED STEEL	N/A	N/A

HOT WATER RETURN PUMP

SYMBOL	MANUFACTURER	MODEL	TYPE	SERVICE	MINIMUM CAPACITY GPM	TOTAL DYNAMIC HEAD FT WC	MAXIMUM RPM	PUMP CONTROL	MOTOR MINIMUM HP	MOTOR VOLTAGE	MOTOR PHASE	MOTOR HERTZ	REMARKS
P-1 P-2	BELL & GOSSETT	SERIES 100	IN LINE	HOT WATER RETURN	10	7	1750	AQUASTAT	1/12	110	1	60	

1. REFER TO THE SPECIFICATIONS FOR ADDITIONAL DETAILS AND CONTRACT REQUIREMENTS. COMPLY WITH THE LATEST ADDITIONS, UNLESS OTHERWISE NOTED, OF ALL FEDERAL, STATE AND LOCAL CODES AND REGULATIONS, THE CODES, REGULATIONS AND STANDARDS THOSE REFERENCED IN THE SPECIFICATIONS, AND THE FOLLOWING CODES STANDARDS AND REGULATIONS:

TITLE 24, 2022 CBC	IBC 2021, INCLUDING 2022 STATE OF CALIFORNIA AMENDMENTS
TITLE 24, 2022 CEC	NEC 2021, INCLUDING 2022 STATE OF CALIFORNIA AMENDMENTS
TITLE 24, 2022 CMC	UMC 2021, INCLUDING 2022 STATE OF CALIFORNIA AMENDMENTS
TITLE 24, 2022 CPC	UPC 2021, INCLUDING 2022 STATE OF CALIFORNIA AMENDMENTS
TITLE 24, 2022 CFC	IFC 2021, INCLUDING 2022 STATE OF CALIFORNIA AMENDMENTS
TITLE 19	PUBLIC SAFETY DIVISION I, STATE FIRE MARSHAL REGULATIONS
CAL/OSHA	CODES, STANDARDS AND REGULATIONS
ANSI/ASME B31.1	POWER PIPING CODE

1. THE MECHANICAL CONTRACTOR SHALL VERIFY ALL SECTIONS AND ELEVATIONS OF EXISTING DRAINS TO INSTALLATION.
2. MECHANICAL CONTRACTOR MAY USE ONE SIZE LARGER PIPE WHEN PIPE SIZE SHOWN IS NOT AVAILABLE. IF CONTRACTOR CHOOSES TO INCREASE PIPE SIZE, THE VALVES AND FITTING SIZES MUST ALSO BE INCREASED.
3. MECHANICAL CONTRACTOR TO REMOVE ALL LEFT OVER SCRAPS, ETC. (IF ANY) AND LEAVE PREMISES CLEAN AND FREE OF ANY TRASH OR DEBRIS DUE TO HIS WORK.
4. MECHANICAL CONTRACTOR IS TO REPORT TO THE OWNER ANY OBSERVATIONS OR CONDITIONS WHICH ARE DISCOVERED IN THE BUILDING WHICH WOULD PREVENT THE CORRECT INSTALLATION OF THE SYSTEM.
5. EXAMINE THE SITE AND BECOME FAMILIAR WITH ALL CONDITIONS WHICH MAY AFFECT THE WORK AS COVERED BY THIS SECTION OF THE WORK. FAILURE TO DO SO SHALL NOT LESSEN RESPONSIBILITY OR ENTITLE ADDITIONAL COMPENSATION FOR WORK NOT INCLUDED IN THE ESTIMATE.
6. LAYOUT OF THE EQUIPMENT AND WORK IS GENERALLY DIAGRAMMATIC, UNLESS SPECIFICALLY DIMENSIONED. DRAWINGS AND DETAILS SHALL BE CHECKED FOR INTERFERENCE BEFORE INSTALLING THE WORK. ANY INTERFERENCE NOTED BETWEEN DIFFERENT DRAWINGS, AND BETWEEN DRAWINGS AND ACTUAL FIELD CONDITIONS SHALL BE BROUGHT TO THE ATTENTION FOR A DECISION. THERE SHALL BE NO ADDITIONAL COMPENSATION FOR INTERFERING WORK THAT WAS PERFORMED PRIOR TO CHECKING INTERFERENCE AND FIELD CONDITIONS. THE RIGHT IS RESERVED TO MAKE ANY REASONABLE CHANGE IN LOCATION OF EQUIPMENT WITHOUT INVOLVING ADDITIONAL EXPENSE TO THE OWNER.
7. CONTRACTOR IS RESPONSIBLE FOR DAMAGE TO THE BUILDING AND FACILITY CAUSED BY LEAKS IN ANY TEMPORARY OR PERMANENT PIPING SYSTEM CAUSED BY DISCONNECTED PIPES OR FITTINGS, OR BY OVERFLOW OR EQUIPMENT, OR LEAKS CAUSED BY THESE INSTALLATIONS.
8. MANUFACTURER'S DIRECTIONS SHALL BE FOLLOWED IN ALL CASES WHERE THE MANUFACTURERS OF ARTICLES USED IN THIS CONTRACT FURNISH DIRECTIONS COVERING POINTS NOT SHOWN IN THE DRAWINGS AND SPECIFICATIONS.
9. ALL OF THE WORK ARE NEW UNLESS OTHERWISE NOTED.
10. VERIFY EXACT LOCATIONS AND POINTS OF CONNECTIONS BEFORE ENTERING BID. BID SHALL REFLECT ANY DIFFERENCES ENCOUNTERED IN FIELD. NO EXTRA COSTS WILL BE ACCEPTED SUBSEQUENT TO BID FOR DETERMINING THESE LOCATIONS.
11. VERIFY INVERT ELEVATION OF EXISTING SEWER TO WHICH NEW BUILDING WASTE LINE IS TO BE CONNECTED AND NOTIFY OWNER OF ANY DISCREPANCIES BEFORE MAKING UP OR INSTALLATION OF NEW WASTE SYSTEM.
12. CONNECTIONS TO EXISTING WORK SHALL BE CHECKED BEFORE STARTING THE WORK.
13. SEWER MATERIAL SHALL BE SCHEDULE 40 ABS PIPE AND INSTALLED PER APPLICABLE CODES AND STANDARDS.
14. DRAINAGE PIPING SHALL BE SLOPED AT 1/4" PER FOOT. OBTAIN CITY APPROVAL FOR PIPE SLOPE LESS THAN 1/4" PER FOOT.
15. MINIMUM VENT SIZE SHALL BE AS PER CODE.
16. PROVIDE CLEAN-OUT WITHIN 2'OF THE BUILDING FOUNDATION ON THE EXTERIOR OF THE BUILDING.
17. PROVIDE ALL CLEAN-OUTS TO BE EXTENDED TO THE EXTERIOR WHEN LOCATED MORE THAN 5'FROM THE CRAWL HOLE.
18. STRIP DRAINS ARE INSTALLED FOR SHOWERS, PROVIDE AN IAMPO (INTERNATIONAL ASSOCIATION OF MECHANICAL AND PLUMBING OFFICIALS) NUMBER FOR THE SHOWER DRAIN SYSTEM.
19. ALL PROPOSED HOSE BIBS TO HAVE NON-REMOVABLE BACKFLOW DEVICE.
20. PROVIDE A COMBINATION PRESSURE BALANCE/THERMOSTATIC MIXING VALVES FOR ALL TUB/SHOWERS AND BATHTUBS & WHIRLPOOL TUBS PER SECTIONS 408.3 AND 409 CPC.
21. PROVIDE WATER PIPING AND COOLING SYSTEM LINE INSULATION THICKNESS AND CONDUCTIVITY, PIPING SHALL BE INSULATED TO THE THICKNESS AS FOLLOWS PER 150.0 (J) CEC:

A) ALL DOMESTIC HOT WATER SYSTEM PIPING CONDITIONS LISTED BELOW, WHETHER BURIED OR UNBURIED, MUST BE INSULATED AND THE INSULATION THICKNESS SHALL BE SELECTED BASED ON THE CONDUCTIVITY RANGE IN TABLE 120.3-A AND THE INSULATION LEVEL SHALL BE SELECTED FROM THE FLUID TEMPERATURE RANGE BASED ON THE THICKNESS REQUIREMENTS IN TABLE 120.3A

B) THE FIRST 5 FEET OF HOT AND COLD-WATER PIPES FROM THE STORAGE TANK.

C) ALL PIPING WITH A NOMINAL DIAMETER OF 3/4 INCH (19 MILLIMETER) OR LARGER.

D) ALL PIPING ASSOCIATED WITH A DOMESTIC HOT WATER RETICULATION SYSTEM REGARDLESS OF THE PIPE DIAMETER.

E) ALL HOT WATER PIPING FROM THE HEAT SOURCE TO THE KITCHEN FIXTURES.

22. PROVIDE THE FIRST HOUR RATING OF THE WATER TO PROVIDE A MINIMUM OF 74 GALLONS PER TABLE 501.1 (2) CPC.

PLUMBING FIXTURE SCHEDULE AND SPECIFICATION

MARK	FIXTURE	TYPE	MIN. BRANCH SIZE W	V	HW	CW	FIXTURE UNIT	TRAP SIZE	MAKE	MODEL	P-TRAP	FIXTURE SUPPORTS	FIXTURE SIZE AND MATERIAL	REMARKS
WC-1	WATER CLOSET	FLOOR MOUNTED, FLUSH TANK	4"	2"	–	1/2"	5	INTEGRAL	–	–	–	–	–	SEE NOTES
LS-1	LAUNDRY SINK	–	2"	1½"	1/2"	1/2"	2	1½" X1½"	–	–	CHROME PLATED CAST BRASS	–	–	SEE NOTES
KS-1	KITCHEN SINK	–	2"	1½"	1/2"	1/2"	2	1½" X1½"	–	–	CHROME PLATED CAST BRASS	–	–	SEE NOTES
L-1	LAVATORY	–	2"	1½"	1/2"	1/2"	2	1½" X1½"	–	–	CHROME PLATED CAST BRASS	–	–	SEE NOTES
SH-1	SHOWER		2"	1½"	1/2"	1/2"	2	1½" X1½"	–	–		–	–	WITH ISOLATION VALVES SEE NOTES
	BATHTUB		2"	1½"	1/2"	1/2"	2	1½" X1½"	–	–		–	–	WITH ISOLATION VALVES SEE NOTES
D-1	DISHWASHER		2"	1½"	1/2"	1/2"	1.5	1½" X1½"	–	–		–	–	SEE NOTES
H-1	HOSE BIBB					1/2"			–	–		–	–	
W-1	WASHER		2"	1½"	1/2"	1/2"	4	1½"	–	–		–	–	

NOTES:

– PROVIDE ISOLATION VALVE FOR EACH WATER CONNECTION TO FIXTURES.

WATER BRANCH PIPE SIZE SCHEDULE

HW OR CW PIPE SIZE	WITH FLUSH VALVE MAX. F.U.	WITH FLUSH VALVE GPM	WITHOUT FLUSH VALVE MAX. F.U.	WITHOUT FLUSH VALVE GPM	REMARKS
1/2"	—	—	2	4	
3/4"	—	—	10	9	
1"	5	15	20	15	
1-1/4"	10	22	30	22	
1-1/2"	15	30	55	30	
2"	60	55	150	55	
2-1/2"	170	85	300	85	

NOTES:

1. CW & HW BRANCH PIPES SERVING GROUP OF FIXTURES SHALL BE SIZED AS SCHEDULED UNLESS OTHERWISE NOTED ON PLANS.
2. SIZE OF BRANCH MAIN SERVING EACH GROUP OF FIXTURES SHALL BE AS NOTED ON PLANS.

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REGISTERED PROFESSIONAL ENGINEER
IRADJ RAHNAMA
No. M-26257
Exp. 06/30/25
MECHANICAL
STATE OF CALIFORNIA

irad Rahnama

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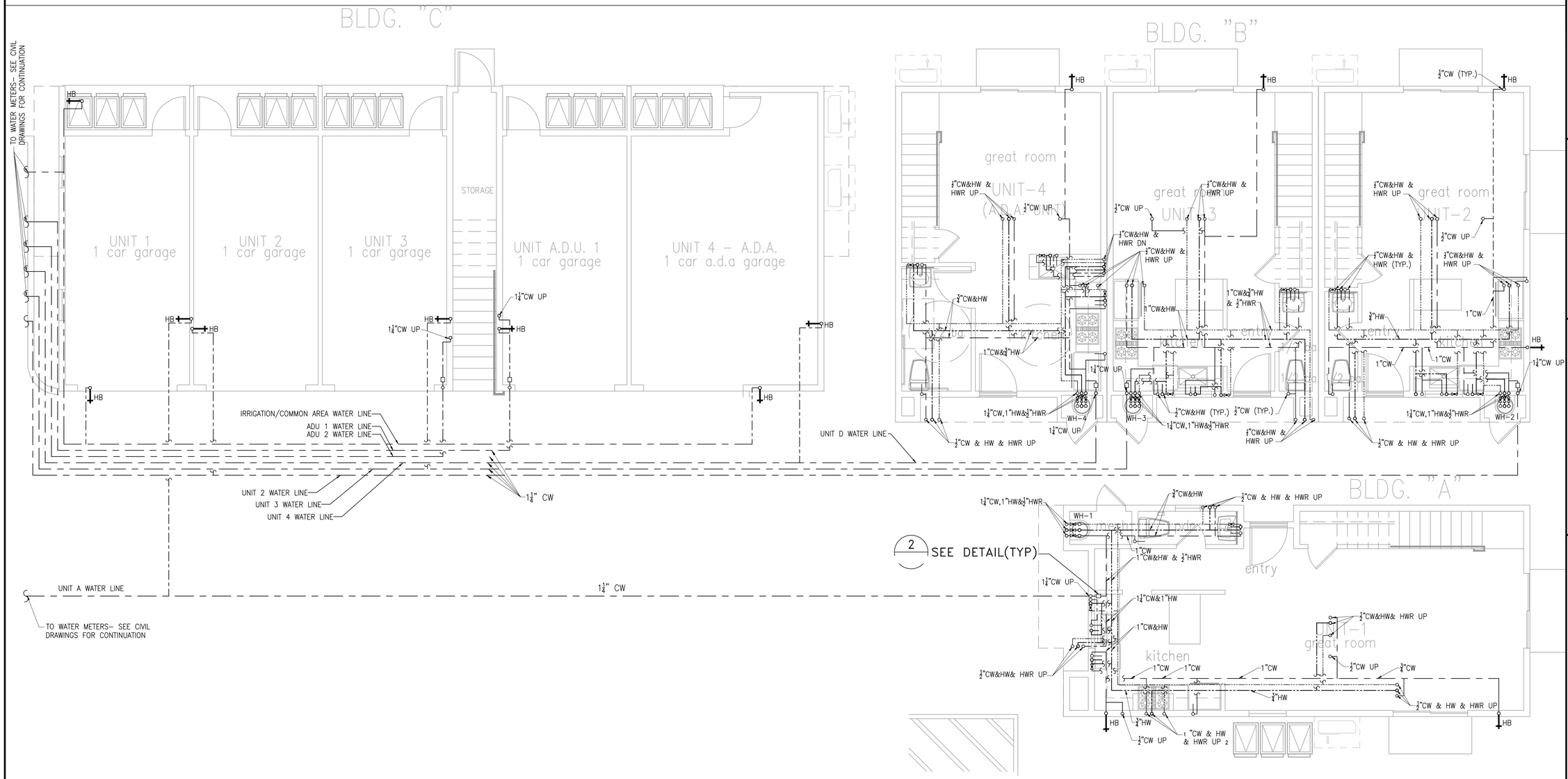
Morgan Hill, CA 95037

PROJECT: LJ COMMONS 4 PLEX

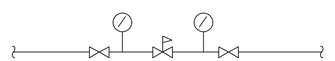
DRAWING TITLE: SYMBOLS, LEGENDS, AND GENERAL NOTES

REV	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		
7		

JOB NO.: 23-113
CAD FILE:
DSGN'D BY: I. R.
DRAWN BY: H. N.
CHK'D BY: I. R.
APP'D BY: I. R.
DATE: 4/17/23
SCALE: AS NOTED
DRAWING NO.: P0-1
SHEET * OF *



1 FIRST FLOOR PLAN–COLD AND HOT WATER PIPING
SCALE: 1/4"=1'–0"



2 PRESSURE REDUCER ASSEMBLY DETAIL
SCALE: NO SCALE

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Morgan Hill, CA 95037

PROJECT: LJ COMMONS 4 PLEX

DRAWING TITLE: FIRST FLOOR PLAN
COLD AND HOT WATER PIPING

REV	DATE	DESCRIPTION
1		
2		
3		
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5		
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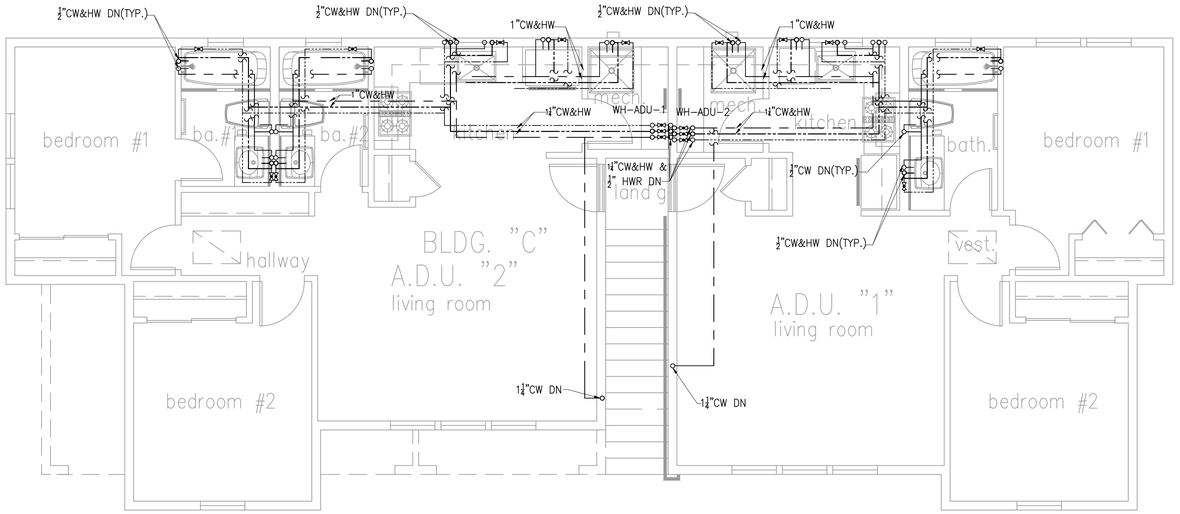
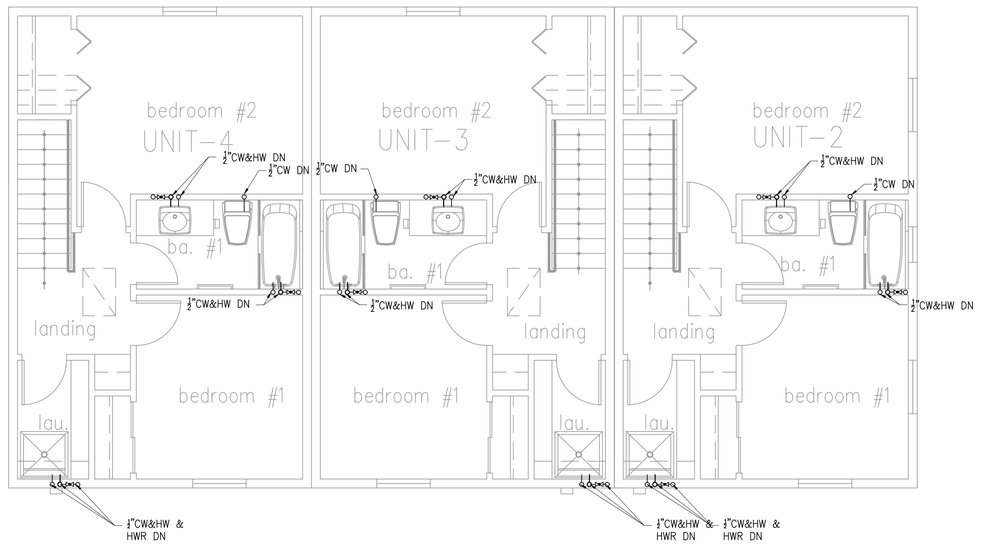
7		

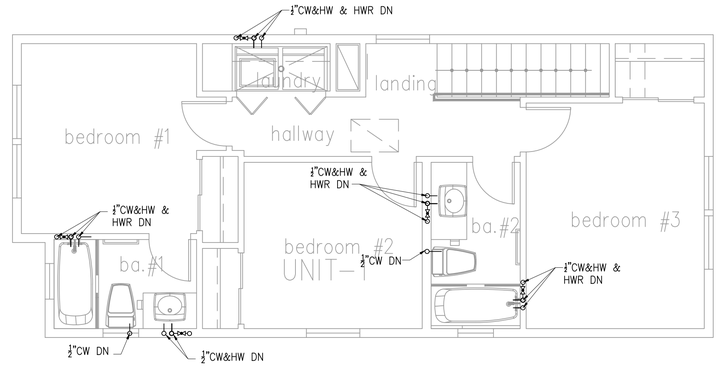
JOB NO.:	23–113
CAD FILE:	
DSGN'D BY: I. R.	DRAWN BY: H. N.
CHK'D BY: I. R.	APP'D BY: I. R.
DATE: 4/17/23	SCALE: AS NOTED

DRAWING NO.: P1-1

SHEET * OF *







1 SECOND FLOOR PLAN-COLD AND HOT WATER PIPING

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

I & A ENGINEERING
1610 BLOSSOM HILL ROAD, SUITE "6A"
SAN JOSE, CALIFORNIA 95124
TEL: (408) 268-9337
FAX: (408) 268-1135

REGISTERED PROFESSIONAL ENGINEER
IRADJ RAHNAMA
No. M-26257
Exp. 06/30/25
MECHANICAL
STATE OF CALIFORNIA

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Morgan Hill, CA 95037

PROJECT: LJ COMMONS 4 PLEX

DRAWING TITLE: SECOND FLOOR PLAN
COLD AND HOT WATER PIPING

REV	DATE	DESCRIPTION
1		
2		
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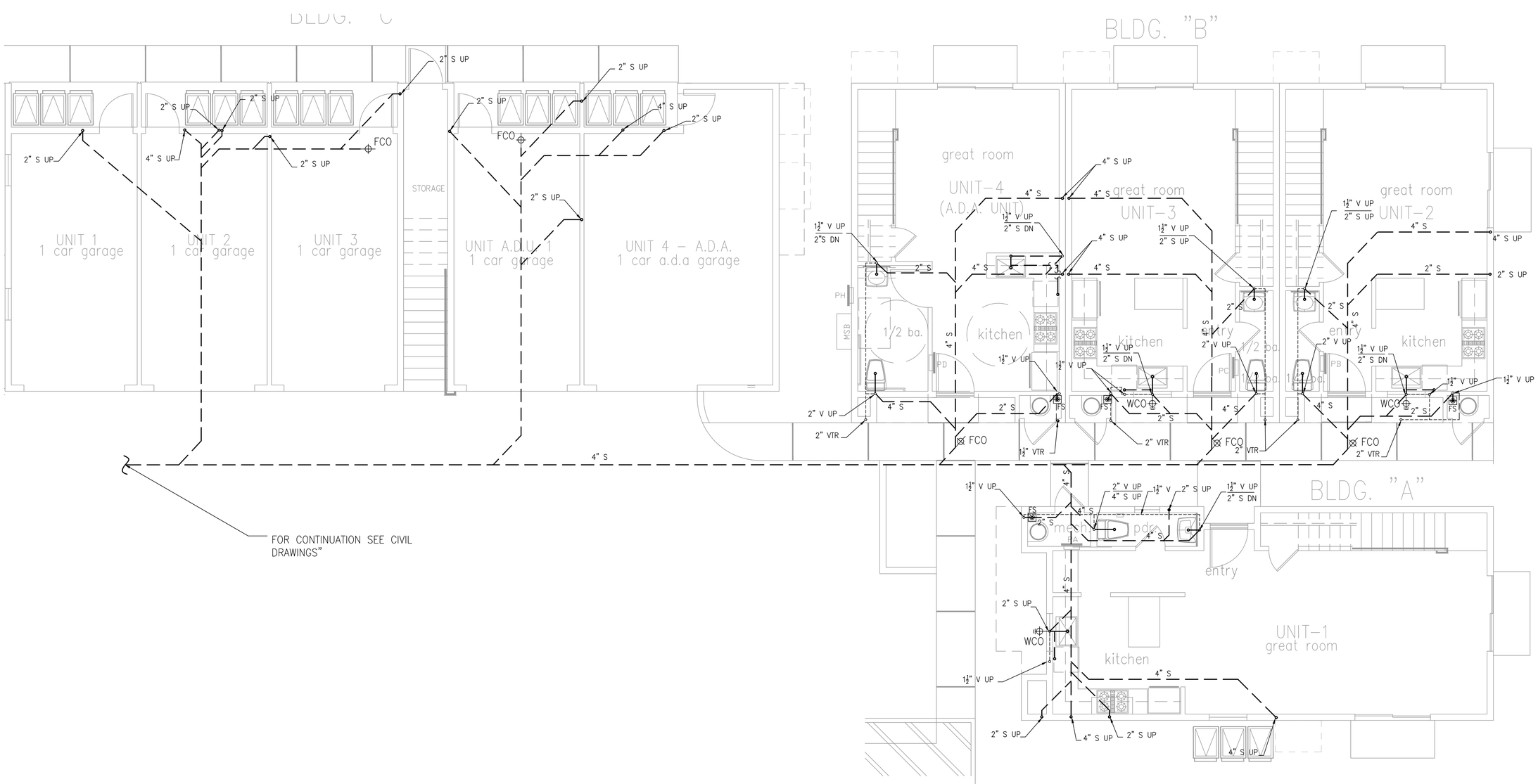
7		

JOB NO.:	23-113
CAD FILE:	
DSGN'D BY: I. R.	DRAWN BY: H. N.
CHK'D BY: I. R.	APP'D BY: I. R.
DATE: 4/17/23	SCALE: AS NOTED

DRAWING NO.:

P1-2

SHEET * OF *



1 FIRST FLOOR PLAN–SEWER AND VENT PIPING

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

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SAN JOSE, CALIFORNIA 95124
TEL: (408) 268-9337
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iradj Rahnama

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PROJECT: LJ COMMONS 4 PLEX

DRAWING TITLE: FIRST FLOOR PLAN
SEWER AND VENT PIPING

REV	DATE	DESCRIPTION
1		
2		
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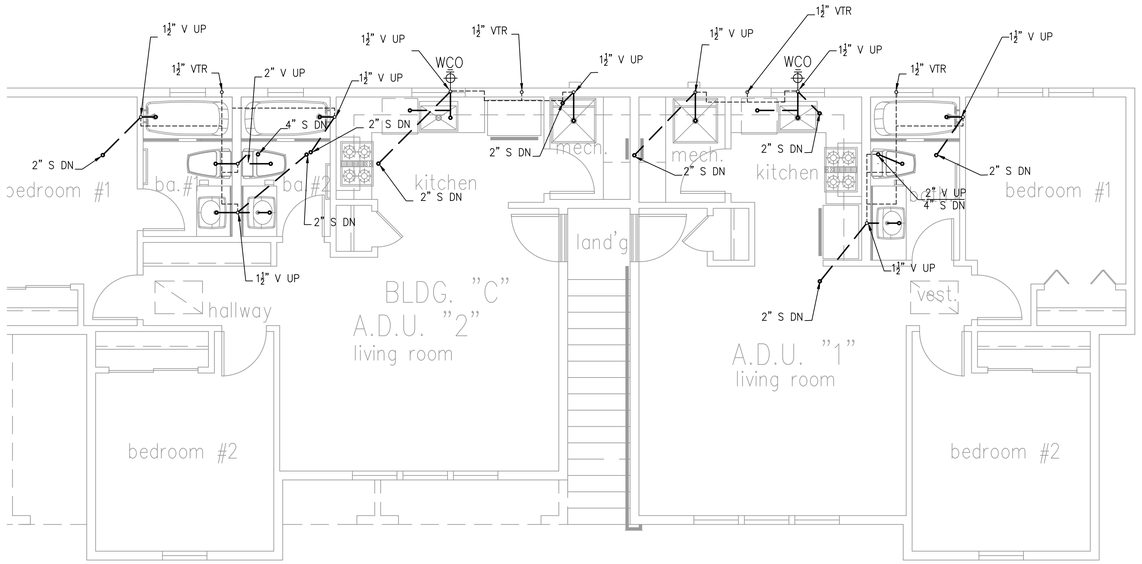
JOB NO.: 23–113
CAD FILE:

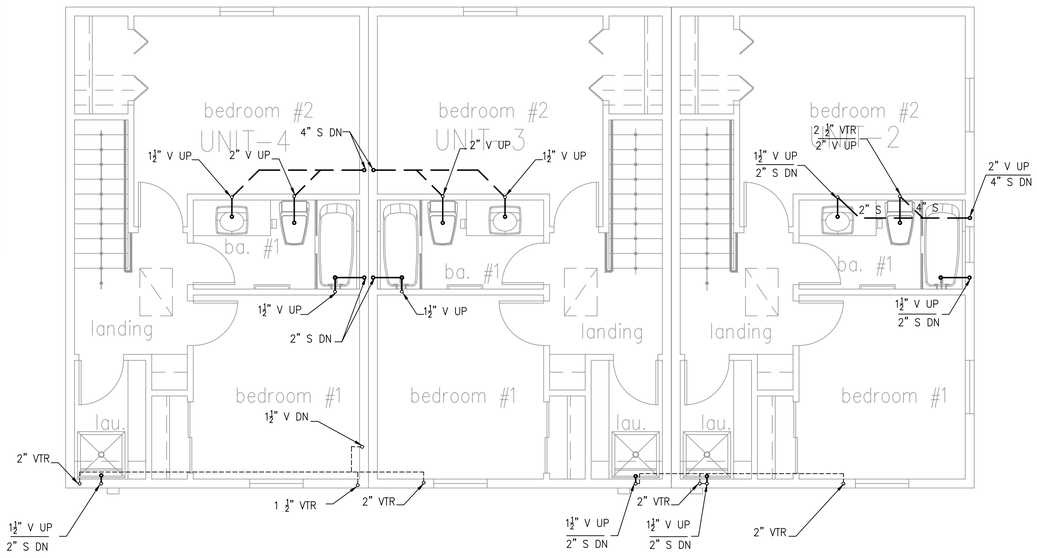
DSGN'D BY:	DRAWN BY:
I. R.	H. N.
CHK'D BY:	APP'D BY:
I. R.	I. R.
DATE: 4/17/23	SCALE: AS NOTED

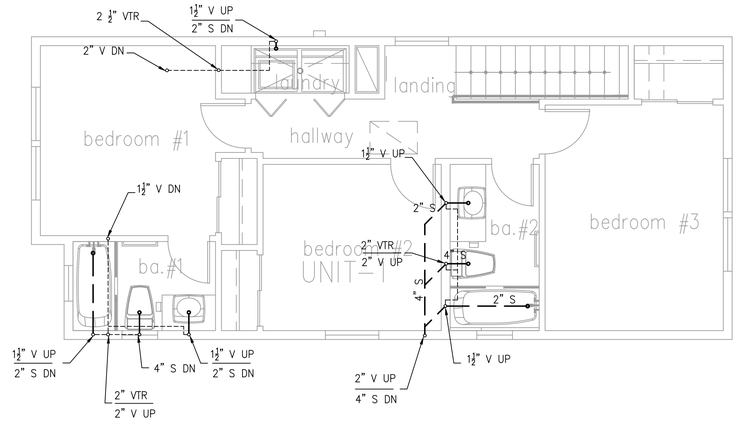
DRAWING NO.:

P2-1

SHEET * OF *







1 SECOND FLOOR PLAN – SEWER AND VENT PIPING
SCALE: 1/4"= 1'-0"

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Morgan Hill, CA 95037

PROJECT: LJ COMMONS 4 PLEX

DRAWING TITLE: SECOND FLOOR PLAN
SEWER AND VENT PIPING

REV	DATE	DESCRIPTION
1		
2		
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5		
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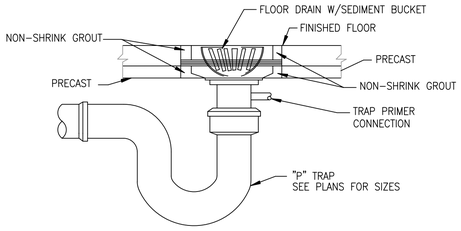
7		

JOB NO.:	23-113
CAD FILE:	
DSGN'D BY: I. R.	DRAWN BY: H. N.
CHK'D BY: I. R.	APP'D BY: I. R.
DATE: 4/17/23	SCALE: AS NOTED

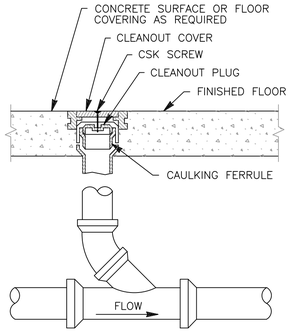
DRAWING NO.:

P2-2

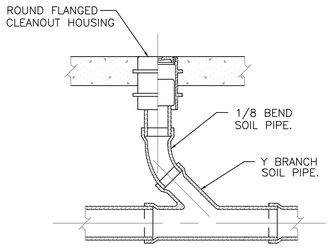
SHEET * OF *



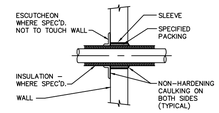
1 FLOOR DRAIN DETAIL
SCALE: NO SCALE



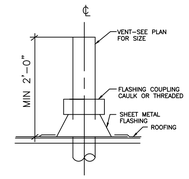
2 FLOOR CLEANOUT-FINISHED ROOMS DETAIL
SCALE: NO SCALE



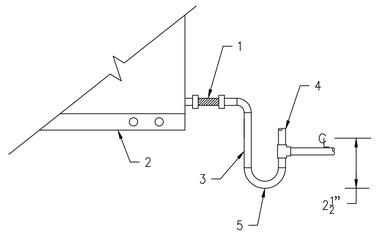
3 SANITARY CLEAN-OUT FLOOR SLAB DETAIL
SCALE: NO SCALE



4 PIPE THRU WALL DETAIL
SCALE: NO SCALE

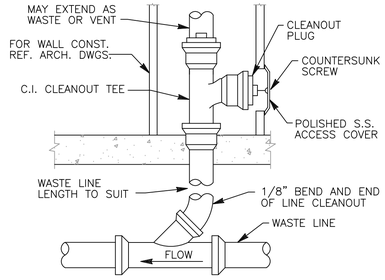


5 VENT THRU WALL DETAIL
SCALE: NO SCALE

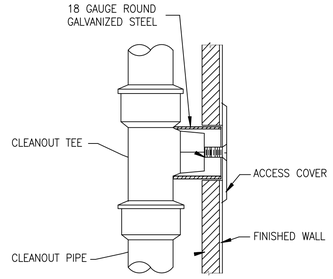


1. CD CONNECTION W/4" LONG FLEX HOSE SECURED W/SS CLAMPS AT ALL SPRING ISOLATED UNITS.
2. UNIT BASE
3. TYPE "M" COPPER SOLDERED TRAP & PIPING SEE PLAN FOR SIZE. MINIMUM SLOP: ⅛" PER 1"
4. TOP OF VENT @ CL OF CD OUTLET.
5. INSULATE CONDENSATE PIPING INSIDE BUILDING EXPOSED AND IN CONCEALED SPACES.

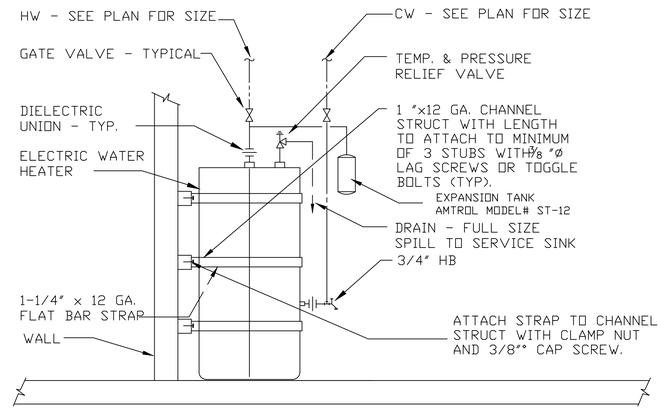
6 CONDENSATE DRAIN DETAIL
SCALE: NO SCALE



7 WALL CLEANOUT-FINISHED ROOMS
SCALE: NO SCALE

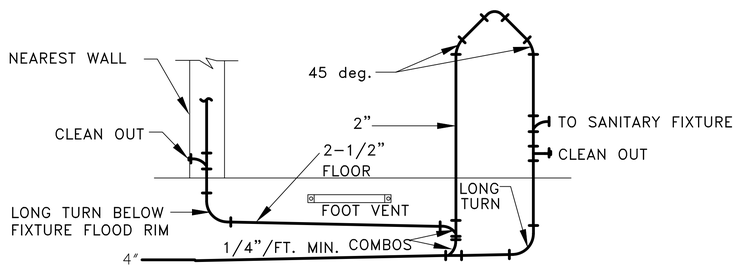


8 WALL CLEANOUT DETAIL
SCALE: NO SCALE



1. PROVIDE MAINTAIN 4"TO THE CONTROLS PER SECTION 507.2 CPC.
2. THE WATER HEATER SHALL BE ELEVATED A MINIMUM 18"STAND AFF PER SECTION 507.13 CPC
3. R THE PRESSURE RELIEF PIPING SERVING THE WATER HEATER TO BE PIPED TO THE EXTERIOR OF THE BUILDING PER SECTIONS 504.6 & 608.5 CPC. THE TERMINATION OF SUCH PIPE SHALL BE AT A MINIMUM 6"AFF AND MAXIMUM OF 24"AFF.

9 ELECTRIC WATER HEATER PIPING DETAIL
SCALE: NO SCALE



10 FOOT VENT DETAIL
SCALE: NO SCALE

I & ENGINEERING
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Morgan Hill, CA 95037

PROJECT: LJ COMMONS 4 PLEX

DRAWING TITLE: DETAILS

REV	DATE	DESCRIPTION
1		
2		
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7		

JOB NO.: 23-113
CAD FILE:

DSGN'D BY:	DRAWN BY:
I. R.	H. N.
CHK'D BY:	APP'D BY:
I. R.	I. R.
DATE: 4/17/23	SCALE: AS NOTED

DRAWING NO.: P3-1

SHEET * OF *

I & A ENGINEERING

PLUMBING CALCULATION

PROJECT: BARNELL AVE MORGARN HILL -UNIT 1

Building type: RESIDENTIAL

FIXTURE		No. PUB.	No. PRI.	WATER PIPE SIZE: FIXTURE UNIT WEIGHT PUBLIC FIXT. UNITS FU	PUBLIC HW FU 75%	PRIVATE FIXT. UNITS FU	PRIVATE HW FU 75%	TOTAL FU DEMAND TOTAL CW PUB.	CW PR.	HW PUB.	HW PR.	140 DEG. HOTWATER HEATER GPH PER FIXT.	GPH TOTAL PUB.	GPH TOTAL PRI.
WATER	FV			5	-	3	-	0	0	-		-	-	
CLOSET	FT		3	3	-	2.5	-	0	7.5	-		-	-	
URINAL	FV			4	-		-	0	0	-		-	-	
WALL/STALL	FT			2	-	2	-	0	0	-		-	-	
LAVATORY			3	1	0.75	1	0.75	0	3	0	2.3	2	0	6
SINGLE COMPARTMENT SINK			1	1.5	1.125	1	0.75	0	1	0	0.8	10	0	10
DOUBLE COMPARTMENT SINK				1.5	1.125	1	0.75	0	0	0	0	10	0	0
THREE COMPARTMENT SINK				1.5	1.125	1	0.75	0	0	0	0	10	0	0
INDUSTRIAL SINK				3	2.25	1.5	1.125	0	0	0	0	10	0	0
JANITORS SINK				3	2.25	1.5	1.125	0	0	0	0	20	0	0
DISH WASHING SINK				1.5	1.125	2	1.5	0	0	0	0	20	0	0
MOP SINK				3	2.25	1.5	1.125	0	0	0	0	20	0	0
DRINKING FOUNTAIN				0.5	0		0	0	0	-	0	0	0	0
BATHTUB			2	4	3	4	3	0	8	0	6	20	0	40
SHOWER	(1 HEAD)			2	1.5	2	1.5	0	0	0	0	30	0	0
LAVATORY	WASHUP			2	1.5		0	0	0	0	0	20	0	0
HOSE BIBB-FIRST			1	2.5	1.875	2.5	1.875	0	2.5	0	1.9		0	0
HOSE BIBB-OTHERS				2.5	1.875	1	0.75	0	0	0	0			0
LAUNDRY SINK				1.5	1.125	1.5	1.125	0	0	0	0	20	0	0
					0		0	0	0	0	0		0	0
					0		0	0	0	0	0		0	0
					0		0	0	0	0	0		0	0
BAR SINK				2	1.5	1	0.75	0	0	0	0	20	0	0
COFFE/TEE STAND				2	0		0	0	0	0	0		0	0
ICE MAKER				2	0		0	0	0	0	0		0	0
DISHWASHER			1	1.5	1.125	1.5	1.125	0	1.5	0	1.1	15	0	15
CLOTHES WASHER			1	4	3	4	3	0	4	0	3	20	0	20
GREASE INTERCEPT					0		0	0	0	0	0	0	0	0
DISPOSAL				2	1.5		0	0	0	0	0	0	0	0
PEELER					0		0	0	0	0	0	0	0	0
FLOOR DRAIN					0		0	0	0	0	0	0	0	0
FLOOR SINK					0		0	0	0	0	0	0	0	0
TOTAL		0	12											

		0	26	0	15	0	91
TOTAL FIXTURE UNITS		27.5		15			
WATER DEMAND	GPM	19		11			
HOSE BIBBS	GPM	0					
SITE	GPM						
GLASS WASHER	GPM	0					
POOL	GPM	0					
TOTAL WATER DEMAND	GPM	35		11		GPH	91
MAIN PIPE SIZE (in.):		1.25"					
HEAD LOSS (PSI/100')		4.1					

CALCULATION BASED ON CPC-2022, TABLE H2.1

HOTWATER HEATER

TOTAL/MAX REHEAT GPH	FACTOR	GPH	DISHWASHER GPH	TOTAL GPH
91	0.4	36.4	0	36.4

TOTAL/STORAGE GAL	FACTOR	GAL	DISHWASHER GAL	TOTAL GAL
36	1	36.4	0	36.4

CW IN/OUT DEG. DEG. F	HWH BTU/H	HWH KW
60 130	21148.4	6

COLD AND HOTWATER PIPE CALCULATION

	HORIZ. FEET	VERT. FEET		
1- PIPE MAXIMUM LENGTH	150	15	165	FEET
FITTING 25%			41.25	FEET
TOTAL			206.25	FEET
2- AVAILABLE MIN.			45	PSI
MAX.			45	PSI
3- TOTAL FIXTURE UNITS			27.5	FU
GPM			35	
OTHER GPM				
TOTAL GPM			35	GPM
4- METER SIZE			1"	INCH
5- LOSSES:				
PRESSURE DROP THRU METER			5	PSI
HEIGHT LOSS			6.5217391	PSI
RESIDUAL PRESSURE			25	PSI
OTHER LOSSES				PSI
				PSI
TOTAL LOSSES			36.521739	PSI
6- AVAILABLE PRESSURE				
TOTAL			8.4782609	PSI
PRESSURE DROP PER 100'			4.1	PSI

WATER PIPE SIZE INCH	GPM	FLUSH TANK FU
1/2	2.2	3
3/4	5.8	7
1	13	18
1-1/4	20	30
1-1/2	32	58
2	66	205

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Morgan Hill, CA 95037

PROJECT: LJ COMMONS 4 PLEX

DRAWING TITLE: PLUMBING CALCULATIONS UNIT 1

REV	DATE	DESCRIPTION
1		
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7		

JOB NO.: 23-113
CAD FILE:
DSGN'D BY: I. R.
DRAWN BY: H. N.
CHK'D BY: I. R.
APP'D BY: I. R.
DATE: 4/17/23
SCALE: AS NOTED
DRAWING NO.: P4-1
SHEET * OF *

I & A ENGINEERING

PLUMBING CALCULATION

PROJECT: BARNELL AVE MORGARN HILL -UNIT 2

Building type: RESIDENTIAL

FIXTURE		No. PUB.	No. PRI.	WATER PIPE SIZE: FIXTURE UNIT WEIGHT PUBLIC FIXT. UNITS FU	PUBLIC HW FU 75%	PRIVATE FIXT. UNITS FU	PRIVATE HW FU 75%	TOTAL FU DEMAND TOTAL CW PUB.	CW PR.	HW PUB.	HW PR.	140 DEG. HOT WATER HEATER GPH PER FIXT.	GPH TOTAL PUB.	GPH TOTAL PRI.
WATER	FV			5	-	3	-	0	0	-		-	-	
CLOSET	FT		2	3	-	2.5	-	0	5	-		-	-	
URINAL	FV			4	-		-	0	0	-		-	-	
WALL/STALL	FT			2	-	2	-	0	0	-		-	-	
LAVATORY			2	1	0.75	1	0.75	0	2	0	1.5	2	0	4
SINGLE COMPARTMENT SINK			1	1.5	1.125	1	0.75	0	1	0	0.8	10	0	10
DOUBLE COMPARTMENT SINK				1.5	1.125	1	0.75	0	0	0	0	10	0	0
THREE COMPARTMENT SINK				1.5	1.125	1	0.75	0	0	0	0	10	0	0
INDUSTRIAL SINK				3	2.25	1.5	1.125	0	0	0	0	10	0	0
JANITORS SINK				3	2.25	1.5	1.125	0	0	0	0	20	0	0
DISH WASHING SINK				1.5	1.125	2	1.5	0	0	0	0	20	0	0
MOP SINK				3	2.25	1.5	1.125	0	0	0	0	20	0	0
DRINKING FOUNTAIN				0.5	0		0	0	0	-	0	0	0	0
BATHTUB			1	4	3	4	3	0	4	0	3	20	0	20
SHOWER	(1 HEAD)			2	1.5	2	1.5	0	0	0	0	30	0	0
LAVATORY	WASHUP			2	1.5		0	0	0	0	0	20	0	0
HOSE BIBB-FIRST			1	2.5	1.875	2.5	1.875	0	2.5	0	1.9		0	0
HOSE BIBB-OTHERS				2.5	1.875	1	0.75	0	0	0	0			0
LAUNDRY SINK				1.5	1.125	1.5	1.125	0	0	0	0	20	0	0
					0		0	0	0	0	0		0	0
					0		0	0	0	0	0		0	0
					0		0	0	0	0	0		0	0
BAR SINK				2	1.5	1	0.75	0	0	0	0	20	0	0
COFFE/TEE STAND				2	0		0	0	0	0	0		0	0
ICE MAKER				2	0		0	0	0	0	0		0	0
DISHWASHER			1	1.5	1.125	1.5	1.125	0	1.5	0	1.1	15	0	15
CLOTHES WASHER			1	4	3	4	3	0	4	0	3	20	0	20
GREASE INTERCEPT					0		0	0	0	0	0	0	0	0
DISPOSAL				2	1.5		0	0	0	0	0	0	0	0
PEELER					0		0	0	0	0	0	0	0	0
FLOOR DRAIN					0		0	0	0	0	0	0	0	0
FLOOR SINK					0		0	0	0	0	0	0	0	0
TOTAL		0	9					0	20	0	11		0	69

TOTAL FIXTURE UNITS		20		11.25	
WATER DEMAND	GPM	14		9	
HOSE BIBBS	GPM	0			
SITE	GPM				
GLASS WASHER	GPM	0			
POOL	GPM	0			
TOTAL WATER DEMAND	GPM	35		9	GPH 69
MAIN PIPE SIZE (in.):		1.25"			
HEAD LOSS (PSI/100')		3.2			

CALCULATION BASED ON CPC -2022, TABLE H2.1

HOT WATER HEATER

TOTAL REHEAT GPH FACTOR	GPH	DISHWASHER GPH	TOTAL GPH
69 0.4	27.6	0	27.6

TOTAL STORAGE GAL FACTOR	GAL	DISHWASHER GAL	TOTAL GAL
28 1	27.6	0	27.6

CW IN OUT DEG. DEG. F	HWH BTU/H	HWH KW
60 130	16035.6	5

COLD AND HOT WATER PIPE CALCULATION

	HORIZ. FEET	VERT. FEET		
1- PIPE MAXIMUM LENGTH	195	15	210	FEET
FITTING 25%			52.5	FEET
TOTAL			262.5	FEET
2- AVAILABLE MIN.			45	PSI
MAX.			45	PSI
3- TOTAL FIXTURE UNITS			20	FU
GPM			35	
OTHER GPM				
TOTAL GPM			35	GPM
4- METER SIZE			1"	INCH
5- LOSSES:				
PRESSURE DROP THRU METER			5	PSI
HEIGHT LOSS			6.5217391	PSI
RESIDUAL PRESSURE			25	PSI
OTHER LOSSES				PSI
				PSI
TOTAL LOSSES			36.521739	PSI
6- AVAILABLE PRESSURE				
TOTAL			8.4782609	PSI
PRESSURE DROP PER 100'			3.2	PSI

WATER PIPE SIZE INCH	GPM	FLUSH TANK FU
1/2	1.8	1
3/4	5	6
1	10	13
1-1/4	18	26
1-1/2	28	49
2	60	175

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Morgan Hill, CA 95037

PROJECT: LJ COMMONS 4 PLEX

DRAWING TITLE: PLUMBING CALCULATIONS UNIT 2

REV	DATE	DESCRIPTION
1		
2		
3		
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7		

JOB NO.: 23-113
CAD FILE:
DSGN'D BY: I. R.
DRAWN BY: H. N.
CHK'D BY: I. R.
APP'D BY: I. R.
DATE: 4/17/23
SCALE: AS NOTED
DRAWING NO.:

P4-2

SHEET * OF *

I & A ENGINEERING

PLUMBING CALCULATION

PROJECT: BARNELL AVE MORGARN HILL -UNIT 3

Building type: RESIDENTIAL

FIXTURE		No. PUB.	No. PRI.	WATER PIPE SIZE: FIXTURE UNIT WEIGHT PUBLIC FIXT. UNITS FU	PUBLIC HW FU 75%	PRIVATE FIXT. UNITS FU	PRIVATE HW FU 75%	TOTAL FU DEMAND TOTAL CW PUB.	CW PR.	HW PUB.	HW PR.	140 DEG. HOT WATER HEATER GPH PER FIXT.	GPH TOTAL PUB.	GPH TOTAL PRI.
WATER	FV			5	-	3	-	0	0	-		-	-	
CLOSET	FT		2	3	-	2.5	-	0	5	-		-	-	
URINAL	FV			4	-		-	0	0	-		-	-	
WALL/STALL	FT			2	-	2	-	0	0	-		-	-	
LAVATORY			2	1	0.75	1	0.75	0	2	0	1.5	2	0	4
SINGLE COMPARTMENT SINK			1	1.5	1.125	1	0.75	0	1	0	0.8	10	0	10
DOUBLE COMPARTMENT SINK				1.5	1.125	1	0.75	0	0	0	0	10	0	0
THREE COMPARTMENT SINK				1.5	1.125	1	0.75	0	0	0	0	10	0	0
INDUSTRIAL SINK				3	2.25	1.5	1.125	0	0	0	0	10	0	0
JANITORS SINK				3	2.25	1.5	1.125	0	0	0	0	20	0	0
DISH WASHING SINK				1.5	1.125	2	1.5	0	0	0	0	20	0	0
MOP SINK				3	2.25	1.5	1.125	0	0	0	0	20	0	0
DRINKING FOUNTAIN				0.5	0		0	0	0	-	0	0	0	0
BATHTUB			1	4	3	4	3	0	4	0	3	20	0	20
SHOWER (1 HEAD)				2	1.5	2	1.5	0	0	0	0	30	0	0
LAVATORY WASHUP				2	1.5		0	0	0	0	0	20	0	0
HOSE BIBB-FIRST			1	2.5	1.875	2.5	1.875	0	2.5	0	1.9		0	0
HOSE BIBB-OTHERS				2.5	1.875	1	0.75	0	0	0	0			0
LAUNDRY SINK				1.5	1.125	1.5	1.125	0	0	0	0	20	0	0
					0		0	0	0	0	0		0	0
					0		0	0	0	0	0		0	0
					0		0	0	0	0	0		0	0
BAR SINK				2	1.5	1	0.75	0	0	0	0	20	0	0
COFFE/TEE STAND				2	0		0	0	0	0	0		0	0
ICE MAKER				2	0		0	0	0	0	0		0	0
DISHWASHER			1	1.5	1.125	1.5	1.125	0	1.5	0	1.1	15	0	15
CLOTHES WASHER			1	4	3	4	3	0	4	0	3	20	0	20
GREASE INTERCEPT					0		0	0	0	0	0	0	0	0
DISPOSAL				2	1.5		0	0	0	0	0	0	0	0
PEELER					0		0	0	0	0	0	0	0	0
FLOOR DRAIN					0		0	0	0	0	0	0	0	0
FLOOR SINK					0		0	0	0	0	0	0	0	0
TOTAL		0	9											

		0	20	0	11	0	69
TOTAL FIXTURE UNITS		20		11.25			
WATER DEMAND	GPM	14		9			
HOSE BIBBS	GPM	0					
SITE	GPM						
GLASS WASHER	GPM	0					
POOL	GPM	0					
TOTAL WATER DEMAND	GPM	35		9		GPH	69
MAIN PIPE SIZE (in.):		1.25"					
HEAD LOSS (PSI/100')		3.8					

CALCULATION BASED ON CPC -2022, TABLE H2.1

HOT WATER HEATER

TOTAL MAKE UP HEAT GPH FACTOR		GPH	DISHWASHER GPH	TOTAL GPH
69	0.4	27.6	0	27.6

TOTAL STORAGE GAL FACTOR		GAL	DISHWASHER GAL	TOTAL GAL
28	1	27.6	0	27.6

CW IN W OUT DEG. DEG. F	HWH BTU/H	HWH KW
60 130	16035.6	5

COLD AND HOT WATER PIPE CALCULATION

	HORIZ. FEET	VERT. FEET		
1- PIPE MAXIMUM LENGTH	165	15	180	FEET
FITTING 25%			45	FEET
TOTAL			225	FEET
2- AVAILABLE MIN.			45	PSI
MAX.			45	PSI
3- TOTAL FIXTURE UNITS			20	FU
GPM			35	
OTHER GPM				
TOTAL GPM			35	GPM
4- METER SIZE			3/4"	INCH
5- LOSSES:				
PRESSURE DROP THRU METER			5	PSI
HEIGHT LOSS			6.5217391	PSI
RESIDUAL PRESSURE			25	PSI
OTHER LOSSES				PSI
				PSI
TOTAL LOSSES			36.521739	PSI
6- AVAILABLE PRESSURE				
TOTAL			8.4782609	PSI
PRESSURE DROP PER 100'			3.8	PSI

WATER PIPE SIZE INCH	GPM	FLUSH TANK FU
1/2	2	1
3/4	5.5	7
1	11	15
1-1/4	20	30
1-1/2	31	56
2	63	195

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Morgan Hill, CA 95037

PROJECT: LJ COMMONS 4 PLEX

DRAWING TITLE: PLUMBING CALCULATIONS UNIT 3

REV	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		
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JOB NO.: 23-113
CAD FILE:
DSGN'D BY: I. R.
DRAWN BY: H. N.
CHK'D BY: I. R.
APP'D BY: I. R.
DATE: 4/17/23
SCALE: AS NOTED
DRAWING NO.:

P4-3

SHEET * OF *

I & A ENGINEERING

PLUMBING CALCULATION

PROJECT: BARNELL AVE MORGARN HILL -UNIT 4

Building type: RESIDENTIAL

FIXTURE		No. PUB.	No. PRI.	WATER PIPE SIZE: FIXTURE UNIT WEIGHT PUBLIC FIXT. UNITS FU	PUBLIC HW FU 75%	PRIVATE FIXT. UNITS FU	PRIVATE HW FU 75%	TOTAL FU DEMAND TOTAL CW PUB.	CW PR.	HW PUB.	HW PR.	140 DEG. HOT WATER HEATER GPH PER FIXT.	GPH TOTAL PUB.	GPH TOTAL PRI.
WATER	FV			5	-	3	-	0	0	-		-	-	
CLOSET	FT		2	3	-	2.5	-	0	5	-		-	-	
URINAL	FV			4	-		-	0	0	-		-	-	
WALL/STALL	FT			2	-	2	-	0	0	-		-	-	
LAVATORY			2	1	0.75	1	0.75	0	2	0	1.5	2	0	4
SINGLE COMPARTMENT SINK			1	1.5	1.125	1	0.75	0	1	0	0.8	10	0	10
DOUBLE COMPARTMENT SINK				1.5	1.125	1	0.75	0	0	0	0	10	0	0
THREE COMPARTMENT SINK				1.5	1.125	1	0.75	0	0	0	0	10	0	0
INDUSTRIAL SINK				3	2.25	1.5	1.125	0	0	0	0	10	0	0
JANITORS SINK				3	2.25	1.5	1.125	0	0	0	0	20	0	0
DISH WASHING SINK				1.5	1.125	2	1.5	0	0	0	0	20	0	0
MOP SINK				3	2.25	1.5	1.125	0	0	0	0	20	0	0
DRINKING FOUNTAIN				0.5	0		0	0	0	-	0	0	0	0
BATHTUB			1	4	3	4	3	0	4	0	3	20	0	20
SHOWER	(1 HEAD)			2	1.5	2	1.5	0	0	0	0	30	0	0
LAVATORY	WASHUP			2	1.5		0	0	0	0	0	20	0	0
HOSE BIBB-FIRST			1	2.5	1.875	2.5	1.875	0	2.5	0	1.9		0	0
HOSE BIBB-OTHERS				2.5	1.875	1	0.75	0	0	0	0			0
LAUNDRY SINK				1.5	1.125	1.5	1.125	0	0	0	0	20	0	0
					0		0	0	0	0	0		0	0
					0		0	0	0	0	0		0	0
					0		0	0	0	0	0		0	0
BAR SINK				2	1.5	1	0.75	0	0	0	0	20	0	0
COFFE/TEE STAND				2	0		0	0	0	0	0		0	0
ICE MAKER				2	0		0	0	0	0	0		0	0
DISHWASHER			1	1.5	1.125	1.5	1.125	0	1.5	0	1.1	15	0	15
CLOTHES WASHER			1	4	3	4	3	0	4	0	3	20	0	20
GREASE INTERCEPT					0		0	0	0	0	0	0	0	0
DISPOSAL				2	1.5		0	0	0	0	0	0	0	0
PEELER					0		0	0	0	0	0	0	0	0
FLOOR DRAIN					0		0	0	0	0	0	0	0	0
FLOOR SINK					0		0	0	0	0	0	0	0	0
TOTAL		0	9					0	20	0	11	0	69	

TOTAL FIXTURE UNITS		20	11.25	
WATER DEMAND	GPM	14	9	
HOSE BIBBS	GPM	0		
SITE	GPM			
GLASS WASHER	GPM	0		
POOL	GPM	0		
TOTAL WATER DEMAND	GPM	35	9	GPH 69
MAIN PIPE SIZE (in.):		1.25"		
HEAD LOSS (PSI/100')		4.0		

CALCULATION BASED ON CPC -2022, TABLE H2.1

HOT WATER HEATER

TOTAL STORAGE GPH	FACTOR	GPH	DISHWASHER GPH	TOTAL GPH
69	0.4	27.6	0	27.6

TOTAL STORAGE GAL	FACTOR	GAL	DISHWASHER GAL	TOTAL GAL
28	1	27.6	0	27.6

CW IN W OUT DEG. F	HWH BTU/H	HWH KW
60 130	16035.6	5

COLD AND HOT WATER PIPE CALCULATION

	HORIZ. FEET	VERT. FEET		
1- PIPE MAXIMUM LENGTH	154	15	169	FEET
FITTING 25%			42.25	FEET
TOTAL			211.25	FEET
2- AVAILABLE MIN.			45	PSI
MAX.			45	PSI
3- TOTAL FIXTURE UNITS			20	FU
GPM			35	
OTHER GPM				
TOTAL GPM			35	GPM
4- METER SIZE			3/4"	INCH
5- LOSSES:				
PRESSURE DROP THRU METER			5	PSI
HEIGHT LOSS			6.5217391	PSI
RESIDUAL PRESSURE			25	PSI
OTHER LOSSES				PSI
				PSI
TOTAL LOSSES			36.521739	PSI
6- AVAILABLE PRESSURE				
TOTAL			8.4782609	PSI
PRESSURE DROP PER 100'			4.0	PSI

WATER PIPE SIZE INCH	GPM	FLUSH TANK FU
1/2	2.2	3
3/4	5.8	7
1	13	18
1-1/4	20	30
1-1/2	32	58
2	66	205

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PROJECT: LJ COMMONS 4 PLEX

DRAWING TITLE: PLUMBING CALCULATIONS UNIT 4

REV	DATE	DESCRIPTION
1		
2		
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5		
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JOB NO.: 23-113
CAD FILE:
DSGN'D BY: I. R.
DRAWN BY: H. N.
CHK'D BY: I. R.
APP'D BY: I. R.
DATE: 4/17/23
SCALE: AS NOTED
DRAWING NO.: P4-4
SHEET *__OF_*

I & A ENGINEERING

PLUMBING CALCULATION

PROJECT: BARNELL AVE MORGARN HILL - ADU 1

Building type: RESIDENTIAL

FIXTURE		No. PUB.	No. PRI.	WATER PIPE SIZE: FIXTURE UNIT WEIGHT PUBLIC FIXT. UNITS FU	PUBLIC HW FU 75%	PRIVATE FIXT. UNITS FU	PRIVATE HW FU 75%	TOTAL FU DEMAND TOTAL CW PUB.	CW PR.	HW PUB.	HW PR.	140 DEG. HOT WATER HEATER GPH PER FIXT.	GPH TOTAL PUB.	GPH TOTAL PRI.
WATER	FV			5	-	3	-	0	0	-		-	-	
CLOSET	FT		2	3	-	2.5	-	0	5	-		-	-	
URINAL	FV			4	-		-	0	0	-		-	-	
WALL/STALL	FT			2	-	2	-	0	0	-		-	-	
LAVATORY			2	1	0.75	1	0.75	0	2	0	1.5	2	0	4
SINGLE COMPARTMENT SINK			1	1.5	1.125	1	0.75	0	1	0	0.8	10	0	10
DOUBLE COMPARTMENT SINK				1.5	1.125	1	0.75	0	0	0	0	10	0	0
THREE COMPARTMENT SINK				1.5	1.125	1	0.75	0	0	0	0	10	0	0
INDUSTRIAL SINK				3	2.25	1.5	1.125	0	0	0	0	10	0	0
JANITORS SINK				3	2.25	1.5	1.125	0	0	0	0	20	0	0
DISH WASHING SINK				1.5	1.125	2	1.5	0	0	0	0	20	0	0
MOP SINK				3	2.25	1.5	1.125	0	0	0	0	20	0	0
DRINKING FOUNTAIN				0.5	0		0	0	0	-	0	0	0	0
BATHTUB			2	4	3	4	3	0	6	0	6	20	0	40
SHOWER	(1 HEAD)			2	1.5	2	1.5	0	0	0	0	30	0	0
LAVATORY	WASHUP			2	1.5		0	0	0	0	0	20	0	0
HOSE BIBB-FIRST			1	2.5	1.875	2.5	1.875	0	2.5	0	1.9		0	0
HOSE BIBB-OTHERS				2.5	1.875	1	0.75	0	0	0	0			0
LAUNDRY SINK				1.5	1.125	1.5	1.125	0	0	0	0	20	0	0
					0		0	0	0	0	0		0	0
					0		0	0	0	0	0		0	0
					0		0	0	0	0	0		0	0
BAR SINK				2	1.5	1	0.75	0	0	0	0	20	0	0
COFFE/TEE STAND				2	0		0	0	0	0	0		0	0
ICE MAKER				2	0		0	0	0	0	0		0	0
DISHWASHER			1	1.5	1.125	1.5	1.125	0	1.5	0	1.1	15	0	15
CLOTHES WASHER			1	4	3	4	3	0	4	0	3	20	0	20
GREASE INTERCEPT					0		0	0	0	0	0	0	0	0
DISPOSAL				2	1.5		0	0	0	0	0	0	0	0
PEELER					0		0	0	0	0	0	0	0	0
FLOOR DRAIN					0		0	0	0	0	0	0	0	0
FLOOR SINK					0		0	0	0	0	0	0	0	0
TOTAL		0	10					0	24	0	14		0	89

TOTAL FIXTURE UNITS		24		14.25	
WATER DEMAND	GPM	17		11	
HOSE BIBBS	GPM	0			
SITE	GPM				
GLASS WASHER	GPM	0			
POOL	GPM	0			
TOTAL WATER DEMAND	GPM	35		11	GPH 89
MAIN PIPE SIZE (in.):		1.25"			
HEAD LOSS (PSI/100')		3.3			

CALCULATION BASED ON CPC -2022, TABLE H2.1

HOT WATER HEATER

TOTAL REHEAT GPH	FACTOR	GPH	DISHWASHER GPH	TOTAL GPH
89	0.4	35.6	0	35.6

TOTAL STORAGE GAL	FACTOR	GAL	DISHWASHER GAL	TOTAL GAL
36	1	35.6	0	35.6

CW IN	W OUT DEG. F	DEG. F	HWH BTU/H	HWH KW
60	130		20683.6	6

COLD AND HOT WATER PIPE CALCULATION

	HORIZ. FEET	VERT. FEET		
1- PIPE MAXIMUM LENGTH	135	20	155	FEET
FITTING 25%			38.75	FEET
TOTAL			193.75	FEET
2- AVAILABLE MIN.			45	PSI
MAX.			45	PSI
3- TOTAL FIXTURE UNITS			24	FU
GPM			35	
OTHER GPM				
TOTAL GPM			35	GPM
4- METER SIZE			1"	INCH
5- LOSSES:				
PRESSURE DROP THRU METER			5	PSI
HEIGHT LOSS			8.6956522	PSI
RESIDUAL PRESSURE			25	PSI
OTHER LOSSES				PSI
				PSI
TOTAL LOSSES			38.695652	PSI
6- AVAILABLE PRESSURE				
TOTAL			6.3043478	PSI
PRESSURE DROP PER 100'			3.3	PSI

WATER PIPE SIZE INCH	GPM	FLUSH TANK FU
1/2	1.8	1
3/4	5	6
1	10	13
1-1/4	18	26
1-1/2	28	49
2	60	175

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Morgan Hill, CA 95037

PROJECT: LJ COMMONS 4 PLEX

DRAWING TITLE: PLUMBING CALCULATIONS ADU 1

REV	DATE	DESCRIPTION
1		
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4		
5		
6		
7		

JOB NO.: 23-113
CAD FILE:
DSGN'D BY: I. R.
DRAWN BY: H. N.
CHK'D BY: I. R.
APP'D BY: I. R.
DATE: 4/17/23
SCALE: AS NOTED
DRAWING NO.: P4-5
SHEET * OF *

I & A ENGINEERING

PLUMBING CALCULATION

PROJECT: BARNELL AVE MORGARN HILL- ADU 2

Building type: RESIDENTIAL

FIXTURE		No. PUB.	No. PRI.	WATER PIPE SIZE: FIXTURE UNIT WEIGHT PUBLIC FIXT. UNITS FU	PUBLIC HW FU 75%	PRIVATE FIXT. UNITS FU	PRIVATE HW FU 75%	TOTAL FU DEMAND TOTAL CW PUB.	CW PR.	HW PUB.	HW PR.	140 DEG. HOTWATER HEATER GPH PER FIXT.	GPH TOTAL PUB.	GPH TOTAL PRI.
WATER	FV			5	-	3	-	0	0	-		-	-	
CLOSET	FT		1	3	-	2.5	-	0	2.5	-		-	-	
URINAL	FV			4	-		-	0	0	-		-	-	
WALL/STALL	FT			2	-	2	-	0	0	-		-	-	
LAVATORY			1	1	0.75	1	0.75	0	1	0	0.8	2	0	2
SINGLE COMPARTMENT SINK			1	1.5	1.125	1	0.75	0	1	0	0.8	10	0	10
DOUBLE COMPARTMENT SINK				1.5	1.125	1	0.75	0	0	0	0	10	0	0
THREE COMPARTMENT SINK				1.5	1.125	1	0.75	0	0	0	0	10	0	0
INDUSTRIAL SINK				3	2.25	1.5	1.125	0	0	0	0	10	0	0
JANITORS SINK				3	2.25	1.5	1.125	0	0	0	0	20	0	0
DISH WASHING SINK				1.5	1.125	2	1.5	0	0	0	0	20	0	0
MOP SINK				3	2.25	1.5	1.125	0	0	0	0	20	0	0
DRINKING FOUNTAIN				0.5	0		0	0	0	-	0	0	0	0
BATHTUB			1	4	3	4	3	0	4	0	3	20	0	20
SHOWER (1 HEAD)				2	1.5	2	1.5	0	0	0	0	30	0	0
LAVATORY WASHUP				2	1.5		0	0	0	0	0	20	0	0
HOSE BIBB-FIRST				2.5	1.875	2.5	1.875	0	0	0	0		0	0
HOSE BIBB-OTHERS				2.5	1.875	1	0.75	0	0	0	0			0
LAUNDRY SINK				1.5	1.125	1.5	1.125	0	0	0	0	20	0	0
					0		0	0	0	0	0		0	0
					0		0	0	0	0	0		0	0
					0		0	0	0	0	0		0	0
BAR SINK				2	1.5	1	0.75	0	0	0	0	20	0	0
COFFE/TEE STAND				2	0		0	0	0	0	0		0	0
ICE MAKER				2	0		0	0	0	0	0		0	0
DISHWASHER			1	1.5	1.125	1.5	1.125	0	1.5	0	1.1	15	0	15
CLOTHES WASHER			1	4	3	4	3	0	4	0	3	20	0	20
GREASE INTERCEPT					0		0	0	0	0	0	0	0	0
DISPOSAL				2	1.5		0	0	0	0	0	0	0	0
PEELER					0		0	0	0	0	0	0	0	0
FLOOR DRAIN					0		0	0	0	0	0	0	0	0
FLOOR SINK					0		0	0	0	0	0	0	0	0
TOTAL		0	6											

		0	14	0	8.6	0	67
TOTAL FIXTURE UNITS			14		8.625		
WATER DEMAND	GPM		17		11		
HOSE BIBBS	GPM		0				
SITE	GPM						
GLASS WASHER	GPM		0				
POOL	GPM		0				
TOTAL WATER DEMAND	GPM		35		11	GPH	67
MAIN PIPE SIZE (in.):			1.25"				
HEAD LOSS (PSI/100')			3.3				

CALCULATION BASED ON CPC -2022, TABLE H2.1

HOT WATER HEATER

TOTAL MAKE UP HEAT GPH FACTOR	GPH	DISHWASHER GPH	TOTAL GPH
67 0.4	26.8	0	26.8

TOTAL STORAGE GAL FACTOR	GAL	DISHWASHER GAL	TOTAL GAL
27 1	26.8	0	26.8

CW IN/ OUT DEG. F	HWH DEG. F	HWH BTU/H	HWH KW
60 130		15570.8	5

COLD AND HOT WATER PIPE CALCULATION

	HORIZ. FEET	VERT. FEET		
1- PIPE MAXIMUM LENGTH	135	20	155	FEET
FITTING 25%			38.75	FEET
TOTAL			193.75	FEET
2- AVAILABLE MIN.			45	PSI
MAX.			45	PSI
3- TOTAL FIXTURE UNITS			14	FU
GPM			35	
OTHER GPM				
TOTAL GPM			35	GPM
4- METER SIZE			1"	INCH
5- LOSSES:				
PRESSURE DROP THRU METER			5	PSI
HEIGHT LOSS			8.6956522	PSI
RESIDUAL PRESSURE			25	PSI
OTHER LOSSES				PSI
				PSI
TOTAL LOSSES			38.695652	PSI
6- AVAILABLE PRESSURE				
TOTAL			6.3043478	PSI
PRESSURE DROP PER 100'			3.3	PSI

WATER PIPE SIZE INCH	GPM	FLUSH TANK FU
1/2	1.8	1
3/4	5	6
1	10	13
1-1/4	18	26
1-1/2	28	49
2	60	175

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Barnell Ave,
Morgan Hill, CA 95037

PROJECT: LJ COMMONS 4 PLEX

DRAWING TITLE: PLUMBING CALCULATIONS ADU 2

REV	DATE	DESCRIPTION
1		
2		
3		
4		
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7		

JOB NO.: 23-113
CAD FILE:
DSGN'D BY: I. R.
DRAWN BY: H. N.
CHK'D BY: I. R.
APP'D BY: I. R.
DATE: 4/17/23
SCALE: AS NOTED
DRAWING NO.:

P4-6

SHEET * OF *

SYMBOLS AND LEGEND

SYMBOL	ABBR.	DESCRIPTION
	ϕ	ROUND DUCT (SECTION)
	S.D.	SUPPLY AIR DUCT (SECTION)
	R.D.	RETURN AIR DUCT (SECTION)
	E.D.	EXHAUST AIR DUCT (SECTION)
	CBA	COMBUSTION AIR DUCT (SECTION)
	F	STACK/FLUE (SECTION)
	CSD/R	CEILING DIFFUSER/REGISTER
	CRD/R	CEILING RETURN GRILLE/REGISTER
	CER/G	CEILING EXHAUST REGISTER/GRILLE
	EF	CEILING EXHAUST FAN
	WSR	WALL SUPPLY REGISTER (WITH DAMPER)
	WRR/G	WALL RETURN REGISTER/GRILLE
	FC	FLEXIBLE CONNECTION
	FS	FIRE AND SMOKE DAMPER
VD		BALANCE DAMPER OR VOLUME DAMPER
T	T'STAT	ROOM THERMOSTAT
	B.D.	BACK DRAFT DAMPER
	AFF	ABOVE FINISHED FLOOR
	NTS	NOT TO SCALE
	N.I.C	NOT IN CONSTRUCTION
	(TYP.)	TYPICAL
	EF.	EXHAUST FAN
	AH	AIR HANDLING UNIT
	AG	AIR GRILLE
	EXH	EXHAUST
	DN	DOWN
	DG	DOOR GRILLE
	VD	MANUAL VOLUME DAMPER
	W/	WITH
	POC	POINT OF CONNECTIONS

GENERAL NOTES

1. REFER TO THE SPECIFICATIONS FOR ADDITIONAL DETAILS AND CONTRACT REQUIREMENTS. COMPLY WITH THE LATEST ADDITIONS, UNLESS OTHERWISE NOTED, OF ALL FEDERAL, STATE AND LOCAL CODES AND REGULATIONS, THE CODES, REGULATIONS AND STANDARDS THOSE REFERENCED IN THE SPECIFICATIONS, AND THE FOLLOWING CODES STANDARDS AND REGULATIONS:

TITLE 24, 2022 CBC	IBC 2021, INCLUDING 2022 STATE OF CALIFORNIA AMENDMENTS
TITLE 24, 2022 CEC	NEC 2021, INCLUDING 2022 STATE OF CALIFORNIA AMENDMENTS
TITLE 24, 2022 CMC	UMC 2021, INCLUDING 2022 STATE OF CALIFORNIA AMENDMENTS
TITLE 24, 2022 CPC	UPC 2021, INCLUDING 2022 STATE OF CALIFORNIA AMENDMENTS
TITLE 24, 2022 CFC	IFC 2021, INCLUDING 2022 STATE OF CALIFORNIA AMENDMENTS
TITLE 19	PUBLIC SAFETY DIVISION I, STATE FIRE MARSHAL REGULATIONS
CAL/OSHA	CODES, STANDARDS AND REGULATIONS
ANSI/ASME B31.1	POWER PIPING CODE

2. THE DOCUMENTS REFERENCED ON THE DRAWINGS ARE AN INTEGRAL PART OF THIS WORK AND ARE IN ADDITION TO THE NOTES CONTAINED ON THE DRAWINGS.
3. FURNISHING OF ALL LABOR, MATERIALS AND SUPPLIES NECESSARY FOR THE CONSTRUCTION AND COMPLETION OF THE WORK SHOWN ON THE DRAWINGS AND SPECIFICATIONS IS THE RESPONSIBILITY OF THE CONTRACTOR UNLESS OTHERWISE NOTED.
4. INSTALL ALL MATERIALS IN ACCORDANCE WITH THE DRAWINGS, SPECIFICATIONS, MANUFACTURER'S RECOMMENDATIONS, AND THE APPLICABLE CODES AND STANDARDS.
5. ALL OMISSIONS OR CONFLICTS BETWEEN VARIOUS ELEMENTS OF THE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE BEFORE PROCEEDING WITH ANY OTHER WORK.
6. VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS, WHETHER OR NOT SHOWN ON THE DRAWINGS OR REFERENCED IN THE SPECIFICATIONS, PRIOR TO COMMENCEMENT OF WORK.
7. DRAWINGS ARE BASED ON TYPICAL MANUFACTURER SUPPLIED EQUIPMENT AND CONFIGURATIONS. VERIFY CONCURRENCE OF ACTUAL MANUFACTURER EQUIPMENT WITH THAT REPRESENTED IN THE DRAWINGS. OBTAIN APPROVAL FROM THE OWNER PRIOR TO MAKING ANY REQUIRED CHANGES.
8. PROVIDE AND INSTALL ALL EQUIPMENT, PIPING AND INSTRUMENTS IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. WHERE THOSE RECOMMENDATIONS DIFFER FROM THE DRAWINGS, OBTAIN CLARIFICATION FROM THE OWNER.
9. INTERRUPTION OF ANY OF EXISTING UTILITY AND SERVICES INCLUDED, POWER, WATER, CONTROL AND ECT. ARE NOT PERMITTED UNLESS REQUESTED FOUR WEEKS IN ADVANCE
10. ALL WORK IS NEW UNLESS OTHERWISE NOTED.
11. CONTRACTOR SHALL PROVIDE ALL MATERIALS AND OTHER ITEMS AS REQUIRED AND NECESSARY FOR A COMPLETE AND FUNCTIONAL CHILLED AND HOT WATER PIPING SYATEM OF THIS PROJECT.
12. ALL DUCT SIZES ARE INSIDE CLEAR DIMENSIONS.
13. THE MECHANICAL CONTRACTOR SHALL VERIFY ALL SECTIONS AND ELEVATIONS PRIOR TO DUCTWORK FABRICATIONS.
14. THE MECHANICAL CONTRACTOR SHALL COORDINATE ALL AIR TERMINALS WITH REFLECTED CEILING PLAN AND ALL DUCTWORK LOCATIONS WITH WORK OF OTHER TRADES BEFORE PROCEEDING WITH FABRICATION.
15. THE MECHANICAL CONTRACTOR SHALL COORDINATE WITH GENERAL CONTRACTOR FOR ACCESS TO ALL DAMPERS AND EQUIPMENT.
16. THE MECHANICAL CONTRACTOR MAY USE (1) SIZE LARGER ROUND DUCT WHERE ODD SIZE ROUND IS INDICATED AND WHERE SPACE PERMITS.
17. THE MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR ALL EQUIPMENT PLATFORM AND CURB LOCATIONS.
18. INSTALL MANUAL VOLUME DAMPER AT EACH DIFFUSER BRANCH AS INDICATED ON DRAWINGS AND AS FAR FROM THE DIFFUSER AS POSSIBLE.
19. THE CONTRACTOR MAY USE EQUIVALENT SIZE RECTANGULAR DUCT WHERE PREFERRED OF WHERE SPACE IS LIMITED AND IN CONCEALED AREAS ONLY.
20. THE MECHANICAL CONTRACTOR MAY USE FLEXIBLE DUCT AT LAST 4 FEET OF RUN TO THE AIR TERMINAL IN CONCEALED AREAS ONLY.
21. ALL ROOF AND EXTERIOR WALL PENETRATIONS SHALL BE FLASHED AND COUNTER FLASHED AS REQUIRED TO SEAL WEATHERTIGHT.
22. MECHANICAL CONTRACTOR SHALL PROVIDE BIRD SCREENS AT ALL INTAKE AND EXHAUST OPENINGS.
23. ALL VISIBLE INTERIOR PORTIONS OF DUCTWORK AND AIR TERMINALS SHALL BE PAINTED FLAT BLACK BY MECHANICAL CONTRACTOR.
24. ALL SUPPLY, RETURN, AND EXHAUST TERMINALS SHALL HAVE INTEGRAL VOLUME CONTROL UNLESS OTHERWISE INDICATED.
25. ALL LOW VOLTAGE SHALL BE FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR.
26. ALL LOW VOLTAGE WIRING SHALL BE ENCLOSED IN CONDUIT OR EMT.
27. MECHANICAL CONTRACTOR SHALL BALANCE SYSTEM TO WITHIN +/- 5% OF THE AIR QUANTITIES SHOWN.
28. ALL EXPOSED DUCTWORK SHALL HAVE ITS JOINTS SEALED INTERNALLY WITH AIR TIGHT MASTIC.
29. ALL EXPOSED ROUND DUCTWORK SHALL BE SPIRAL ROUND.
30. EXPOSED DUCTWORK SHALL BE PREMIERED AND READY FOR PAINTING. SEE ARCHITECTURAL DRAWINGS.
31. ALL CEILING DIFFUSERS, SUPPLY REGISTER, RETURN REGISTERS AND EXHAUST GRILLS SHALL BE INSTALLED WITH TAMPER PROOF SCREWS.
32. THE MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR FOR ACCESS TO ALL VALVES AND EQUIPMENT.
33. HVAC CONTRACTOR IS TO REPORT TO THE OWNER'S ENGINEER ANY OBSERVATIONS OR CONDITIONS WHICH ARE DISCOVERED IN THE BUILDING WHICH WOULD PREVENT THE CORRECT INSTALLATION OF THE HVAC SYSTEM.
34. EACH EXHAUST FAN SHALL BE EQUIPPED WITH A BACK-DRAFT DAMPER.
35. A MAINTENANCE LABEL MUST BE AFFIXED TO MECHANICAL EQUIPMENT. TWO COPIES OF A MAINTENANCE MANUAL FOR THE EQUIPMENT ITEMS SHALL BE PROVIDED TO THE OWNER BY THE CONTRACTOR.
36. LAYOUT OF THE EQUIPMENT AND WORK IS GENERALLY DIAGRAMMATIC, UNLESS SPECIFICALLY DIMENSIONED. DRAWINGS AND DETAILS SHALL BE CHECKED FOR INTERFERENCE BEFORE INSTALLING THE WORK. ANY INTERFERENCE NOTED BETWEEN DIFFERENT DRAWINGS, AND BETWEEN DRAWINGS AND ACTUAL FIELD CONDITIONS SHALL BE BROUGHT TO THE ATTENTION FOR A DECISION. THERE SHALL BE NO ADDITIONAL COMPENSATION FOR INTERFERING WORK THAT WAS PERFORMED PRIOR TO CHECKING INTERFERENCE AND FIELD CONDITIONS. THE RIGHT IS RESERVED TO MAKE ANY REASONABLE CHANGE IN LOCATION OF EQUIPMENT WITHOUT INVOLVING ADDITIONAL EXPENSE TO THE OWNER.
37. THE CONTRACTOR SHALL COORDINATE THE DUCTWORK WITH BUILDING STRUCTURAL ELEMENTS AND CEILING.
38. MATERIAL OF THE METAL DUCTS SHALL COMPLY WITH CMC SECTION 602.5.
39. FACTORY MADE AIR DUCTS, IF USED, SHALL BE CLASS 1 OR 0 LISTED DUCT PER CMC SECTION 604.3.
40. APPROVED LINING MATERIALS, INSTALLED WITHIN DUCTS AND PLENUMS SHALL HAVE AMOLD, HUMIDITY AND EROSION RESISTANT SURFACE TO MEET TED REQUIREMENTS OF THE CMC CHAPTER 17 AND CMC SECTION 605.0.
41. APPROVED LINING MATERIALS, INSTALLED WITHIN DUCTS AND PLENUMS SHALL HAVE AMOLD, HUMIDITY AND EROSION RESISTANT SURFACE TO MEET TED REQUIREMENTS
42. FLAME SPREAD INDEX OF THE INSULATION MATERIALS APPLIED TO THE EXTERIOR OF THE DUCTS NOT BE MORE THAN 25 AND SMOKE DEVELOPMENT RATING OF NOT MORE THAN 50 PER CMC SECTION 602.2.
43. DUCT INSULATION SHALL BE PER LATEST T-24 REQUIREMENTS.
44. PROVIDE SMOOTH DUCTWORK FOR ALL OF THE DRYERS AND COOK HOODS.
45. PROVIDE BACKDRAFT DAMPERS FOR ALL OF THE EXHAUST DUCTS.

EXHAUST FAN SCHEDULE

MARK	UNIT	SERVICE	MFR	MODEL	CFM	S.P.	DUCT DIA.	TYPE	ELECTRICAL WATS	HP	VOLTS	ø	OPER. WT. LBS	REMARKS
EF1-1-1	UNIT #1	1/2BATH	PANASONIC	FV-0511VQC1	110	0.1	6"	CEILING MOUNTED	16		120	1	11.2	SEE NOTES
EF1-1-2		KITCHEN	PANASONIC	FV-20VQ3	240	0.1	8"	CEILING MOUNTED	42		120	1	16.8	SEE NOTES
EF1-2-1		BATH#1	PANASONIC	FV-0511VQC1	110	0.1	6"	CEILING MOUNTED	16		120	1	11.2	SEE NOTES
EF1-2-2		BATH#2	PANASONIC	FV-0511VQC1	110	0.1	6"	CEILING MOUNTED	16		120	1	11.2	SEE NOTES
EF1-2-3		LAUNDARY	PANASONIC	FV-0511VQC1	110	0.1	6"	CEILING MOUNTED	16		120	1	11.2	SEE NOTES
EF2-1-1	UNIT #2	1/2BATH	PANASONIC	FV-0511VQC1	110	0.1	6"	CEILING MOUNTED	16		120	1	11.2	SEE NOTES
EF2-1-2		KITCHEN	PANASONIC	FV-20VQ3	240	0.1	8"	CEILING MOUNTED	42		120	1	16.8	SEE NOTES
EF2-2-1		BATH#1	PANASONIC	FV-0511VQC1	110	0.1	6"	CEILING MOUNTED	16		120	1	11.2	SEE NOTES
EF2-2-2		LAUNDARY	PANASONIC	FV-0511VQC1	110	0.1	6"	CEILING MOUNTED	16		120	1	11.2	SEE NOTES
EF3-1-1	UNIT #3	1/2BATH	PANASONIC	FV-0511VQC1	110	0.1	6"	CEILING MOUNTED	16		120	1	11.2	SEE NOTES
EF3-1-2		KITCHEN	PANASONIC	FV-20VQ3	240	0.1	8"	CEILING MOUNTED	42		120	1	16.8	SEE NOTES
EF3-2-1		BATH#1	PANASONIC	FV-0511VQC1	110	0.1	6"	CEILING MOUNTED	16		120	1	11.2	SEE NOTES
EF3-2-2		LAUNDARY	PANASONIC	FV-0511VQC1	110	0.1	6"	CEILING MOUNTED	16		120	1	11.2	SEE NOTES
EF4-1-1	UNIT #4	1/2BATH	PANASONIC	FV-0511VQC1	110	0.1	6"	CEILING MOUNTED	16		120	1	11.2	SEE NOTES
EF4-1-2		KITCHEN	PANASONIC	FV-20VQ3	240	0.1	8"	CEILING MOUNTED	42		120	1	16.8	SEE NOTES
EF4-2-1		BATH#1	PANASONIC	FV-0511VQC1	110	0.1	6"	CEILING MOUNTED	16		120	1	11.2	SEE NOTES
EF4-2-2		LAUNDARY	PANASONIC	FV-0511VQC1	110	0.1	6"	CEILING MOUNTED	16		120	1	11.2	SEE NOTES
EF-1	ADU #1	KITCHEN	PANASONIC	FV-20VQ3	240	0.1	8"	CEILING MOUNTED	42		120	1	16.8	SEE NOTES
EF-2		BATH#1	PANASONIC	FV-0511VQC1	110	0.1	6"	CEILING MOUNTED	16		120	1	11.2	SEE NOTES
EF-3		BATH#2	PANASONIC	FV-0511VQC1	110	0.1	6"	CEILING MOUNTED	16		120	1	11.2	SEE NOTES
EF-4		MECH	PANASONIC	FV-0511VQC1	110	0.1	6"	CEILING MOUNTED	16		120	1	11.2	SEE NOTES
EF-1	ADU #2	KITCHEN	PANASONIC	FV-20VQ3	240	0.1	8"	CEILING MOUNTED	42		120	1	16.8	SEE NOTES
EF-2		BATH#1	PANASONIC	FV-0511VQC1	110	0.1	6"	CEILING MOUNTED	16		120	1	11.2	SEE NOTES
EF-4		MECH	PANASONIC	FV-0511VQC1	110	0.1	6"	CEILING MOUNTED	16		120	1	11.2	SEE NOTES

DRAWING LIST

1. M0-1 SYMBOLS, LEGEND, GENERAL NOTES EQUIPMENT SCHEDULE
2. M0-2 EQUIPMENT SCHEDULE
3. M1-1 FIRST FLOOR PLAN-HVAC
4. M1-2 SECOND FLOOR PLAN- HVAC
5. M2-1 DETAILS

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Barnell Ave.
Morgan Hill, CA 95037

PROJECT: LJ COMMONS 4 PLEX

DRAWING TITLE: SYMBOLS AND LEGENDS, AND GENERAL NOTES

REV	DATE	DESCRIPTION
1		
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3		
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5		
6		
7		

JOB NO.: 23-113
CAD FILE:
DSGN'D BY: I. R.
DRAWN BY: H. N.
CHK'D BY: I. R.
APP'D BY: I. R.
DATE: 4/17/23
SCALE: AS NOTED
DRAWING NO.: M0-1
SHEET * OF *

VARIABLE REFRIGERANT VOLUME

TAG	UNIT	ROOM	BASIS OF DESIGN (DAIKIN)	NOMINAL TONNAGE	TYPE	CONNECTED TO:		SUPPLY FAN	COOLING CAPACITY				HEATING CAPACITY		ELECTRICAL			DIMENSIONS	WEIGHT	NOTES	Options and Accessories
						CONDENSING UNIT	ZONE CHANGEOVER DEVICE	AIR FLOW RATE cfm	TOTAL BTU/h	SENSIBLE BTU/h	ENTERING AIR °F DB	ENTERING AIR °F WB	TOTAL BTU/h	ENTERING AIR °Fdb	POWER SUPPLY	Min Circuit Amps	Max Overcurrent Protection	WxHxD	Net		
															Voltage - Phase	MCA	MOP	inch	lbs		
FC1-1-1	UNIT 1	KITCHEN	FXZQ07TAVJU	0.6	4-Way Discharge Ceiling Cassette (2' x 2')	CU A	No	307	7,161	5,444	78.8	65.5	8,872	68.0	208-230V 1ph	0.3	15.0	22.6 x 10.2 x 22.6	35.3		BRC1E73 (1), BYFQ60C3W1W (1)
FC1-1-2	UNIT 1	GREAT ROOM	FXZQ07TAVJU	0.6	4-Way Discharge Ceiling Cassette (2' x 2')	CU A	No	307	7,161	5,444	78.8	65.5	8,872	68.0	208-230V 1ph	0.3	15.0	22.6 x 10.2 x 22.6	35.3		BRC1E73 (1), BYFQ60C3W1W (1)
FC1-1-3	UNIT 1	GREAT ROOM	FXZQ07TAVJU	0.6	4-Way Discharge Ceiling Cassette (2' x 2')	CU A	No	307	7,161	5,444	78.8	65.5	8,872	68.0	208-230V 1ph	0.3	15.0	22.6 x 10.2 x 22.6	35.3		BRC1E73 (1), BYFQ60C3W1W (1)
FC1-2-1	UNIT 1	BEDROOM1	FXZQ07TAVJU	0.6	4-Way Discharge Ceiling Cassette (2' x 2')	CU A	No	307	7,161	5,444	78.8	65.5	8,872	68.0	208-230V 1ph	0.3	15.0	22.6 x 10.2 x 22.6	35.3		BRC1E73 (1), BYFQ60C3W1W (1)
FC1-2-2	UNIT 1	BEDROOM2	FXZQ07TAVJU	0.6	4-Way Discharge Ceiling Cassette (2' x 2')	CU A	No	307	7,161	5,444	78.8	65.5	8,872	68.0	208-230V 1ph	0.3	15.0	22.6 x 10.2 x 22.6	35.3		BRC1E73 (1), BYFQ60C3W1W (1)
FC1-2-3	UNIT 1	BEDROOM3	FXZQ07TAVJU	0.6	4-Way Discharge Ceiling Cassette (2' x 2')	CU A	No	307	7,161	5,444	78.8	65.5	8,872	68.0	208-230V 1ph	0.3	15.0	22.6 x 10.2 x 22.6	35.3		BRC1E73 (1), BYFQ60C3W1W (1)
FC2-1-1	UNIT 2	GREAT ROOM	FXZQ07TAVJU	0.6	4-Way Discharge Ceiling Cassette (2' x 2')	CU B	No	307	7,161	5,444	78.8	65.5	8,872	68.0	208-230V 1ph	0.3	15.0	22.6 x 10.2 x 22.6	35.3		BRC1E73 (1), BYFQ60C3W1W (1)
FC2-1-2	UNIT 2	KITCHEN	FXZQ07TAVJU	0.6	4-Way Discharge Ceiling Cassette (2' x 2')	CU B	No	307	7,161	5,444	78.8	65.5	8,872	68.0	208-230V 1ph	0.3	15.0	22.6 x 10.2 x 22.6	35.3		BRC1E73 (1), BYFQ60C3W1W (1)
FC2-2-1	UNIT 2	BEDROOM1	FXZQ07TAVJU	0.6	4-Way Discharge Ceiling Cassette (2' x 2')	CU B	No	307	7,161	5,444	78.8	65.5	8,872	68.0	208-230V 1ph	0.3	15.0	22.6 x 10.2 x 22.6	35.3		BRC1E73 (1), BYFQ60C3W1W (1)
FC2-2-2	UNIT 2	BEDROOM2	FXZQ07TAVJU	0.6	4-Way Discharge Ceiling Cassette (2' x 2')	CU B	No	307	7,161	5,444	78.8	65.5	8,872	68.0	208-230V 1ph	0.3	15.0	22.6 x 10.2 x 22.6	35.3		BRC1E73 (1), BYFQ60C3W1W (1)
FC3-1-1	UNIT 3	GREAT ROOM	FXZQ07TAVJU	0.6	4-Way Discharge Ceiling Cassette (2' x 2')	CU C	No	307	7,161	5,444	78.8	65.5	8,872	68.0	208-230V 1ph	0.3	15.0	22.6 x 10.2 x 22.6	35.3		BRC1E73 (1), BYFQ60C3W1W (1)
FC3-1-2	UNIT 3	KITCHEN	FXZQ07TAVJU	0.6	4-Way Discharge Ceiling Cassette (2' x 2')	CU C	No	307	7,161	5,444	78.8	65.5	8,872	68.0	208-230V 1ph	0.3	15.0	22.6 x 10.2 x 22.6	35.3		BRC1E73 (1), BYFQ60C3W1W (1)
FC3-2-1	UNIT 3	BEDROOM1	FXZQ07TAVJU	0.6	4-Way Discharge Ceiling Cassette (2' x 2')	CU C	No	307	7,161	5,444	78.8	65.5	8,872	68.0	208-230V 1ph	0.3	15.0	22.6 x 10.2 x 22.6	35.3		BRC1E73 (1), BYFQ60C3W1W (1)
FC3-2-2	UNIT 3	BEDROOM2	FXZQ07TAVJU	0.6	4-Way Discharge Ceiling Cassette (2' x 2')	CU C	No	307	7,161	5,444	78.8	65.5	8,872	68.0	208-230V 1ph	0.3	15.0	22.6 x 10.2 x 22.6	35.3		BRC1E73 (1), BYFQ60C3W1W (1)
FC4-1-1	UNIT 4	GREAT ROOM	FXZQ07TAVJU	0.6	4-Way Discharge Ceiling Cassette (2' x 2')	CU D	No	307	7,161	5,444	78.8	65.5	8,872	68.0	208-230V 1ph	0.3	15.0	22.6 x 10.2 x 22.6	35.3		BRC1E73 (1), BYFQ60C3W1W (1)
FC4-1-2	UNIT 4	KITCHEN	FXZQ07TAVJU	0.6	4-Way Discharge Ceiling Cassette (2' x 2')	CU D	No	307	7,161	5,444	78.8	65.5	8,872	68.0	208-230V 1ph	0.3	15.0	22.6 x 10.2 x 22.6	35.3		BRC1E73 (1), BYFQ60C3W1W (1)
FC4-2-1	UNIT 4	BEDROOM1	FXZQ07TAVJU	0.6	4-Way Discharge Ceiling Cassette (2' x 2')	CU D	No	307	7,161	5,444	78.8	65.5	8,872	68.0	208-230V 1ph	0.3	15.0	22.6 x 10.2 x 22.6	35.3		BRC1E73 (1), BYFQ60C3W1W (1)
FC4-2-2	UNIT 4	BEDROOM2	FXZQ07TAVJU	0.6	4-Way Discharge Ceiling Cassette (2' x 2')	CU D	No	307	7,161	5,444	78.8	65.5	8,872	68.0	208-230V 1ph	0.3	15.0	22.6 x 10.2 x 22.6	35.3		BRC1E73 (1), BYFQ60C3W1W (1)
FC-ADU1-1	ADU 1	KITCHEN	FXZQ07TAVJU	0.6	4-Way Discharge Ceiling Cassette (2' x 2')	CU ADU	No	307	7,161	5,444	78.8	65.5	8,872	68.0	208-230V 1ph	0.3	15.0	22.6 x 10.2 x 22.6	35.3		BRC1E73 (1), BYFQ60C3W1W (1)
FC-ADU1-2	ADU 1	LIVING ROOM	FXZQ07TAVJU	0.6	4-Way Discharge Ceiling Cassette (2' x 2')	CU ADU	No	307	7,161	5,444	78.8	65.5	8,872	68.0	208-230V 1ph	0.3	15.0	22.6 x 10.2 x 22.6	35.3		BRC1E73 (1), BYFQ60C3W1W (1)
FC-ADU1-3	ADU 1	LIVING ROOM	FXZQ07TAVJU	0.6	4-Way Discharge Ceiling Cassette (2' x 2')	CU ADU	No	307	7,161	5,444	78.8	65.5	8,872	68.0	208-230V 1ph	0.3	15.0	22.6 x 10.2 x 22.6	35.3		BRC1E73 (1), BYFQ60C3W1W (1)
FC-ADU1-4	ADU 1	BEDROOM1	FXZQ07TAVJU	0.6	4-Way Discharge Ceiling Cassette (2' x 2')	CU ADU	No	307	7,161	5,444	78.8	65.5	8,872	68.0	208-230V 1ph	0.3	15.0	22.6 x 10.2 x 22.6	35.3		BRC1E73 (1), BYFQ60C3W1W (1)
FC-ADU1-5	ADU 1	BEDROOM2	FXZQ07TAVJU	0.6	4-Way Discharge Ceiling Cassette (2' x 2')	CU ADU	No	307	7,161	5,444	78.8	65.5	8,872	68.0	208-230V 1ph	0.3	15.0	22.6 x 10.2 x 22.6	35.3		BRC1E73 (1), BYFQ60C3W1W (1)
FC-ADU2-1	ADU 2	KITCHEN	FXZQ07TAVJU	0.6	4-Way Discharge Ceiling Cassette (2' x 2')	CU ADU	No	307	7,161	5,444	78.8	65.5	8,872	68.0	208-230V 1ph	0.3	15.0	22.6 x 10.2 x 22.6	35.3		BRC1E73 (1), BYFQ60C3W1W (1)
FC-ADU2-2	ADU 2	LIVING ROOM	FXZQ07TAVJU	0.6	4-Way Discharge Ceiling Cassette (2' x 2')	CU ADU	No	307	7,161	5,444	78.8	65.5	8,872	68.0	208-230V 1ph	0.3	15.0	22.6 x 10.2 x 22.6	35.3		BRC1E73 (1), BYFQ60C3W1W (1)
FC-ADU2-3	ADU 2	LIVING ROOM	FXZQ07TAVJU	0.6	4-Way Discharge Ceiling Cassette (2' x 2')	CU ADU	No	307	7,161	5,444	78.8	65.5	8,872	68.0	208-230V 1ph	0.3	15.0	22.6 x 10.2 x 22.6	35.3		BRC1E73 (1), BYFQ60C3W1W (1)
FC-ADU2-4	ADU 2	BEDROOM1	FXZQ07TAVJU	0.6	4-Way Discharge Ceiling Cassette (2' x 2')	CU ADU	No	307	7,161	5,444	78.8	65.5	8,872	68.0	208-230V 1ph	0.3	15.0	22.6 x 10.2 x 22.6	35.3		BRC1E73 (1), BYFQ60C3W1W (1)
FC-ADU2-5	ADU 2	BEDROOM2	FXZQ07TAVJU	0.6	4-Way Discharge Ceiling Cassette (2' x 2')	CU ADU	No	307	7,161	5,444	78.8	65.5	8,872	68.0	208-230V 1ph	0.3	15.0	22.6 x 10.2 x 22.6	35.3		BRC1E73 (1), BYFQ60C3W1W (1)

VARIABLE REFRIGERANT VOLUME - AIR-COOLED CONDENSING UNIT SCHEDULE-MAIN HOUSE

TAG: ROOM	UNIT	BASIS OF DESIGN (DAIKIN)	NOMINAL TONNAGE	DESCRIPTION	COOLING CAPACITY		HEATING CAPACITY		REFRIGERANT CHARGE		CONNECTION RATIO	ELECTRICAL											DIMENSIONS	WEIGHT	EFFICIENCY (NonDucted/Ducted or Specific Combo)							SOUND RATING LEVEL	NOTES	Options and Accessories
					BTU/h	AMBIENT DESIGN (°F DB)	BTU/h	AMBIENT DESIGN (°F DB / WB)	Factory Charge (lbs)	Add'l Refrigerant (lbs)		VOLTAGE-PHASE	MIN CIRCUIT mod #1	MIN CIRCUIT mod #2	MIN CIRCUIT mod #3	MIN CIRCUIT total	MAX OVERCURRENT mod #1	MAX OVERCURRENT mod #2	MAX OVERCURRENT mod #3	MAX OVERCURRENT total	RUNNING mod #1	RUNNING mod #2	RUNNING mod #3	RUNNING total	(WxHxD) (inch)	WEIGHT (lbs)	EER	IEER	COP47	COP17	SCHE	SEER	HSPF			
CU-1	UNIT 1	RXTQ60TAVJUA	5	Air cooled heat pump (1)	58,731	84.2	55,181	38.0 / 36.5	7.9	n/a	107.9	208-230V 1ph	29.1			29.1	35.0			35.0	23.2			23.2	35.4 x 53.0 x 12.6	224.9	9.8 / 9.2	n/a / n/a	n/a / n/a	n/a / n/a	n/a	18 / 16	10.5 / 10.5	57 dB(A)		
CU-2	UNIT 2	RXTQ60TAVJUA	5	Air cooled heat pump (1)	58,731	84.2	55,181	38.0 / 36.5	7.9	n/a	107.9	208-230V 1ph	29.1			29.1	35.0			35.0	23.2			23.2	35.4 x 53.0 x 12.6	224.9		n/a / n/a	n/a / n/a	n/a / n/a	n/a	18 / 16	10.5 / 10.5	57 dB(A)		
CU-3	UNIT 3	RXTQ60TAVJUA	5	Air cooled heat pump (1)	58,731	84.2	55,181	38.0 / 36.5	7.9	n/a	107.9	208-230V 1ph	29.1			29.1	35.0			35.0	23.2			23.2	35.4 x 53.0 x 12.6	224.9		n/a / n/a	n/a / n/a	n/a / n/a	n/a	18 / 16	10.5 / 10.5	57 dB(A)		
CU-4	UNIT 4	RXTQ60TAVJUA	5	Air cooled heat pump (1)	58,731	84.2	55,181	38.0 / 36.5	7.9	n/a	107.9	208-230V 1ph	29.1			29.1	35.0			35.0	23.2			23.2	35.4 x 53.0 x 12.6	224.9		n/a / n/a	n/a / n/a	n/a / n/a	n/a	18 / 16	10.5 / 10.5	57 dB(A)		
CU -ADU1	ADU1	RXTQ60TAVJUA	5	Air cooled heat pump (1)	58,731	84.2	55,181	38.0 / 36.5	7.9	n/a	107.9	208-230V 1ph	29.1			29.1	35.0			35.0	23.2			23.2	35.4 x 53.0 x 12.6	224.9		n/a / n/a	n/a / n/a	n/a / n/a	n/a	18 / 16	10.5 / 10.5	57 dB(A)		
CU -ADU2	ADU2	RXTQ60TAVJUA	5	Air cooled heat pump (1)	58,731	84.2	55,181	38.0 / 36.5	7.9	n/a	107.9	208-230V 1ph	29.1			29.1	35.0			35.0	23.2			23.2	35.4 x 53.0 x 12.6	224.9		n/a / n/a	n/a / n/a	n/a / n/a	n/a	18 / 16	10.5 / 10.5	57 dB(A)		

Schedule Notes:

Manufacturer must be certified, listed, and labeled per AHRI 1230.
System rating data based on design ambient conditions for cooling and for heating.
Submitted performance data must be fully de-rated for all components and accessories, including but not limited to, line length, vertical separation, connection ratio, design conditions, condenser coil coating.
Condensing units must have fully modulating INVERTER compressors.
Condensing units must have have auto changeover functions
Demand limiting relay contact must be provided.
EEV actuators must be removable from valve body without disturbing the refrigerant system.
FCU thermostats must provide +/- 1 degree dead-band set-point and control capability.
System shall be provided with i-Touch Manager controller with WEB based software for displaying up to 8 DIII-Net systems with 128 indoor units per system.PC by others.
Manufacturers submittal must include refrigerant piping diagram with pipe diameters, lengths, and refrigerant volume.
Substitute manufacturer shall be responsible for additional piping and refrigerant.
Contractor to verify piping dimensions.
Installing contractor must have successfully completed manufacturers certified installation class within past 36 months.
Contractor to furnish and install insulation on refrigerant piping.
Manufacturers Representative must have local stock of parts and factory certified technician on staff.
Manufacturers Representative shall provide proof of ongoing installation training at their local facility for at least the past 5 years.
Manufacturers Representative shall provide proof of continuous sales and support of their products for at least 15 years.
Mechanical contractor shall be responsible for all direct costs and operating costs increases for 20 years associated with any deviations resulting from changes in design.
Manufacturer must provide 10 years parts warranty on all FCUs, Condensing Units, and Mode Changeover Devices. Warranty conditions must be clarified during submittal phase.
3-phase Air cooled condensing units must have published performance data with 200% indoor connected capacity.
Condensing units must be furnished with protective coil coating to withstand ASTM B117 salt spray test for a minimum of 1000 hours.Performance of system must be de-rated for coil coating.
Manufacturer must certify and submit system performance at extreme conditions of 122 degrees FDB ambient in cooling mode and -4 degrees FWB in heating mode.

I & ENGINEERING
1610 BLOSSOM HILL ROAD, SUITE "6A"
SAN JOSE, CALIFORNIA 95124
TEL: (408) 268-9337
FAX: (408) 268-1135

REGISTERED PROFESSIONAL ENGINEER
IRADJ RAHNAMA
No. M-26257
Exp. 06/30/25
MECHANICAL
STATE OF CALIFORNIA

DRAWINGS NOT FOR CONSTRUCTION UNTIL STAMPED JOB COPY BY BUILDING DEPARTMENT. ALL DRAWINGS AND WRITTEN MATERIAL APPEARING HEREIN CONSTITUTE ORIGINAL AND UNPUBLISHED WORK OF THE ENGINEER AND MAY NOT BE DUPLICATED, USED, OR DISCLOSED WITHOUT WRITTEN CONSENT OF THE ENGINEER.

Barnell Ave.
Morgan Hill, CA 95037

PROJECT: LJ COMMONS 4 PLEX

DRAWING TITLE: EQUIPMENT SCHEDULE

REV	DATE	DESCRIPTION
1		
2		
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4		
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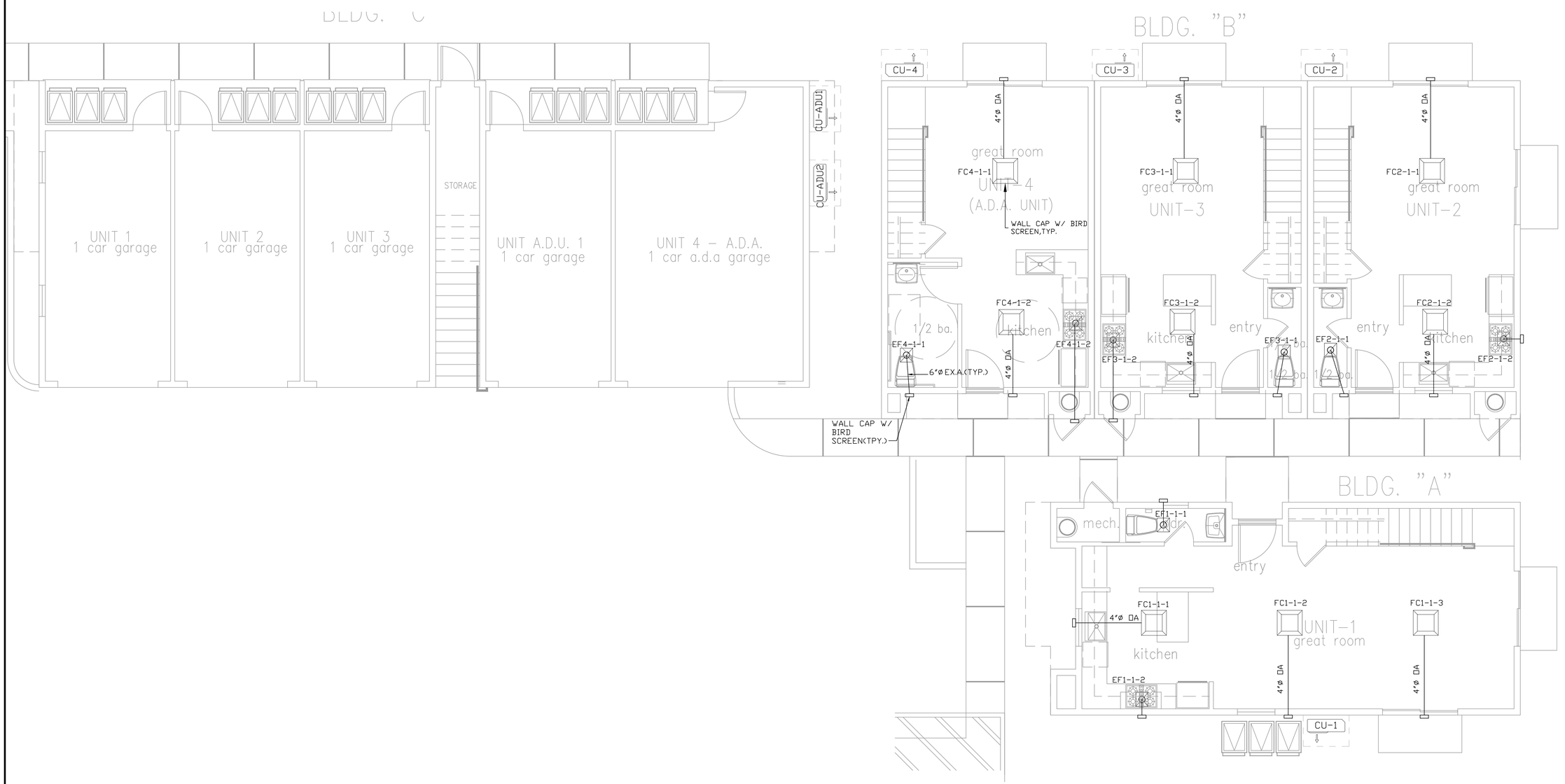
6		
7		

JOB NO.: 23-113
CAD FILE:
DSGN'D BY: I. R.
DRAWN BY: H. N.
CHK'D BY: I. R.
APP'D BY: I. R.
DATE: 4/17/23
SCALE: AS NOTED
DRAWING NO.: M0-2
SHEET * OF *



1 FIRST FLOOR PLAN – HVAC

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

I & A ENGINEERING
1610 BLOSSOM HILL ROAD, SUITE "6A"
SAN JOSE, CALIFORNIA 95124
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Barnell Ave.
Morgan Hill, CA 95037

PROJECT: LJ COMMONS 4 PLEX

DRAWING TITLE: FIRST FLOOR PLAN HVAC

REV	DATE	DESCRIPTION
1		
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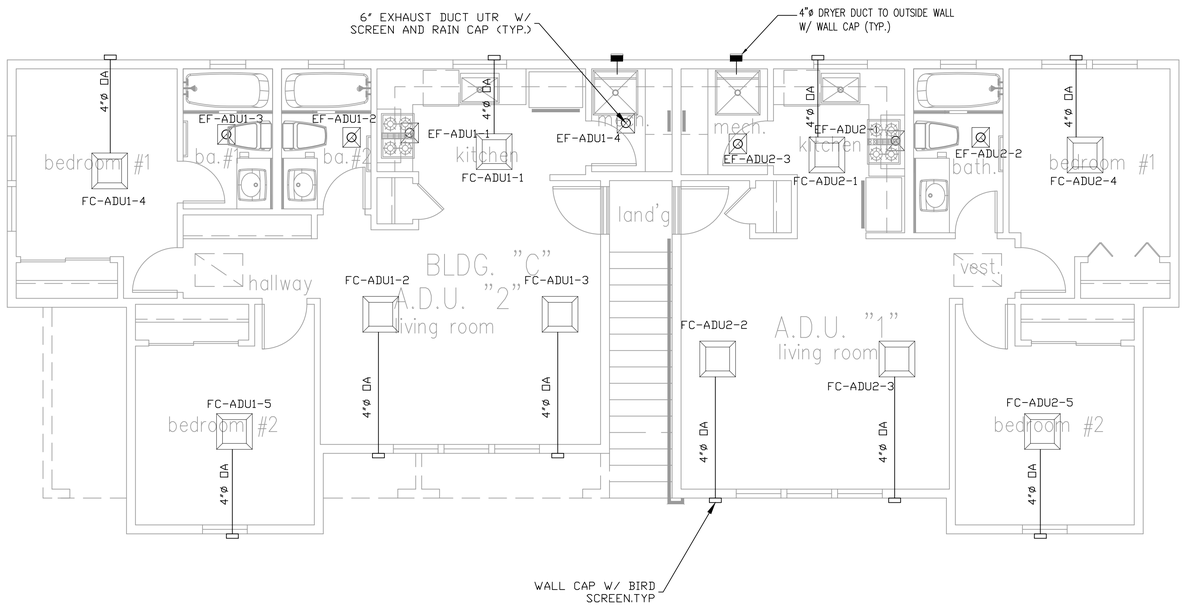
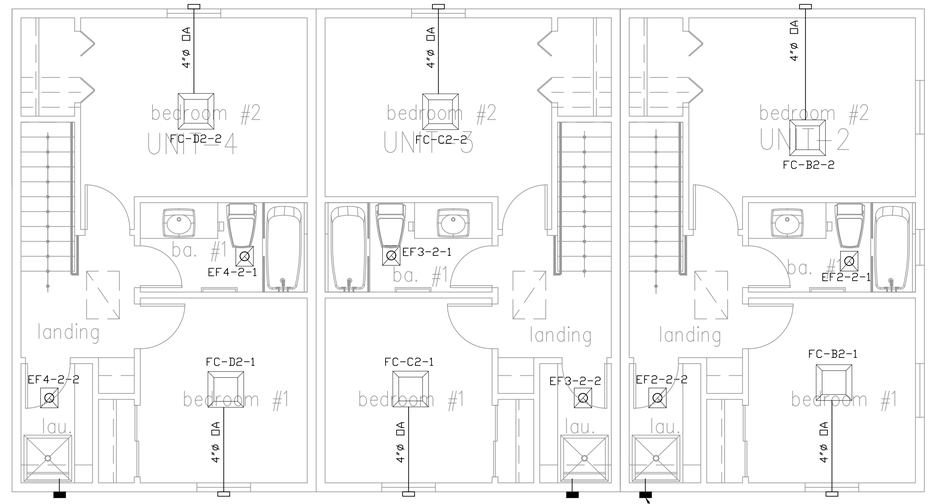
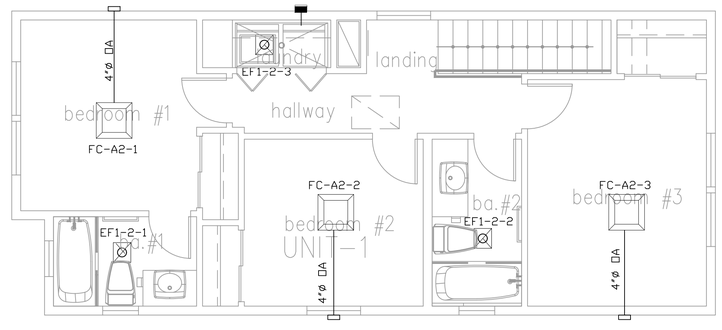
JOB NO.:	23–113
CAD FILE:	
DSGN'D BY: I. R.	DRAWN BY: H. N.
CHK'D BY: I. R.	APP'D BY: I. R.
DATE: 4/17/23	SCALE: AS NOTED

DRAWING NO.: M1-1

SHEET * OF *







1 SECOND FLOOR PLAN – HVAC
SCALE: 1/4"= 1'-0"

I & A ENGINEERING
1610 BLOSSOM HILL ROAD, SUITE "6A"
SAN JOSE, CALIFORNIA 95124
TEL: (408) 268-9337
FAX: (408) 268-1135

REGISTERED PROFESSIONAL ENGINEER
IRADJ RAHNAMA
No. M-26257
Exp. 06/30/25
MECHANICAL
STATE OF CALIFORNIA

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Barnell Ave.
Morgan Hill, CA 95037

PROJECT: LJ COMMONS 4 PLEX

DRAWING TITLE: SECOND FLOOR PLAN HVAC

REV	DATE	DESCRIPTION
1		
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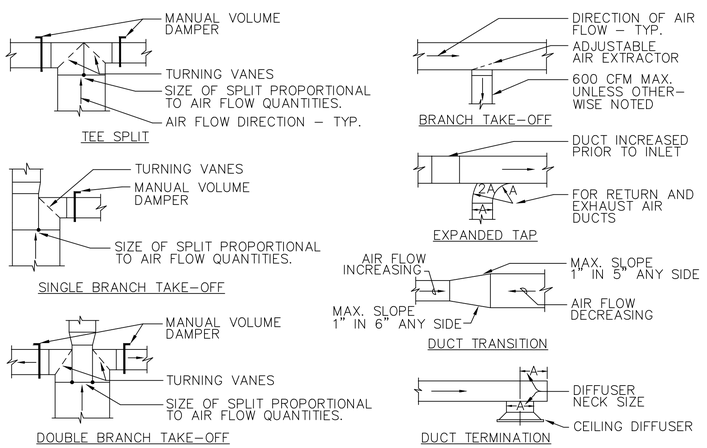
JOB NO.: 23–113
CAD FILE:

DSGN'D BY:	DRAWN BY:
I. R.	H. N.
CHK'D BY:	APP'D BY:
I. R.	I. R.
DATE: 4/17/23	SCALE: AS NOTED

DRAWING NO.: M1-2

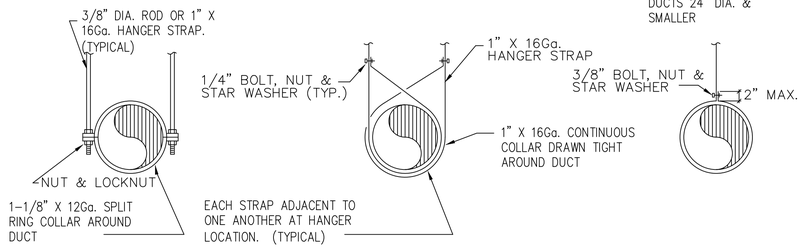
SHEET * OF *



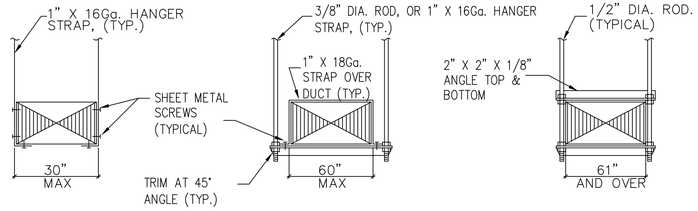
1 TYPICAL RECTANGULAR DUCT FITTING DETAIL
NOT TO SCALE

THESE TWO HANGERS ARE TO BE USED ON DUCTS 25" & LARGER (MAY BE USED ON SMALLER DUCTS).

THIS HANGER IS FOR DUCTS 24" DIA. & SMALLER



ROUND DUCT HANGER



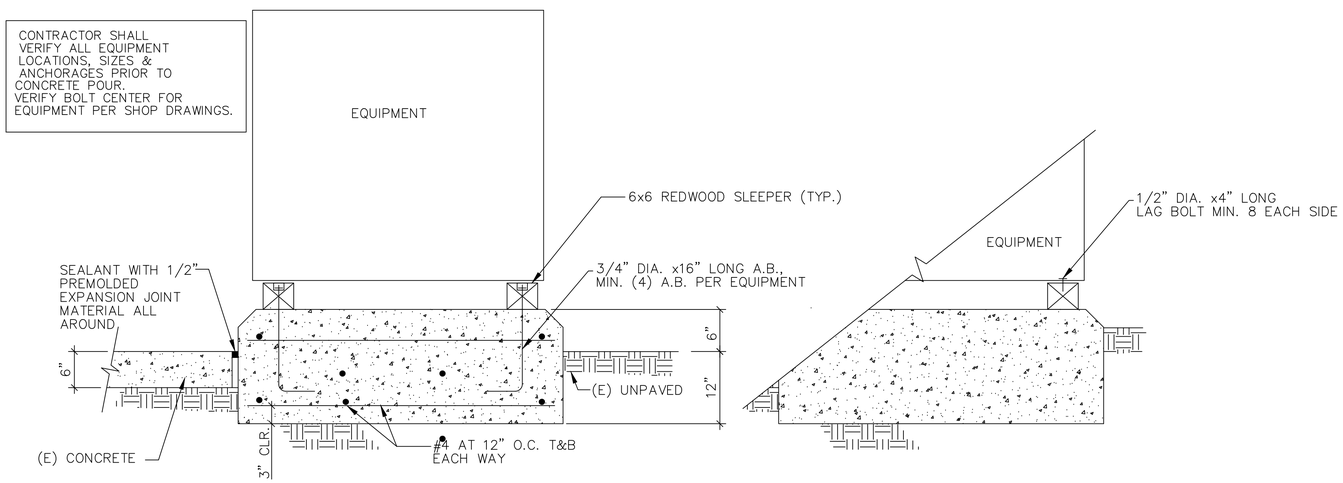
RECTANGULAR DUCT HANGER

NOTES:

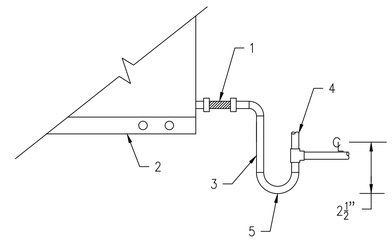
1. REFER TO UMC FOR HANGER SPACINGS.
2. PROVIDE UNISTRUT BETWEEN THE ROOF JOISTS FOR DUCT SUPPORTS ATTACHMENT.
3. PROVIDE SWAY & SEISMIC BRACING PER SMACNA SEISMIC GUIDELINES. PROVIDE AT LEAST ONE SEISMIC BRACING FORM EACH DUCT RUN.

2 DUCT HANGERS DETAILS
NOT TO SCALE

CONTRACTOR SHALL VERIFY ALL EQUIPMENT LOCATIONS, SIZES & ANCHORAGES PRIOR TO CONCRETE POUR. VERIFY BOLT CENTER FOR EQUIPMENT PER SHOP DRAWINGS.



4 CONDENSR AND GENERATOR TYPICAL PAD DETAIL
SCALE: NO SCALE



1. CD CONNECTION W/4" LONG FLEX HOSE SECURED W/SS CLAMPS AT ALL SPRING ISOLATED UNITS.
2. UNIT BASE
3. TYPE "M" COPPER SOLDERED TRAP & PIPING SEE PLAN FOR SIZE. MINIMUM SLOP: ⅛" PER 1"
4. TOP OF VENT @ CL OF CD OUTLET.
5. INSULATE CONDENSATE PIPING INSIDE BUILDING EXPOSED AND IN CONCEALED SPACES.

3 CONDENSATE DRAIN DETAIL
NOT TO SCALE

I & A ENGINEERING
1610 BLOSSOM HILL ROAD, SUITE "6A"
SAN JOSE, CALIFORNIA 95124
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REGISTERED PROFESSIONAL ENGINEER
IRADJ RAHNAMA
No. M-26257
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Barnell Ave.
Morgan Hill, CA 95037

PROJECT: LJ COMMONS 4 PLEX

DRAWING TITLE: DETAILS

REV	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		
7		

JOB NO.: 23–113
CAD FILE:

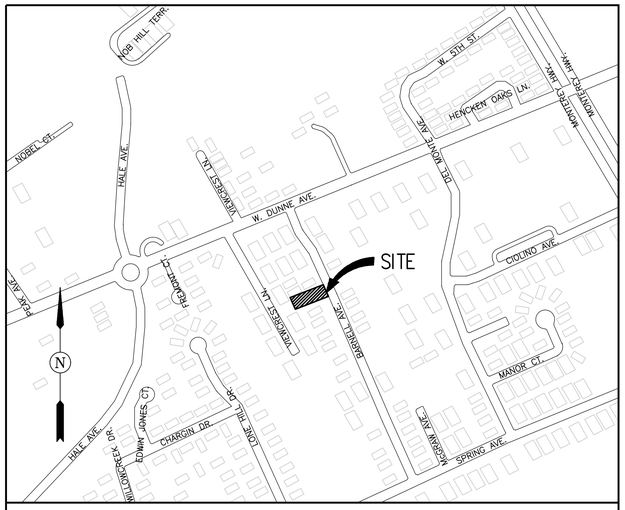
DSGN'D BY:	DRAWN BY:
I. R.	H. N.
CHK'D BY:	APP'D BY:
I. R.	I. R.
DATE: 4/17/23	SCALE: AS NOTED

DRAWING NO.:

M2-1

SHEET * OF *

HAREN PROPERIES, LLC
LJ COMMONS
MORGAN HILL SANTA CLARA COUNTY CALIFORNIA



VICINITY MAP
NOT TO SCALE

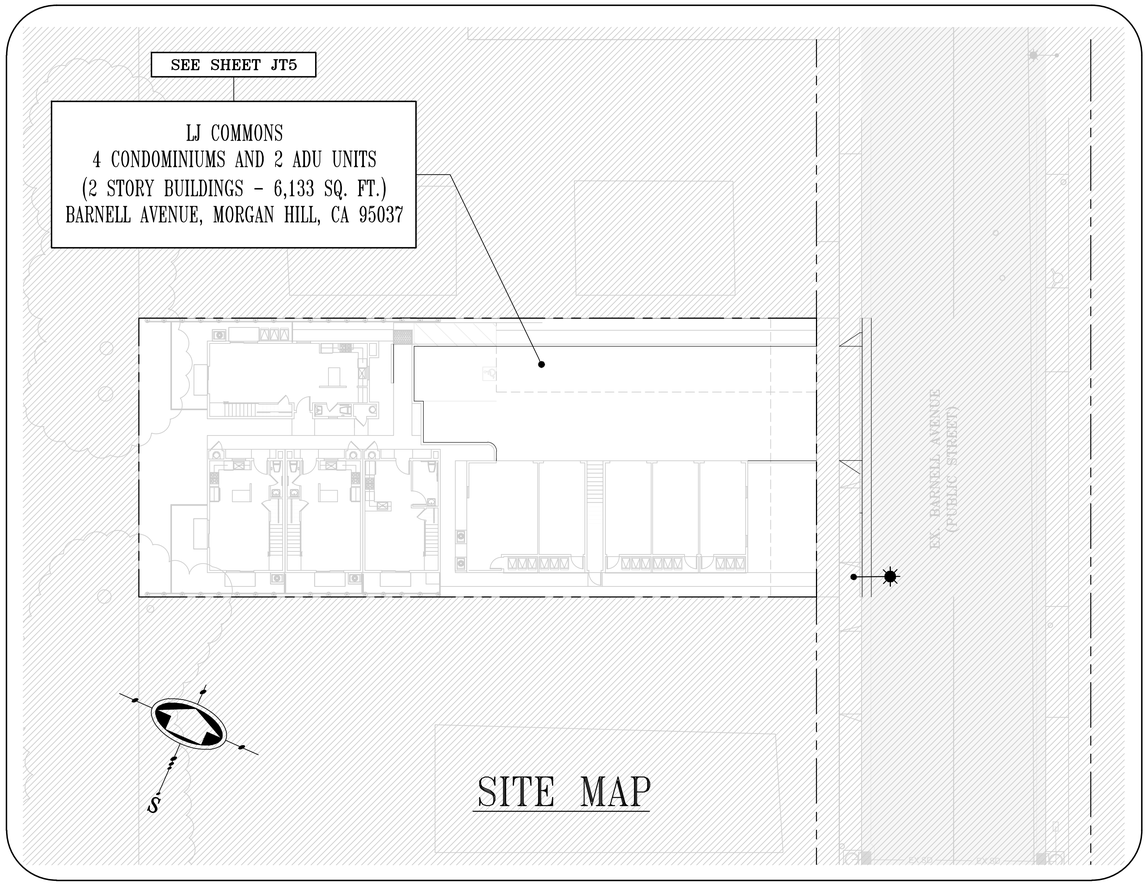
SHEET INDEX

SHEET NO.	DESCRIPTION
JT1	JOINT TRENCH COMPOSITE TITLE SHEET
JT2	JOINT TRENCH GENERAL NOTES AND DETAILS
JT3	JOINT TRENCH DETAILS
JT4	JOINT TRENCH SECTIONS AND DETAILS
JT5	JOINT TRENCH COMPOSITE PLAN
P1 - P2	PHOTO EXHIBIT SHEET

85 L.F. OF JOINT TRENCH AND 1 STREET LIGHTS
SHALL BE INSTALLED WITH THIS JOINT TRENCH PLAN SET

4 NEW CONDOMINIUMS + 2 NEW ADU (6 UNITS TOTAL)

1 NEW SERVICE COMPLETIONS (ELECTRIC, TELEPHONE, AND CATV)



SITE MAP

LEGEND

JT	PROPOSED JOINT TRENCH
SVC	PROPOSED JOINT TRENCH SERVICE
GAS	PROPOSED GAS
EX GAS	EXISTING GAS
ECUG	EXISTING UNDERGROUND CATV LINES
EEUG	EXISTING UNDERGROUND ELECTRIC LINES
EUOH	EXISTING OVERHEAD UTILITY LINES
EEOH	EXISTING OVERHEAD ELECTRIC LINES
CUG	PROPOSED UNDERGROUND CATV LINES
EUG	PROPOSED UNDERGROUND ELECTRIC LINES
TUG	PROPOSED UNDERGROUND TELEPHONE LINES
UOH	PROPOSED OVERHEAD UTILITY LINES
	DESIGNATES UTILITY LINES TO BE REMOVED
	EXISTING PRIMARY SPLICE BOX
	EXISTING SECONDARY SPLICE BOX
	PG&E 3ø, PAD MOUNT TRANSFORMER, IIE PAD SIZE–90" x 106", CABINET SIZE–89"w x 90"d x 96"h
FVT 5S	PG&E SPLICE BOX, 3' x 5' x 3'6" (LID DIMENSIONS) 3'9" X 5'9" X 5'1" (OVERALL DIMENSIONS)
	JOINT/UTILITY POLE
	ELECTROLIER, SINGLE ARM

TARRAR UTILITY REP.:	COREY CAMPBELL	JOB NO.	223134	PHONE NO.	(925) 240-2595
DEVELOPER:	GABRIEL CONNORS	JOB NO.	223134	PHONE NO.	(408) 201-0108
PG&E ELECTRIC COORDINATOR:	TROY DARONE	JOB NO.	125950245	PHONE NO.	ELECPHNO
PG&E GAS COORDINATOR:	-	JOB NO.	-	PHONE NO.	-
TELEPHONE REP.:	GREG WHITING	JOB NO.	-	PHONE NO.	TELEPHNO
CABLE T.V. REP.:	TONY AGUILAR	JOB NO.	-	PHONE NO.	(408) 846-3767

FILES STATUS

DESCRIPTION:	BY:	DATE:	STATUS:
CIVIL PLANS (ELECTRONIC FILE)	MH ENGINEERING	XX-XX-XXXX	XXXX
ARCHITECTURAL PLANS (ELECTRONIC FILE)	GARY MOORE RESIDENTIAL DESIGN	XX-XX-XXXX	XXXX
LANDSCAPE PLANS (ELECTRONIC FILE)	KAREN AITKEN & ASSOC.	XX-XX-XXXX	XXXX
GAS DESIGN	-	-	-
ELECTRIC DESIGN	PG&E	XX-XX-XXXX	XXXX
TELEPHONE INTENT REPLY	FRONTIER	XX-XX-XXXX	XXXX
CATV INTENT REPLY	SPECTRUM	XX-XX-XXXX	XXXX
STREET LIGHT PLANS – PUBLIC	TARRAR UTILITY CONSULTANTS	XX-XX-XXXX	XXXX
STREET LIGHT PLANS – PRIVATE	TARRAR UTILITY CONSULTANTS	XX-XX-XXXX	XXXX
SOILS REPORT	XXXX	XX-XX-XXXX	XXXX

A = APPROVED • **ANS** = APPROVED NOT SIGNED • **NA** = NOT APPROVED• **F** = FIRST SUBMITTAL • **SS** = SECOND SUBMITTAL • **R** = RECEIVED

TARRAR UTILITY CONSULTANTS
APPROVED FOR SUBMITTAL
KARA PEDERSEN
QUALIFIED APPLICANT DESIGN ENGINEER

COMPOSITE DRAWING BY DEVELOPER

Estimate # _____

Approved _____ Gas ADE _____ Date

Approved _____ Electric ADE _____ Date

PG & E is not responsible for the accuracy of the specifications shown on this drawing.

COMPOSITE DRAWING BY DEVELOPER

Approved _____ Telephone representative _____ Date

Approved _____ CATV representative _____ Date

SUBSTRUCTURE VERIFICATION STAMP

DEVELOPER NOTE AND SIGN

ALL PG&E ENCLOSURES AND BOXES HAVE BEEN SET TO GRADE ACCORDING TO GRADE STAKES PROVIDED BY DEVELOPERS ENGINEER. ALL COSTS TO RELOCATE OR READJUST BOXES AT A LATER DATE WILL BE BILLED TO THE DEVELOPER. PLEASE HAVE YOUR JOB SUPT. VERIFY THE CORRECT GRADE OF ALL ENCLOSURES AND BOXES, AND SIGN AND DATE DRAWING.

THANK YOU

SIGNED _____

DATE: _____

813 First Street
Brentwood, CA 94513
(925) 240-2595
(925) 240-7013 fax
www.tarrar.com

TARRAR UTILITY CONSULTANTS

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- PG&E Gas Design
- PG&E Elec Design
- M.E.P. Design
- Cost Analysis
- Due Diligence

JOINT TRENCH COMPOSITE TITLE SHEET
HAREN PROPERIES, LLC
LJ COMMONS
MORGAN HILL CALIFORNIA

NO.	REVISIONS	BY	DATE

DATE: September 2023 | DATE LAST WORKED ON: 11/9/2023
SCALE: NOT TO SCALE | DRAWN: LH | CHECKED: CC
JOB NO.: 223134

INTENT TO CONSTRUCT

811 CALL BEFORE YOU DIG UNDERGROUND SERVICE ALERT

REGISTERED PROFESSIONAL ENGINEER ZABIHULLAH ZAKA C 59346 Exp. 06/30/25 CIVIL STATE OF CALIFORNIA

SHEET JT1 OF JT5 SHEETS

PROJECT NOTES:

1. FIELD ADJUST SERVICES TO MINIMIZE INTERFERENCE WITH EXISTING FACILITIES (TYPICAL).
2. CONTRACTOR SHALL PERFORM ALL TRENCHING, EXCAVATING, BACKFILLING AND OTHER WORK AS SHOWN OR NOTED ON PLANS, AND AS SPECIFIED ON UTILITY BID DOCUMENTS.
3. FIELD ADJUST SPLICE BOXES TO KEEP CLEAR OF SIDEWALK, DRIVEWAYS AND EXISTING FACILITIES (TYPICAL).
4. A 3 FOOT LEVEL WORKING AREA MUST BE MAINTAINED AROUND ALL ELECTRIC ENCLOSURES. PRIOR TO ENERGIZING THE SYSTEM, THE ELECTRIC UTILITY COMPANY INSPECTOR WILL DETERMINE IF RETAINING WALLS ARE REQUIRED TO MEET MINIMUM CLEARANCE BETWEEN ENCLOSURES AND THE TOPS OR TOES OF SLOPES. IF RETAINING WALLS ARE REQUIRED, THE DEVELOPER AND/OR CONTRACTOR SHALL OBTAIN THE NECESSARY PERMITS FROM THE CITY/COUNTY BUILDING DEPARTMENT PRIOR TO WALL CONSTRUCTION.
5. TRANSITION TO VAULTS FROM TRENCH NOT SHOWN, SEE TRANSITION DETAIL SHEET JT3 (TYPICAL).
6. CONTRACTOR SHALL PLACE ALL UTILITY SPLICE BOXES, ENCLOSURES & CONDUIT IN PROPER RELATIONSHIP TO FINAL GRADE (SHOWN SCHEMATICALLY).
7. ALL PG&E, TELEPHONE, CABLE T.V. AND FIBER OPTIC BOXES AND JOINT TRENCH FACILITIES ARE TO MAINTAIN A MINIMUM OF 3' SEPARATION FROM SEWER, WATER LATERALS AND DRIVEWAYS.
8. CONTRACTOR SHALL COORDINATE ALL CONNECTIONS BETWEEN PROPOSED AND EXISTING FACILITIES AS DIRECTED BY THE RESPECTIVE UTILITY COMPANY INSPECTOR. UTILITY COMPANY PERSONNEL SHALL MAKE ALL "HOT TIE-INS"; THE CONTRACTOR IS PROHIBITED FROM WORKING IN ANY ENERGIZED FACILITIES.
9. THE CONTRACTOR SHALL OBTAIN THE APPROPRIATE STREET EXCAVATION AND ENCROACHMENT PERMIT(S) FROM THE CITY/COUNTY PRIOR TO STARTING WORK IN THE PUBLIC STREET AREA.
10. FIELD LOCATE JOINT TRENCH FACILITIES TO KEEP CLEAR OF SERVICE LATERALS. SERVICE LATERALS TO BE ROUTED TO AVOID SPLICE BOX (ADDITIONAL P.U.E MAY BE REQUIRED).
11. RESPECTIVE UTILITY COMPANY TO OBTAIN CITY APPROVAL OF ALL ABOVE GROUND EQUIPMENT.
12. UNLESS OTHERWISE SHOWN ON THE PLANS, NATURAL BENDS SHALL BE USED FOR ALL CONDUIT EXCEPT STREET LIGHT CONDUIT.
13. INCIDENTAL TRENCHING TO SPLICE BOXES NOT SHOWN (TYPICAL). CONTRACTOR TO PROVIDE ADDITIONAL TRENCHING AS REQUIRED FOR CONDUIT ROUTING TO SPLICE BOXES AND CABINETS (TYPICAL).
14. ALL CONDUITS SHALL ENTER OR EXIT PERPENDICULAR TO BOX WALLS.
15. ALL CONDUITS MUST BE MANDREL TESTED AND APPROVED.
16. OFFSET SPLICE BOXES TO ROUTE TELEPHONE/FIBER OPTIC CONDUIT AS NEEDED (TYPICAL).
17. PULL ROPES SHALL BE PLACED IN ALL EMPTY CONDUITS AS REQUIRED BY EACH UTILITY COMPANY.
18. ALL PG&E SPLICE BOXES ADJACENT TO TRANSFORMER SHALL BE 26" IN DEPTH (TYPICAL).
19. ALL CONDUITS NOT ENTERING SPLICE BOXES OR ENCLOSURES SHALL BE CAPPED.
20. COORDINATE TIE-IN WITH UTILITY COMPANY AS REQUIRED.
21. THE STREET LIGHT SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE "MATERIAL AND LABOR RECAP" AND LIGHT SCHEDULE AS SHOWN ON THESE PLANS.
22. ALL EXISTING DUCTS TO BE USED IN THESE PLANS SHALL BE "VERIFIED" BY PULLING A MANDREL THROUGH THE ENTIRE EXISTING LENGTH PRIOR TO CONNECTION.
23. EDGE OF SPLICE BOXES & PEDESTALS SHALL BE 5' FROM EDGE OF FIRE HYDRANT AND 3' FROM STREET LIGHT (TYPICAL). CONTRACTOR TO AVOID DISTURBING FIRE HYDRANT THRUST BLOCK.
24. ALL UTILITY SUBSTRUCTURES SHALL BE INSTALLED IN ACCORDANCE WITH THE "MATERIAL AND LABOR RECAP" SHOWN ON THESE PLANS
25. MAINTAIN 3' CLEARANCE AND LEVEL AREA AROUND PRIMARY SPLICE BOXES & XFMRS.
26. DUE TO UNCERTAINTIES OF THE EXACT LOCATION OF EXISTING FACILITIES, FIELD LOCATION OF PROPOSED FACILITIES MAY BE REQUIRED. CONFIRM WITH VARIOUS UTILITIES FOR EXACT PLACEMENT.
27. FOR CLARITY – BOXES/PEDESTALS ARE SHOWN AT LARGER SIZE THAN ACTUAL. FIELD ADJUST TO KEEP CLEAR OF DRIVEWAYS (TYPICAL).
28. ALL SERVICE FACILITIES SHALL BE EXTENDED TO EITHER THE PROPERTY LINE OR TO POSITION SHOWN ON THE PLANS, AND THEN CAPPED, BURIED AND LOCATION STAKED.
29. THESE PLANS WERE PREPARED UTILIZING PLANS RECEIVED FROM MH ENGINEERING ((408) 779-7381).

ABBREVIATION LIST

B/C	BACK OF CURB	H.P.S.	HIGH PRESSURE SODIUM	RT	RETAINING WALL
B/W	BACK OF WALK	IRR.	IRRIGATION CONTROLLER	R/W	RIGHT OF WAY
BTU	BRITISH TERM UNITS	J.T.	JOINT TRENCH	SCH.	SCHEDULE
CB	CATCH BASIN	KV	KILO-VOLTS	SD	STORM DRAIN
℄	CENTERLINE	LE	LANDSCAPE EASEMENT	SHT.	SHEET
CAT.	CATALOG	LF	LINEAR FOOT/FEET	S/W	SIDE WALK
C OR CATV	CABLE TELEVISION	MH	MANHOLE	SS	SANITARY SEWER
CFH	CUBIC FEET PER HOUR	MIN.	MINIMUM	SSE	SANITARY SEWER EASEMENT
C.I.P.	CAPITOL IMPROVEMENT PROJECT	MPOE	MINIMUM POINT OF ENTRY	ST. LT.-S/L	STREET LIGHT
CL	CENTER LINE	N.T.S.	NOT TO SCALE	SUBD'V	SUBDIVISION
CU	COPPER	O.D.	OUTER DIAMETER	Sqft.	SQUARE FOOTAGE
E	ELECTRIC	O.H.	OVER HEAD	T	TELEPHONE
EP	EDGE OF PAVEMENT	PIEUE	PRIVATE INGRESS, EGRESS, AND UTILITY EASEMENT	TUC	TARRAR UTILITY CONSULTANTS
EVAE	EMERGENCY VEHICLE ACCESS EASEMENT			TYP.	TYPICAL
EX.	EXISTING	℄	PROPERTY LINE	T/S	TRAFFIC SIGNAL
F/C	FACE OF CURB	P.S.	POWER SUPPLY	U.G.	UNDERGROUND
FH	FIRE HYDRANT	PROJ.	PROJECT	U.O.N.	UNLESS OTHERWISE NOTED
FUT.	FUTURE	PSDE	PRIVATE STORM DRAIN EASEMENT	V	VOLT
F.O.	FIBER OPTIC	PSE	PUBLIC SERVICE EASEMENT	W	WATT
G	GAS	PVAW	PRIVATE VEHICLE ACCESS WAY	WT	WATER
GALV.	GALVANIZE	P.V.C.	POLY VINYL CHLORIDE	W/	WITH
G.E.	GENERAL ELECTRIC	PWE	PUBLIC WATER LINE EASEMENT	W/O	WITHOUT
GRD.	GROUND	PWR	POWER	WLE	WATER LINE EASEMENT
H.O.A.	HOME OWNERS ASSOCIATION	PUE	PUBLIC UTILITY EASEMENT	XFMR	TRANSFORMER

GENERAL NOTES:

1. ALL JOINT TRENCH CONSTRUCTION WORK SHALL BE IN ACCORDANCE WITH PG&E UTILITY OPERATIONS UO STANDARD S5453.
2. ALL WORK SHALL BE SUBJECT TO THE INSPECTION AND SATISFACTION OF ALL PARTICIPATING UTILITIES AND CITY INSPECTORS.
3. BACKFILL SELECTION SHALL BE SUBJECT TO THE APPROVAL OF THE RESPECTIVE UTILITY COMPANIES, THE SOILS ENGINEER AND THE CITY AND/OR COUNTY WHERE THE PROJECT IS LOCATED. CONSULT PARTICIPATING UTILITIES, SOILS ENGINEER, AND THE CITY FOR APPROVED BACKFILL MATERIAL. COMPACTION TO MEET LOCAL AGENCIES REQUIREMENTS.
4. THE BOTTOM OF THE TRENCH SHALL BE CLEARED OF ROCKS AND OTHER HARD SURFACES. DISTRIBUTION TRENCHES WITHOUT TELEPHONE CONDUIT DO NOT REQUIRE BEDDING MATERIAL. SERVICE TRENCHES WITHOUT TELEPHONE CONDUIT REQUIRE 2" SAND BEDDING AS A PAD ON WHICH UTILITY FACILITIES CAN REST. SERVICE TRENCHES CONTAINING TELEPHONE CONDUIT ONLY REQUIRE A 1" SAND BEDDING. ALL OTHER TRENCHES CONTAINING TELEPHONE CONDUIT REQUIRE A 3" SAND BEDDING. REFER TO PG&E GREEN BOOK PUBLICATION S5453, EXHIBIT B AND AT&T SPEC95 "AT&T SPECIFICATIONS" TRENCHING AND CONDUIT GUIDE FOR FURTHER INFORMATION.
5. THE CONTRACTOR SHALL BE RESPONSIBLE TO REPLACE PAVEMENT AND/OR SIDEWALK WHERE REMOVED OR DAMAGED AS A RESULT OF ITS OPERATION (UNLESS OTHERWISE NOTED). REPLACEMENT OF PAVEMENT AND/OR SIDEWALK TO BE PER CITY SPECIFICATIONS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE AND NOTIFY ALL PARTICIPATING UTILITY INSTALLATIONS.
7. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY FIELD CHANGES MADE WITHOUT FIRST NOTIFYING TARRAR UTILITY CONSULTANTS.
8. **IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE EXISTENCE AND/OR PRECISE LOCATION OF ALL UNDERGROUND FACILITIES PRIOR TO THE START OF CONSTRUCTION. TARRAR UTILITY CONSULTANTS MAKES NO WARRANTY WHATSOEVER THAT THE EXISTING UNDERGROUND UTILITIES AND/OR STRUCTURES DEPICTED ON THE PLANS HAVE BEEN ACCURATELY LOCATED OR THAT THERE ARE NO OTHER UNDERGROUND UTILITIES AND STRUCTURES IN ADDITION TO WHAT HAS BEEN SHOWN. CALL U.S.A. A MINIMUM OF 48 HOURS PRIOR TO STARTING CONSTRUCTION. FOR CALIFORNIA NORTH, (KERN COUNTY AND NORTHERLY, AND NEVADA) CALL (800)227-2600. FOR CALIFORNIA SOUTH, (SAN BERNARDINO COUNTY AND SOUTHERLY) CALL (800)422-4133.**
9. CONTRACTOR SHALL COMPLY WITH ALL STATE, COUNTY AND CITY LAWS AND ORDINANCES AND WITH THE REGULATIONS OF THE DEPARTMENT OF INDUSTRIAL RELATIONS, O.S.H.A. AND ANY OTHER GOVERNMENTAL AGENCY RELATING TO THE SAFETY AND CHARACTER OF WORK, EQUIPMENT AND LABOR PERSONNEL.
10. THE DRAWINGS AND SPECIFICATIONS SHALL BE CONSIDERED TO BE COMPLEMENTARY TO EACH OTHER. ANYTHING SHOWN ON THE DRAWINGS AND NOT MENTIONED IN THE SPECIFICATIONS, OR MENTIONED IN THE SPECIFICATIONS AND NOT SHOWN ON THE DRAWINGS, SHALL BE OF LIKE EFFECT AS IF SHOWN ON OR MENTIONED IN BOTH. IF DISCREPANCY IS FOUND, NOTIFY TARRAR UTILITY CONSULTANTS PRIOR TO STARTING WORK.
11. TRENCH AND CONDUIT LAYOUTS ARE SHOWN SCHEMATICALLY.
12. TRENCHING OR SUBSTRUCTURE EXCAVATION MAY NECESSITATE OPERATION OVER, UNDER, OR ADJACENT TO OTHER UNDERGROUND UTILITIES (STORM, SEWER, WATER, ETC...). THE CONTRACTOR IS RESPONSIBLE TO LOCATE, PROSPECT, EXPOSE AND PROTECT ALL ADJACENT OR CROSSING UNDERGROUND UTILITIES. THIS WORK TO PROTECT THOSE UTILITIES IS NOT CONSIDERED AS EXTRA WORK. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW IMPROVEMENT PLANS, IN CONJUNCTION WITH THIS PLAN, AND BID THE WORK ACCORDINGLY.
13. THE QUANTITIES SHOWN ON THESE PLANS ARE ONLY ESTIMATES OF WHAT WILL ACTUALLY BE REQUIRED FOR THE CONSTRUCTION OF THE OVERALL PROJECT. FINAL QUANTITIES MAY VARY ACCORDING TO CHANGES, ADDITIONS, DELETIONS OR OMISSIONS ON THE ORIGINAL PLAN.
14. VERIFY ALL SUBSTRUCTURE EXCAVATION DIMENSIONS WITH SUPPLIER(S) BEFORE BIDDING.
15. TARRAR UTILITY CONSULTANTS ASSUMES NO RESPONSIBILITY FOR ANY VARIANCE BETWEEN THESE PLANS AND THE ACTUAL FIELD CONDITIONS. THE CONTRACTOR SHOULD REVIEW THE PROJECT SITE PRIOR TO SUBMITTING ITS BID.
16. THE CONTRACTOR IS REQUIRED TO EXCAVATE BELL HOLE(S) AT TIE-IN LOCATIONS AS DIRECTED BY PARTICIPATING UTILITY.
17. CONTRACTOR WILL COMPLY WITH ALL LAWS, ORDINANCES AND REGULATIONS. CONTRACTOR SHALL BE FAMILIAR WITH O.S.H.A. INDUSTRIAL ORDERS AND SHALL CONDUCT HIS WORK ACCORDINGLY. WHEN WORKING ENERGIZED EQUIPMENT, THE UTILITY OWNER SHALL BE NOTIFIED TO SUPPLY THE APPROPRIATE MAN POWER AND SAFETY PRECAUTIONS AS NEEDED. THE CONTRACTOR IS RESPONSIBLE FOR PUBLIC SAFETY AND TRAFFIC CONTROL MEASURES.
18. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE AS-BUILT DRAWINGS AFTER INSTALLATION OF PG&E'S GAS AND ELECTRIC SYSTEMS (PRIOR TO "HOT TIE-INS").
19. THE CITY INSPECTOR SHALL BE NOTIFIED TWO WORKING DAYS PRIOR TO COMMENCEMENT OF WORK. COORDINATE WITH THE INSPECTOR ANY SERVICES TO BE ABANDONED.
20. THE CONTRACTOR IS TO VERIFY THE RIGHT OF WAY, PUBLIC UTILITY EASEMENT AND/OR PUBLIC SERVICE EASEMENT ACQUISITION WITH THE APPLICANT PRIOR TO CONSTRUCTION WITHIN AREAS OF QUESTION.
21. PG&E'S GENERAL TERM AND CONDITIONS FOR GAS AND ELECTRIC EXTENSION AND SERVICE CONSTRUCTION BY "APPLICANT" (EFFECTIVE 07/1/95) TO BE UTILIZED FOR ALL TRENCHING, BACKFILLING, AND INSTALLATION WORK.
22. IN THE EVENT OF DISPUTES OR DISAGREEMENT OVER ANY INSTALLATIONS, DESIGNS, PLANS OR DRAWINGS, THE SPECIFICATIONS AND REQUIREMENTS OF THE INDIVIDUAL UTILITY COMPANIES AND THEIR INSPECTORS SHALL TAKE PRECEDENCE. IN CASE OF DISCREPANCIES WITHIN THE DRAWINGS AND SPECIFICATIONS HEREIN, THE CONTRACTOR SHALL CONSULT TARRAR UTILITY CONSULTANTS FOR INTERPRETATION BEFORE WORK IS STARTED.
23. TARRAR UTILITY CONSULTANTS HEREIN, ASSUMES NO RESPONSIBILITY WHATSOEVER FOR THE QUALITY, QUANTITY OR TIMING OF WORK TO BE PERFORMED BY THE CONTRACTOR, UTILITY COMPANY CONSTRUCTION CREWS, OR OTHER SUB-CONTRACTOR OF DEVELOPER.
24. ALL TRENCHING, BACKFILLING AND INSTALLATION WORK IS TO BE IN ACCORDANCE WITH THE STANDARD PRACTICES AND SPECIFICATIONS OF EACH UTILITY COMPANY PARTICIPATING IN THE UTILITY TRENCHES WITHIN THE PROJECT.
25. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING POINTS OF ACCESS THAT ARE AGREEABLE TO ADJACENT LAND USES AND TENANTS AT ALL TIMES.
26. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ASCERTAINING WHAT INSPECTIONS WILL BE REQUIRED FOR APPROVAL OF THE WORK AND FOR COORDINATING ALL SUCH INSPECTIONS. THE CONTRACTOR SHALL GIVE AT LEAST 48 HOURS PRIOR NOTICE TO THE CITY, SOILS ENGINEER, UTILITY COMPANIES OR ANY OTHER INDIVIDUALS OR PUBLIC AGENCIES, THAT THE WORK IS READY FOR INSPECTION.
27. THE CONTRACTOR SHALL NOTIFY DEVELOPER 48 HOURS PRIOR TO THE NEED FOR SURVEY STAKING. THE CONTRACTOR IS RESPONSIBLE FOR THE PRESERVATION OF ALL CONSTRUCTION STAKING SET BY THE DEVELOPER'S SURVEYORS AND WILL BE BACK CHARGED FOR ANY RE-STAKING THAT IS REQUIRED. ANY EXTRA CONSTRUCTION STAKING NECESSITATED SOLELY BY THE CONTRACTOR'S NEGLIGENCE WILL BE CHARGED TO AND PAID FOR BY THE CONTRACTOR.
28. ALL TRANSFORMERS AND TRANSFORMER PADS ARE TO BE INSTALLED PER PG&E SPECIFICATIONS. PROTECTIVE BOLLARDS ARE TO BE PLACED WHERE NEEDED.
29. THE CONTRACTOR SHALL MAKE HIMSELF FAMILIAR WITH THE PROJECT IMPROVEMENT PLANS AND CONDUCT HIS WORK ACCORDINGLY.
30. KEEP ALL BOXES AND PEDESTALS WITHIN PUBLIC UTILITY EASEMENTS OR RIGHT OF WAY. AS SHOWN.
31. ALL SAND BACKFILL MUST HAVE TESTING OF PH LEVEL AS WELL AS SAND EQUIVALENT. SEE **CITY OF MORGAN HILL** REQUIREMENTS.
32. THE PROPOSED CONSTRUCTION OPERATION MAY TAKE PLACE AT OR NEAR FENCE LINES, PROPERTY LINES AND PROPERTY IMPROVEMENTS PRIOR TO CONSTRUCTION, CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING THESE AREAS AND FOR MAINTAINING THESE AREAS AND FACILITIES AT ALL TIMES DURING THE CONSTRUCTION OPERATION.
33. THE CONTRACTOR ASSUMES SOLE AND COMPLETE RESPONSIBILITY FOR THE SITE CONDITION AND SHALL DEFEND AND HOLD THE DEVELOPER AND TARRAR UTILITY CONSULTANTS HARMLESS FROM ANY ALLEGED CLAIMS OR LIABILITIES, EXCEPT THOSE ARISING FROM SOLE NEGLIGENCE OF THE DEVELOPER OR TARRAR UTILITY CONSULTANTS.
34. THE APPROXIMATE LOCATIONS OF ALL EXISTING UTILITY COMPANY UNDERGROUND LINES, POLES BOXES, ETC., WERE OBTAINED FROM A REVIEW OF AVAILABLE UTILITY COMPANY RECORDS, REPRESENTATIONS OF UTILITY COMPANY PERSONAL, OR FIELD OBSERVATIONS. NEITHER THE DEVELOPER NOR TARRAR UTILITY CONSULTANTS ASSUME ANY RESPONSIBILITY FOR VARIANCES BETWEEN THESE PLANS AND THE ACTUAL FIELD CONDITIONS. NO EXTRA PAYMENT WILL BE MADE TO THE CONTRACTOR FOR ANY ADDITIONAL TRENCHING, BOX EXCAVATIONS, MATERIALS, ETC., THAT MAY BE REQUIRED TO COMPLETE THIS PROJECT IN THE EVENT AN EXISTING TIE-IN POINT SUBSTRUCTURE IS EITHER NON-EXISTING OR IS NOT SHOWN ON THE PLANS IN ITS ACTUAL FIELD POSITION. IT IS THE CONTRACTOR'S OBLIGATION AND RESPONSIBILITY TO SAFELY LOCATE ALL EXISTING UNDERGROUND FACILITIES BY SURFACE MARKING AND/OR HAND EXCAVATION PRIOR TO STARTING CONSTRUCTION.
35. "DEVELOPER AND/OR CONTRACTOR IS RESPONSIBLE TO OBTAIN A **CITY OF MORGAN HILL** ENCROACHMENT PERMIT FOR ALL WORK DONE IN THE PUBLIC RIGHT OF WAY. DEVELOPER AND/OR CONTRACTOR IS ALSO RESPONSIBLE TO PROVIDE JOINT TRENCH PLANS TO THE **CITY OF MORGAN HILL** AT THE TIME OF APPLICATION FOR THE ENCROACHMENT PERMIT."

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Brentwood, CA 94513
(925) 240-2595
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- M.E.P. Design
- Cost Analysis
- Due Diligence

JOINT TRENCH GENERAL NOTES AND DETAILS

HAREN PROPERIES, LLC
LJ COMMONS
MORGAN HILL CALIFORNIA

NO.	REVISIONS	BY	DATE

DATE: September 2023 | DATE LAST WORKED ON: 11/9/2023
SCALE: NOT TO SCALE | DRAWN: LH | CHECKED: KT
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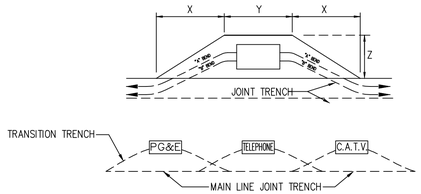
INTENT TO CONSTRUCT

811 CALL BEFORE YOU DIG UNDERGROUND SERVICE ALERT

REGISTERED PROFESSIONAL ENGINEER ZABIHULLAH ZACA C 59346 Exp. 06/30/25 CIVIL STATE OF CALIFORNIA

SHEET JT2 OF JT5 SHEETS

JOINT TRENCH TRANSITION

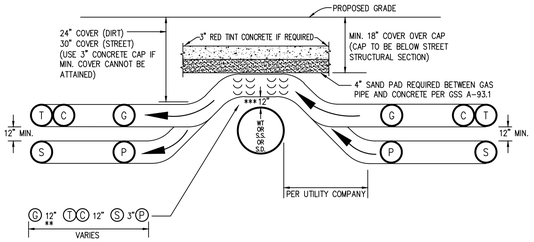


BEND	PRIMARY BOX SIZE	DISTANCE (when conduit enters box) "X"	"Y"	"Z"	NOTES
"A"	3' x 5'	24'	7'	5'	BEND IS 60° RADIUS WITH AN ANGLE OF 10 DEG. USE 2-5 COUPLINGS WITH 1-5' CONDUIT SECTION FOR EACH BEND SHOWN.
	4'-6" x 8'-6"	24'	11'	7'	
"B"	3' x 5'	32'	7'	5'	BEND IS 30° RADIUS WITH AN ANGLE OF 15 DEG. USE 3-5 COUPLINGS WITH 2-2 1/2' CONDUIT SECTION FOR EACH BEND SHOWN.
	4'-6" x 8'-6"	32'	11'	7'	

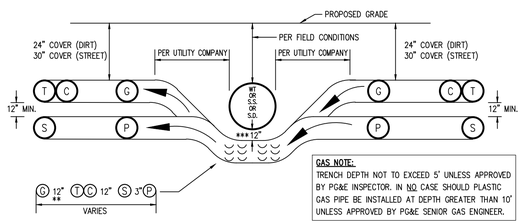
NOTE:

1. CONTRACTOR TO EXCAVATE TRANSITIONS FROM MAIN-LINE TRENCH TO VAULTS AS REQUIRED BY EACH UTILITY.
2. TRANSITIONS NOT SHOWN ON COMPOSITE DRAWING FOR CLARITY.
3. CONTRACTOR TO INCLUDE COST OF TRANSITIONS IN VAULT EXCAVATION COST.

DETAIL 1 / JT3 — N.T.S. — TYPICAL PRIMARY BOX EXCAVATION USING CONDUIT



JOINT TRENCH OVER WATER, SANITARY SEWER OR STORM DRAIN
CHOICE 1 (PREFERRED METHOD)



GAS NOTE:
TRENCH DEPTH NOT TO EXCEED 5' UNLESS APPROVED BY PG&E INSPECTOR. IN NO CASE SHOULD PLASTIC GAS PIPE BE INSTALLED AT DEPTH GREATER THAN 10' UNLESS APPROVED BY PG&E SENIOR GAS ENGINEER.

JOINT TRENCH UNDER WATER, SANITARY SEWER OR STORM DRAIN
CHOICE 2 (OPTIONAL METHOD)

* SEE MINIMUM COVER & CLEARANCE CHART

** WITH MUTUAL AGREEMENT, WHEN 4" O.D. OR SMALLER GAS PIPE IS INSTALLED SEPARATION MAY BE REDUCED TO NOT LESS THAN 6" BETWEEN GAS AND COMMUNICATION DUCTS (TELEPHONE & CATV).

*** 6" MINIMUM REQUIRED BY PG&E-ADDITIONAL CLEARANCE MAYBE REQUIRED BY CITY OR COUNTY

DETAIL 2 / JT3 — N.T.S. — OVER UNDER DETAILS

CONSTRUCTION LABOR AND MATERIAL RESPONSIBILITY

PUBLIC UTILITY SYSTEM (JOINT TRENCH)

	P.G.&E. ELECTRIC	P.G.&E. GAS	TELEPHONE	C.A.T.V.	CONTRACTOR
TRENCHING: EXCAVATE, BACKFILL AND COMPACT.	○	○	○	○	●
GAS MATERIAL: FURNISH.		○			
INSTALL.		○			●
ELECTRIC CABLE: FURNISH.	○				
INSTALL.	○				●
ELECTRIC CONDUIT: FURNISH.	○				
INSTALL.	○				●
ELECTRIC SPLICE BOXES: EXCAVATE.	○				
FURNISH.	○				
INSTALL.	○				●
ELECTRIC TPMR. ENCLS.: EXCAVATE.	○				
FURNISH.	○				
INSTALL.	○				●
ELECTRIC EQUIP. ENCLS.: EXCAVATE.	○				
FURNISH.	○				
INSTALL.	○				●
ELECTRIC TPMR. PADS: GRADE.	○				
FURNISH.	○				
INSTALL.	○				●
ELECTRIC SWITCH PADS: GRADE.	○				
FURNISH.	○				
INSTALL.	○				●
TELEPHONE CONDUIT: FURNISH.			○		
INSTALL.			○		●
TELEPHONE CABLE: FURNISH.			○		
INSTALL.			○		●
TELEPHONE SPLICE BOX: EXCAVATE.			○		
FURNISH.			○		
INSTALL.			○		●
TELEPHONE INTER. PADS: GRADE.			○		
FURNISH.			○		
INSTALL.			○		●
C.A.T.V. CONDUITS: FURNISH.				○	
INSTALL.				○	●
C.A.T.V. SPLICE BOXES: EXCAVATE.				○	
FURNISH.				○	
INSTALL.				○	●

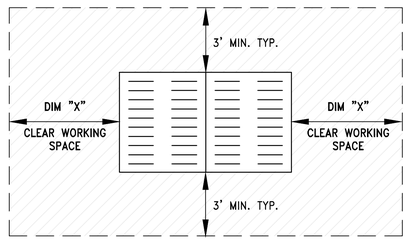
STREET LIGHTING SYSTEM

	P.G.&E.	CONTRACTOR
WIRE: FURNISH.	○	
INSTALL.		●
CONDUIT: FURNISH.	○	
INSTALL.		●
BASES: FURNISH.	○	
INSTALL.		●
LUMINAIRES: FURNISH.	○	
INSTALL.		●
SPLICE BOXES: FURNISH.	○	
INSTALL.		●
EXCAVATE.		●
POLES & ARMS: FURNISH.	○	
INSTALL.		●

SCHEDULE: LS2A
INSTALL IN JOINT TRENCH: NO/YES
INSTALL IN SEPARATE TRENCH: YES/NO
CONDUIT SIZE: 1 1/2"
CONDUIT TYPE: SCH. 40
WIRE SIZE: #8 TYPE: CU

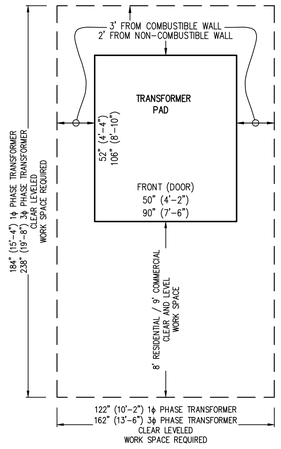
ADDITIONAL NOTES:
DEVELOPER TO SUPPLY AND INSTALL ELECTRIC FACILITIES UNDER THE COMPETITIVE BIDDING PROVISIONS OF PG&E GREEN BOOK RULES 15, 16 AND 20.

● DESIGNATES THE WORK TO BE PERFORMED BY THE CONTRACTOR AND EACH UTILITY COMPANY.

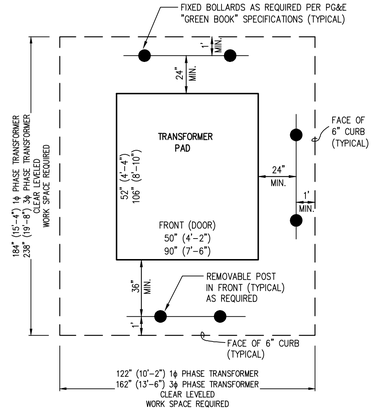


DIM "X"
3' MIN. 3'0" x 5'0" ENCLOSURES
4' MIN. 4' x 6'6" x 5'0" ENCLOSURES
5' MIN. 4'6" x 8'6" x 6'0" ENCLOSURES
(OR EASEMENT REQUIRED)

DETAIL 3 / JT3 — N.T.S. — PG&E ENCLOSURE CLEARANCES



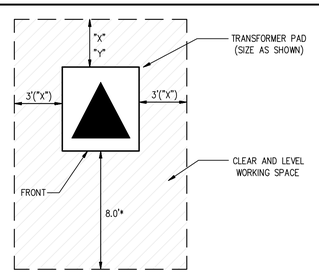
PG&E 1Ø & 3Ø
CLEAR AND LEVEL WORK SPACE CLEARANCES



PG&E 1Ø & 3Ø PHYSICAL PROTECTION REQUIREMENTS (PARKING LOT, TRAVELED WAY, ETC. ...)

DETAIL 4 / JT3 — N.T.S. — PG&E PAD MOUNTED TRANSFORMER CLEARANCE & PROTECTION DETAIL

NOT TO SCALE



"X"= 3' MIN. CLEARANCE FROM COMBUSTIBLE WALL

"Y"= 2' MIN. CLEARANCE FROM NON-COMBUSTIBLE WALL

* MINIMUM 9' (COMMERCIAL/HIGH DENSITY) FROM FACE OF CURB

* MINIMUM 3' (RESIDENTIAL/LOW DENSITY) FROM FACE OF CURB

** MINIMUM 4' FROM ANY DOORWAY

DETAIL 5 / JT3 — N.T.S. — PG&E PAD MOUNT TRANSFORMER DETAIL

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(925) 240-7013 fax
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- PG&E Elec Design
- M.E.P. Design
- Cost Analysis
- Due Diligence

JOINT TRENCH DETAILS
HAREN PROPERIES, LLC
LJ COMMONS
MORGAN HILL CALIFORNIA

NO.	REVISIONS	BY	DATE

DATE: September 2023 | DATE LAST WORKED ON: 11/9/2023
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INTENT TO CONSTRUCT

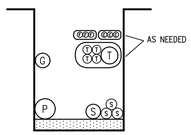
811 CALL BEFORE YOU DIG — UNDERGROUND SERVICE ALERT

REGISTERED PROFESSIONAL ENGINEER
ZABIHULLAH ZACA
C 59346
Exp. 06/30/25
CIVIL
STATE OF CALIFORNIA

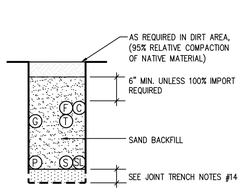
SHEET JT3 OF JT5 SHEETS

JOINT TRENCH MINIMUM COVER AND CLEARANCES
MINIMUM SEPARATION FROM

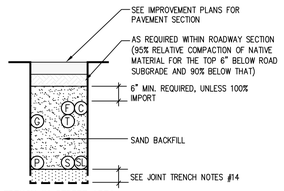
	UTILITY	G	T	TD	C	S	P	SL	SLP	F	FE	MINIMUM COVER
G	(GAS)*	–	12"	12"	12"	6"	12"	12"	6"	12"	12"	24", 30" IN STREET
T	(TELEPHONE) DUCT	12"	–	1"	1"	12"	12"	12"	12"	1"	12"	24", 30" IN STREET
TD	(TELEPHONE) DIRECT BURY	12"	1"	–	1"	12"	12"	12"	12"	1"	12"	24", 30" IN STREET
C	(CABLE T.V.)	12"	1"	1"	–	12"	12"	12"	12"	1"	12"	24", 30" IN STREET
S	(ELECT. SECONDARY)	6"	12"	12"	12"	1.5"	2"	12"	1.5"	12"	12"	24", 30" IN STREET
P	(ELECT. PRIMARY)	12"	12"	12"	12"	2"	2"	2"	2"	12"	12"	36", 36" IN STREET
SL	(PUBLIC AND PRIVATE–STREET LIGHT)**	12"	12"	12"	12"	12"	12"	–	12"	12"	12"	24", 30" IN STREET
SLP	(P.G.E.–STREET LIGHT)	6"	12"	12"	12"	1.5"	2"	12"	1.5"	12"	12"	24", 30" IN STREET
FE	(FOREIGN ELECTRIC SOURCES, NON PG&E)	12"	12"	12"	12"	12"	12"	12"	12"	–	12"	24", 30" IN STREET
F	(FIBER OPTIC)	12"	1"	1"	1"	12"	12"	12"	12"	–	12"	24", 30" IN STREET



TYPICAL EXAMPLE OF STACKING FACILITIES IN JOINT TRENCH



TRENCH IN DIRT AREA



TRENCH IN STREET AREA

LEGEND

- MEETS UTILITY TRENCH ALLOTMENT
- EXCEEDS UTILITY TRENCH ALLOTMENT
- (G) GAS
- (P) ELECTRIC PRIMARY
- (S) ELECTRIC SECONDARY
- (T) TELEPHONE (DUCT OR DIRECT BURY)
- (C) CATV
- (SL) STREET LIGHT (PUBLIC OR PRIVATE)
- (SLP) STREET LIGHT (PG&E)
- (FE) FOREIGN ELECTRIC
- (F) FIBER OPTIC

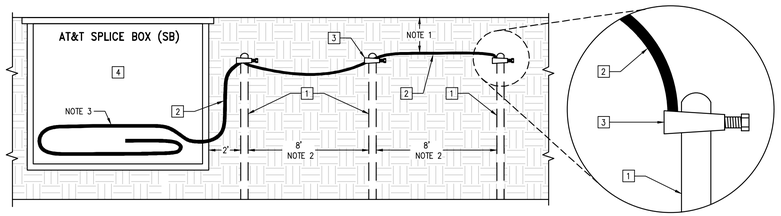
JOINT TRENCH NOTES:

1. TRENCH COVER & CLEARANCES SHOWN ARE MINIMUMS ONLY AND MAY REQUIRE ALTERATIONS TO SUIT FIELD CONDITIONS.
2. IT IS RECOMMENDED THAT ALL FACILITIES ARE TO BE A MINIMUM OF 12" BELOW SUB–BASE DISTURBANCE.
3. * WITH MUTUAL AGREEMENT FROM PARTICIPATING UTILITIES, WHEN 4" O.D. OR SMALLER GAS PIPE IS INSTALLED, SEPARATION MAY BE REDUCED TO NOT LESS THAN 6" BETWEEN GAS AND COMMUNICATION DUCTS (TELEPHONE, C.A.T.V. & FIBER OPTIC).
4. * WHERE 6" GAS MAIN IS LOCATED IN THE JOINT TRENCH A 18" MINIMUM SEPARATION FROM GAS MAIN TO ALL UTILITIES WILL BE REQUIRED.
5. ** WITH MUTUAL AGREEMENT FROM PARTICIPATING UTILITIES, STREET LIGHT SEPARATION MAY BE REDUCED TO 0" BETWEEN STREET LIGHT AND COMMUNICATION DUCTS (TELEPHONE, C.A.T.V. & FIBER OPTIC).
6. TRENCH CONFIGURATIONS SHOWN ARE FOR INSTALLATION WHERE EACH OCCUPANT IS UTILIZING HIS ENTIRE SPACE ALLOCATION. OTHER CONFIGURATIONS OR REDUCED DIMENSIONS MAY BE USED, PROVIDED THAT MINIMUM COVER AND CLEARANCES ARE MAINTAINED.
7. THE CONTRACTOR IS TO ADJUST TRENCH DEPTHS AT ALL JOINT TRENCH LATERAL CROSSINGS TO MAINTAIN REQUIRED CLEARANCES BETWEEN ALL PARTICIPATING UTILITIES.
8. TRENCH SECTIONS ARE SHOWN SCHEMATICALLY AND INDICATE AREAS OF OCCUPANCY ONLY; THEY DO NOT REFLECT SIZE OR QUANTITY OF FACILITIES TO BE INSTALLED.
9. TRENCH FOOTAGES PER SECTION ARE APPROXIMATE. SECTIONS ARE DESIGNED TO ACCOMMODATE ALL REQUIRED FACILITIES AS INDICATED ON EACH TRENCH PARTICIPANT'S CONSTRUCTION DRAWINGS.
10. THE CONTRACTOR SHALL VERIFY TRENCH FOOTAGES FOR ACCURACY PRIOR TO EXCAVATION AND TAKE NECESSARY PRECAUTION CROSSING WATER AND SEWER FACILITIES.
11. THE CONTRACTOR SHALL REFER TO THE COMPOSITE, CONDUIT, AND/OR EACH RESPECTIVE UTILITY INSTALLATION PLAN FOR THE NECESSARY CONDUIT CABLE AND/OR PIPE TO BE INSTALLED IN THIS PROJECT.
12. TYPE "M2" TRENCH SHALL BE INSTALLED AFTER CURB AND GUTTER INSTALLATION. CONTRACTOR SHALL COORDINATE ADDITIONAL MOVE–INS NECESSARY TO COMPLETE THE SERVICES TO THE DWELLING UNITS WITH THE DEVELOPER, ALL AGENCIES AND THE UTILITY COMPANIES. THE COST OF THESE MOVE–INS SHALL BE INCLUDED IN THE CONTRACTOR'S UNIT PRICE FOR TRENCHING.
13. THE AVERAGE TRENCH DEPTHS SHOWN ARE BASED ON THE MINIMUM UTILITY COMPANY REQUIREMENTS FOR DEPTH AND SEPARATION. CONTRACTOR SHALL ADJUST TRENCH WIDTH & DEPTH AS REQUIRED TO ADEQUATELY CLEAR EXISTING UNDERGROUND FACILITIES AND MAINTAIN MINIMUM UTILITY CLEARANCES. ALL TRENCHES OVER 60" DEEP MUST COMPLY WITH OSHA REQUIREMENTS. (SEE THE JOINT TRENCH MINIMUM COVER AND CLEARANCE TABLE)
14. CONTRACTOR SHALL USE SAND BEDDING AND SHADING AS REQUIRED BY THE UTILITY COMPANIES. THE BOTTOM OF THE TRENCH SHALL BE CLEARED OF ROCKS AND OTHER HARD SURFACES. DISTRIBUTION TRENCHES WITHOUT TELEPHONE CONDUIT DO NOT REQUIRE BEDDING MATERIAL. SERVICE TRENCHES WITHOUT TELEPHONE CONDUIT REQUIRE 2" SAND BEDDING AS A PAD ON WHICH UTILITY FACILITIES CAN REST. SERVICE TRENCHES CONTAINING TELEPHONE CONDUIT ONLY REQUIRE A 1" SAND BEDDING. ALL OTHER TRENCHES CONTAINING TELEPHONE CONDUIT REQUIRE A 3" SAND BEDDING. REFER TO PG&E GREEN BOOK PUBLICATION S5453, EXHIBIT B AND AT&T SPEC95 "AT&T SPECIFICATIONS" TRENCHING AND CONDUIT GUIDE FOR FURTHER INFORMATION.
15. ALL TRENCHING AND BACKFILLING TO BE DONE IN ACCORDANCE WITH THE CITY OF MORGAN HILL ENGINEERING STANDARDS AND SPECIFICATIONS.
16. ALL PG&E, TELEPHONE, CABLE, AND FIBER OPTIC BOXES AND JOINT TRENCH FACILITIES ARE TO MAINTAIN A MINIMUM OF 3' SEPARATION FROM SEWER AND WATER LATERALS AND DRIVEWAYS. ALL UTILITY VAULTS, BOXES, PEDESTALS, ETC. MUST MAINTAIN A 5' MINIMUM CLEARANCE FROM FIRE HYDRANTS, AND 3' MINIMUM FROM STREETLIGHTS.

JOINT TRENCH OCCUPANCY GUIDE

TRENCH SECTION	A*	B*	C*	D*	E*	F*	G*	H*	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
GAS																							
TELEPHONE	X	X		X		X			X	X		X	X	X		X		X			X		
CABLE T.V.	X		X	X			X		X		X	X	X		X	X			X			X	
ELECTRIC SEC.	X	X	X	X	X	X	X	X						X	X	X	X	X	X				X
ELECTRIC PRI.	X	X	X	X	X	X	X	X															
FIBER OPTCS																							

*THESE SECTIONS MAY OR MAY NOT CONTAIN SECONDARY



LEGEND

1. 8' LENGTH x 5/8" DIAMETER GROUND ROD POLES
2. BARE CONTINUOUS SOLID NUMBER 6 AWG. WIRE
3. GROUND CLAMP
4. TELEPHONE SPLICE BOX

NOTES

1. MINIMUM DEPTH = 12 INCHES
2. GROUND BEDS MAY BE PLACED IN ANY CONFIGURATION AS LONG AS THE 8 FOOT SEPARATION BETWEEN GROUND RODS IS MAINTAINED AND THE 2 FOOT SEPARATION FROM THE SB WALL IS NOT ENCROACHED UPON.
3. BARE #6 GROUND WIRE TO ENTER THROUGH SIDEWALL OR BOTTOM OF SB AND WRAP SB ONCE.

DETAIL 1 / N.T.S. JT4 — AT&T AERIAL AND BURIED GROUND BED DESIGN

THIS AREA RESERVED FOR JOINT TRENCH SECTIONS TO BE PLACED AT A LATER TIME

813 First Street
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(925) 240-7013 fax
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JOINT TRENCH SECTIONS AND DETAILS
HAREN PROPERIES, LLC
LJ COMMONS
MORGAN HILL CALIFORNIA

NO.	REVISIONS	BY	DATE

DATE: September 2023 | DATE LAST WORKED ON: 11/9/2023
SCALE: NOT TO SCALE | DRAWN: LH | CHECKED: KT
JOB NO.: 223134
INTENT TO CONSTRUCT

811 CALL BEFORE YOU DIG — UNDERGROUND SERVICE ALERT

REGISTERED PROFESSIONAL ENGINEER — ZABIHULLAH ZAZAI — C 59346 Exp. 06/30/25 — CIVIL — STATE OF CALIFORNIA

SHEET JT4 OF JT5 SHEETS

SERVICE TERMINATION LEGEND

E,T,C — ELECTRIC, TELEPHONE, CATV LOCATION

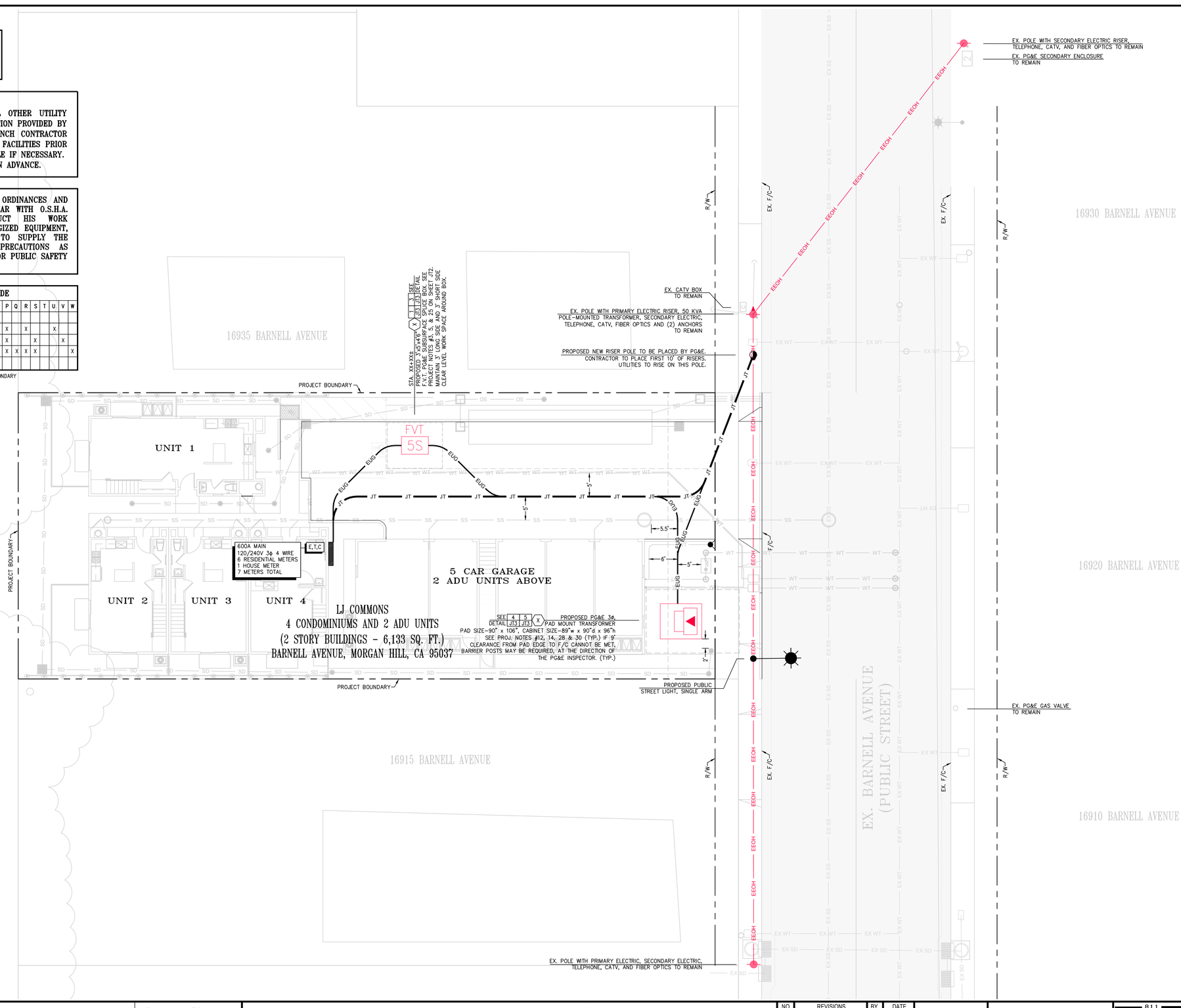
CAUTION !! CAUTION !! CAUTION !!
EX. JOINT TRENCH AND EX. GAS AND ALL OTHER UTILITY LOCATIONS ARE SHOWN BASED UPON INFORMATION PROVIDED BY OTHERS AND FIELD OBSERVATION. JOINT TRENCH CONTRACTOR TO VERIFY EXACT LOCATION OF ALL EXISTING FACILITIES PRIOR OF ANY JOINT TRENCH CONSTRUCTION. POTHOLE IF NECESSARY. CONTACT U.S.A. DIG ALERT 2 WORKING DAYS IN ADVANCE.

CONTRACTOR WILL COMPLY WITH ALL LAWS, ORDINANCES AND REGULATIONS. CONTRACTOR SHALL BE FAMILIAR WITH O.S.H.A. INDUSTRIAL ORDERS AND SHALL CONDUCT HIS WORK ACCORDINGLY. WHEN WORKING AROUND ENERGIZED EQUIPMENT, THE UTILITY OWNER SHALL BE NOTIFIED TO SUPPLY THE APPROPRIATE MAN POWER AND SAFETY PRECAUTIONS AS NEEDED. THE CONTRACTOR IS RESPONSIBLE FOR PUBLIC SAFETY AND TRAFFIC CONTROL MEASURES.

JOINT TRENCH OCCUPANCY GUIDE

TRENCH SECTION	A*	B*	C*	D*	E*	F*	G*	H*	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
GAS																							
TELEPHONE	X	X		X		X			X	X		X	X	X		X		X			X		
CABLE T.V.	X		X	X			X		X		X	X	X		X	X			X			X	
ELECTRIC SEC.	X	X	X	X	X	X	X	X					X	X	X	X	X	X			/		X
ELECTRIC PRI.	X	X	X	X	X	X	X	X															

*THESE SECTIONS MAY OR MAY NOT CONTAIN SECONDARY



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JOINT TRENCH COMPOSITE PLAN

HAREN PROPERIES, LLC
LJ COMMONS
MORGAN HILL CALIFORNIA

NO.	REVISIONS	BY	DATE

DATE: SEPTEMBER 2023 | DATE LAST WORKED ON: 12/19/2023
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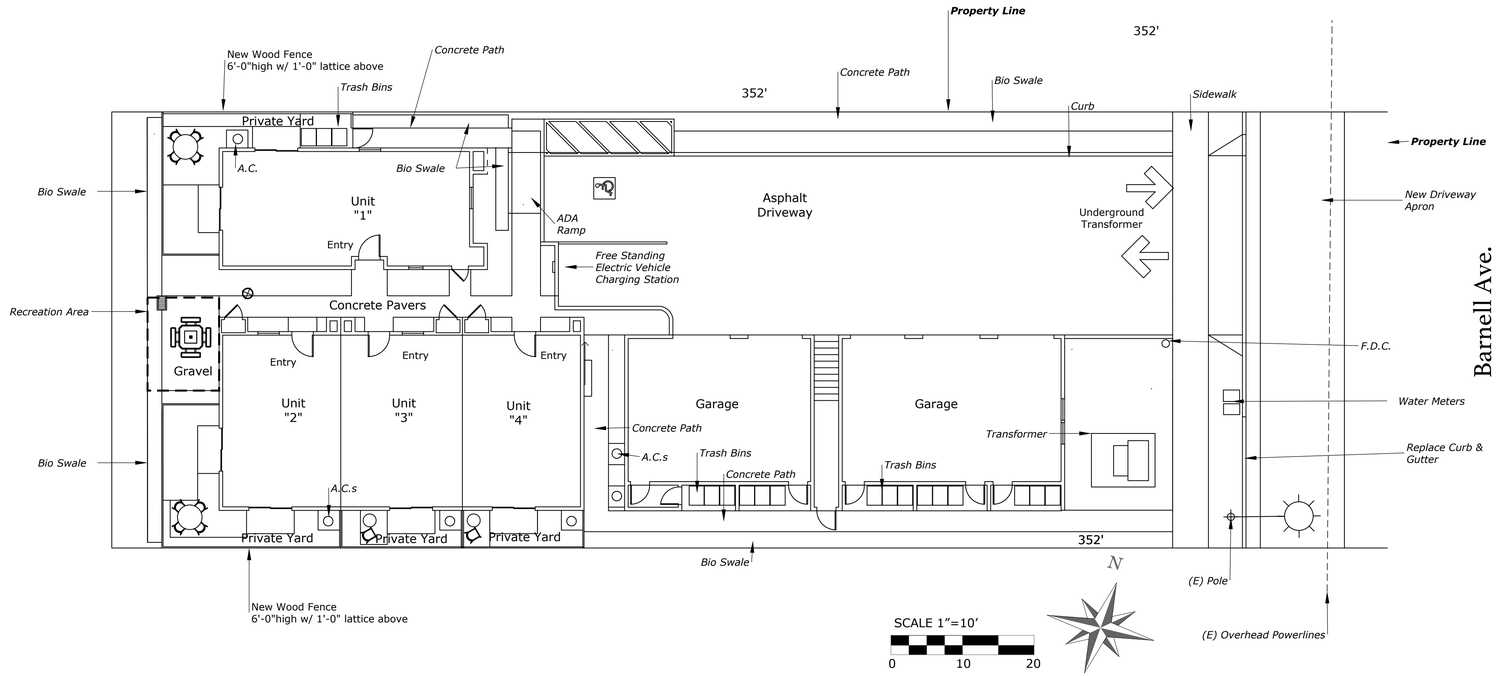
REGISTERED PROFESSIONAL ENGINEER ZAHIULLAH ZACKY C 59346 Exp. 06/30/25 CIVIL STATE OF CALIFORNIA

SHEET JT5 OF JT5 SHEETS

LANDSCAPE PLANS FOR:

LJ COMMONS

o Barnell Ave, Morgan Hill, CA.



OWNER:

Gabriel Connors
Cellphone: (408)960 91 13
Email: gconnors@interorealestate.com
Address:
o Barnell Ave, Morgan Hill, CA.

PROJECT INFORMATION:

PROPERTY ADDRESS :	o Barnell Ave, Morgan Hill, CA.
PROJECT TYPE:	Residential
WATER SUPPLY TYPE:	Potable Water

APN: 767-12-012

Landscape Architects:
Karen Aitken & Associates, Cal. License #2239
(408) 842-0245
8262 Rancho Real Gilroy CA 95020
Karen@KAA.Design

LANDSCAPE DOCUMENT INDEX

Cover Sheet with Project information	L-0
Planting Plan	L-1
Material Plan	L-2
Irrigation Plan	L-3
Planting & Irrigation Details	L-4

SCOPE OF WORK

- Planting proposal & installation
- Irrigation system proposal & installation
- Lighting proposal & installation

Project shall comply with:

· 2022 California Building Code
· 2022 CA Residential
· 2022 CA Plumbing
· 2022 CA Mechanical
· 2022 CA Electrical
· 2022 CA Fire
· 2022 CA Energy Code
· 2022 CA Green Building Code
· Ordinance of Placer County

Landscape audit report to be provided after construction

Total landscape area: 1,711 sf

Soils management report must be prepared as part of the building permit application and the results of the report are to be used to finalize the irrigation design and soil amendment plans.
There are no slopes greater than 25%.

After installation of landscaping on property, I agree to have an irrigation audit, landscape audit, irrigation schedule, and maintenance schedule conducted by a Certified Irrigation Auditor and submit it to the City for final project sign off

The developer will submit receipts and/or invoices for all compost and mulch purchases to Environmental Services Division after final construction".

"I have complied with the criteria of the ordinance and applied them for the efficient use of water in the landscape design plan"

Karen Aitken
12-05-23

Karen Aitken & Associates -2023

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*** NOTES (E) = Existing**

REVISIONS	BY

KAREN AITKEN & ASSOCIATES
LANDSCAPE ARCHITECTS
8262 Rancho Real Gilroy Ca. 95020
Calif. Reg.#2239 (408) 842-0245
karen@KAA.Design

LJ COMMONS
o Barnell Ave, Morgan Hill, CA.
COVER SHEET

LICENSED LANDSCAPE ARCHITECT
KAREN JONES AITKEN
No. 2239
Exp. 8-31-25
STATE OF CALIFORNIA

DATE	
SCALE	1/8"=1'-0"
DRAWN	SL
JOB	CONNORS

L-0

SOIL PREPARATION, MULCH AND AMENDMENTS

THE FOLLOWING CRITERIA SHALL BE USED IN THE PREPARATION OF ON-SITE SOILS AND FOR MULCHING PROCEDURES:

A) PRIOR TO THE PLANTING OF ANY MATERIALS, COMPACTED SOILS SHALL BE TRANSFORMED TO A FRIABLE CONDITION. ON ENGINEERED SLOPES, ONLY AMENDED PLANTING HOLES NEED MEET THIS REQUIREMENT;

B) SOIL AMENDMENTS SHALL BE INCORPORATED ACCORDING TO RECOMMENDATIONS OF THE SOIL REPORT AND WHAT IS APPROPRIATE FOR THE PLANTS SELECTED;

C) FOR LANDSCAPE INSTALLATIONS, COMPOST AT A RATE OF A MINIMUM OF FOUR CUBIC YARDS PER 1,000 SQUARE FEET OF PERMEABLE AREA SHALL BE INCORPORATED TO A DEPTH OF SIX INCHES INTO THE SOILS WITH GREATER THAN 6% ORGANIC MATTER IN THE TOP 6 INCHES OF SOIL ARE EXEMPT FROM ADDING COMPOST AND TILLING;

D) A MINIMUM 3 INCH (3") LAYER OF WONDER MULCH BY VISION RECYCLING SHALL BE APPLIED ON ALL EXPOSED SOIL SURFACES OF PLANTING AREAS EXCEPT IN TURF AREAS, CREEPING OR ROOTING GROUNDCOVERS, OR DIRECT SEEDING APPLICATIONS WHERE
MULCH IS CONTRAINDICATED. TO PROVIDE HABITAT FOR BENEFICIAL INSECTS AND OTHER WILDLIFE, UP TO 5 % OF THE LANDSCAPE AREA MAY BE LEFT WITHOUT MULCH. DESIGNATED INSECT HABITAT MUST BE INCLUDED IN THE LANDSCAPE DESIGN PLAN AS SUCH;

E) AT LEAST 4 CU. YDS. OF COMPOST, SIX INCHES DEEP, SHALL BE APPLIED PER 1,000 SQ. FT. OF LANDSCAPE AREA.

F) STABILIZING MULCHING PRODUCTS SHALL BE USED ON SLOPES THAT MEET CURRENT ENGINEERING STANDARDS;

G) ORGANIC MULCH MATERIALS MADE FROM RECYCLED OR POST-CONSUMER SHALL TAKE PRECEDENCE OVER INORGANIC MATERIALS OR VIRGIN FOREST PRODUCTS UNLESS THE RECYCLED POST-CONSUMER ORGANIC PRODUCTS ARE NOT LOCALLY AVAILABLE. ORGANIC MULCHES ARE NOT REQUIRED WHERE PROHIBITED BY LOCAL FUEL MODIFICATION PLAN GUIDELINES OR OTHER APPLICABLE LOCAL ORDINANCES.

Plant Legend

BOTANICAL	COMMON	SIZE	QTY	WATER	REMARKS
Tree					
Cercis occidentalis	Western Redbud	24" box	3	Very Low	(2) 24" Box, (1) 15 Gallon
Heteromeles arbutifolia	Toyon	5 gal	1	Very Low, Low	
Pistacia chinensis	Chinese Pistache	24" box	1	Low	
Shrub					
Dodonaea viscosa	Green Hopseed Bush	5 gal	4	Low	
Euryops pectinatus	Euryops	5 gal	3	Very Low	
Lavandula angustifolia 'Hidcote'	Hidcote English Lavender	5 Gallon	21	Low	
Nandina domestica	Nandina, Heavenly Bamboo	5 gal	14	Low	
Pittosporum tobira	Tobira	5 gal	9	Very Low, Low	
Rhamnus californica 'Eve Case'	Eve Case Compact Coffeeberry	5 Gallon	8	Very Low	
Rosmarinus officinalis 'Tuscan Blue'	Tuscan Blue Upright Rosemary	5 gal	3	Very Low	
Salvia leucantha	Mexican Sage	5 gal	9	Low	
Sollya heterophylla	Australian Bluebell Creeper	5 Gallon	7	Low	
Ground cover					
Heterotheca villosa	Hairy False Goldenaster	5 gal	5	Low, Extra in Summer	
Lantana montevidensis	Trailing Lantana	5 Gallon	8	Low	
Myoporum parvifolium	Ground Cover Myoporum	5 gal	3	Low, Extra in Summer	
Vine					
Campsis radicans	Trumpet Creeper	5 gal	6	Low	
Perennial					
Penstemon pseudospectabilis	Desert Penstemon	5 gal	3	Low	
Grass					
Chondropetalum tectorum	Cape Rush	5 gal	47	Low	
Festuca rubra	Creeping Red Fescue, Red Fescue	1 Gallon	14	Low	
Juncus patens	California Gray Rush	1 Gallon	51	Low	
Succulent					
Agave attenuata	Fox Tail Agave	5 Gallon	3	Low	
Broadleaf Evergreen					
Salvia muelleri	Royal Purple Sage	5 gal	1	Low	

N

SCALE 1/8" = 1'-0"

0 8 16

*** NOTES (E) = Existing**

REVISIONS	BY

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LJ COMMONS

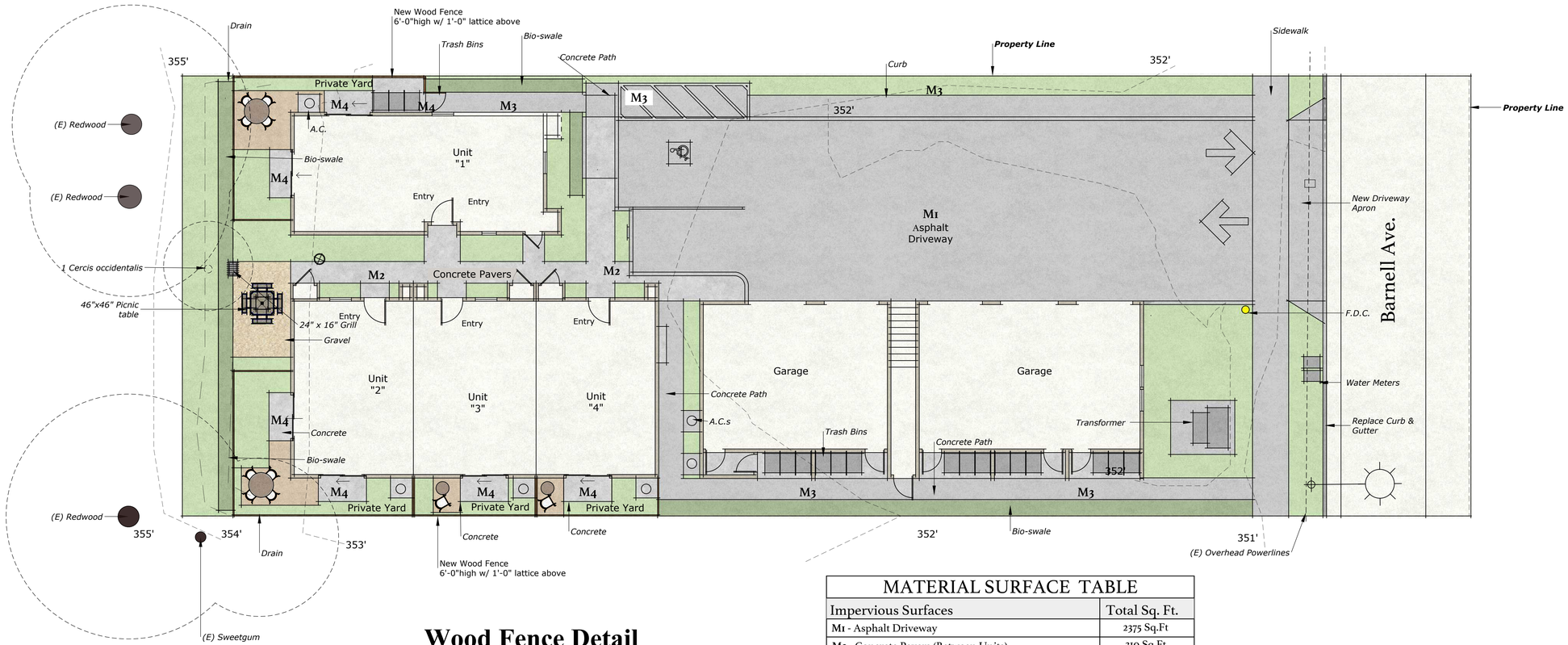
o Barnell Ave, Morgan Hill, CA.

PLANTING PLAN

LICENSED LANDSCAPE ARCHITECT
KAREN JONES AITKEN
No. 2239
Exp. 8-31-25
STATE OF CALIFORNIA

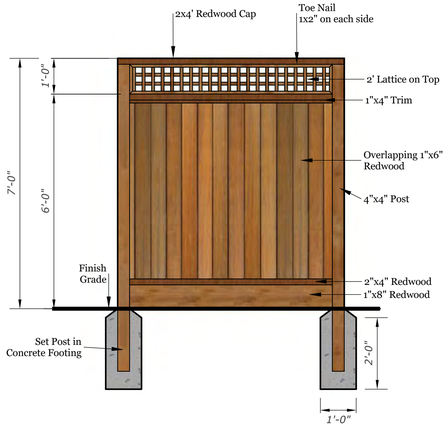
DATE	12-21-23
SCALE	1/8"=1'-0"
DRAWN	SL & IN
JOB	CONNORS

L-1



Wood Fence Detail

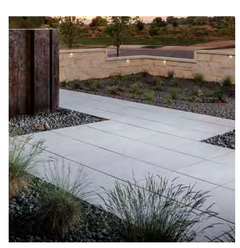
Scale: 1/2"=1'-0"



MATERIAL SURFACE TABLE	
Impervious Surfaces	Total Sq. Ft.
M1 - Asphalt Driveway	2375 Sq.Ft
M2 - Concrete Pavers (Between Units)	310 Sq.Ft
M3 - Concrete Paths	690 Sq.Ft
M4 - Private Yards Concrete Pads	200 Sq.Ft
Sub Total Impervious:	3,575 Sq.Ft
Pervious Surfaces	Total Sq. Ft.
Gravel Patio	120 Sq.Ft
Private Gravel Patio	170 Sq.Ft
Bio Swale	416 Sq.Ft
Landscape Area	985 Sq.Ft
Private Patio Landscape Area	310 Sq.Ft
Sub Total Pervious:	2,001 Sq.Ft

BBQ Grill
Pilot Rock CBP-247

Picnic Table
Dvasocio Square Steel
Commercial Metal Picnic table
46 inch for outdoor



Concrete Pavers Example

N

SCALE 1/8" = 1'-0"

0 8 16

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JOB	CONNORS

L-2

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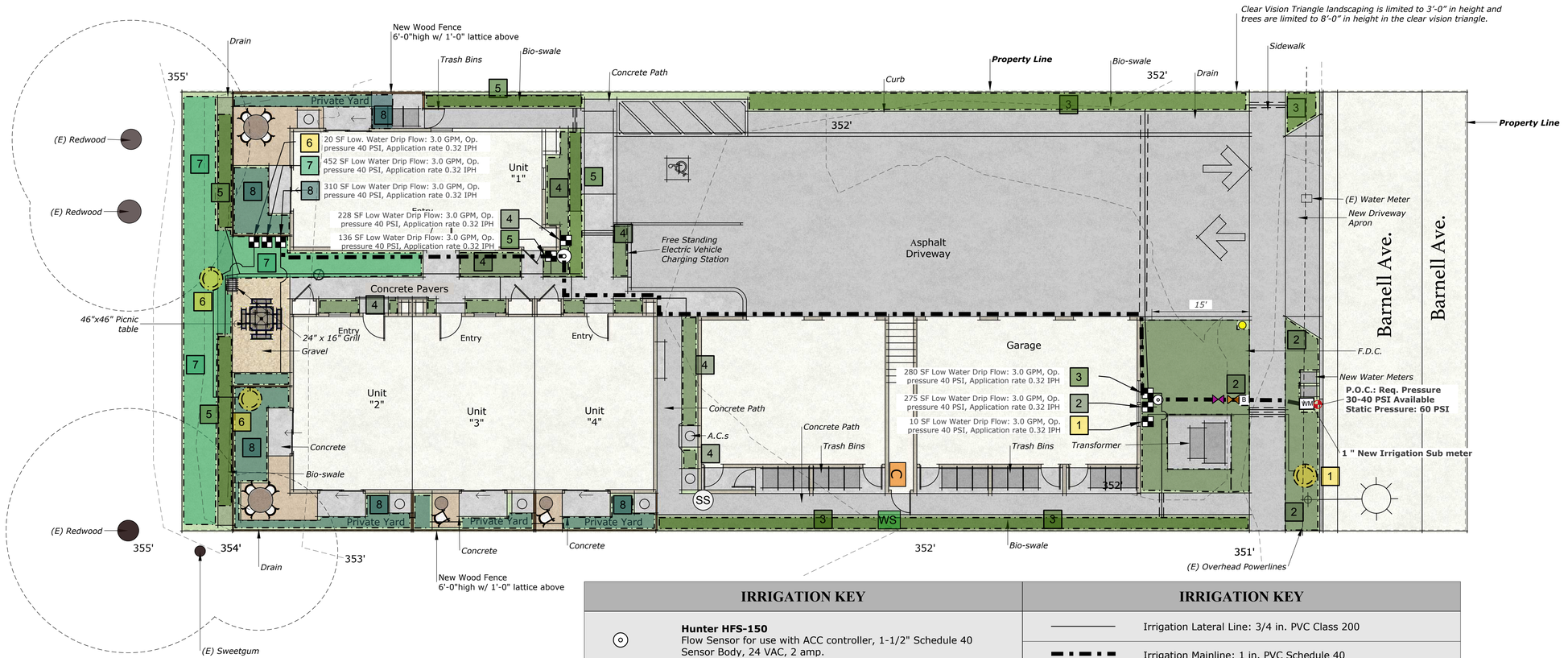

IRRIGATION NOTES

1. Before beginning work, Contractor shall inspect the site. If any conditions exist that differ from what is shown on the plans and will affect the Contractor's work, notify the Owner or Landscape Architect immediately.
2. This irrigation system is based on a minimum of 40 psi and 6 gpm. Prior to irrigation installation, ensure that gpm and psi requirements are met. If there is insufficient of either, contact the Landscape Architect immediately.
3. Install all irrigation equipment in accordance with manufacturer's specifications.
4. Piping layout is diagrammatic. Irrigation equipment shown in paved areas are for legibility only and are to be installed in planting areas (except for sleeves).
5. All irrigation pipes under paving must be sleeved. Sleeves are only shown diagrammatically on the plan, and more may be needed than shown. All mainline pipes and control wires under paving are to be installed in separate sleeves. Contractor is responsible to coordinate with other contractors to locate and install pipe sleeves under paving.
6. Flood trenches to compact backfill before final landscape grading.
7. The irrigation controller must be programmed within the days and hours established by any water conservation program adopted by the City of Morgan Hill.
8. The Contractor is responsible to create accurate, scaled, as-built drawing of the entire irrigation system. Three copies of the as-built drawings are to be given to the Owner before the project is complete.
9. Contractor to install automatic irrigation per these plans. Any discrepancies are to be brought to the attention of the Landscape Architect. Contractor is responsible for the successful, full operation of the irrigation system.
An irrigation audit shall be completed by a Certified Landscape Irrigation Auditor after installation per the State Model Water Efficient Landscape Ordinance. The audit shall be provided to the Santa Clara County.
10. Contractor to review controller selection and controller and valve locations with Owner.
11. The Contractor is responsible to work with the Owner and Landscape Architect to create a maintenance schedule and complete the Certificate of Completion and Certificate of Installation in compliance with the Model Water Efficient Landscape Ordinance.

IRRIGATION KEY	
⊙	**Hunter HFS-150** Flow Sensor for use with ACC controller, 1-1/2" Schedule 40 Sensor Body, 24 VAC, 2 amp.
WM	New Irrigation 1" Water Meter
B	FEBCO Backflow Preventer 1" 825Y
	Master Shut Off Valve behind meter
	Medium Flow Inline Pressure Regulator 40 PSI

Color Indicates the Irrigated Area — 1 — 100 SF Low Water Drip — Water Use (Low, Moderate or High)

Hydrozone Number (Valve)

"I have complied with the criteria of the ordinance and applied them accordingly for the efficient use of water in the irrigation design plan"

Karen Aitken

*** NOTE: Refer to L-4 for Water Calculations & Irrigation Details**

No Areas irrigated with recycled water.
No areas dedicated to edible plants.
No water features presented on plan.
Utilities will be screened to avoid visibility from right-of-way or common areas.

IRRIGATION KEY	
	Irrigation Lateral Line: 3/4 in. PVC Class 200
	Irrigation Mainline: 1 in. PVC Schedule 40
	Pipe Sleeve: PVC Class 200 Typical pipe sleeve for irrigation pipe. Pipe sleeve size shall allow for irrigation piping and their related couplings to easily slide through sleeving material. Extend sleeves 18 inches beyond edges of paving or construction.
	Hunter ICZ-101-25-LF Drip Control Zone Kit. 1" ICV Globe Valve with 1" HY100 filter system. Pressure Regulation: 25psi. Flow Range: .5-15 GPM. 150 mesh stainless steel screen.
	Hunter Dripline HDL-06-12-CV Hunter Dripline w/ 0.9 GPH emitters every 18 in. Dripline laterals spaced at 18" apart. Install with Hunter PLD barbed or PLD-LOC fittings.
	Tree Ring Irrigation Dripline w/ 0.9 drip emitters placed every 12 in. Inner ring 12" from plant. Outter ring 30" from plant. Place tie down every 4' in loam and 5' in clay.
C	**Hunter ACC2** 12 to 42 Station Outdoor Modular Controller. No Module Required. High-End Commercial Use.
WS	**Hunter SOIL-CLIK** The Soil-Clik probe uses proven technology to measure moisture within the root zone. When the probe senses that the soil has reached its desired moisture level, it will shut down irrigation, preventing water waste.
SS	**Hunter Solar-Sync** Solar, rain freeze sensor with outdoor interface, connects to Hunter PCC, Pro-C, and I-Core Controllers, install as noted. Includes 10 year lithium battery and rubber module cover, and gutter mount bracket. Wired.

N

SCALE 1/8" = 1'-0"
0 8 16

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IRRIGATION PLAN

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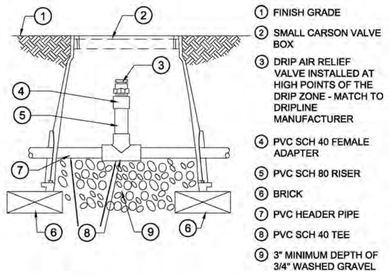
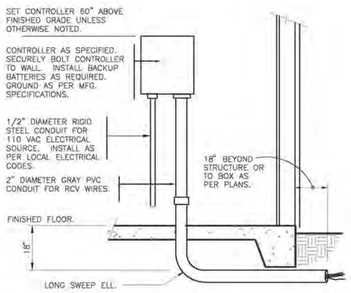
DRAWN	SL & IN
JOB	CONNORS

L-3



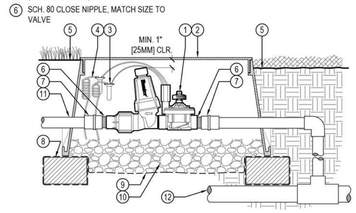
AIR RELIEF VALVE IN PVC HEADER



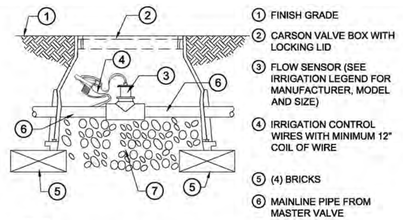
INTERIOR WALL MOUNT CONTROLLER

LEGEND

1. HUNTER REMOTE CONTROL VALVE (ICZ) WITH FILTER REGULATOR
2. IRRIGATION VALVE BOX: HEAT STAMP LID WITH 'RCV' IN 2" LETTERS
3. WATERPROOF CONNECTORS (2)
4. 18"-24" COILED WIRE TO CONTROLLER
5. FINISH GRADE AT ADJACENT SURFACE (TURF OR MULCH)
6. SCH. 80 CLOSE NIPPLE, MATCH SIZE TO VALVE
7. PVC SLIP X FPT ADAPTOR
8. BRICK SUPPORTS (4)
9. FILTER FABRIC - WRAP TWICE AROUND BRICK SUPPORTS
10. 3/4" WASHED GRAVEL - 4" MIN. DEPTH
11. IRRIGATION LATERAL
12. MAINLINE LATERAL AND FITTINGS



DRIP CONTROL ZONE KIT (ICZ-101-LF)
Hunter V.ICZ.01 NO SCALE



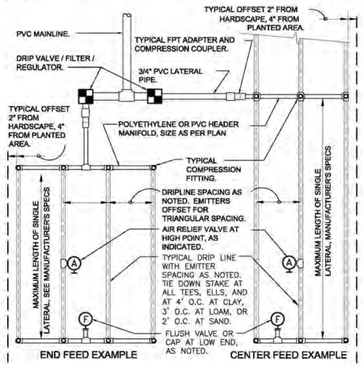
NOTES:

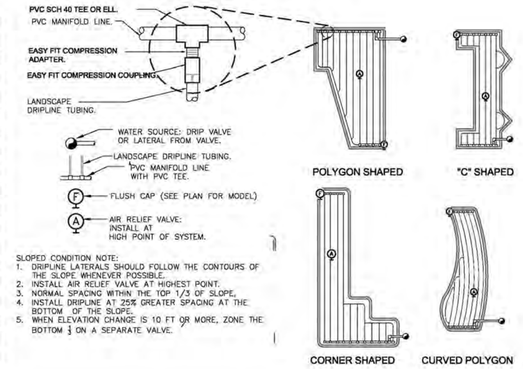
1- FLOW SENSOR WIRE SHALL BE PER THE CONTROLLER MANUFACTURER'S SPECIFICATIONS.

2- INSTALL FLOW SENSOR PER MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.

3- ALL WIRE RUNS SHALL BE CONTINUOUS WITHOUT ANY SPLICES. WIRE CONNECTIONS SHALL BE MADE USING DBRY-6 CONNECTORS OR APPROVED EQUAL.

FLOW SENSOR





TYPICAL DRIPLINE LAYOUT

MAWA EPPT and ETWU Calculations

Project Name:	LJ Commons	
Project Location:	0 Barnell Ave, Morgan Hill, CA.	
Total Landscape Area:	1,711.0	sq. ft.
Date:	10/19/2023	

MAWA CALCULATION

MAWA = (Eto)(.62)[(.0.55xLA) + (1-ETAF x SLA)]

MAWA = Maximum Applied Water Allowance (gallons per year)
Eto = Reference Evapotranspiration (inches per year)
.62 = Conversion Factor (to gallons)
0.55 = Et Adjustment Factor (ETAF)
LA = Landscape Area including SLA (square feet)
0.45 = Additional Water Allowance for SLA
SLA = Special Landscape Area (square feet)

Eto =	49.2
Conversion	0.62
ETAF	0.55
LA =	1,711
SLA =	0

MAWA =	28,705.8	gallons per year
	3,837.7	cubic feet per year

MAWA with EPPT

MAWA = (Eto-Eppt)(.62)[(.0.55xLA) + (1-ETAF x SLA)]
Eppt= 25% of Annual precipitation

Eto =	49.2
Eppt=	5
ETAF=	0.55
LA =	1,711
SLA =	0

MAWA w/ EPPT =	25,815.9	gallons per year
	3,451.3	cubic feet

ETWU CALCULATION

ETWU = (Eto)(.62)(PF/IE)(LA)

ETWU = Estimated Total Water Use Per Year (gallons)
ETo = Reference Evapotranspiration
PF = Plant Factor from WUCOLS (Region 2: Water Use: H 0.7 - 0.9, M 0.4 - 0.6, L 0.1 - 0.3, VL < 0.1, All Turf 0.8)
LA = Landscape Area (High, Medium, and low water use areas)(square feet)
SLA = Special Landscape Area
.62 = Conversion Factor
IE = Irrigation Efficiency (drip spray and bubblers .81, sub surface .81, spray sprinklers .75
ET Adjustment Factor (ETAF) .55 for Residential and .45 for Non Residential

Reference Evapotranspiration (Eto)	49.2	Morgan Hill, CA

REGULAR LANDSCAPE AREAS

Hydrozone # / Plant Description	Irrigation Method	Plant Factor (PF)	Irrigation Efficiency (IE)	ETAF (PF/IE)	Landscape Area (sq. ft)	ETAF x Area	ETWU
1.) Low Water Use/ Trees	Drip	0.3	0.81	0.37037037	10.0	3.7	113.0
2.) Low Water Use/ Shrubs	Drip	0.3	0.81	0.37037037	275.0	101.9	3,106.9
3.) Low Water Use/ Bio-swale	Drip	0.3	0.81	0.37037037	280.0	103.7	3,163.4
4.) Low Water Use/ Shrubs	Drip	0.3	0.81	0.37037037	228.0	84.4	2,575.9
5.) Low Water Use/ Bio-swale	Drip	0.3	0.81	0.37037037	136.0	50.4	1,536.5
6.) Low Water Use/ Trees	Drip	0.3	0.81	0.37037037	20.0	7.4	226.0
7.) Low Water Use/ Shrubs	Drip	0.3	0.81	0.37037037	452.0	167.4	5,106.6
8.) Low Water Use/ Shrubs	Drip	0.3	0.81	0.37037037	310.0	114.8	3,502.3
					Total sf ft.	Totals	Totals
					1,711.0	633.7	19,330.5

SPECIAL LANDSCAPE AREAS

Hydrozone # / Plant Description	Irrigation Method	Plant Factor (PF)	Irrigation Efficiency (IE)	ETAF (PF/IE)	Landscape Area (sq. ft)	ETAF x Area	ETWU
				1	0	0	0.0
					Totals	Totals	Totals
					0	0	0.0
						ETWU TOTAL	19,330.5
						MAWA	28,705.8

ETAF CALCULATIONS

Regular Landscape Areas

Total ETAF x Area	633.7
Total Area	1,711.0
Average ETAF	**0.37**

Special Landscape Areas

Total ETAF x Area	633.7
Total Area	1,711.0
Sitewide ETAF	0.4

Average ETAF for Regular Landscape Areas must be .55 or below for residential areas, and .45 or below for non residential areas.

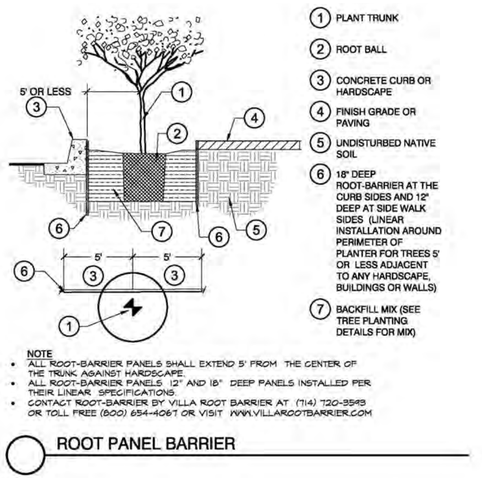
IRRIGATION SCHEDULE

Irrigation Schedule				
Valve #	Hydrozone/Water Use	Days of the Week	Run Time	Gal. Per Day
1	Low Water Use - Trees	Tue. Thu	2 min	2.03 Gal
2	Low Water Use / Shrubs	Mon, Wed, Fri	6 min	19.62 Gal
3	Low Water Use / Shrubs	Mon, Wed, Fri	7 min	24.40 Gal
4	Low Water Use / Shrubs	Mon, Wed, Fri	5 min	15.35 Gal
5	Low Water Use / Shrubs	Mon, Wed, Fri	3 min	10.87 Gal
6	Low Water Use/ Trees	Tue. Thu	2 min	2.03 Gal
7	Low Water Use / Shrubs	Mon, Wed, Fri	10 min	42.00 Gal
8	Low Water Use / Shrubs	Mon, Wed, Fri	8 min	20.63 Gal

Note Irrigation times to be after 7:00 PM and before 9:00am. Uses Rain Sensor & Automatically Adjusts for the time of year

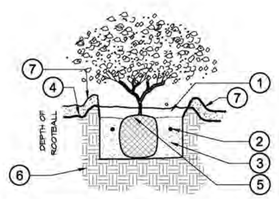
Landscape Maintenance Schedule													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Fine Turf Maintenance													
Mowing/ Edging	1	1	3	4	5	4	5	4	4	3	1	1	36
Blow Hard Surfaces	1	1	3	4	5	4	5	4	4	3	1	1	36
Fertilization: Lawn		1				1				1			3
Weed Control- Pre-Emergent			1				1						2
Weed Control- Post-Emergent				1					1				2
Fire Ant Treatment Mound As needed				1		1		1					3
Trees, Shrubs & Beds													
Prune Shrubs			1	1	1	1	1	1	1	1			8
Canopy Lift - 8' Trees Under 4" Caliper		1											1
Pruning Flowering Plants			1		1		1		1		1		5
Surface Fertilization Shrubs			1						1				
Weed Control	1	1	3	4	5	4	5	4	4	3	1	1	36
Mulch/Top Cover Beds			1										1
Seasonal Color													
Flower Color Change (per application)						1				1			2
Weed Control-beds	2	2	3	4	5	4	5	4	4	3	2	2	40
Debris Removal	2	2	3	4	5	4	5	4	4	3	2	2	40
Irrigation													
System Inspection	1	1	1	1	1	1	1	1	1	1	1	1	12
Water adjustment	1	1	1	1	1	1	1	1	1	1	1	1	12
Manager Inspection	1	2	4	4	5	4	5	4	4	3	2	2	40

Note: Numbers in legend represent the number of times each activity has to be implemented in a month.



NOTE
- ALL ROOT-BARRIER PANELS SHALL EXTEND 5' FROM THE CENTER OF THE TRUNK AGAINST HARDSCAPE.
- ALL ROOT-BARRIER PANELS 12" AND 18" DEEP PANELS INSTALLED PER THEIR LINEAR SPECIFICATIONS.
- CONTACT ROOT-BARRIER BY VILLA ROOT BARRIER AT (714) 720-3543 OR TOLL FREE (800) 654-4067 OR VISIT WWW.VILLAROOTBARRIER.COM

ROOT PANEL BARRIER



TYPICAL SHRUB PLANTING

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LJ COMMONS
0 Barnell Ave, Morgan Hill, CA.
IRRIGATION & PLANTING DETAILS

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L-4