SAGE COMMONS

PERMIT SET 2020-01-27 / PCC-3 REVISIONS ISSUE 2020-06-05

OWNER

DANCO COMMUNITIES / DANCO BUILDERS
5251 ERICSON WAY
ARCATA, CA 95532
TEL: 707-825-1531

CONTACTS:
CHRIS DART, PRESIDENT
CDART@DANCO.COM
MCKENZIE DIBBLE, ASSET MANAGER
MDIBBLE@DANCO.COM

GENERAL CONTRACTOR

DANCO COMMUNITIES / DANCO BUILDERS
5251 ERICSON WAY
ARCATA, CA 95532
TEL: 707-825-1531

CONTACTS:
CHUCK BARNHART, SENIOR VP
CBARNHART@DANCO-GROUP.COM

ARCHITECT

ROWELL BROKAW ARCHITECTS
1203 WILLAMETTE STREET, SUITE 210
EUGENE OR, 97401
PH: 541-485-1003

CONTACTS:
JOHN ROWELL, AIA PRINCIPAL
JOHN@ROWELLBROKAW.COM
FRANK VISCONTI, AIA - ARCHITECT
FRANK@ROWELLBROKAW.COM

STRUCTURAL ENGINEER

HOHBACH LEWIN INC
296 EAST 5TH AVENUE
EUGENE, OR 97401
PH: 541-349-1701

CONTACTS:
VIKKI BOURCIER
VBOURCIER@HOHBACH-LEWIN.COM

CIVIL ENGINEER

CALIFORNIA ENGINEERING CO. INC.
1110 CIVIC CENTER BLVD, SUITE 404
YUBA CITY, CA 95993
PH: 530-751-0952

CONTACTS:
DAVE SWARTZ
SWARTZ@CECUSA.NET

MEP, SECURITY, ALARM, FIRE SPRINKLER ENGINEER

PAE ENGINEERS
44 WEST BROADWAY, SUITE 430
EUGENE, OR 97401
PH: 541-735-8222

CONTACTS:
CONRAD BROWN
CONRAD.BROWN@PAE-ENGINEERS.COM

ENERGY / TITLE 24 CONSULTANT

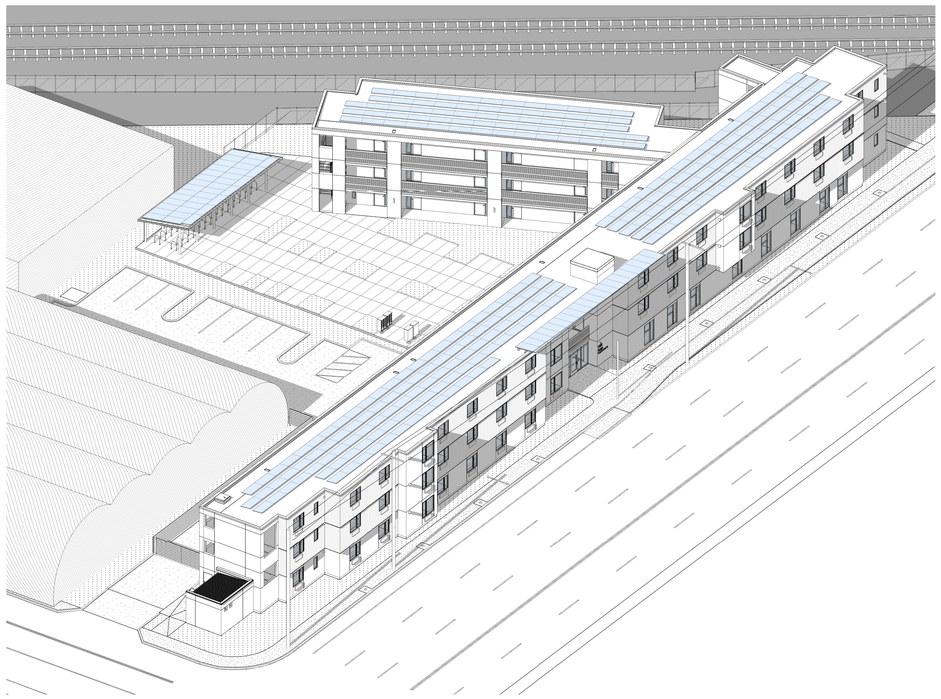
DUCTTESTERS
336 W MAIN STREET
RIPON, CA 95366
PH: (866) 950-1191

CONTACTS:
DERRICK YEUNG
DERRICKYEUNG@DUCTTESTERS.COM

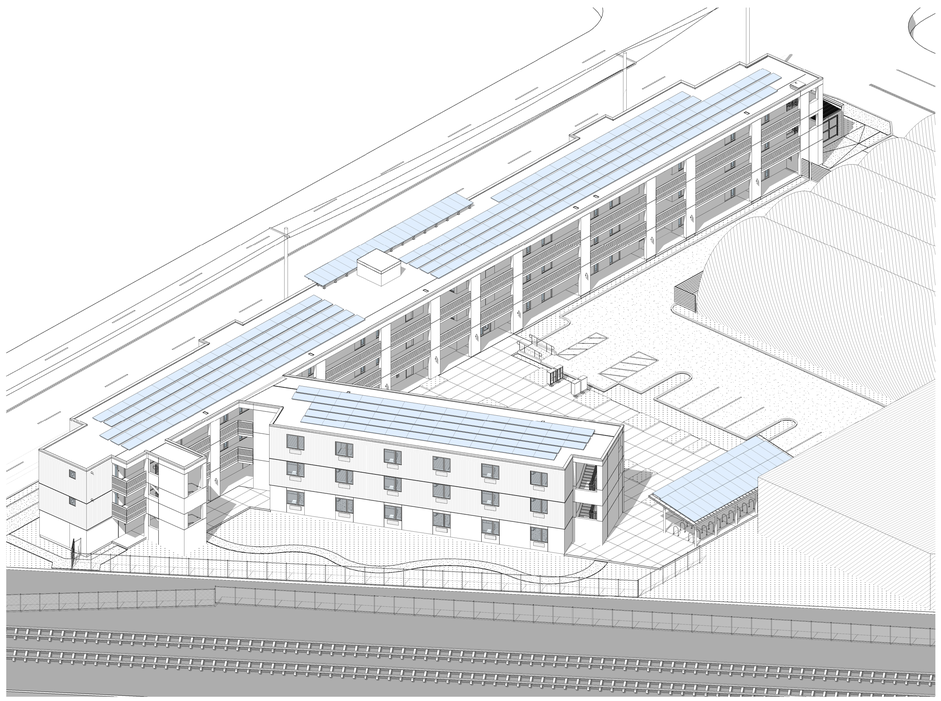
LANDSCAPE ARCHITECT

MACNAIR LANDSCAPE ARCHITECTURE
P.O. BOX 251
KENWOOD, CA 95452
PH: 707-833-2288

CONTACTS:
DONALD MACNAIR
DON@MACNAIRLANDSCAPES.COM



ISO VIEW TO WEST



ISO VIEW TO EAST

VICINITY MAP

PROJECT DESCRIPTION:

THE PROPOSED PROJECT IS FOR A NEW 3-STORY BUILDING THAT INCLUDES (54) DWELLING UNITS AND SUPPORTIVE SERVICES ON A DOWNTOWN URBAN SITE.

THERE ARE (53) STUDIO UNITS FOR FORMERLY HOMELESS TENANTS AS PART OF A PERMANENT SUPPORTIVE HOUSING PROGRAM. THERE WILL ALSO BE (1) ONE BEDROOM ON-SITE MANAGER'S DWELLING UNIT. THE FACILITY WILL BE 100% ACCESSIBLE ("UNIVERSAL DESIGN").

IN ADDITION TO THE UNITS, THERE WILL BE OFFICES, MEETING AND THERAPY ROOMS FOR AN ON-SITE SERVICE PROVIDER. ADDITIONALLY, THERE WILL BE COMMON LAUNDRY ROOMS, GYMS AND LOUNGES AVAILABLE FOR TENANTS.

THERE WILL BE ONE ELEVATOR AND THREE EGRESS STAIRS ORGANIZED OFF AN OPEN EGRESS BALCONY OVERLOOKING A PRIVATE SOUTH FACING COURTYARD.

SITE DEVELOPMENT INCLUDES REPLACEMENT OF SIDEWALKS AND A NEW ACCESS DRIVEWAY WITH PARKING FOR 10 CARS. A COVERED BIKE SHELTER IS PROPOSED AS WELL AS A COVERED TRASH AND RECYCLING ENCLOSURE. THE COURTYARD WILL INCLUDE GARDENING BEDS, LANDSCAPING, AND STORMWATER TREATMENT.

FUNDING FOR THIS PROJECT HAS BEEN PROVIDED BY:

TCAC TAX CREDIT
CONSTRUCTION TO PERMANENT LOAN
DEVELOPER NOE
NO PLACE LIKE HOME FUNDS – HCD
PHP – PARTNERSHIP HEALTH PLAN CALIFORNIA

GENERAL CODE REQUIREMENTS:

COMPLY WITH ALL PROVISIONS OF THE LATEST ADOPTED CODES AS APPLICABLE PER THE AHJ UPON BUILDING PERMIT APPROVAL:

2019 CA BUILDING CODE, TITLE 24, PART 2
2019 CA RESIDENTIAL CODE, TITLE 24, PART 2.5
2019 CA ELECTRICAL CODE, TITLE 24, PART 3
2019 CA MECHANICAL CODE, TITLE 24, PART 4
2019 CA PLUMBING CODE, TITLE 24, PART 5
2019 CA ENERGY CODE, TITLE 24, PART 6
2019 CA FIRE CODE, TITLE 24, PART 9
2019 CA GREEN BUILDING STANDARDS CODE, TITLE 24, PART 11
2019 CA REFERENCED STANDARDS CODE, TITLE 24, PART 12

APPLICABLE CODES AND REGULATIONS OF THE CITY OF SANTA ROSA

CONSTRUCTION TYPE: TYPE VA

OCCUPANCY TYPE:
MIXED USE SEPARATED OCCUPANCY:
APARTMENTS: GROUP R2
OFFICES: GROUP B
COMMON AREAS: R2 (UNDER 50 OCCUPANTS)
ASSEMBLY: A3 (OVER 50 OCCUPANTS)

ALLOWABLE AREA PER R2 OCCUPANCY:
ALLOWABLE STORIES: 4
ALLOWABLE AREA/FL: 36,000 (WITH SPRINKLER SYSTEM PER 903.3.1.1. (R2/VA)

ALLOWABLE AREA PER MIXED USE OCCUPANCY:
(PER CBC 508.4.2/EQUATION 5-3):

FIRST FLOOR:
1. The factor of the B occupancies is actual SF 1908 / calculated SF 54,000 = 0.035
2. The factor of the A3 occupancies is actual SF 819 / calculated SF 34,500 = 0.024
3. The factor of the R2 occupancies is actual SF 10,271 / calculated SF 36,000 = 0.285
4. The sum of the factors is 0.035 + 0.024 + 0.285 = 0.344 which is less than 1 and therefore complies.

SECOND+THIRD FLOORS
1. The factor of the R2 occupancies (common areas are less than 10% of the floor area and therefore part of R2) is actual SF 12,505 SF / calculated SF 36,000 = 0.347 which is less than 1 and 12,477 SF / 36,000 SF = 0.346 which is less than 1.
b. The aggregate sum of the ratios for the building shall not exceed 2. CBC 506.2.4. (1st floor = 0.344 + 2nd floor = 0.347 + 3rd floor = 0.346 = 1.621 which is less than 2 and therefore complies.

STRUCTURAL SYSTEMS: CONCRETE SLAB-ON-GRADE, WOOD LIGHT FRAME, WITH STRUCTURAL STEEL SECTIONS, PREMANUFACTURED TRUSSES AND/OR TRUSS JOIST

GEOTECHNICAL REPORT:
ENGINEERING GEOLOGIC FOUNDATION AND SOILS REPORT APPLICABLE TO THIS PROJECT MUST BE FURNISHED BY OWNER. THE RECOMMENDATIONS INCLUDED IN THAT REPORT MUST BE ADHERED TO, WITH SPECIAL ATTENTION TO LISTED LIMITATIONS AND FOR FOUNDATION DESIGN, TESTING AND INSPECTION SERVICES.

AUTOMATIC FIRE SPRINKLERS:
INCLUDED FOR ENTIRE BUILDING (DESIGN BY OTHERS) IN ACCORDANCE WITH CBC 903.3.1.1 NFPA 13 AS AMENDED IN CBC CH. 35.

SMOKE ALARMS:
PROVIDE UL & CA SFM LISTED SMOKE DETECTION & NOTIFICATION SYSTEM PER NFPA 72. SMOKE ALARMS SHALL HAVE PRIMARY POWER FROM PERMANENT BUILDING WIRING AND EQUIPPED WITH A 10 YEAR LIFETIME BATTERY BACKUP. THE ALARM DEVICES SHALL BE INTERCONNECTED SO ACTUATION OF ONE ALARM WILL ACTIVATE ALL ALARMS IN THAT DWELLING UNIT. INSTALL ALARMS IN THE FOLLOWING LOCATIONS PER MANUFACTURER'S WRITTEN INSTRUCTIONS:
1). IN EACH SLEEPING ROOM.
2). OUTSIDE EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY.
3. ON EACH ADDITIONAL STORY OF THE DWELLING
AND HABITABLE ATTICS BUT NOT INCLUDING CRAWL SPACES OR UNINHABITABLE ATTICS.

CARBON MONOXIDE ALARMS:
PROVIDE CARBON MONOXIDE ALARMS PER OFFICE OF THE STATE FIRE MARSHALL. THESE MAY BE IN THE FORM OF COMBINATION WITH SMOKE ALARMS OR AS SEPARATE UNITS. INSTALL PER MANUFACTURER'S WRITTEN INSTRUCTIONS.

PARCEL/ZONING INFORMATION:

PROJECT TITLE:
SANTA ROSA HOUSING FIRST

PROJECT ADDRESS:
80 COLLEGE AVENUE, SANTA ROSA CALIFORNIA

APN: 010-121-020, 024, 025

TOTAL PARCEL AREA: 0.983 ACRES (42,850 SF)

JURISDICTION: CITY SANTA ROSA

FIRE DISTRICT: CITY OF SANTA ROSA

ZONING: CG (GENERAL COMMERCIAL) - SA (STATION AREA)

HOUSING CODE: IN ACCORDANCE WITH CA GOV. CODE 65915, SB35 AND 2009-002)

DWELLING UNITS: 53 STUDIO UNITS, 1 ONE-BEDROOM UNIT (FOR RESIDENT MANAGER)

DENSITY (GROSS): 30 UNITS PER ACRE

LOT COVERAGE: 46% INCLUDING COURTYARD

DENSITY BONUS REVIEW:
TOTAL COMBINED LOT AREA = 42,850 SF

-CG ZONE ALLOWS 30 UNITS/ACRE

-SA ZONE/SUPPLEMENTAL DENSITY BONUS ALLOWS FOR 80% DENSITY BONUS TO 54 UNITS/ACRE (PER 2009-002) 53 UNITS FOR FORMERLY HOMELESS INDIVIDUALS, 1 MANAGER'S UNIT

-REQUESTING PARKING CONCESSION FOR 10 SPACES (18 REQUIRED IN STATION AREA PER CODE @ .3/UNIT) SECTION 65654 EXEMPTS ALL PARKING REQUIREMENTS FOR SUPPORTIVE HOUSING WITHIN ONE-HALF MILE OF PUBLIC TRANSIT STOP.

MAX ZONING HEIGHT: CG - 55 FEET
PROPOSED HEIGHT: 30 FEET
PROPOSED STORIES: 3 STORIES

PROPOSED GROSS AREA (SF):
1ST FLOOR: 8,750 + 3,520 COVERED AREA
2ND FLOOR: 8,780 + 3,490 COVERED AREA
3RD FLOOR: 8,800 + 3,575 COVERED AREA
TOTAL: **26,330** + 10,585 COVERED WALKWAY = **36,915 SF**

SPECIAL ZONE DESIGNATIONS:
COASTAL ZONE: NO
100 YR FLOOD ZONE: NO
TIGER SALAMANDER ZONE: NO
SRA / HIGH FIRE ZONE: NO
WETLANDS WPCZ: NO
URBAN SERVICES: YES

A NOISE STUDY WAS COMPLETED AND IS INCLUDED WITH THE PERMIT SUBMISSION DOCUMENTS. WINDOW FABRICATION SUBMITTAL REQUIRED TO COMPLY WITH STC REQUIREMENTS PER ACOUSTIC ENGINEER'S REPORT.

DEFERRED SUBMITTALS:
1. ELEVATOR (BY OTIS ELEVATOR)
2. SOLAR PANELS (BY INSTALLER)
3. FIRE SPRINKLER SYSTEM (BY INSTALLER)
4. FIRE ALARM (BY INSTALLER)
5. EMERGENCY RESPONDER RADIO COVERAGE. (CFC 105.7.6, 510.1)
5. PRIVATE FIRE UNDERGROUND AND HYDRANTS. (CFC SEC. 105.7.19, 507.2.1)

REACH CODE:
THIS PROJECT IS SUBJECT TO THE SANTA ROSA ADOPTED "REACH" CODES REQUIRING AN "ALL ELECTRIC BUILDING/DESIGN USING PERMANENT SUPPLY OF ELECTRICITY AS THE SOURCE OF ENERGY FOR ALL SPACE HEATING, WATER HEATING, COOKING APPLIANCES AND CLOTHES DRYING APPLIANCES, AND HAVE NO NATURAL OR PROPANE PLUMBING INSTALLED IN THE BUILDING" PER SANTA ROSA ORDINANCE NO. ORD-2019-019.

BEFORE VERTICAL CONSTRUCTION BEGINS:
1. ON-SITE FIRE HYDRANT LOCATIONS SHALL BE APPROVED BY THE FIRE DEPARTMENT AND IN SERVICE.
2. ASPHALT OR CONCRETE FIRE ACCESS ROADS SHALL BE INSTALLED.
3. TEMPORARY ADDRESS SIGNAGE SHALL BE CLEARLY VISIBLE FROM THE STREET.

LOT LINE ADJUSTMENT HAS BEEN APPROVED AND RECORDED BY SRC.

100% OF THE DWELLING UNITS ARE DESIGNED TO MEET BOTH CBC 2019 11A AND 11B MOBILITY REQUIREMENTS.

MULTIPURPOSE ROOM 117 AND MEETING ROOM 120 ARE NOT FOR THE GENERAL PUBLIC AND ONLY INTENDED FOR THE TENANTS AND, PER CBC §311EB.1 Exception 2, NO PUBLIC BATHROOMS ARE PROVIDED.

A MAN-DOOR IS NOT PROVIDED AT THE TRASH ENCLOSURE TO FACILITATE CART REMOVAL. UPON REQUEST OF AN EMPLOYEE, THE MANAGEMENT SHALL PROVIDE EQUAL FACILITATION FOR ACCESS TO THE TRASH ENCLOSURE. CBC 11B-206.2.8.

DRAWING SHEET INDEX

D3 STANDARD DETAILS

EN-2.1 ENERGY FORMS
EN-2.2 ENERGY FORMS

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.
KB for Sal 8/13/2020

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REGISTERED ARCHITECT
JOHN ROWELL
C28587
12-31-2021
Renewal Date
STATE OF CALIFORNIA

REVISIONS TO THIS SHEET

REV.	DATE
PCC-2	2020.05.15
PCC-1	2020.04.06

SHEET ISSUE DATE
2020-01-27 PERMIT SET

PROJECT TRACKING
RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

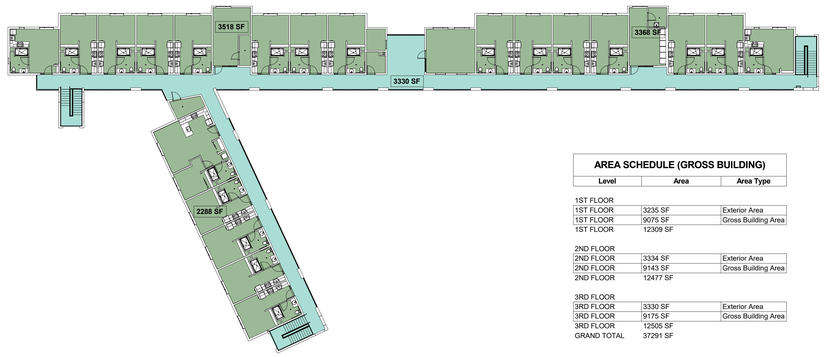
Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

COVER

G-001

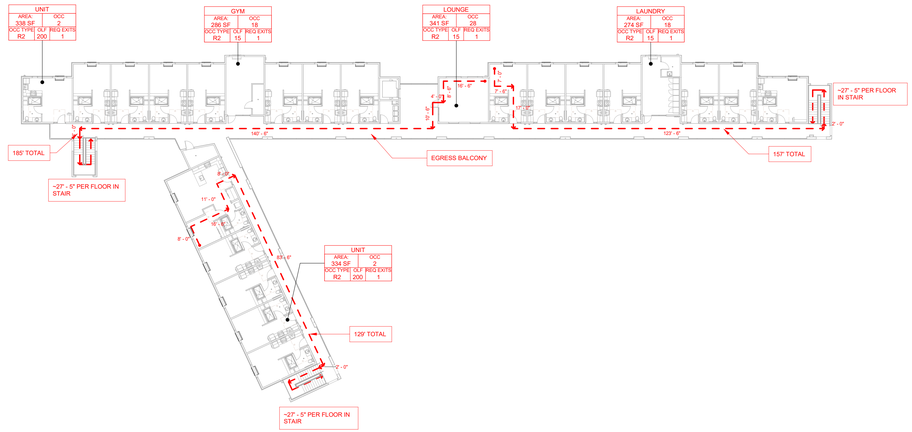
6/5/2020 3:08:22 PM



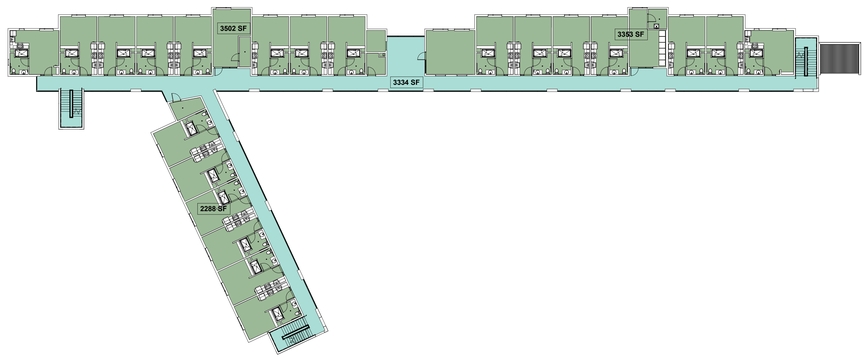
AREA SCHEDULE (GROSS BUILDING)

Level	Area	Area Type
1ST FLOOR		
1ST FLOOR	3235 SF	Exterior Area
1ST FLOOR	9075 SF	Gross Building Area
1ST FLOOR	12309 SF	
2ND FLOOR		
2ND FLOOR	3334 SF	Exterior Area
2ND FLOOR	9143 SF	Gross Building Area
2ND FLOOR	12477 SF	
3RD FLOOR		
3RD FLOOR	3330 SF	Exterior Area
3RD FLOOR	9175 SF	Gross Building Area
3RD FLOOR	12505 SF	
GRAND TOTAL	37291 SF	

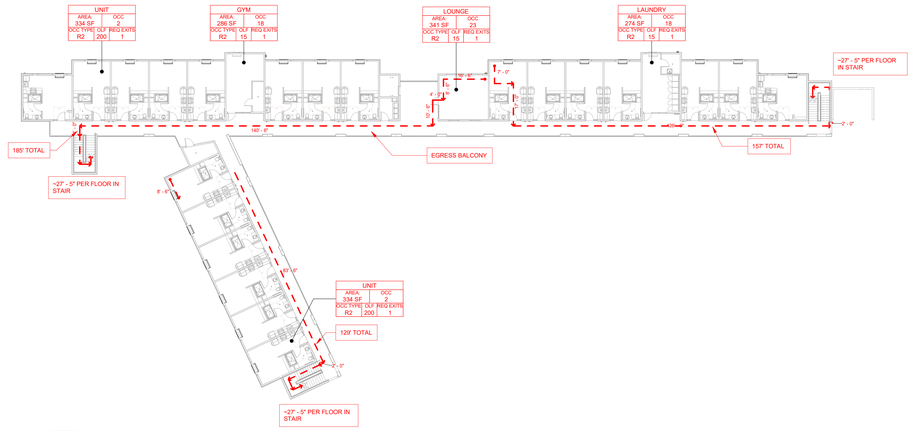
3 3RD FLOOR-GROSS AREA
3/64" = 1'-0"



6 3RD FLOOR CODE DIAGRAM
3/64" = 1'-0"

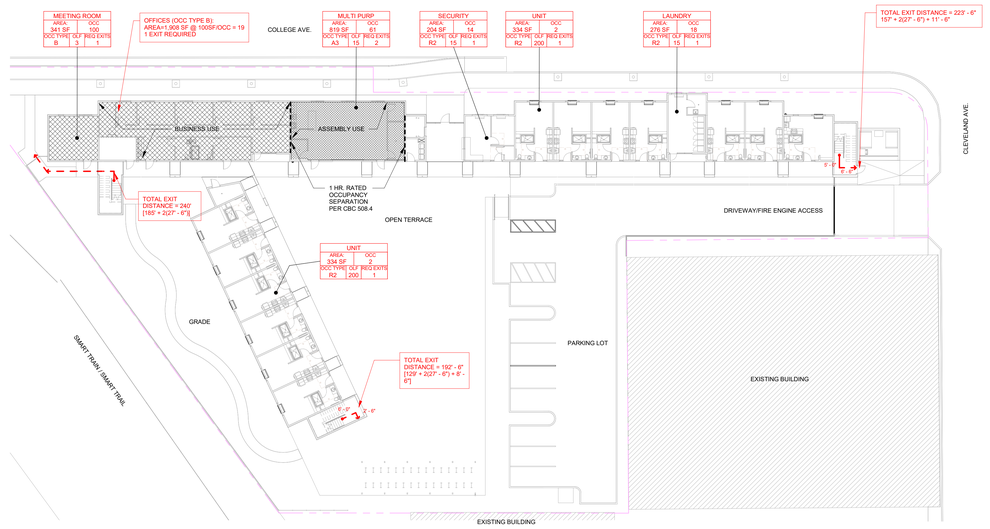


2 2ND FLOOR-GROSS AREA
3/64" = 1'-0"



5 2ND FLOOR CODE DIAGRAM
3/64" = 1'-0"

1 1ST FLOOR-GROSS AREA
3/64" = 1'-0"



4 1ST FLOOR CODE DIAGRAM
3/64" = 1'-0"

EGRESS CODE (CBC 2019) NOTES:

1. OCCUPANCY LOAD: 12,261 SF X 200SF/PERSON (RESIDENTIAL OCCUPANCY) = 61 PEOPLE
2. MIN. STAIR WIDTH (WITH 13R SPRINKLER SYSTEM): 61 PEOPLE X .3"/PERSON < REQ. 44" WIDTH
3. MAX TRAVEL DISTANCE WITH SPRINKLER SYSTEM: 250' (+ 100' EXTERIOR EGRESS BALCONY INCREASE) = 350'

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REGISTERED ARCHITECT
JOHN ROWELL
C28507
12-31-2021
Renewal Date
STATE OF CALIFORNIA

REVISIONS TO THIS SHEET

REV.	DATE
PCC-2	2020.05.15
PCC-1	2020.04.06

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

P.I.C.: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner

DANCO

Project Name

SAGE COMMONS

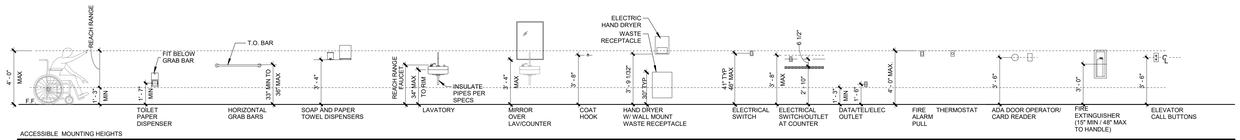
Project Address

80 COLLEGE AVENUE
SANTA ROSA, CA

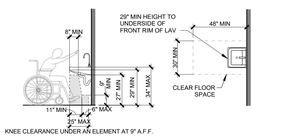
CODE PLAN DIAGRAMS

G-003

6/4/2020 4:48:17 PM

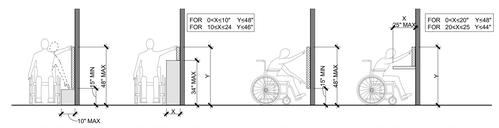


ACCESSIBLE MOUNTING HEIGHTS



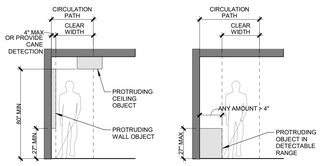
KNEE & TOE CLEARANCE CLEARANCE FOR FORWARD APPROACH

CLEARANCE AT LAVATORY - SECTION 11B-606



UNOBSTRUCTED SIDE REACH OBSTRUCTED HIGH SIDE REACH UNOBSTRUCTED FORWARD REACH OBSTRUCTED HIGH FORWARD REACH

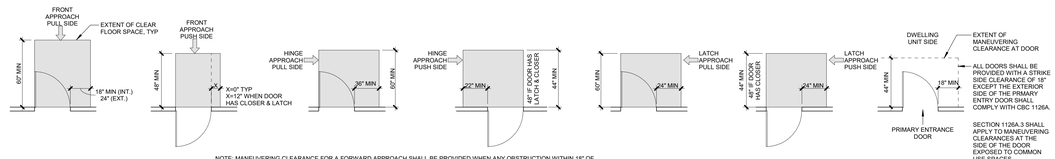
REACH RANGE - SECTION 11B-308



WALL & CEILING MOUNTED OBJECTS FLOOR MOUNTED OBJECTS

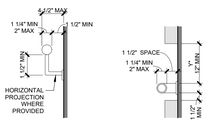
PROTRUDING OBJECTS IN CIRCULATION PATHS - SECTION 11B-307

NOTE: SEE 11B-404.2.3 FOR RESTRICTIONS ON PROTRUDING OBJECTS INTO CLEAR OPENING WIDTHS



DOOR CLEARANCES AT SWING DOORS - SECTION 11B-404

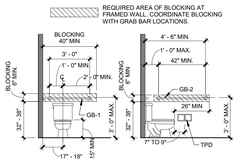
NOTE: MANEUVERING CLEARANCE FOR A FORWARD APPROACH SHALL BE PROVIDED WHEN ANY OBSTRUCTION WITHIN 18" OF THE LATCH SIDE OF THE DOORWAY PROJECTS MORE THAN 8" BEYOND THE FACE OF THE DOOR. SEE SECTION 11B-404.2.4.3



DOOR CLEARANCES - SECTION 11B-404

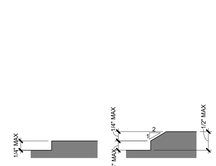
HANDRAILS - SECTION 11B-505

GRAB BARS - SECTION 11B-604.5



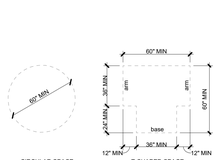
NOTE: WATER CLOSET CONTROLS SHALL BE ON THE OPEN SIDE OR ON TOP OF THE TANK (11B-604.6)

GRAB BAR, WATER CLOSET, & TOILET PAPER DISPENSER TYP. LOCATIONS
GB-1 IS BACK GRAB BAR; GB-2 AND 3 ARE SIDE GRAB BARS.



1/4" MAX LEVEL CHANGE 1/2" MAX LEVEL CHANGE CARPET PILE HEIGHT

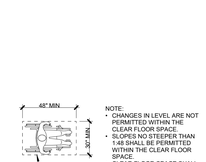
LEVEL CHANGES ON ACCESSIBLE ROUTE - SECTION 11B-302



CIRCULAR SPACE T-SHAPED SPACE

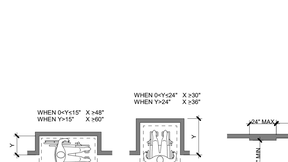
NOTE: TURNING SPACE MAY OVERLAP KNEE & TOE CLEARANCE. IF THE T-SHAPED SPACE IS USED, IT CAN ONLY OVERLAP THE KNEE AND TOE CLEARANCES AT EITHER THE BASE OR ONE ARM.

MINIMUM WHEELCHAIR TURNING SPACE - SECTION 11B-304

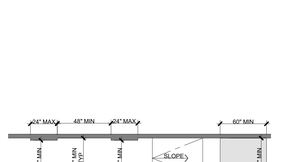


NOTE:
- CHANGES IN LEVEL ARE NOT PERMITTED WITHIN THE CLEAR FLOOR SPACE.
- SLOPES NO STEEPER THAN 1:48 SHALL BE PERMITTED WITHIN THE CLEAR FLOOR SPACE.
- CLEAR FLOOR SPACE SHALL BE PERMITTED TO INCLUDE KNEE AND TOE CLEARANCE.

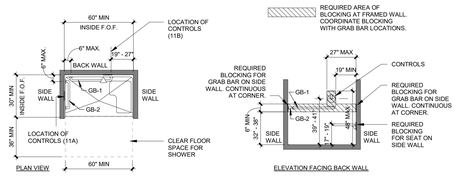
STANDARD CLEAR FLOOR SPACE - SECTION 11B-305



MANEUVERING CLEARANCE IN ALCOVE - SECTION 11B-305.7



ACCESSIBLE ROUTE - SECTION 11B-401



STANDARD ROLL-IN SHOWERS PER 1134A.6 AND 11B-608
GB-1 IS BACK GRAB BAR; GB-2 IS SIDE GRAB BAR

ACCESSIBILITY CLEARANCE DIAGRAMS

ACCESSIBILITY CODE NOTES:

1. PROJECT ACCESSIBILITY STANDARDS BASED ON 2019 CALIFORNIA BUILDING CODE (VOL 1) CHAPTERS 11A (HOUSING ACCESSIBILITY) AND 11B (ACCESSIBILITY TO PUBLIC ACCOMMODATIONS, COMMERCIAL BUILDINGS AND PUBLIC BUILDINGS).
2. UNITED FEDERAL ACCESSIBILITY STANDARDS (UFAS) ARE ALSO APPLIED TO THE PROJECT AND HAVE USED THE MORE RESTRICTIVE REQUIREMENTS WHERE APPLICABLE.
3. THE PROJECT IS DESIGNED TO BE PROVIDE "UNIVERSAL ACCESSIBILITY" WHERE ALL UNITS, AND STAFF AREAS PER UFAS ARE FULLY ACCESSIBLE.
4. PROVIDE CONTRASTING STRIPING AT ALL TREADS AT EXTERIOR STAIRS PER CBC 1115A.

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

LICENSED ARCHITECT JOHN ROWELL C28587 12-31-2021 Renewal Date STATE OF CALIFORNIA

REVISIONS TO THIS SHEET

REV.	DATE
PCC-2	2020.05.15
PCC-1	2020.04.06

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner

DANCO

Project Name

SAGE COMMONS

Project Address

80 COLLEGE AVENUE
SANTA ROSA, CA

ADA-MOUNTING HT DIAGRAMS

REVIEWED FOR CODE COMPLIANCE
BY CSANTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

G-004

6/4/2020 4:48:19 PM

SAGE COMMONS

CIVIL IMPROVEMENT PLANS

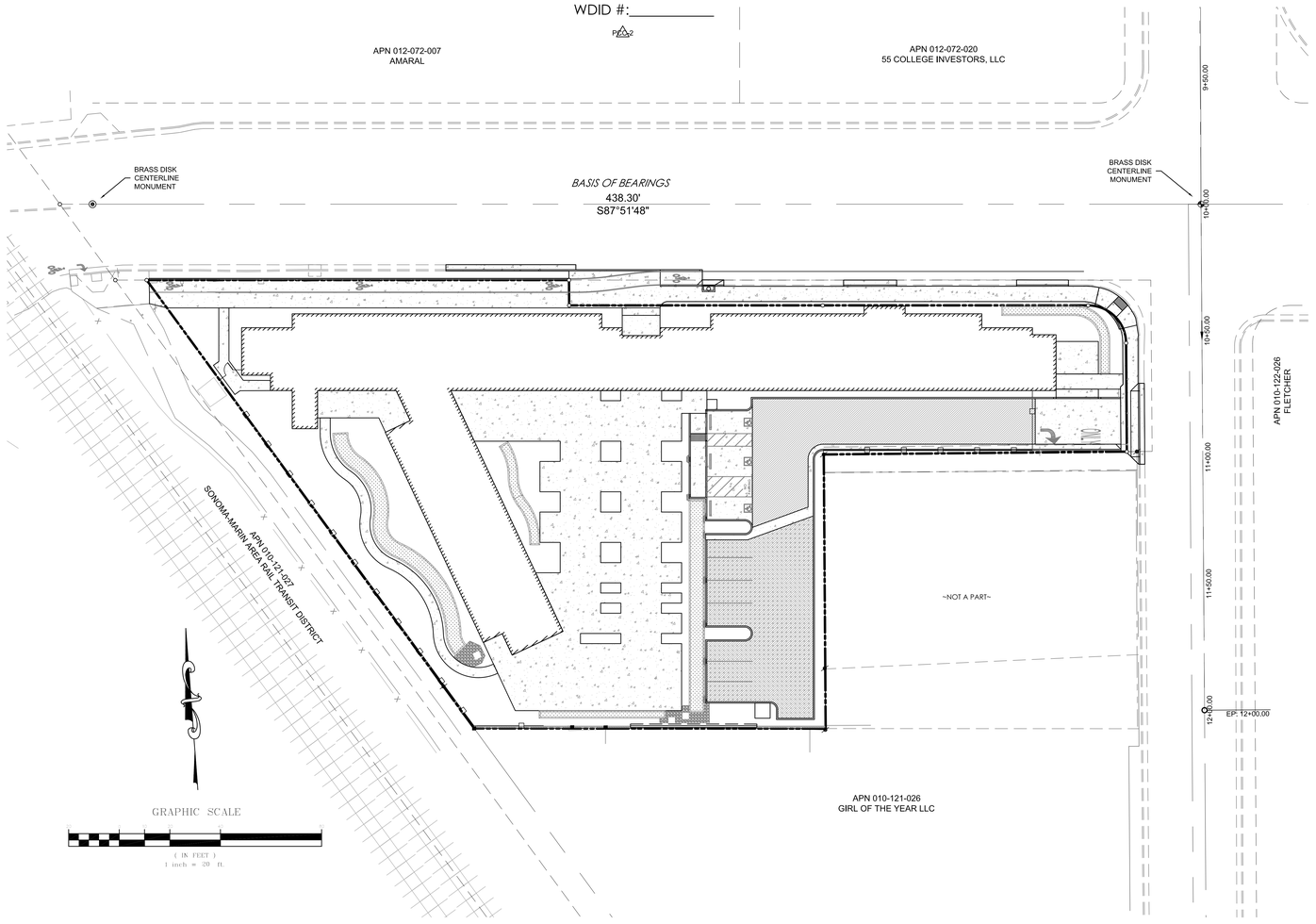
80 COLLEGE AVENUE, SANTA ROSA, CALIFORNIA

PERMIT SET

JUNE 5 2020

WDID #:_____

VICINITY MAP
NOT TO SCALE



ABBREVIATIONS:

AC	-	ASPHALT CONCRETE
AB	-	AGGREGATE BASE
APPROX.	-	APPROXIMATELY
ARV	-	AIR RELEASE VALVE
AVE.	-	AVENUE
BC	-	BEGIN CURVE
BFV	-	BACKFLOW VALVE
C&G	-	CURB AND GUTTER
CL	-	CENTER LINE
C.O.	-	CLEAN OUT (SSCO)
CR	-	CURB RETURN
CULV.	-	CULVERT
DTL.	-	DETAIL
D\W	-	DRIVEWAY
EC	-	END CURVE
EL	-	ELEVATION
ELB	-	ELBOW
EP	-	EDGE OF PAVEMENT
ESMT.	-	EASEMENT
EX.	-	EXISTING
EXP.	-	EXPIRES
F.E.S.	-	FLARED END SECTION
FH	-	FIRE HYDRANT
FL	-	FLOW LINE
FLG	-	FLANGE
FM.	-	SEWER FORCE MAIN
FND.	-	FOUND
GB	-	GRADE BREAK
HORIZ.	-	HORIZONTAL
HP	-	HIGH POINT
INTX.	-	INTERSECTION
INV.	-	INVERT
I.P.	-	IRON PIPE
JP	-	JOINT POLE
LIP	-	LIP OF GUTTER
L.S.	-	LONG SWEEP
MH	-	MANHOLE
MON.	-	MONUMENT
OG	-	ORIGINAL GROUND
P	-	PROPOSED
PC	-	POINT OF CURVATURE
PCC	-	PORTLAND CEMENT CONC.
PL	-	PROPERTY LINE
PP	-	POWER POLE
PRV	-	PRESSURE REDUCING VALVE
PT	-	POINT OF TANGENCY
PAE	-	PUBLIC ACCESS EASEMENT
PUE	-	PUBLIC UTILITY EASEMENT
ROW	-	RIGHT-OF-WAY
R.C.	-	RELATIVE COMPACTION
SCH	-	SCHEDULE
SD	-	STORM DRAIN
SHT	-	SHEET
SS	-	SANITARY SEWER
ST.	-	STREET
STA.	-	STATION
STD.	-	STANDARD
S/W	-	SIDEWALK
TBC	-	TOP BACK OF CURB
TBW	-	TOP BACK OF WALK
TOE	-	TOE OF SLOPE
TOP	-	TOP OF SLOPE
TP	-	TELEPHONE POLE
VERT.	-	VERTICAL
w/	-	WITH
W	-	WATER
WM	-	WATER METER
WSP	-	WELDED STEEL PIPE
WV	-	WATER VALVE

LEGEND

- FOUND MONUMENTS *(PER FINAL MAP OF THIS SUBDIVISION)*
- CALCULATED POINT
- FOUND BENCHMARK
- PARCEL BOUNDARY LINE
- RIGHT OF WAY LINE
- ADJOINER LINE

SHEET INDEX:

SCOPE OF PROJECT:

A THREE STORY BUILDING THAT WILL INCLUDE 54 DWELLING UNITS AND SUPPORTIVE SERVICES ON A DOWNTOWN URBAN SITE. IN ADDITION: OFFICES, MEETING AND THERAPY ROOMS, COMMON LAUNDRY ROOMS, GYMS, AND LOUNGES.

SITE IMPROVMENTS INCLUDE REPLACEMENT OF SIDEWALKS, NEW DRIVEWAY, PARKING LOT, COVERED BIKE SHELTER, TRASH AND RECYCLING ENCLOSURE, GARDENING BEDS, SEWER SERVICE, DOMESTIC AND FIRE SUPPRESSION WATER SERVICE, ON-SITE STORMWATER TREATMENT AND RETENTION.

OWNER INFORMATION:

DANCO GROUP OF COMPANIES
DAN JOHNSON, OWNER
CHRIS DART, PROJECT MANAGER
5251 ERICSON WAY
ARCATA, CA 95521
(707)825-1588

UTILITY REPRESENTATIVES

UTILITY	COMPANY	CONTACT	PHONE
SEWER	CITY OF SANTA ROSA	JASON NUTT	(707) 543-3810
DRAINAGE	CITY OF SANTA ROSA	JASON NUTT	(707) 543-3810
WATER	CITY OF SANTA ROSA	JENNIFER BURKE	(707) 543-3359
IRRIG. WATER	CITY OF SANTA ROSA	JENNIFER BURKE	(707) 543-3359
FIRE	SANTA ROSA FIRE DEPARTMENT	ANTHONY GOSSNER	(707) 543-3500
CABLE TV	COMCAST	STAFF	(800) 934-6489
ELECTRICAL	PACIFIC GAS & ELECTRIC (PG&E)	STAFF	(800) 743-5000
GAS	PACIFIC GAS & ELECTRIC (PG&E)	STAFF	(800) 743-5000
PHONE	AT&T	STAFF	(707) 445-4069
USA	UNDERGROUND SERVICE ALERT	STAFF	(800) 227-2600

CEC GENERAL NOTES

1.) ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THESE PLANS AND SPECIFICATIONS, AND TO THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD PLANS AND SPECIFICATIONS, LATEST EDITION. THE CONTRACTOR SHALL OBTAIN A COPY OF THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD PLANS AND SPECIFICATIONS PRIOR TO CONSTRUCTION. IN THE ABSENCE OF A SPECIFICATION FOR AN ITEM IN THESE PLANS AND THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD PLANS AND SPECIFICATIONS, ALL APPLICABLE FEDERAL AND STATE LAWS ARE TO BE ADHERED TO AND MEET CURRENT ENGINEERING AND CONSTRUCTION STANDARD PRACTICES TO THE SATISFACTION OF THE CITY ENGINEER.

2.) THE TYPES, LOCATIONS, SIZES, AND DEPTHS OF EXISTING UTILITIES WERE OBTAINED FROM SOURCES OF VARYING RELIABILITY. THE CONTRACTOR IS CAUTIONED THAT ONLY ACTUAL EXCAVATIONS WILL REVEAL SUCH INFORMATION. A REASONABLE EFFORT WAS MADE TO DELINEATE UTILITIES, HOWEVER, CALIFORNIA ENGINEERING COMPANY, INC. ASSUMES NO RESPONSIBILITY FOR THE COMPLETENESS AND ACCURACY OF THE LOCATION OF THE EXISTING UTILITIES ON THE PLANS, NOR FOR OTHER UTILITIES THAT MAY BE ENCOUNTERED. THE CONTRACTOR IS HEREBY NOTIFIED THAT HE IS RESPONSIBLE FOR VERIFICATION OF THE LOCATION OF ALL UTILITIES AT THE CONSTRUCTION SITE. IN THE EVENT THAT SUBSTANTIAL DISCREPANCIES ARE FOUND, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER FOR DIRECTION.

3.) IN THE EVENT THERE IS A DISCREPANCY OR TYPOGRAPHICAL ERROR WITHIN THESE PLANS, OR REQUEST FOR INFORMATION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY FOR DIRECTION. THE CONTRACTOR IS HEREBY NOTIFIED THAT THE ENGINEER SHALL BE ALLOWED A MINIMUM OF TWO WORKING DAYS TO ADDRESS THE ISSUE.

4.) ONLY SIGNED PLANS BY ALL PARTIES INVOLVED SHALL BE CONSIDERED APPROVED. THE CONTRACTOR SHALL NOT BEGIN WORK BEFORE THE PLANS HAVE BEEN APPROVED. THE CONTRACTOR SHALL HAVE ALL PERMITS AND APPROVED PLANS ON-SITE AT ALL TIMES DURING CONSTRUCTION.

5.) THE CONTRACTOR SHALL CONTACT UNDERGROUND SERVICE ALERT BEFORE DIGGING (800-227-2600) AT LEAST 72 HOURS BEFORE BEGINNING WORK.

6.) IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WORK WITH ALL SUBCONTRACTORS, UTILITY COMPANIES, AND THE CITY OF SANTA ROSA.

7.) THE CONTRACTOR SHALL CONTACT THE CITY OF SANTA ROSA PUBLIC WORKS DEPARTMENT AT LEAST 48 HOURS IN ADVANCE/PRIOR TO COMMENCEMENT OF WORK.

8.) ADJACENT STREET FRONTAGES SHALL BE SWEPT AT LEAST ONCE A DAY TO REMOVE SILT AND OTHER DIRT WHICH IS EVIDENT FROM CONSTRUCTION ACTIVITIES.

9.) ALL TESTING IS THE RESPONSIBILITY OF THE CONTRACTOR AND ALL REQUIRED TESTS SHALL BE COORDINATED AND APPROVED BY THE PROJECT ENGINEER AND CITY OF SANTA ROSA.

10.) ADDITIONAL NOTES AND DETAILS ARE LOCATED ON THE FOLLOWING SHEETS.

11.) OWNER, NOT THE ENGINEER, SHALL BE RESPONSIBLE FOR OBTAINING ANY AND ALL LOCAL, STATE, AND FEDERAL APPROVALS AND PERMITS ASSOCIATED WITH WORK SHOWN IN THESE PLANS, AND ASSUMES ALL LIABILITY ASSOCIATED THEREWITH.

12.) CONTRACTOR TO FIELD VERIFY ALL EXISTING ELEVATION AND INVERTS ON ALL EXISTING UTILITIES PRIOR TO INSTALL ANY PIPE.

BASIS OF BEARINGS:

THE BASIS OF BEARING FOR THIS SURVEY IS ALONG THE CENTERLINE OF COLLEGE AVENUE AS SHOWN ON THAT CERTAIN MAP "RECORD OF SURVEY OF THE LANDS OF MORDECHAI AND BARBARA WINTER", ON FILE WITH THE SONOMA COUNTY CLERK-RECORDER IN BOOK 729 OF MAPS, AT PAGE 13; SAID LINE BEING SOUTH 87°51'48" EAST A DISTANCE OF 438.30 FEET.

VERTICAL DATUM:

THE VERTICAL DATUM ON THIS TOPOGRAPHIC SURVEY IS NAVD88. THE PROJECT BENCHMARK USED FOR THIS SITE IS A BRASS DISK CENTERLINE MONUMENT AT THE CENTERLINE INTERSECTION OF COLLEGE AND CLEVELAND AVENUES. POINT ELEVATION = 145.09 FEET NAVD88.

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

CONTRACTOR TO CALL UNDERGROUND SERVICE ALERT (USA) AT 1-800-227-2600, 48 HOURS IN ADVANCE OF EXCAVATION

CALIFORNIA ENGINEERING COMPANY, INC.
SUBMITTED BY:
06/05/2020
DAVID L. SWARTZ, P.E.# C52840 - P.L.S. # 8401 — DATE
OFFICER IN CHARGE
P.E. EXP. 12/31/20 - P.L.S. EXP. 06/30/22

CALIFORNIA ENGINEERING COMPANY, INC.
SUBMITTED BY:
06/05/2020
DANIEL INGOGLIA, P.E.# C74600 — DATE
PROJECT ENGINEER
P.E. EXP. 12/31/21

CITY OF SANTA ROSA
APPROVED BY:
DATE

NO.	DATE	DESCRIPTION
1	10/23/2020	PLAN CHECK 1 COMMENT REVISIONS
2	05/12/2020	PLAN CHECK 2 COMMENT REVISIONS
3	06/05/2020	PLAN CHECK 3 COMMENT REVISIONS

DATE: 06-05-2020
SCALE: AS SHOWN
DRAWN BY: DDI
DESIGNED BY: DDI
CHECKED BY: DLS

CALIFORNIA ENGINEERING COMPANY INC
CIVIL ENGINEERING
LAND SURVEYING
PROJECT DEVELOPMENT
CONSTRUCTION ADMINISTRATION
www.ceausa.net
1110 Civic Center Blvd, Suite 404 | Yuba City, CA 95993 | (530) 751-0952 Office

DANCO GROUP

COVER SHEET

SAGE COMMONS CIVIL IMPROVEMENT PLANS

PROJECT NUMBER 19-218

SHEET G1 OF 2

CEC GENERAL NOTES

1.) THE CONSTRUCTION CONTRACTOR SHALL AGREE, THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS AND THE CONSTRUCTION CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD CONSULTING ENGINEER, DANCO GROUP, AND THE CITY OF SANTA ROSA HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT. EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE CONSULTING DESIGN PROFESSIONAL, DANCO GROUP, OR THE CITY OF SANTA ROSA.

2.) ALL CONSTRUCTION MATERIALS, METHODS AND WORKMANSHIP SHALL CONFORM TO THE CITY OF SANTA ROSA PUBLIC WORKS IMPROVEMENT STANDARDS, ADOPTED LATEST EDITION OF STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD PLANS AND SPECIFICATIONS, AND CITY OF SANTA ROSA STANDARD DETAILS AND SPECIFICATIONS (RANK SHALL BE IN ABOVE LISTED ORDER WHERE DISCREPANCIES EXIST). ALL WORK IS SUBJECT TO THE APPROVAL OF CITY ENGINEER OR HIS AUTHORIZED REPRESENTATIVE. CERTIFICATION FOR CONFORMANCE WITH CITY SPECIFICATIONS WILL BE REQUIRED FOR ALL MATERIALS USED ON THE PROJECT UNLESS SPECIFICALLY WAIVED BY THE CITY ENGINEER.

3.) THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEER 72-HOURS PRIOR TO COMMENCING WORK AND 24-HOURS PRIOR TO RESUMPTION AFTER INTERRUPTION.

4.) THE CONTRACTOR SHALL OBTAIN ALL NECESSARY ENCROACHMENT PERMITS FOR THE PROJECT, AND BE IN RECEIPT OF SUCH PERMITS AND APPROVED PLANS PRIOR TO THE BEGINNING OF CONSTRUCTION.

5.) THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL CURRENTLY APPLICABLE SAFETY LAWS OF ANY JURISDICTIONAL BODIES. FOR MORE INFORMATION, PLEASE CONTACT THE STATE INDUSTRIAL SAFETY DEPARTMENT (916-455-5818).

6.) THE CONTRACTOR SHALL BE HELD RESPONSIBLE TO SEE THAT ALL SUBCONTRACTORS AND SUPPLIERS HAVE CURRENT COUNTY BUSINESS LICENSES. THE WORK WILL NOT BE ACCEPTED FOR COMPLETION UNTIL SUBMITTAL OF A COMPLETE LIST WITH LICENSE NUMBERS TO THE CITY ENGINEER.

7.) THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF EXISTING PUBLIC AND PRIVATE IMPROVEMENTS WITHIN AND ADJACENT TO THE WORK AND SHALL ADEQUATELY BARRICADE PROJECT TO KEEP THE GENERAL PUBLIC FROM THE SITE. ANY DAMAGE TO CITY OR PRIVATE IMPROVEMENTS SHALL BE REPLACED OR REPAIRED BY THE CONTRACTOR AT HIS EXPENSE TO CURRENT STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD PLANS.

8.) THE CONTRACTOR IS TO EXPOSE THE ENDS OF WATER MAINS, SEWER AND DRAIN LINES AND EXISTING GRAVITY LINES FOR THE SURVEYOR TO VERIFY LOCATION AND DEPTH OF FACILITIES PRIOR TO PLACEMENT OF PIPE.

9.) THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPORTING ALL CONFLICTS, ERRORS, OMISSIONS, ETC. TO THE CONSULTING ENGINEER IMMEDIATELY UPON DISCOVERY. IF SO DIRECTED BY THE ENGINEER OR CITY ENGINEER, THE CONTRACTOR SHALL STOP WORK UNTIL MITIGATIONS CAN BE MADE. ANY COSTS INCURRED RESULTING FROM THE CONTRACTOR'S FAILURE TO STOP WORK AS DIRECTED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

10.) THE CONTRACTOR SHALL AT ALL TIMES COORDINATE HIS WORK WITH THAT OF OTHERS ON THE SITE. THE CONTRACTOR SHALL HAVE A RESPONSIBLE PARTY, WHO SHALL HAVE THE AUTHORITY TO REPRESENT AND ACT ON HIS BEHALF, ON THE JOB SITE DURING ALL WORKING HOURS.

11.) THE CITY OF SANTA ROSA IS A MEMBER OF THE UNDERGROUND SERVICE ALERT (U.S.A.) ONE CALL SYSTEM. THE CONTRACTORS SHALL NOTIFY THE U.S.A. CENTER 72-HOURS IN ADVANCE OF PERFORMING ANY EXCAVATION WORK BY CALLING 1-800-227-2600.

12.) THE CONTRACTOR SHALL MARK IN WHITE PAINT ALL AREAS TO BE EXCAVATED PRIOR TO CONTACTING U.S.A.

13.) CONTRACTOR SHALL SUBMIT TO THE PUBLIC WORKS DEPARTMENT INSPECTOR A COPY OF THE COMPANY ANNUAL CALOSHA TRENCHING PERMIT AND A COPY OF THE COMPANIES LETTER INFORMING CALOSHA OF THE TIME OF TRENCHING PRIOR TO EXCAVATION OF TRENCHES 5' OR DEEPER.

14.) ALL WORK SHALL BE IN ACCORDANCE WITH THE CITY'S NOISE ORDINANCE.

15.) IF ANY AMOUNT OF BONES, STONE OR ARTIFACTS ARE UNCOVERED, WORK WITHIN 165 FEET OF THE AREA SHALL CEASE IMMEDIATELY AND A QUALIFIED ARCHEOLOGIST SHALL BE CONSULTED TO DEVELOP (IF NECESSARY) FURTHER MITIGATION MEASURES TO REDUCE ANY ARCHEOLOGICAL IMPACT TO A LESS THAN SIGNIFICANT EFFECT BEFORE CONSTRUCTION RESUMES IN THE AREA.

16.) CONTRACTOR SHALL PROVIDE THE CITY ENGINEER WITH SUBMITTALS FOR ALL MATERIALS TO BE USED. THE SUBMITTALS SHALL BE DELIVERED TO THE DEPARTMENT OF PUBLIC WORKS A MINIMUM OF TWO (2) WEEKS PRIOR TO THE PRE-CONSTRUCTION CONFERENCE.

17.) CERTIFICATION FOR CONFORMANCE WITH THE CITY OF SANTA ROSA SPECIFICATIONS WILL BE REQUIRED OF ALL MATERIAL USED ON THE PROJECT UNLESS SPECIFICALLY WAIVED BY THE ENGINEER.

18.) CONTRACTOR SHALL ADEQUATELY BARRICADE PROJECT TO KEEP THE GENERAL PUBLIC FROM THE SITE.

19.) ALL APPLICABLE FEES TO BE PAID AND PERMITS REQUIRED SHALL BE OBTAINED BY THE CONTRACTOR BEFORE COMMENCEMENT OF CONSTRUCTION.

20.) A SOILS ENGINEER SHALL BE ENGAGED BY THE OWNER TO CERTIFY THAT THE VARIOUS ITEMS OF COMPACTION COMPLY WITH THE SPECIFICATIONS AND THAT SPECIAL WORK REQUIRED HAS BEEN DONE SATISFACTORILY.

21.) THE CONTRACTOR SHALL USE A WATER TRUCK WHEN REQUIRED TO MAINTAIN ADEQUATE DUST CONTROL.

22.) INTERMEDIATE TRENCH BACK FILL SHALL BE IN MAXIMUM LIFTS OF 8" AND SHALL HAVE A MINIMUM RELATIVE COMPACTION OF 90% OR AS DIRECTED BY THE SOILS ENGINEER. COMPACTION SHALL BE BY THE MECHANICAL MEANS.

23.) EROSION CONTROL MEASURES SHALL BE IN ACCORDANCE WITH THE PLANS AND STORM WATER POLLUTION PREVENTION PLAN (SWPPP).

24.) PRIOR TO THE BEGINNING OF EARTHWORK THE CONTRACTOR SHALL CLEAR ALL ROOTS, ORGANIC MATTER, DEBRIS, PAVING. CURB, AND VEGETATION DESIGNATED TO BE SAVED, FROM THE AREA WITHIN WHICH EXCAVATION AND GRADING ARE TO BE CONDUCTED OR STORAGE OF EXCAVATED MATERIALS OR FILL IS TO BE MADE. VEGETATION CLEARED FROM THESE AREAS SHALL BE DISPOSED OF BY THE CONTRACTOR, AND INCLUDED IN THE COST OF CLEARING AND GRUBBING.

25.) IN TRANSITION AREAS FROM ONE STREET WIDTH TO ANOTHER STREET WIDTH, THE HEAVIER STRUCTURAL SECTION SHALL BE USED.

26.) DIMENSIONS SHOWN ON PLANS ARE TO CENTERLINE OF PIPE, UNLESS OTHERWISE NOTED.

27.) SEWER AND WATER AND SERVICES TO HAVE A MINIMUM 10 FEET HORIZONTAL SEPARATION.

28.) THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING UTILITIES.

29.) CONTRACTOR SHALL POTHOLE ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION TO VERIFY LOCATION AND DEPTH. THE TYPES, LOCATIONS, SIZES AND DEPTH OF EXISTING UTILITIES WERE OBTAINED FROM SOURCES OF VARYING RELIABILITY, THE CONTRACTOR IS CAUTIONED THAT ONLY EXCAVATIONS WILL REVEAL ACTUAL INFORMATION. A REASONABLE EFFORT WAS MADE TO DELINEATE UTILITIES, HOWEVER, CALIFORNIA ENGINEERING COMPANY ASSUMES NO RESPONSIBILITY FOR THE COMPLETENESS, NOR ACCURACY, NOR FOR OTHER UTILITIES WHICH MAY BE ENCOUNTERED. THE CONTRACTOR IS HEREBY NOTIFIED THAT THEY ARE RESPONSIBLE FOR VERIFICATION OF THE LOCATION OF ALL UTILITIES AT THE CONSTRUCTION SITE. IN THE EVENT CONFLICTS EXIST OR SUBSTANTIAL DISCREPANCIES ARE FOUND, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IMMEDIATELY AND ALLOW 2 WORKING DAYS FOR CHANGE TO BE MADE, COORDINATED AND APPROVED.

GRADING NOTES

1.) A SOILS ENGINEER SHALL CERTIFY THAT THE VARIOUS ITEMS OF COMPACTION AND MATERIALS HAVE BEEN ACCOMPLISHED. GRADING SHALL CONFORM TO CHAPTER 70 UBC, LATEST EDITION, AND TO THE RECOMMENDATION OF THE GEOTECHNICAL ENGINEERING REPORT, AND CITY REQUIREMENTS, WHICHEVER IS GREATER.

2.) ALL COMPACTION TESTING SHALL BE PERFORMED BY A LICENSED GEOTECHNICAL ENGINEER IN ACCORDANCE WITH THE GEOTECHNICAL AND CITY SPECIFICATIONS AND BE PAID FOR BY THE DEVELOPER (OR CONTRACTOR IN CASE OF RE-TESTING). THOSE TESTS WITHIN THE RIGHT-OF-WAY SHALL BE APPROVED BY THE CITY OF SANTA ROSA AND ALL TESTING OUTSIDE THE RIGHT-OF-WAY CERTIFIED BY THE SOILS ENGINEER FOR THE PROJECT. THE RESULTS OF SOIL COMPACTION TESTING SHALL BE SUBMITTED TO THE CITY BI-MONTHLY.

3.) ALL UNSUITABLE AND SURPLUS MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED.

4.) SUFFICIENT EQUIPMENT SHALL BE AVAILABLE TO PROVIDE DUST CONTROL AT ALL TIMES DURING CONSTRUCTION. A WATER TRUCK SHALL BE USED, WHEN REQUIRED, TO MAINTAIN ADEQUATE DUST CONTROL. AREAS SURROUNDING THE WORK SHALL BE KEPT CLEAN AND RETURNED TO ORIGINAL CONDITION UPON COMPLETION OF THE CONTRACT. THE CONTRACTOR SHALL OBTAIN A FIRE HYDRANT WATER METER PRIOR TO COMMENCEMENT OF WORK.

5.) ROUTES TO THE PROJECT SITE FOR HEAVY EQUIPMENT AND MATERIAL SHALL BE APPROVED BY THE CITY ENGINEER.

6.) EROSION CONTROL HYDROSEEDING SHALL BE APPLIED TO ALL GRADED OR DISTURBED SOILS WITHIN THE WORK AREA AFTER COMPLETION OF IMPROVEMENTS OR IF PRACTICAL AFTER GRADING ALSO TO REDUCE DUST.

7.) WINTERIZATION NOTE *THE FOLLOWING ARE REQUIRED IF GRADING AND CLEARING IMPROVEMENTS ARE INCOMPLETE BY OCTOBER 15TH; EROSION PROTECTION ON SLOPES 10:1 OR STEEPER AND SWALES WITH SLOPES 2% OR GREATER. NO SEDIMENT SHALL LEAVE THE PROJECT AREA. GRADE GUTTER SAG POINTS TO DRAIN. PROVIDE FOR DRAINAGE OF IMPROVEMENTS. PREVENT SEDIMENTATION IN EXISTING STORM DRAIN SYSTEM AND CLEAN PIPES PER SECTION SS60-05 (CAL-TRANS SPECS). SEAL OFF ALL SANITARY SEWER CONNECTION TO EXISTING SYSTEMS. IT IS THE CONTRACTORS RESPONSIBILITY TO MAINTAIN WINTERIZATION FACILITIES AT ALL TIMES OR UNTIL IMPROVEMENTS ARE FINAL.

8.) ALL EROSION CONTROL SHALL BE PLACED AS SPECIFIED ON THESE PLANS OR AS SHOWN ON THE SWPPP.

9.) TARPAULINS OR OTHER EFFECTIVE COVERS SHALL BE USED ON ALL STOCKPILED EARTH MATERIAL AND ON HAUL TRUCKS TO MINIMIZE DUST.

10.) THE CITY SHALL HAVE THE AUTHORITY TO STOP ALL GRADING OPERATIONS, IF, IN OPINION OF CITY STAFF, INADEQUATE DUST CONTROL MEASURES ARE BEING PRACTICED OR EXCESSIVE WIND CONDITIONS CONTRIBUTE TO FUGITIVE DUST EMISSIONS.

11.) ADJACENT STREET FRONTAGES SHALL BE SWEPT AT LEAST ONCE A DAY TO REMOVE SILT AND OTHER DIRT WHICH IS EVIDENT FROM CONSTRUCTION ACTIVITIES.

12.) THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING CONSTRUCTION VEHICLES LEAVING THE SITE ON A DAILY BASIS TO PREVENT DUST, SILT, AND DIRT FROM BEING RELEASED OR TRACKED OFFSITE.

13.) PRIOR TO INITIATING CLEARING AND GRUBBING ALL PROTECTIVE FENCING SHALL BE INSTALLED.

CONSTRUCTION STAKING

1.) THE SURVEYOR FOR THIS PROJECT SHALL PROVIDE ONE (1) SET OF CONSTRUCTION STAKES FOR LINE AND GRADE UNLESS OTHERWISE REQUESTED BY THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING MONUMENTS AND OTHER SURVEY MARKERS DURING CONSTRUCTION. ALL SUCH MONUMENTS OR MARKERS DESTROYED DURING CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTORS EXPENSE.

2.) IN THE EVENT OF A DISAGREEMENT OR DESTROYED STAKE OR MONUMENT, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE SURVEYOR PRIOR TO ANY FURTHER CONSTRUCTION.

3.) THE CONTRACTOR SHALL GIVE THE SURVEYOR 72-HOURS NOTICE PRIOR TO EACH PHASE OF CONSTRUCTION OR IN THE EVENT OF NEEDED RE-STAKING. PRIOR TO REQUESTING ACCEPTANCE OF IMPROVEMENTS, THE SURVEYOR FOR THIS PROJECT SHALL SET SURVEY MONUMENTS AS SPECIFIED IN THE IMPROVEMENT STANDARDS.

4.) THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING MONUMENTS AND OTHER SURVEY MARKERS.

5.) THE CONTRACTOR SHALL HAVE THE SITE STAKED PRIOR TO CONSTRUCTION OF ANY IMPROVEMENTS TO ENSURE PROPER ALIGNMENTS AND ELEVATIONS.

STREET/PARKING NOTES

1.) UPON COMPLETION OF CURB AND GUTTER POUR AND PRIOR TO THE SETTING OF THE CONCRETE, ALL GUTTERS SHALL BE WATER TESTED. WATER TESTING SHALL CONSIST OF POURING WATER ONTO THE FLOW LINE AND FOLLOWING THE WATER DOWNSTREAM REMOVING ALL HIGH AND LOW AREAS IN THE FLOW LINE.

2.) CURB OR MOW STRIP SHALL BE BRANDED WITH AN "S", "W", OR "I" AT SEWER AND WATER SERVICE LOCATIONS AND IRRIGATION CROSSINGS RESPECTIVELY.

3.) SIDEWALK RAMPS SHALL BE CONSTRUCTED AT THE CENTER OF ALL CURB RETURNS OR AS SHOWN.

4.) STREET NAME SIGNS SHALL BE PLACED ON THE RIGHT SIDE OF EACH INTERSECTION. MATERIALS, LOCATIONS, AND INSTALLATION PER THE CITY OF SANTA ROSA IMPROVEMENT STANDARDS.

5.) THE CONTRACTOR SHALL COORDINATE WITH OTHER WORK TO ASSURE THAT ALL UNDERGROUND CONDUITS AND UTILITIES ARE INSTALLED PRIOR TO PAVING. ALL PIPES IN PAVED AREAS SHALL BE PLACED PRIOR TO PLACING AGGREGATE BASE.

6.) EXISTING AC SURFACE SHALL BE CUT TO A NEAT STRAIGHT LINE PARALLEL WITH AND PERPENDICULAR TO THE STREET CENTERLINE AND THE EXPOSED BASE AND EDGE MATERIAL SHALL BE TACKED WITH EMULSION PRIOR TO PAVING. THE EXPOSED BASE MATERIAL SHALL BE GRADED, RE-COMPACTED, AND RESEALED PRIOR TO PAVING. ANY CONCRETE, AC, TREES, FENCES, AND/OR OTHER OBSTRUCTIONS REQUIRED TO CONSTRUCT THE PROPOSED IMPROVEMENTS SHALL BE REMOVED AND BE INCLUDED IN THE PRICES FOR VARIOUS ITEMS OF WORK. VERTICAL FACES OF ALL GUTTERS SHALL BE TACKED WITH EMULSION PRIOR TO PAVING.

7.) WHERE WORK IS ADJACENT TO A TRAFFIC LANE AND THERE IS A PAVEMENT CUT, DITCH, OR TRENCH GREATER THAN 2-INCHES IN DEPTH, AT A MINIMUM, THE CONTRACTOR SHALL MAINTAIN CONTINUOUS BARRICADES SPACED AT APPROXIMATELY 50-FOOT INTERVALS. IF THE CUT, DITCH, OR TRENCH IS GREATER THAN 10-FEET FROM A TRAFFIC LANE, THE SPACING MAY BE GREATER, BUT, SPACING SHALL NOT EXCEED 200-FEET.

WATER FACILITIES NOTES

1.) ALL WATER FACILITIES INCLUDING BUT NOT LIMITED TO LINES, SERVICE BOXES, VALVES, AND ALL MISCELLANEOUS APPURTENANCES SHALL CONFORM TO THE CITY OF SANTA ROSA STANDARD DETAILS AND SPECIFICATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY INFORMATION, REQUIREMENTS, AND DRAWINGS NECESSARY TO BID AND COMPLETE THE WORK SHOWN ON THESE PLANS AND INSTALLED PER MANUFACTURERS SPECIFICATIONS. PIPE ALTERNATIVES SHALL BE: POLYVINYL CHLORIDE PIPE - AWWA - C900 CLASS 150 DUCTILE - IRON PIPE - AWWA 151 CLASS 50.

2.) FIRE HYDRANTS SHALL BE APPROVED BY THE CITY ENGINEER AND SANTA ROSA FIRE DEPARTMENT.

3.) ALL RUNS OF SEWER FORCE MAIN AND WATER MAIN PIPE SHALL HAVE NO.10 GAUGE, SOLID INSULATED SOFT-DRAWN COPPER WIRE TAPED ALONG THE TOP OF PIPE. THE WIRE SHALL BE STUBBED UP INSIDE EACH VALVE BOX AND DEAD END BLOWOFF ASSEMBLY AND BE INSTALLED AS PER STANDARD DRAWING ASSEMBLY W-5. ALL SPLICES SOLDERED AND SHRINK-WRAPPED OR TAPPED.

4.) AT UTILITY CROSSING MAINTAIN A MINIMUM 12" VERTICAL CLEARANCE BETWEEN WATER LINES AND ALL OTHER FACILITIES. ALL SEWER/WATER CROSSINGS, INCLUDING SERVICES, SHALL CONFORM TO STATE HEALTH DEPARTMENT REQUIREMENTS WITH 10' MINIMUM HORIZONTAL CLEARANCE.

5.) ALL VALVES SHALL BE FLANGED TO TEES AND/OR CROSSES. ALL MAINLINE VALVES 16-INCH AND LARGER SHALL BE BUTTERFLY VALVES WHERE VALVE NUT IS GREATER THAN 30-INCH BELOW FINISHED GRADE. A VALVE OPERATING EXTENSION SHALL BE REQUIRED.

6.) ALL WATER SERVICES SHALL BE PER CITY OF SANTA ROSA STANDARD DETAILS AND SPECIFICATIONS.

7.) WATER METER BOXES AND COVERS SUBJECT TO TRAFFIC SHALL BE REINFORCED CONCRETE.

8.) SERVICE CONNECTION TO EXISTING WATER MAIN(S), OR TO AN EXTENSION OF AN EXISTING WATER MAIN(S), WILL BE MADE BY A QUALIFIED CONTRACTOR. THE CONTRACTOR SHALL NOTIFY CITY 72 HOURS IN ADVANCE, SCHEDULE AND PROCEED WITH THE SERVICE CONNECTION WITH MINIMUM INTERFERENCE TO EXISTING WATER AND FIRE SERVICES. AN INSPECTION BY THE CITY CONSTRUCTION INSPECTOR OF ALL CONNECTIONS MADE BY THE CONTRACTOR IS REQUIRED PRIOR TO BACKFILLING.

9.) PIPE JOINTS WILL NOT BE ALLOWED WITHIN SIX FEET (6') OF VALVE, FITTING OR HYDRANT.

10.) UNDER NO CIRCUMSTANCES SHALL PIPE OR JOINT DEFLECTION EXCEED MANUFACTURERS RECOMMENDATION. DEFLECTION OF PIPE WILL NOT BE ALLOWED WITHIN TEN FEET (10') OF ANY FITTING OR VALVE.

11.) STANDARD PIPE LENGTHS (MINIMUM EIGHTEEN (18) TO TWENTY (20) FEET, SHALL BE USED FOR ALL HORIZONTAL AND VERTICAL DEFLECTIONS. PIPE LENGTHS LESS THAN STANDARD LENGTH SHALL BE APPROVED BY THE CITY ENGINEER.

12.) IN THE EVENT THAT THIS PROJECT INDICATES THAT WATER MAINS WILL BE CONSTRUCTED WITHOUT THE PROTECTION OF AN OVERLAYING PAVEMENT, PLASTICIZED METALLIC LOCATING TAPE SHALL BE PLACED EIGHTEEN INCHES (18") ABOVE ALL SAID WATER MAINS.

13.) WATER SYSTEM CONTRACTOR SHALL COORDINATE WITH THE STREET LIGHTING CONTRACTOR TO AVOID CONFLICTS WITH WATER SERVICES AND STREET LIGHT FOUNDATIONS AND ELECTRICAL PULLBOXES.

14.) CONTRACTOR TO PROVIDE 72-HOUR NOTIFICATION TO THE CITY DEPARTMENT OF PUBLIC WORKS AND HBMWD PRIOR TO DISINFECTION.

15.) ALL WATER LINE FITTINGS 11$\frac{1}{4}$ DEGREE OR GREATER, TEES, CROSSES, DEAD ENDS AND REDUCERS/INCREASERS SHALL BE PROVIDED WITH BOTH THRUST BLOCKS AND RESTRAINED JOINT PIPE LENGTHS

SANITARY SEWER NOTES

1.) ALL SANITARY SEWER CONSTRUCTION MATERIALS AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE CITY OF SANTA ROSA STANDARD DETAILS AND SPECIFICATIONS AND THE MANUFACTURERS SPECIFICATIONS. ALL SANITARY SEWER INITIAL BACK FILL SHALL BE THE SAME MATERIAL USED FOR PIPE BEDDING AND SHALL BE PLACED TO 6" ABOVE TOP OF PIPE.

2.) THE CONTRACTOR SHALL EXPOSE THE ENDS OF EXISTING SEWER LINES AND VERIFY THE LOCATION AND ELEVATION PRIOR TO THE PLACEMENT OF PIPE. ALL COSTS FOR SUCH EXCAVATION AND BACK FILL SHALL BE INCLUDED IN BID PRICE.

3.) ALL SERVICE SEWERS ENTERING A MANHOLE WILL BE SET NOT LOWER THAN FLOWLINE-TO-CROWN WITH EXISTING PIPE UNLESS OTHERWISE SHOWN.

4.) ALL SEWER MANHOLES NOT IN PAVED AREAS SHALL HAVE RIMS SET 6" ABOVE EXISTING GROUND, OR GRADES AS NOTED, AND INSTALLED WITH LOCK-DOWN COVERS, PINKERTON A-201 OR EQUAL.

5.) THE CONTRACTOR SHALL MAINTAIN ALL EXISTING SEWER FACILITIES WITHIN THE CONSTRUCTION AREA UNTIL NEW IMPROVEMENTS ARE IN PLACE AND APPROVED.

6.) ANY WATER ENTERING THE SANITARY SEWER SYSTEM TO BE CONSTRUCTED UNDER THESE PLANS SHALL NOT BE DISCHARGED TO THE EXISTING SYSTEM. PLUGS SHALL BE INSTALLED IN EXISTING MANHOLES AS NECESSARY TO PERMIT PUMPING THE NEW SYSTEM CLEAR OF WATER AND DEBRIS PRIOR TO ACCEPTANCE. CARE SHALL BE EXERCISED IN LOCATING PLUGS TO AVOID INTERRUPTING SERVICE TO EXISTING CONNECTIONS. MORTAR OR BRICK PLUGS SHALL BE USED. INFLATABLE DEVICES ARE NOT SATISFACTORY.

7.) ALL SERVICES SHALL HAVE 3' MINIMUM, PER CITY OF SANTA ROSA STANDARDS, OF COVER AT THE PROPERTY LINE AND SHALL BE TO THE CENTER OF THE LOT UNLESS OTHERWISE NOTED ON THE PLANS. THE CONTRACTOR SHALL PLACE A 4"X4" REDWOOD POST AT THE END OF EACH SERVICE EXTENDING FROM THE END OF PIPE TO AT LEAST 12" ABOVE SURFACE.

8.) A VACUUM TEST SHALL BE DONE AFTER ASSEMBLY OF THE MANHOLE, BUT BEFORE BACK FILL ALL LIFT HOLES SHALL BE FILLED WITH NON-SHRINK GROUT; ALL PIPES ENTERING THE MANHOLE SHALL BE PLUGGED. TAKING CARE TO SECURELY BRACE THE PLUG FROM BEING DRAWN INTO THE MANHOLE. THE TEST HEAD SHALL BE PLACED INSIDE THE TOP OF THE CONE SECTION AND THE SEAL INFLATED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. A VACUUM OF 10" OF MERCURY (APPROXIMATELY 5PSI) SHALL BE DRAWN AND THE VACUUM PUMP SHUT OFF. WITH THE VALVES CLOSED THE TIME SHALL BE MEASURED FOR THE VACUUM PUMP TO DROP TO 9". ACCEPTABLE TIMES ARE 60+ SECONDS FOR THE 48", 75+ SECONDS FOR THE 60", AND 90+ SECONDS FOR 72". IF THE MANHOLE FAILS THE INITIAL TEST, NECESSARY REPAIRS SHALL BE MADE WITH A NON-SHRINK GROUT WHILE THE VACUUM IS STILL BEING DRAWN. RETESTING SHALL PROCEED UNTIL A SATISFACTORY TEST IS OBTAINED. THE CONTRACTOR IS TO PERFORM THE TEST AND SUPPLY ALL TEST EQUIPMENT.

9.) ALL MANHOLES SHALL BE 48" IN DIAMETER, UNLESS OTHERWISE NOTED.

10.) CURB OR MOW STRIP TO BE BRANDED WITH S AT SEWER SERVICE LOCATIONS.

11.) ALL SEWER SERVICES CONNECTING TO SEWER MAIN SHALL BE CONNECTED WITH 'Y' FITTING IN THE DIRECTION OF FLOW.

STORM DRAIN NOTES

1.) THE STORM DRAIN FACILITIES SPECIFIED IN THESE PLANS, INCLUDING MATERIALS AND METHOD OF INSTALLATION, SHALL BE IN ACCORDANCE WITH THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD PLANS AND SPECIFICATIONS, AND THE MANUFACTURERS SPECIFICATIONS (50 YEARS SERVICE LIFE). THE FOLLOWING PIPE ALTERNATES SHALL BE USED:

A. REINFORCED CONCRETE PIPE CLASS III, UNLESS SPECIFIED OTHERWISE IN THESE PLANS. PIPE SHALL CONFORM TO ASTM C76, LATEST REVISION. THE ASSEMBLY OF JOINTS SHALL BE IN ACCORDANCE WITH THE PIPE MANUFACTURE'S RECOMMENDATION AND THE REQUIREMENTS OF ASTM C 443.

B. POLYVINYL CHLORIDE PIPE (PVC) CONFORMING TO ONE OF THE FOLLOWING SPECIFICATIONS:

DIAMETER ASTM DESIGNATION
12 INCH D3034, SDR 35 / C900, DR 18
15 INCH D3034, SDR 35 / C905, DR 18
18 INCH D2241, SDR 51 / C905, DR 18
21 INCH D2241, SDR 51
24 INCH D2241, SDR 51 / C905, DR 18
27 INCH D2241, SDR 51
30 INCH C905, DR 18

JOINTS OF PVC PIPE SHALL CONSIST OF EITHER AND ELASTOMERIC GASKET COUPLING OR AN INTERNAL BELL AND SPIGOT WITH AN ELASTOMERIC GASKET. THE ASSEMBLY OF JOINTS SHALL BE IN ACCORDANCE WITH THE PIPE MANUFACTURERS RECOMMENDATIONS AND THE REQUIREMENTS OF ASTM D-3212.

C. HIGH DENSITY POLYETHYLENE PIPE DOUBLE WALL-CONFORMING TO AASHTO M294 OR MP7-97 TYPE S OR TYPE D WITH INSIDE DIAMETERS OF 12 TO 60 INCHES. PIPE JOINTS SHALL BE BELL AND SPIGOT OR WELDED TYPE, CERTIFIED CAPABLE OF WATERTIGHT PERFORMANCE, WITH O-RING GASKETS MEETING ASTM F-477. THE ASSEMBLY OF JOINTS SHALL BE IN ACCORDANCE WITH THE PIPE MANUFACTURERS RECOMMENDATIONS AND THE REQUIREMENTS OF ASTM D-3212.

2.) THE CONTRACTOR SHALL MAINTAIN ALL EXISTING DRAINAGE FACILITIES WITHIN THE CONSTRUCTION AREA UNTIL NEW DRAINAGE IMPROVEMENTS ARE IN PLACE AND FUNCTIONING.

3.) EXISTING STORM DRAIN FACILITIES SHALL BE EXPOSED AND INVERT VERIFIED PRIOR TO PLACEMENT OF PIPE WITH ALL CONSTRUCTION CONFORMING TO MANUFACTURERS SPECIFICATIONS AND TO THE REQUIREMENTS OF THE CITY OF SANTA ROSA. ALL COSTS FOR SUCH EXCAVATION AND BACK FILL SHALL BE INCLUDED IN THE BID PRICE.

4.) THE CONTRACTOR SHALL NOT ALLOW ANY SEDIMENT TO BE WASHED INTO OR ENTER STORM DRAINAGE FACILITIES. SHOULD EXCESSIVE SEDIMENTATION OCCUR, THE CONTRACTOR SHALL BE REQUIRED TO FLUSH OUT AND CLEAN THE FACILITIES AND BE APPROVED BY THE CITY ENGINEER PRIOR TO FINAL ACCEPTANCE.

5.) ALL MANHOLES SHALL BE 48" IN DIAMETER, UNLESS OTHERWISE SHOWN.

6.) MANHOLES LOCATED OUTSIDE OF PAVED AREAS SHALL HAVE RIM SET 0.5 FEET ABOVE GROUND SURFACES, OR TO GRADE AS NOTED.

7.) DURING CONSTRUCTION, NEW AND EXISTING PIPES OR UTILITIES LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED WITH PLATE STEEL OR MAIN ADEQUATE COVER TO PREVENT ANY DAMAGE FROM HEAVY EQUIPMENT. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ANY DAMAGE TO PIPES OR UTILITIES DURING CONSTRUCTION.

8.) ALL DROP INLETS SHALL INCLUDE A " NO DUMPING " PUBLIC NOTICE.

9.) ALL DRAINAGE INLET GRATES SHOWN ON PLAN ARE DEPRESSED, LOWER THAN PROJECTED GUTTER FLOWLINE SLOPES. THE CONTRACTOR SHALL PAY SPECIAL ATTENTION TO STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD PLANS AND GUTTER SLOPES TO ENSURE THAT CURB AND GUTTER, AND DRAINAGE INLET GRATES ARE INSTALLED AT PROPER ELEVATIONS. SPECIAL CARE SHOULD BE TAKEN TO THOROUGHLY REVIEW THE TRANSITION PORTION OF CALTRANS DETAILS.

10.) ALL CAST-IN-PLACE CONCRETE PIPE CONSTRUCTION SHALL CONFORM TO "SECTION 63: CAST-IN-PLACE CONCRETE PIPE" OF THE STATE OF CALIFORNIA STANDARD SPECIFICATIONS. THE OWNER AND/OR CONTRACTOR SHALL RETAIN SERVICES OF A FULL-TIME, QUALIFIED CONSULTANT TO MONITOR AND OBSERVE CONSTRUCTION, AND PERFORM TESTING TO ENSURE CONSTRUCTION CONFORMS TO THE SPECIFICATION. QUALITY ASSURANCE/QUALITY CONTROL REPORTS SHALL BE SUBMITTED TO THE CITY REGULARLY. THE CONCRETE SHALL MEET OR EXCEED A COMPRESSIVE STRENGTH OF 3000 PSI PRIOR TO ANY BACKFILL OPERATIONS.

LEGEND - EXISTING

- 196.0 CONTOUR - MAJOR
- 196.0 CONTOUR - MINOR
- PCC CURB, GUTTER, SIDEWALK
- PAVEMENT MARKING
- BUILDING
- STORM DRAIN W/ MANHOLE
- SANITARY SEWER W/ MANHOLE
- SEWER CLEANOUT
- W WATER
- W WATER SERVICE/ BF PREVENTER
- X FENCE
- OH OVERHEAD UTILITY
- LIGHT STANDARD
- UTILITY POLE
- TREE

LEGEND - PROPOSED

- DEMOLISH PCC
- GRIND/REMOVE AC
- EDGE OF PAVEMENT/PCC
- PCC FLATWORK
- AC PAVING
- OPEN GRADED AC PAVING
- GRASSY SWALE
- FLOWLINE
- BUILDING
- PAVEMENT STRIPING
- W 6" W WATER SERVICE
- WATER VALVE
- FIRE HYDRANT
- WATER SERVICE METER
- BACKFLOW/REDUCED PRESSURE DEVICE
- 6"SS SEWER SERVICE WITH BOAT
- SEWER CLEANOUT
- 6"SD STORM DRAIN WITH BOAT
- SD 24" DROP INLET
- STORM DRAIN MANHOLE
- IRRIGATION LINE (SEE LANDSCAPE PLANS)

REVIEWED FOR CODE COMPLIANCE BY COASTLAND CIVIL ENGINEERING, INC. IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

NO.	DATE	DESCRIPTION

DATE: 06-05-2020
SCALE: AS SHOWN
DRAWN BY: DDI
DESIGNED BY: DDI
CHECKED BY: DLS

CALIFORNIA ENGINEERING COMPANY INC ESTD 1996
CIVIL ENGINEERING
LAND SURVEYING
FUNDING PROCUREMENT
CONSTRUCTION ADMINISTRATION
www.cecusa.net
1110 Civic Center Blvd. Suite 404 | Yuba City, CA 95993 | (530) 751-0952 Office

DANCO GROUP

GENERAL NOTES AND LEGENDS

SAGE COMMONS CIVIL IMPROVMENT PLANS

PROJECT NUMBER **19-218**

SHEET **G2** OF **2**

E:\Projects\19-218 Danco_59 Units 80 College Ave\Engl\ImpPlns\19-218 80 College Ave IP's_ACAD2017.dwg Jun 01, 2020-08:35 pm Win8User

COLLEGE AVENUE

ABANDONED SS MANHOLE

SD MANHOLE 36" INV=131.66

SS MH INV ±129.6

88+00.00 88+50.00 89+00.00 89+50.00 90+00.00 90+50.00 91+00.00 91+50.00

438.30
S87° 51' 48"E

(N87° 51' 48"W 12.39)

30'

DRIVEWAY CURB CUT

UTILITY POLE

DRIVEWAY CURB CUT

10'

SEWER LATERAL CLEANOUT

GUTTER SLOPE, TYP

S87° 51' 48"E
166.97

S87° 51' 48"E
(230.00)

DRIVEWAY CURB CUT

UTILITY POLE

DRIVEWAY CURB CUT

UTILITY POLES

TELECOM MANNHOLE

(N87° 51' 48"W 5.00)

UTILITY BOXES

GUTTER SLOPE, TYP

ABANDONED WATER METER

SEWER LATERAL CLEANOUT. INV APPROX. 137

CURB INLET

S01° 44' 18"W
10.00

UTILITY BOX

LIGHT POLE

UTILITY BOX

1" WATER SERVICE METER

S87° 51' 48"E
100.24

UTILITY BOX

S87° 51' 48"E
104.93

UTILITY BOX

UTILITY BOXES

UTILITY BOX

TELECOM MANNHOLE

L=23.46, R=15.00

UTILITY POLE

10'

40'

N34° 01' 11"W
198.94

LOT LINE TO BE REMOVED BY CONCURRENT INSTRUMENT

LOT LINE TO BE REMOVED BY CONCURRENT INSTRUMENT

N01° 44' 18"E
58.92

S.R.C.A. LP
010-121-024

S.R.C.A. LP
010-121-025

WATER SERVICE W/ BACKFLOW

42.91

S01° 44' 18"W (67.71)
(S01° 41' 10"W)

LOT LINE TO BE REMOVED BY CONCURRENT INSTRUMENT

2.9'

10'

15'

SANTA ROSA COLLEGE AVE LP
010-121-020

119.82
N88° 23' 47"W

7.23'

(S88° 23' 6.00)

(N88° 23' 47"W 4.00)

FOUND NAIL & TAG "LS 4120" IN WALK

84.54
S01° 44' 18"W

GIRL OF THE YEAR LLC
010-121-026

N01° 44' 18"E
(116.48)

321.99
N01° 44' 18"E

FOUND IRON PIPE, BENT OVER

N34° 01' 11"W
20.50

LOT LINE TO BE REMOVED BY CONCURRENT INSTRUMENT

S01° 44' 18"W
23.80

(S88° 15' 42"E 4.00)

38.75 13.23 86.99
138.97'
N87° 49' 55"W

SONOMA-MARIN AREA RAIL TRANSIT DISTRICT
010-121-027

(625.44)
N34° 01' 11"W

S01° 44' 18"W
492.13

GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft.

RECORD MAPPING LEGEND

- FOUND AS DESCRIBED
- FOUND DISK IN STD. MONUMENT WELL
- FOUND IRON PIPE, "HOGAN - LS 7362"
- FOUND IRON PIPE, "LS 4120"
- CALCULATED POINT
- BOUNDARY LINE
- PARCEL LINE
- EASEMENT LINE
- CENTER LINE
- (EMBRACED) CALCULATED DATA

LEGEND - EXISTING

- 196.0 CONTOUR - MAJOR
- 196.0 CONTOUR - MINOR
- PCC CURB, GUTTER, SIDEWALK
- PAVEMENT MARKING
- BUILDING
- STORM DRAIN W/ MANHOLE
- SANITARY SEWER W/ MANHOLE
- SEWER CLEANOUT
- W WATER
- W WATER SERVICE/ BF PREVENTER
- X FENCE
- OH OVERHEAD UTILITY
- LIGHT STANDARD
- UTILITY POLE
- TREE

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

NO.	DATE	DESCRIPTION
2	03/26/2020	LOT LINES TO BE REMOVED CALLOUTS

DATE: 06-05-2020
SCALE: 1"=10'
DRAWN BY: DDI
DESIGNED BY: DDI
CHECKED BY: DAS

CALIFORNIA ENGINEERING COMPANY INC
CIVIL ENGINEERING
LAND SURVEYING
PROJECT MANAGEMENT
CONSTRUCTION ADMINISTRATION
www.cecusa.net
1110 Civic Center Blvd. Suite 404 | Yuba City, CA 95993 | (530) 751-0952 Office

DANCO GROUP

EXISTING CONDITIONS

SAGE COMMONS CIVIL IMPROVMENT PLANS

PROJECT NUMBER 19-218

SHEET C1 OF 8

PROJECT NUMBER	DANCO GROUP
19-218	
SHEET C2 OF 8	

CALCULATED SITE PLAN

SAGE COMMONS CIVIL IMPROVEMENT PLANS

CALIFORNIA ENGINEERING COMPANY INC
CIVIL ENGINEERING
PLANNING PROCUREMENT
CONSTRUCTION ADMINISTRATION
1110 Civic Center Blvd. Suite 404 | Yuba City, CA 95993 | (530) 751-0952 Office

NO.	DATE	DESCRIPTION
P1	03/23/2020	GATE LANDING, PUE
P2	05/12/2020	FENCE AND PUE CALLOUTS

DATE: 06-02-2020
SCALE: 1"=10'
DRAWN BY: DDI
DESIGNED BY: DDI
CHECKED BY: DLS

REVIEWED FOR CODE COMPLIANCE
BY ASSESSMENT DISTRICT ENGINEERING
AS CONSULTANTS, INC. (ADE) FOR SUTTER COUNTY
AMENDED BY THE LOCAL AGENCY

LINE AND CURVE TABLES

Line Table		
Line #	Length	Direction
L1	179.992	S87° 51' 48.00"E
L2	101.361	S87° 51' 48.00"E
L5	10.948	S02° 08' 12.00"W
L6	14.937	S87° 51' 48.00"E
L7	10.448	N02° 08' 12.00"E
L14	16.667	S87° 51' 48.01"E
L15	163.909	S87° 51' 48.00"E
L16	16.811	S01° 44' 18.00"W
L17	1.414	S48° 44' 18.00"W
L18	25.613	S01° 44' 18.00"W
L19	32.000	S01° 44' 18.00"W
L20	16.708	S87° 51' 48.00"E
L21	12.854	S02° 08' 12.00"W
L22	25.476	S87° 51' 48.00"E
L23	145.541	S87° 51' 48.00"E
L24	117.680	N87° 51' 48.00"W
L25	2.314	N02° 08' 12.00"E
L26	15.500	S87° 51' 48.00"E
L27	3.033	N55° 57' 23.00"E
L28	3.109	N55° 58' 48.94"E
L29	50.875	S02° 08' 14.50"W
L30	33.667	N02° 08' 12.00"E
L31	9.492	S87° 51' 48.00"E
L32	117.500	N02° 08' 12.00"E
L33	71.500	N02° 08' 12.00"E
L34	15.000	S87° 51' 48.00"E
L35	15.000	S87° 51' 48.00"E
L36	15.000	N87° 51' 48.00"W
L37	15.000	S87° 51' 48.00"E
L38	38.500	N02° 08' 12.00"E
L39	24.999	N87° 51' 48.00"W
L40	3.000	N02° 08' 12.00"E

Line Table		
Line #	Length	Direction
L41	14.001	N87° 51' 48.00"W
L42	102.314	S02° 08' 12.00"W
L43	65.791	S87° 51' 48.00"E
L44	29.729	S22° 51' 48.00"E
L45	33.927	S87° 51' 48.00"E
L46	8.000	S02° 08' 12.00"W
L47	8.000	N87° 51' 48.00"W
L48	12.000	S02° 08' 12.00"W
L49	8.000	S87° 51' 48.00"E
L50	8.000	S02° 08' 12.00"W
L51	8.000	N87° 51' 48.00"W
L52	12.000	S02° 08' 12.00"W
L53	8.000	S87° 51' 48.00"E
L54	12.000	N02° 08' 12.00"E
L55	9.679	S87° 51' 48.00"E
L56	6.236	S22° 51' 48.00"E
L57	24.204	S87° 52' 41.36"E
L58	12.036	N88° 09' 22.57"W
L59	14.310	N24° 01' 11.04"W
L60	21.140	N02° 08' 28.33"E
L61	6.098	S02° 09' 04.16"W
L62	23.413	N72° 08' 12.00"E
L63	27.536	N72° 08' 12.00"E
L64	6.500	S87° 51' 48.00"E

Curve Table			
Curve #	Length	Radius	Delta
C1	4.712	3.000	090°00'00"
C2	25.022	16.000	089°36'06"
C3	6.283	4.000	090°00'00"
C4	9.425	3.000	180°00'00"
C5	9.425	3.000	180°00'00"
C6	4.712	3.000	090°00'00"
C7	35.351	17.833	113°34'37"
C8	33.158	29.392	064°38'18"
C9	25.221	18.909	076°25'21"
C10	16.736	14.508	066°05'40"
C11	21.472	21.896	056°11'17"

GRAPHIC SCALE
(IN FEET)
1 inch = 10 ft.

E:\Projects\19-218 Danco_SB Units 80 College Ave\Engineering\Plans\19-218 80 College Ave PL_ACAD2017.dwg Jun 01, 2020-08:35 pm Weidner

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

CITY STORM DRAIN SYSTEM

EXISTING SD MANHOLE
36" INV IN 131.66

EXISTING OFF-SITE
STORM DRAIN CURB INLET

COLLEGE AVENUE

CLEVELAND AVENUE

NOTE: WORK DONE WITHIN THE RIGHT OF WAY WILL REQUIRE AN ENCROACHMENT PERMIT

FF=145.42

FF=145.42

FF=145.42

EXISTING BUILDING

SMART RAIL

GRAPHIC SCALE
(IN FEET)
1 inch = 10 ft.

CONSTRUCTION NOTES

1. 24" DROP INLET CATCH BASIN, SEE DETAIL, SHEET D3
2. CURB INLET CATCH BASIN, TYPE II. SEE STD-402 SHEET D1
3. RUN-OFF PREVENTION BERM. SEE DETAIL F, SHEET D1
4. 111 LF 6" HDPE STORM DRAIN, S=0.005
5. 151 LF 15" HDPE STORM DRAIN, S=0.003
6. 68 LF 12" HDPE STORM DRAIN, S=0.003
7. 24 LF 8" HDPE STORM DRAIN, S=0.005
8. 101 LF 15" HDPE STORM DRAIN, S=0.003
9. 84 LF 15" HDPE STORM DRAIN, S=0.0015
10. 10 LF 15" HDPE STORM DRAIN, S=0.0015
11. 48" CONTECH CS-4 "CASCADE SEPARATOR" STORM FILTER
12. 38 LF 15" HDPE STORM DRAIN, S=0.0015
13. 105 LF 8" HDPE STORM DRAIN, S=0.005
14. CURB CUT-AWAY. SEE DETAIL B, SHEET D1
15. CURB AND GUTTER SPILLWAY, SEE DETAIL I, SHEET D1
16. ADA ACCESSIBLE RAMP AND VAN PARKING SPACES. SEE MANHOLE OR APPROVED EQUAL -SEE DETAIL, SHEET D3
17. 3"-6" DRAIN GRAVEL, MINIMUM 12" DEPTH.
18. ADA ACCESSIBLE CORNER RAMP CONFORMING TO CALTRANS STANDARD A88A CASE C. SEE DETAIL 1, AND DETAIL SHEET D1
19. 2655 SF 3" AC OVER 10" CLASS 2 AB
20. 2800 SF 3" OPEN GRAD PERMEABLE AC, 10" CL 2 PERMEABLE AB (15.8% OF TOTAL PARKING, WALKING, AND PATIO SURFACES) MARKING PLAN.
21. 610 SF 6" PCC, 4" CLASS 2 AB AT 95% R.C. OVER SELECTIVE FILL
22. POP UP EMITTER, SEE DETAIL C, SHEET D1
23. 1730 SF 1.5" GRIND AND OVERLAY WITH PAVEMENT REINFORCING FABRIC
24. 56 LF ZONE 1 SWALE WITH BIORETENTION BMP, 4' WIDTH
25. 94 LF ZONE 2 SWALE WITH BIORETENTION BMP, 6' WIDTH
26. 50 LF ZONE 3 SWALE WITH BIORETENTION BMP, 3' WIDTH
27. 89 LF ZONE 4 SWALE WITH BIORETENTION BMP, 6' WIDTH
28. 42 LF ZONE 5 SWALE WITH BIORETENTION BMP, 4' WIDTH
29. 72"x60" AND 60"x51" AND GATE LANDINGS. SEE ARCHITECTURAL DRAWINGS FOR FENCE AND GATE DETAIL.
30. 24"x36" SD DROP INLET CATCH BASIN. JENSEN PRECAST OR EQUIVALENT
31. FENCE. SEE LANDSCAPE SHEETS L1 THRU L4
32. ADA ACCESSIBLE RAMP. SEE DETAIL 2 THIS SHEET
33. 50 LF 8" CUTOFF CURB. SEE DETAIL J, SHEET D2
34. 4 LF 12" HDPE STORM DRAIN, S=0.003

NOTES:

1. EXISTING VAULTS, VALVES, STRUCTURES, ETC. ARE APPROXIMATE AND WERE ENCOUNTERED AT THE TIME OF THE SURVEY. ANY TANKS, VAULTS, VALVES, STRUCTURES, ETC. FOUND DURING CONSTRUCTION THAT ARE NOT SHOWN ON THESE PLANS SHALL BE DISCUSSED WITH THE COUNTY IN THE EVENT THEY ARE IN CONFLICT WITH THE PROPOSED IMPROVEMENTS.
2. CONTRACTOR SHALL VERIFY DEPTH, LOCATION AND SIZE OF ALL EXISTING UTILITIES WITHIN WORK LIMITS PRIOR TO CONSTRUCTION.
3. STORM DRAIN TRENCH AND BACKFILL SHALL BE PER CITY OF SANTA ROSA STD-215, SHEET D2
4. EARTHWORK, SITE GRADING, SUBGRADE PREPARATION, AND ENGINEERED FILL SHALL BE PER THE GEOTECHNICAL REPORT

NOTES:

5. THE ENTIRE SITE SHALL BE CLEARED OF VEGETATION, DEBRIS, AND DELETERIOUS MATERIAL TO THE EXTENT POSSIBLE BEFORE GRADING ACTIVITIES BEGIN.
6. MANHOLES, DROP INLETS, CURB INLETS, CATCH BASINS AND CDS TRASH COLLECTOR MANHOLE SHALL BE PER DETAILS, SHEETS D1-D3.
7. CONTRACTOR TO CONSTRUCT TRENCH DAMS ALONG STORM DRAIN AS NECESSARY. BEDDING AND BACKFILL SHALL CONFORM TO THE GEOTECHNICAL REPORT.
8. STORM DRAIN SHOWN SHALL BE OVERFLOW INLETS AND PIPE FOR THE CONTINGENCY THAT THE L.I.D. GRASSY SWALE AND BIORETENTION FEATURES BECOME INUNDATED.

Cut/Fill Report

Volume Summary

Name	Type	Cut Factor	Fill Factor	2d Area (Sq. Ft.)	Cut (Cu. Yd.)	Fill (Cu. Yd.)	Net (Cu. Yd.)
Topsoil Stripping - 3 inches	Clearing/ preparation	1.000	1.000	38,987	361.0	0	361<Cut>
Volume Surface (Stripped Existing Ground to Finish Subgrade	Full – overall site	1.000	1.000	38,987	710.7	211.8	499.0<Cut>
Building Perimeter Footings	24" width x 24" depth	1.000	1.000	1992	147.6	0	147.6<Cut>
Building Interior Footings	24" width x 24" depth	1.000	1.000	1260	93.3	0	93.3<Cut>
Site minus building areas scarify and re-compact to 90% RC, 12" depth	Fill/re-compaction loss	1.000	1.000	23,987	800	888	88<Fill>
Building Areas scarify and re-compact to 90% RC, 30" depth	Fill/re-compaction loss	1.000	1.000	15,000	1250	1389	139<Fill>

Totals

	2d Area (Sq. Ft.)	Cut (Cu. Yd.)	Fill (Cu. Yd.)	Net (Cu. Yd.)
Total	38986.84	3363	2489	874<Cut>

DETAIL 1 - CORNER RAMP
1"=5'

DETAIL 2 - PARKING AREA RAMP
1"=5'

SECTION A-A

SECTION B-B

PER CBC 11B-405.9 A 3" CURB SHALL EXTEND ALONG THE RAMP UNDER THE HAND RAIL

NOTE: AB AND SUB-BASE NOT SHOWN -SEE DETAIL G/D2 FOR STRUCTURAL SECTION DETAILS

LEGEND - PROPOSED

- DEMOLISH PCC
- GRIND/REMOVE AC
- EDGE OF PAVEMENT/PCC
- PCC FLATWORK
- AC PAVING
- OPEN GRADED AC PAVING
- GRASSY SWALE
- FLOWLINE
- BUILDING
- PAVEMENT STRIPING

NO	DATE	DESCRIPTION
1	03/24/2020	SECTION C-A, LOCATE VALLEY GUTTER
2	05/12/2020	FENCE AND PROPERTY LINE GRADING, RAMP DETAIL
3	06/05/2020	BIORETENTION SWALE ADJUST

DATE: 06-05-2020
SCALE: 1"=10'
DRAWN BY: DDI
DESIGNED BY: DDI
CHECKED BY: DAS

CIVIL ENGINEERING
LAND SURVEYING
PROJECT MANAGEMENT
CONSTRUCTION ADMINISTRATION
www.cecusa.net
CALIFORNIA ENGINEERING COMPANY INC
1110 Civic Center Blvd. Suite 404 | Yuba City, CA 95993 | (530) 751-0862 Office

DANCO GROUP

GRADING AND DRAINAGE PLAN

SAGE COMMONS CIVIL IMPROVEMENT PLANS

PROJECT NUMBER 19-218

SHEET C3 OF 8

E:\Projects\19-218 Bronco_38 Units 80 College Ave\Engr\Plan\19-218 80 College Ave PL_ICAD2017.dwg Jun 01, 2020-08:35 pm - Wallace

NOTES:

1. EXISTING VAULTS, VALVES, STRUCTURES, ETC., ARE APPROXIMATE AND WERE ENCOUNTERED AT THE TIME OF THE SURVEY. ANY TANKS, VAULTS, VALVES, STRUCTURES, ETC., FOUND DURING CONSTRUCTION THAT ARE NOT SHOWN ON THESE PLANS SHALL BE DISCUSSED WITH THE COUNTY IN THE EVENT THEY ARE IN CONFLICT WITH THE PROPOSED IMPROVEMENTS.
2. CONTRACTOR SHALL VERIFY DEPTH, LOCATION AND SIZE OF ALL EXISTING UTILITIES WITHIN WORK LIMITS PRIOR TO CONSTRUCTION.
3. SANITARY SEWER TRENCH AND BACKFILL SHALL BE PER CITY OF SANTA ROSA STD-215 & 517, SHEETS D1 & D3
4. SEWER MANHOLES, SERVICE LATERALS, AND CLEANOUTS SHALL BE PER DETAILS, SHEET D3.

NOTES:

5. CONTRACTOR TO CONSTRUCT TRENCH DAMS ALONG SEWER MAIN AS NECESSARY. BEDDING AND BACKFILL SHALL CONFORM TO THE GEOTECHNICAL REPORT.
6. ONSITE WATER MAINS SHALL HAVE 30" MINIMUM COVER, AND WHERE CROSSING PROPOSED UTILITIES SHALL MAINTAIN 12" MINIMUM CLEARANCE OR AS DESCRIBED IN CITY DETAIL 517, SHEET D2. AND CITY WAIVER 3, SHEET D3
7. WATER GATE VALVES AND HYDRANTS SHALL BE PER CITY OF SANTA ROSA STANDARD DETAILS, SHEET D3.
8. ALL BUILDING SEWER LATERALS SHALL BE 4", SLOPED AT 1%. ALL BUILDINGS SHALL HAVE A 4' CLEANOUT (SSCO) LOCATED 5 FEET FROM BUILDING. ALL MAINS AND LATERALS SHALL HAVE 36" MINIMUM COVER.
9. STUB WATER LATERALS 5 FEET FROM BUILDING. SEE PLUMBING/MECHANICAL SHEETS FOR CONNECTIONS.

CONSTRUCTION NOTES

1. CONNECT SERVICE LATERAL TO EXISTING 12" WATER MAIN WITH TAPPING SLEEVE. CONNECTION TO THE EXISTING MAIN WILL REQUIRE A SHUT DOWN FOR A TIE-IN INSPECTION. CALL WATER ENGINEERING SERVICES FOR FEES AND SCHEDULING. ADVANCED NOTICE WILL BE REQUIRED.
2. 8" COMBINATION WATER SERVICE LATERAL
3. COMBINATION SERVICE WITH 3" DOMESTIC WATER METER, 8" FIRE SPRINKLER SERVICE LATERAL W/ ¾" METER, AND 2" IRRIGATION WATER METER -SEE LANDSCAPE SHEETS FOR IRRIGATION DESIGN. SEE DETAILS, SHEET D3
4. STD-876 REDUCED PRESSURE BACKFLOW DEVICE FOR IRRIGATION SERVICE. SEE DETAIL, SHEET D3
5. STD-876 REDUCED PRESSURE BACKFLOW DEVICE FOR DOMESTIC SERVICE. SEE DETAIL, SHEET D3
6. STD-880 DOUBLE CHECK DETECTOR BACKFLOW DEVICE FOR FIRE SUPPRESSION WATER. SEE DETAIL, SHEET D3
7. 266 LF 3" DOMESTIC WATER
8. 176 LF SCH 80 PVC 8" FIRE SUPPRESSION WATER
9. 2" DOMESTIC WATER LATERAL. SEE PLUMBING SHEETS FOR CONNECTION.
10. 63 LF SCH 80 PVC 6" FIRE SUPPRESSION LATERAL. SEE MECHANICAL SHEETS FOR CONNECTION.
11. 48" STANDARD SEWER MANHOLE. SEE DETAIL, SHEET D3
12. 35 LF 8" SEWER SERVICE, S=0.005. CONNECT WITH CITY 15" SEWER PER STD-513, SHEET D3
13. 244 LF 6" SEWER SERVICE, S=0.0067
14. SANITARY SEWER CLEANOUT
15. ABANDON EX. SEWER LATERAL PER CITY STD-507, SHEET D3
16. REMOVE EXISTING WATER SERVICE LATERAL AND BF DEVICE
17. ABANDON EX. WATER SERVICE LATERAL PER CITY STD-507, COLLECT METER VIA CITY METER SHOP.
18. IRRIGATION PIPING. SEE LANDSCAPE PLAN FOR DETAIL
19. CLASS AA FIRE HYDRANT PER STD-857, SEE SHEET D2
20. POWER POLE, SEE ELECTRICAL PLANS FOR INSTALLATION.
21. ELECTRIC AND CABLE SERVICE. SEE JOINT TRENCH NOTES BELOW. COORDINATE INSTALLATION WITH ELECTRICAL PLANS.
22. WATER CROSSING OVER SEWER, LESS THAN 12". 8 LF DUCTILE IRON WATER PIPE SECTIONS, MIN. SEE SANTA ROSA BLANKET WAIVER 3, SHEET D3.

P-SS2

EXISTING SS MANHOLE
RIM = 145.17
15" INV OUT = 139.73

EXISTING CLASS AA FIRE HYDRANT > 1500 GPM

PROPOSED PG&E TRANSFORMER, SEE ELECTRICAL SHEETS

NOTE: SEE LANDSCAPE PLANS FOR IRRIGATION PIPING AND APPURTENANCES

LEGEND - PROPOSED

- WATER SERVICE
- WATER VALVE
- FIRE HYDRANT
- WATER SERVICE METER
- BACKFLOW/REDUCED PRESSURE DEVICE
- SEWER SERVICE WITH BOAT
- SEWER CLEANOUT
- STORM DRAIN WITH BOAT
- SD 24" DROP INLET
- STORM DRAIN MANHOLE
- IRRIGATION LINE (SEE LANDSCAPE PLANS)

The following is a fire flow analysis for on-site fire hydrant at 80 College Avenue, Sage Commons apartments.

Construction Type: V/A
Occupancy Type: R2 A(apartments), B (offices)
Building Type: Three story building
Overall Floor Area: 36,915 S.F. (under roof – includes covered walkway)
Dwelling Units: 53 (studio units), 1 (one-bedroom manager's unit)
Building Sprinkler Sys: Automatic

Required On-Site Hydrant Flow

3500 Gallons per minute
2 hour duration
20 PSI residual in water main
50% credit for structure automatic fire sprinkler system

3500 x 0.5 =
1,750 gpm minimum fire hydrant flow

Therefore, pursuant to California Fire Code Table C102.1, One on-site fire hydrant shall be required.

Fire Service Lateral/Hydrant Lateral Friction Loss Calculations

Assumptions: full fire flow (3500 gallons per minute)
1750 gpm to building, 1750 gpm to fire hydrant

Sch 80 PVC pipe, c value 140
80 PSI (initial at water main in street

Length 1 = 216 feet
Inside Dia 1 = 7.625" (8" nominal)

Length 2 = 5 feet
Inside Dia 2 = 5.761" (6" nominal)

Hazen-Williams Equation shall be used:

$h_{100ft} = 0.2083\,(100/c)^{1.85}\,q^{1.852}/d_i^{4.8652}$

where

h_{100ft} *= friction head loss in feet of water per 100 feet of pipe (h_{ft}/100 ft pipe)*

c = Hazen-Williams roughness constant

q = volume flow (gal/min)

d_i *= inside hydraulic diameter (inches)*

Resultant Final PSI at Hydrant

Length 1 head loss (pipe friction plus fittings) = 19.37 + 18.00 = 37.37
Length 1 head loss (pipe friction plus fittings) = 0.49 + 0.26 = 0.75

PSI final = 60 – 37.37 – 0.75 = **21.89**

Hazen-Williams Equation for Pressure Loss in Pipes

Supply PSI: 60 Final PSI: 21.13

Imperial Units

Specified Data	Length 1	Length 2	Length 3	Length 4	Length 5	Length 6	Length 7
L = Length of pipe (ft)	216	5					
c = Hazen-Williams roughness constant	140	140					
q = volume flow (gal/min)	1600	1750					
di = inside or hydraulic diameter (inches)	7.625	5.761					
Initial PSI	60	22.63	21.13				
Elevation Head Loss (ft)	0	0	0				

Calculated Pressure Loss							
f = Friction head loss in feet of water per 100 feet of pipe (ft H2O per 100 ft pipe)	19.80	12.69	0.00	0.00	0.00	0.00	0.00
f = Friction head loss in psi of water per 100 feet of pipe (psi per 100 ft pipe)	8.57	5.49	0.00	0.00	0.00	0.00	0.00
Pipe Head loss (ft H2O)	65.84	1.13	0.00	0.00	0.00	0.00	0.00
Pipe Head loss (psi)	28.51	0.49	0.00	0.00	0.00	0.00	0.00

Fittings							
Regular 90° elbow	4	1					
Long radius 90° elbow							
Regular 45° elbow	2						
Tee (Line Flow)							
Tee (Branch Flow)	3						
Globe valve							
Gate valve	1	1					
Angle Valve (Check Valve)	2						

Fittings Head loss (ft H2O) by equivalent pipe length	61.80	2.24	0.00	0.00	0.00	0.00	0.00
Fittings Head loss (psi)	19.98	0.96	0.00	0.00	0.00	0.00	0.00

P-SS3

JOINT TRENCH NOTES

1. THE CONTRACTOR SHALL VERIFY TRENCH FOOTAGES FOR ACCURACY PRIOR TO EXCAVATION AND TAKE NECESSARY PRECAUTION CROSSING WATER AND SEWER FACILITIES
2. THE CONTRACTOR SHALL REFER TO THE COMPOSITE, CONDUIT, AND/OR EACH RESPECTIVE UTILITY'S INSTALLATION PLAN FOR THE NECESSARY CONDUIT CABLE AND/OR PIPE TO BE INSTALLED IN THIS PROJECT.
3. PER UO S5453, ATTACHMENT 1, SECTION 3C, PG&E DOES NOT PERMIT INSTALLATION OF WET OR NON-UTILITY FACILITIES IN THE AREA BENEATH ITS VAULTS, PADS, ETC., THIS AREA EXTENDS TO A DEPTH OF 6' BELOW THE BOTTOM AND 12 INCHES HORIZONTAL AROUND PG&E'S FACILITIES. ALSO, VERTICAL SEPARATION OF PG&E GAS AND ELECTRIC FACILITIES MUST HAVE A MINIMUM VERTICAL SEPARATION OF 6 INCHES FROM WET FACILITIES.
4. PER UO S5453, EXHIBIT B, SEPARATION BETWEEN GAS FACILITIES AND ELECTRIC FACILITIES MAY BE REDUCED TO 6" WHEN CROSSING. ALSO, WHEN COMMUNICATION DUCTS ARE INSTALLED, A MINIMUM OF 12" RADIAL SEPARATION SHALL BE MAINTAINED FROM GAS FACILITIES ALTHOUGH, WHEN 4" DIAMETER OR SMALLER GAS PIPE IS INSTALLED, WITH MUTUAL AGREEMENT ONLY, THE SEPARATION MAY BE REDUCED TO 6".
5. CONTRACTOR SHALL USE SAND BEDDING AND SHADING AS REQUIRED BY THE UTILITY COMPANIES. ALL TRENCH SECTIONS SHOWN HEREON INCLUDE A 2 INCH THICK BEDDING LAYER.
6. SEE ELECTRICAL PLANS FOR TRENCH DETAILS, COORDINATE WITH ELECTRICAL PLANS

MINIMUM SEPARATION AND CLEARANCE REQUIREMENTS (INCHES)								
	UTILITY	G	DUCT T	DB T	C	S	P	SL
G	GAS	-	12"	12"	12"	6"	12"	6"
T	TELEPHONE (DUCT)	12"	-	1"	1"	12"	12"	12"
T	TELEPHONE (DIRECT BURY)	12"	1"	-	1"	12"	12"	12"
C	CATV	12"	1"	1"	-	12"	12"	12"
S	ELECTRIC PRIMARY	12"	12"	12"	12"	3"	3"	3"
P	ELECTRIC SECONDARY	6"	12"	12"	12"	1.5"	3"	1.5"
SL	STREET LIGHT	6"	12"	12"	12"	1.5"	3"	1.5"
FE*	FOREIGN ELECTRIC SOURCES	12"	12"	12"	12"	12"	12"	12"

NOTE: WORK DONE WITHIN THE RIGHT OF WAY WILL REQUIRE AN ENCROACHMENT PERMIT

GRAPHIC SCALE
(IN FEET)
1 inch = 10 ft.

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

NO.	DATE	DESCRIPTION
A	03/23/2020	WATER LINE ALIGNMENT, FIRE HYDRANT
B	05/12/2020	WATER LINE ADJUSTMENT
C	06/05/2020	FIRE FLOW CALCULATION REVISION

DATE: 06-05-2020
SCALE: 1"=10'
DRAWN BY: DDI
DESIGNED BY: DDI
CHECKED BY: DJLS

DANCO GROUP

WATER AND SEWER PLAN, UTILITY COORD.

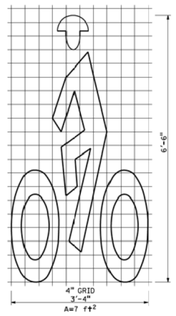
SAGE COMMONS CIVIL IMPROVMENT PLANS

PROJECT NUMBER 19-218

SHEET C4 OF 8

CALIFORNIA ENGINEERING COMPANY INC
CIVIL ENGINEERING
LAND SURVEYING
PLANNING & DEVELOPMENT
CONSTRUCTION ADMINISTRATION
www.cecusa.net
1110 Civic Center Blvd. Suite 404 | Yuba City, CA 95993 | (530) 751-0952 Office
EST'D 1995

E:\Projects\19-218 Danco_SR Units 80 College Ave\Eng\Plns\19-218 80 College Ave IPs_UCA02017.dwg Jun 03, 2020-12:21 am WebUser

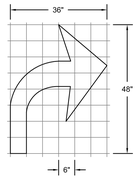


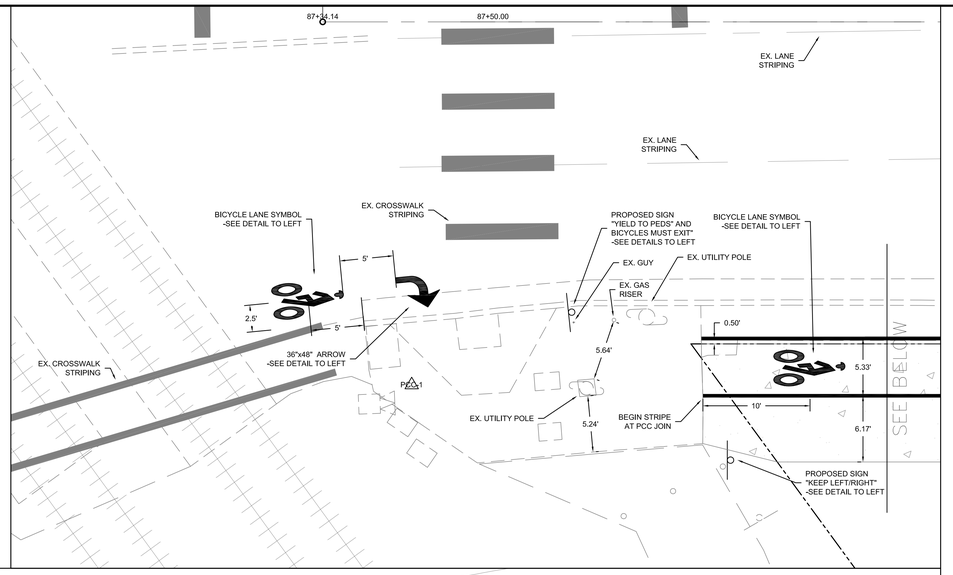
BIKE LANE SYMBOL
WITH PERSON

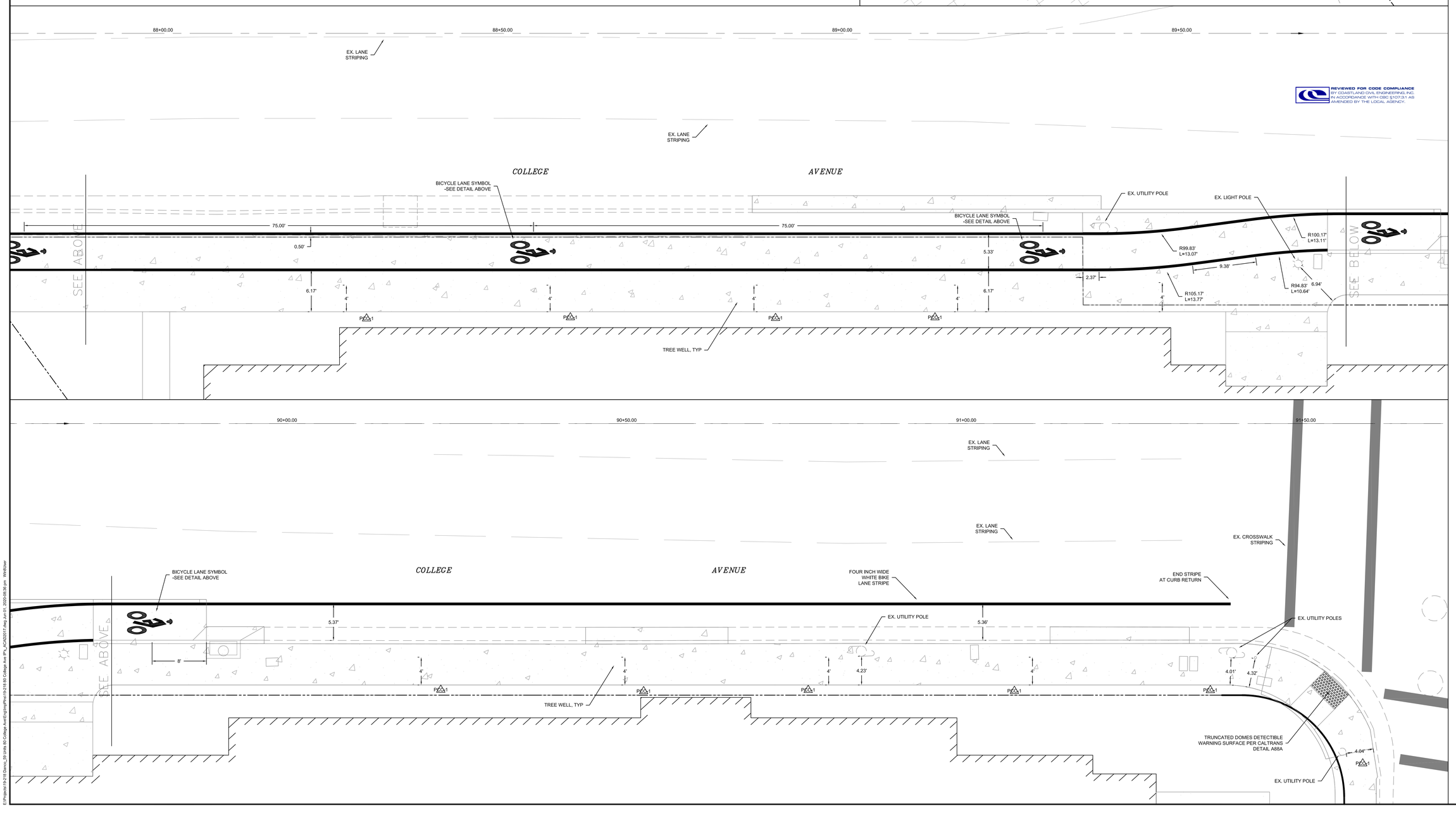
R9-6

R44C (CA)

R9-7







REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

NO.	DATE	DESCRIPTION
2	03/26/2020	RIGHTAGE MARKING PLAN/ADA CLEARANCES

DATE: 06-05-2020
SCALE: 1"=5'
DRAWN BY: DDI
DESIGNED BY: DDI
CHECKED BY: DLS

DANCO GROUP

FRONTAGE MARKING PLAN

SAGE COMMONS CIVIL IMPROVEMENT PLANS

PROJECT NUMBER 19-218

SHEET C5 OF 8

CALIFORNIA ENGINEERING COMPANY INC
CIVIL ENGINEERING
LAND SURVEYING
PLANNING DEVELOPMENT
CONSTRUCTION ADMINISTRATION
www.cecusa.net
1110 Civic Center Blvd. Suite 404 | Yuba City, CA 95993 | (530) 751-0952 Office

PROJECT NUMBER	SHEET C6 OF 8
19-218	

MARKING PLAN

DANCO GROUP

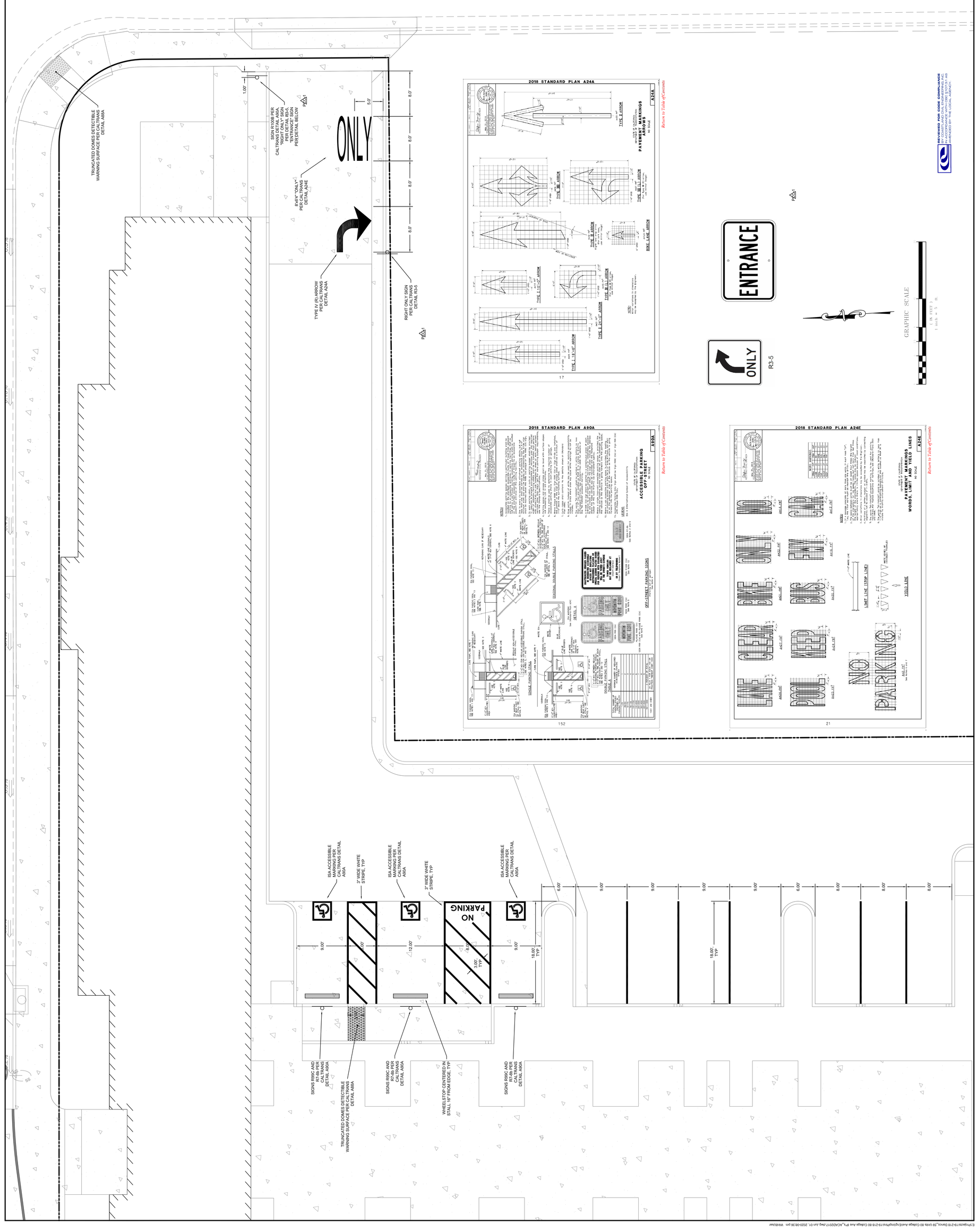
SAGE COMMONS CIVIL IMPROVEMENT PLANS

CALIFORNIA ENGINEERING COMPANY INC
CIVIL ENGINEERING
PLANNING PROCUREMENT
CONSTRUCTION ADMINISTRATION
1110 Civic Center Blvd. Suite 404 | Yuba City, CA 95993 | (530) 751-0952 Office
ESTD 1966
www.cecusa.net

NO.	DATE	DESCRIPTION
1	03/23/2020	SIGNAGE AND STRIPING; RIGHT TURN ONLY

DATE: 06-05-2020
SCALE: 1"=5'
DRAWN BY: DDI
DESIGNED BY: DDI
CHECKED BY: DLS

REVIEWED FOR CODE COMPLIANCE
PLANS ARE APPROVED AS NOTED
IN ACCORDANCE WITH CBC §107.3.4.1
ENFORCED BY: YUBA COUNTY



GRAPHIC SCALE
(IN FEET)
1 inch = 5 ft.

EXISTING CURB & GUTTER
EXISTING MEDIAN CURB
EXISTING CURB & GUTTER
FUTURE BIKE PATH STRIPING (NOT IN SCOPE)
12.2'
26.3'
8.9'
52.3'
21.1'
26.7'
5.17'
SMART
RAIL
EXISTING CROSSWALK STRIPING
PROPOSED SIGN "YIELD TO PEDS" AND BICYCLES MUST EXIT" -SEE DETAILS BELOW
BP: 87+34.14
87+34.14
87+50.00
53.7'
EXISTING MEDIAN CURB
BICYCLE LANE SYMBOL -SEE DETAIL BELOW
25.9'
12.8'
EXISTING UTILITY POLE
2.5'
5'
5'
36"x48" ARROW -SEE DETAIL BELOW
EXISTING RAMP
EXISTING RAIL ARM/ SIGNAL APPARATUS
EXISTING SMART TRAIL/ BIKE PATH
EXISTING SMART TRAIN RAILS
PROPOSED SIGN "KEEP LEFT/RIGHT" -SEE DETAIL BELOW
EXISTING BOLLARDS
PROPOSED PCC SIDEWALK/ BIKE PATH
BICYCLE LANE SYMBOL -SEE DETAIL BELOW
EXISTING CURB & GUTTER
57.9'
88+00.00
88+50.00
12.0'
13.1'
EXISTING CURB & GUTTER
57.7'
89+00.00
89+50.00
12.0'
10.12'
10.14'
BICYCLE LANE SYMBOL -SEE DETAIL BELOW
PROPOSED BIKE PATH STRIPING
BICYCLE LANE SYMBOL -SEE DETAIL BELOW
COLLEGE AVENUE
SEE BELOW
SAGE COMMONS
GRAPHIC SCALE
(IN FEET)
1 inch = 10 ft.

EXISTING CURB & GUTTER
EXISTING CENTERLINE STRIPING
EXISTING CROSSWALK STRIPING
63.77'
89+50.00
90+00.00
90+50.00
91+00.00
91+50.00
92+00.00
EP: 92+00.00
9.9'
11.9'
12.0'
12.0'
9.4'
EXISTING LANE STRIPING
EXISTING LANE STRIPING
10+00.00
10+50.00
11+00.00
SEE ABOVE
BICYCLE LANE SYMBOL -SEE DETAIL BELOW
10.14'
8.33'
5.34'
PROPOSED BIKE PATH STRIPING
EXISTING CURB & GUTTER
5.32'
NO PARKING

R9-6

R44C (CA)

R9-7

4" GRID
3'-4"
Aw7 f+?

BIKE LANE SYMBOL WITH PERSON

36"
48"
6"

P-A1

LEGEND

- BICYCLE RIDING PATH OF TRAVEL
- BICYCLE WALKING PATH OF TRAVEL
- FOOT TRAFFIC

REVIEWED FOR CODE COMPLIANCE
BY CSAIRTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

NO.	DATE	DESCRIPTION
2	03/20/2020	BICYCLE LANE STRIPING

DATE: 06-05-2020
SCALE: 1"=10'
DRAWN BY: DDI
DESIGNED BY: DDI
CHECKED BY: DJS

CALIFORNIA ENGINEERING COMPANY INC
CIVIL ENGINEERING
LAND SURVEYING
PROJECT MANAGEMENT
CONSTRUCTION ADMINISTRATION
www.cecusa.net
1110 Civic Center Blvd. Suite 404 | Yuba City, CA 95993 | (530) 751-0952 Office

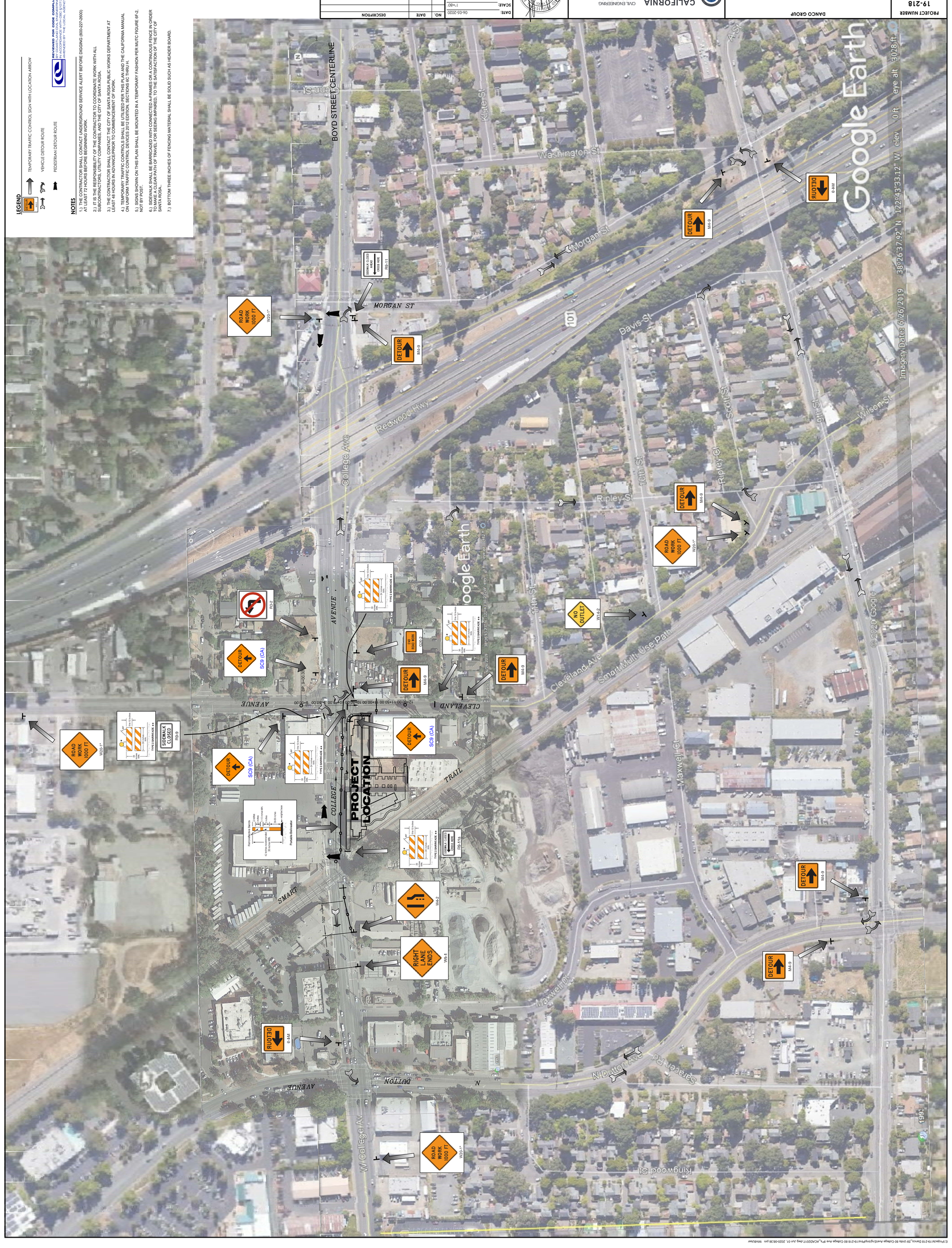
DANCO GROUP

BIKE PATH CONTINUATION PLAN

SAGE COMMONS CIVIL IMPROVEMENT PLANS

PROJECT NUMBER 19-218

SHEET C7 OF 8



PROJECT NUMBER	19-218
SHEET	CB of 8

TEMPORARY TRAFFIC CONTROL PLAN

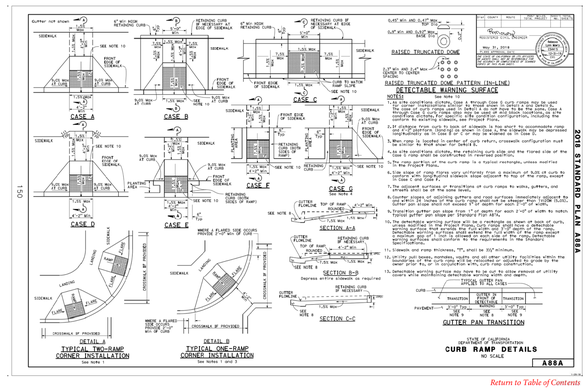
SAGE COMMONS CIVIL IMPROVEMENT PLANS

DANCO GROUP

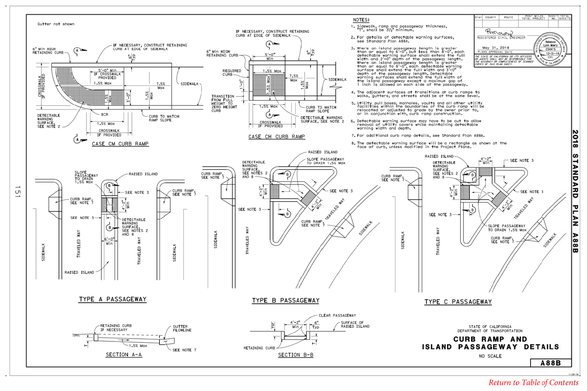
CALIFORNIA ENGINEERING COMPANY INC
CIVIL ENGINEERING
LAND SURVEYING
PLANNING PROCURE MENT
CONSTRUCTION ADMINISTRATION
1110 Civic Center Blvd. Suite 404 | Yuba City, CA 95993 | (530) 751-0952 Office
ESTD 1986
www.cecusa.net

NO.	DATE	DESCRIPTION

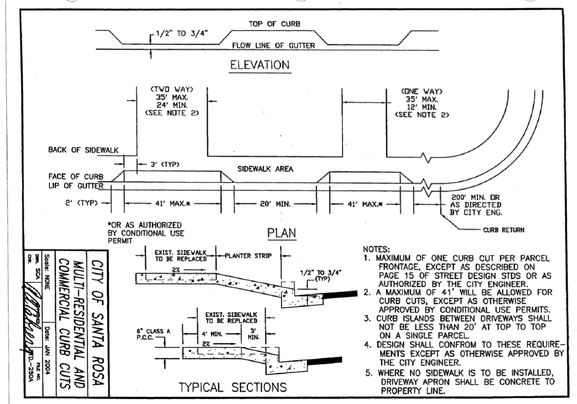
DATE: 06-05-2020
SCALE: 1"=80'
DRAWN BY: DDI
DESIGNED BY: DDI
CHECKED BY: DLS

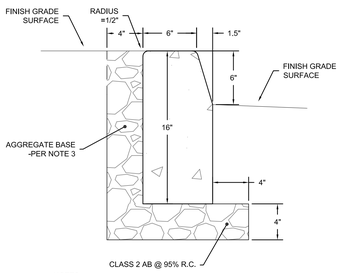


Return to Table of Contents



Return to Table of Contents

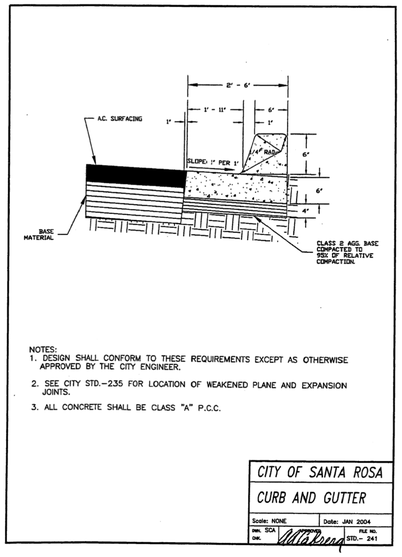




NOTES:

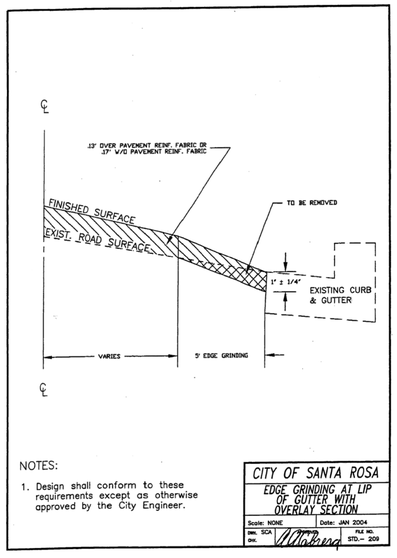
1. ALL CONCRETE SHALL BE CLASS "A" PCC
2. AGGREGATE BASE SHALL BE CLASS 2, COMPACTED TO 95% R.C.
3. BARRIER CURB SHALL BE BACKED BY 4" AGGREGATE BASE AS SHOWN.
4. WHERE BARRIER CURB IS TO BE BACKED BY FLATWORK, CONCRETE SHALL BE POURED MONOLITHICALLY (NO COLD JOINT)

(A) BARRIER CURB



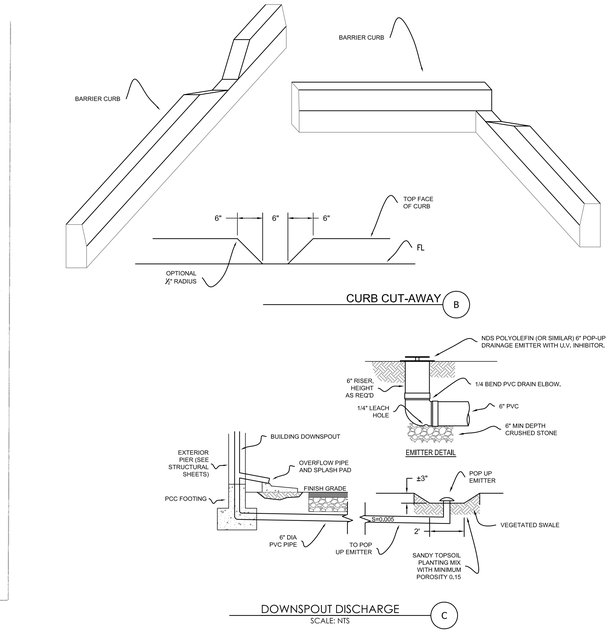
NOTES:
1. DESIGN SHALL CONFORM TO THESE REQUIREMENTS EXCEPT AS OTHERWISE APPROVED BY THE CITY ENGINEER.
2. SEE CITY STD.-235 FOR LOCATION OF WEAKENED PLANE AND EXPANSION JOINTS.
3. ALL CONCRETE SHALL BE CLASS "A" P.C.C.

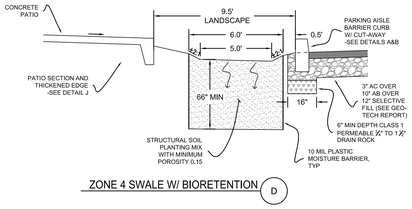
CITY OF SANTA ROSA
CURB AND GUTTER
Scale: NONE | Date: JAN 2004
DWN. SCA | CHK. | FILE NO. STD.- 241

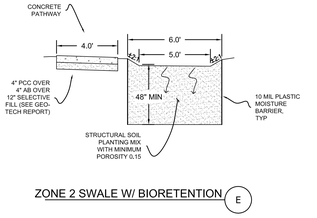


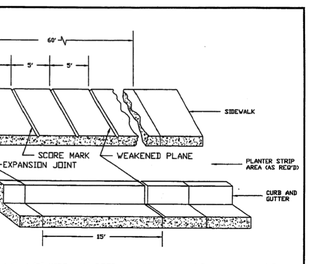
NOTES:
1. Design shall conform to these requirements except as otherwise approved by the City Engineer.

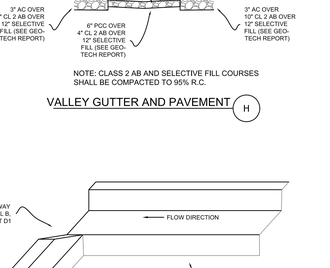
CITY OF SANTA ROSA
EDGE GRINDING AT LIP OF GUTTER WITH OVERLAY SECTION
Scale: NONE | Date: JAN 2004
DWN. SCA | CHK. | FILE NO. STD.- 209

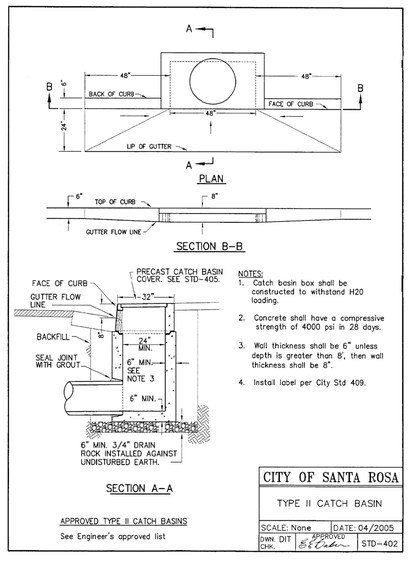








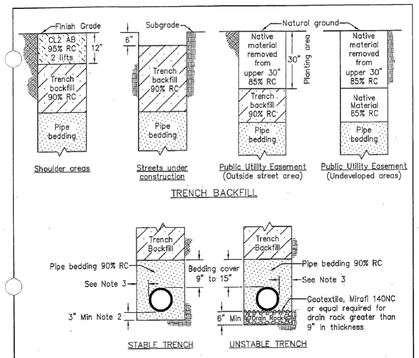




NOTES:
1. Catch basin box shall be constructed to withstand H20 loading.
2. Concrete shall have a compressive strength of 4000 psi in 28 days.
3. Wall thickness shall be 6" unless depth is greater than 8', then wall thickness shall be 8".
4. Install label per City Std 409.

APPROVED TYPE II CATCH BASINS
See Engineer's approved list

CITY OF SANTA ROSA
TYPE II CATCH BASIN
SCALE: None | DATE: 04/2005
DWN. DIT | APPROVED | CHK. | STD-402



NOTES:
1. Relative compaction is designated RC.
2. 1/4 Pipe O.D. Min when excavation is in rocky ground.
3. Pipe diameter 18" or less: 6" Min, 9" Max Pipe diameter greater than 18":9" Min, 12" Max See table below for HDPE pipe trench widths.

TRENCH WIDTH FOR HDPE PIPE
Pipe must be centered in the trench

Inside Diameter Pipe Size	Trench Width (Min)
15"	36"
18"	48"
24"	54"
30"	60"
36"	72"

CITY OF SANTA ROSA
TRENCH BACKFILL AND PIPE BEDDING DETAIL
SCALE: NONE | DATE: MAY 09
DWN: CDA | APPROVED | FILE NO.
CHK: DM | STD.-215

Sheet 3 of 6

MATERIAL SPECIFICATIONS

DRAIN ROCK may be used as bedding under pipe for slopes less than 8%. DRAIN ROCK shall be 100% crushed and shall conform to the following grading:

1-1/2"	1"	1/2"	#4
100	95–100	0–30	0–4

PIPE BEDDING and TRENCH BACKFILL shall be free of asphaltic material.

PIPE BEDDING for slopes less than or equal to 8% shall have a minimum sand equivalent value of 30 and shall conform to the following grading:

1"	3/4"	3/8"	#4	#200
100	90–100	65–100	30–100	0–15

PIPE BEDDING for slopes greater than 8% shall have a minimum sand equivalent of 30 and shall conform to the following grading:

1"	3/4"	3/8"	#4	#30	#200
100	90–100	65–100	30–100	10–100	0–15

TRENCH BACKFILL shall conform to the following grading and have a minimum sand equivalent value of 25 when mechanically compacted, or a minimum sand equivalent value of 40 when jetted:

3"	#4	#30
100	40–100	10–100

AGGREGATE BASE shall conform to the requirements of Section 26 of the Standard Specifications of the City of Santa Rosa, aggregate base. Asphalt concrete shall conform to the requirements of Section 39 of the Standard Specifications of the City of Santa Rosa.

COMPACTION REQUIREMENTS

(as shown on pages 1 – 3 and in the following modifications)

DRAIN ROCK shall be consolidated with a surface vibrator.

PIPE BEDDING material used to grade the trench shall be consolidated with a surface vibrator when it is placed over drain rock or when depth is greater than 6".

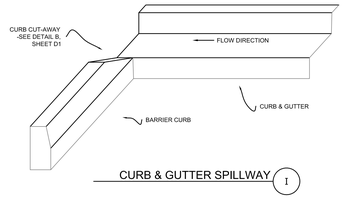
TRENCH BACKFILL may be compacted by jetting in lifts not greater than 10 feet when soil conditions permit water to drain quickly, as determined by the City Engineer. Jetting will not be permitted within 2 feet of finished grade. When compaction is obtained by jetting, the upper surface of the trench backfill shall be thoroughly wheel-rolled with suitable construction equipment. Trench backfill shall be compacted to 90% relative compaction prior to placing base rock or subgrade material over the trench.

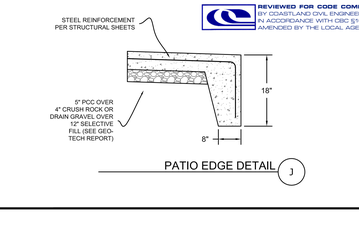
CITY OF SANTA ROSA
TRENCH DETAIL
SCALE: NONE | DATE: MAY 09
DWN: SCA | APPROVED | FILE NO.
CHK: DM | STD.-215

Sheet 5 of 6

NOTES:
1. WEAKENED PLANE: 1/8" WIDE x 1" DEEP IN SIDEWALKS, 1/8" WIDE X 1 1/2" DEEP IN CURB AND GUTTER.
2. EXPANSION JOINTS MATERIAL TO BE 1/4" THICK PREMOLDED JOINT FILLER FULL THICKNESS OF CONCRETE. APROVED MECHANICAL JOINTS MAY BE USED IN WALKS IN LIEU OF EXPANSION JOINTS.
3. SCORE MARKS FOR SIDEWALKS 6' & MORE IN WIDTH: LONGITUDINAL SCORE MARK ALONG CENTER OF WALK.
4. EXPANSION JOINTS SHALL BE INSTALLED IN THE CURB & GUTTER AT ALL CURB RETURNS.
5. EXPANSION JOINTS SHALL BE PLACED IN THE SIDEWALK AT THE SAME LOCATION AS THOSE IN THE CURB & GUTTER WHEN THE SIDEWALK IS CURB ADJACENT, UNLESS OTHERWISE DIRECTED BY THE CITY ENGINEER.
6. SIDEWALK SHALL HAVE A 2" BASE OF SAND, 4" OF P.C.C., AND HAVE A 2% SLOPE TOWARDS THE STREET.
7. DESIGN SHALL CONFORM TO THESE REQUIREMENTS EXCEPT AS OTHERWISE APPROVED BY THE CITY ENGINEER.
8. SCORING PATTERN SHOULD MATCH ADJOINING SIDEWALKS.

CITY OF SANTA ROSA
TYPICAL SPACING WEAKENED PLANES, SCORE MARKS, AND EXPANSION JOINTS
Scale: NONE | Date: JAN 2004
DWN: SCA | CHK. | FILE NO. STD.- 235





REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

NO.	DATE	DESCRIPTION
1	03/23/2020	DETAIL REVISIONS
2	05/12/2020	PLAN CHECK 2 COMMENT REVISIONS

DATE: 06-05-2020
SCALE: AS SHOWN
DRAWN BY: DDI
DESIGNED BY: DDI
CHECKED BY: DLS

DANCO GROUP

DETAILS

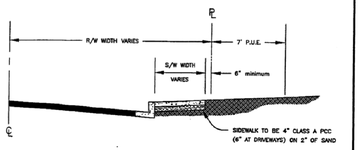
SAGE COMMONS CIVIL IMPROVEMENT PLANS

PROJECT NUMBER 19-218

SHEET D1 OF 3

CIVIL ENGINEERING
LAND SURVEYING
PROJECT MANAGEMENT
CONSTRUCTION ADMINISTRATION
www.cecusa.net
CALIFORNIA ENGINEERING COMPANY, INC.
1110 Civic Center Blvd. Suite 404 | Yuba City, CA 95993 | (530) 751-0852 Office

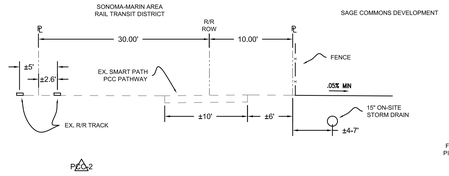
RIGHT– OF WAY FOR CONTIGUOUS SIDEWALKS



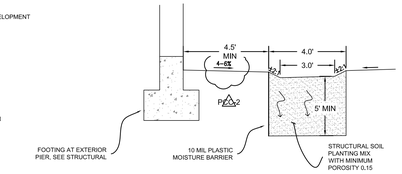
NOTES:

1. Right–of–way and sidewalk widths vary dependent upon street classifications (see Section IV, Street Designs, A. and STDs– 200 A–H), but right–of–way must extend at least 6" beyond sidewalk. Sidewalk behind drive approaches may be covered by combining a sidewalk easement with the Public Utilities Easement (PUE) or by extending the right–of–way.
2. Use of contiguous sidewalk requires specific approval by City Engineer or Planning Commission (see Section IV, Street Designs, A. in these Standards).

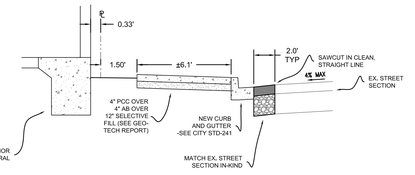
CITY OF SANTA ROSA R/W FOR CONTIGUOUS SIDEWALKS	
Scale: NONE	Date: JAN 2004
DRN: SCA CHK:	APPROVED: FILE NO. STD.– 230G



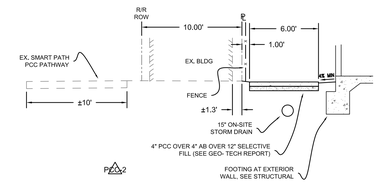
PROPERTY LINE AT SMART PATH (A)



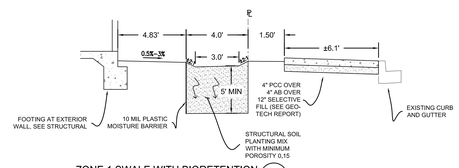
ZONE 5 SWALE W/ BIORETENTION (B)



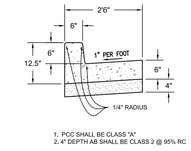
BUILDING AT NORTH PROPERTY LINE (C)



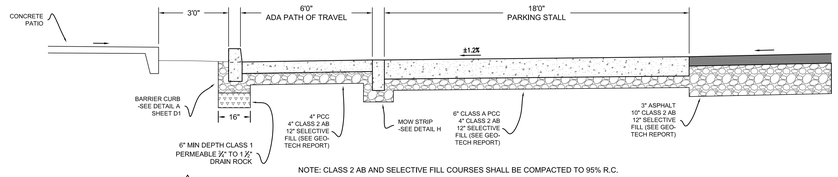
BUILDING AT WEST PROPERTY LINE (D)



ZONE 1 SWALE WITH BIORETENTION (E)

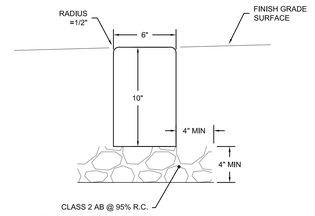


ON-SITE CURB AND GUTTER (F)



NOTE: CLASS 2 AB AND SELECTIVE FILL COURSES SHALL BE COMPACTED TO 95% R.C.

ADA PARKING STALL (G)

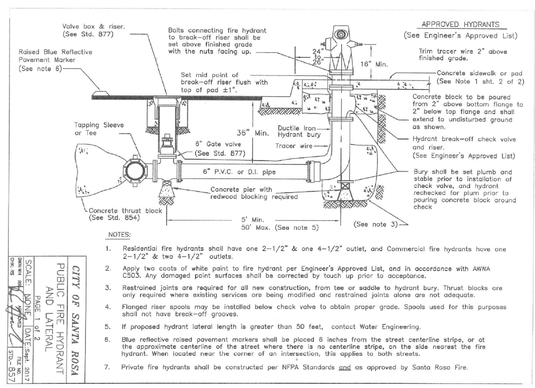


NOTES:

1. ALL CONCRETE SHALL BE CLASS "A" PCC
2. AGGREGATE BASE SHALL BE CLASS 2, COMPACTED TO 95% R.C.
3. WHERE MOW STRIP IS TO BE BACKED BY FLATWORK, CONCRETE SHALL BE POURED MONOLITHICALLY (NO COLD JOINT)

P:\2\1

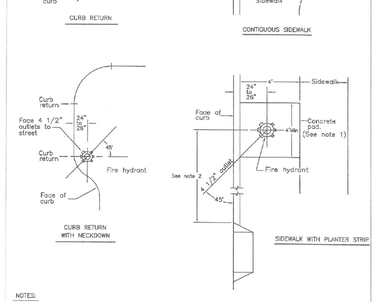
MOW STRIP (H)



NOTES:

1. Residential fire hydrants shall have one 2–1/2" & one 4–1/2" outlet, and Commercial fire hydrants have one 2–1/2" & two 4–1/2" outlets.
2. Apply two coats of white paint to fire hydrant per Engineer's Approved List, and in accordance with AWWA C503. Any damaged paint surfaces shall be corrected by touch up prior to acceptance.
3. Restrained joints are required for all new construction, from tee or saddle to hydrant bury. Thrust blocks are only required where existing services are being modified and restrained joints alone are not adequate.
4. Flanged riser spools may be installed below check valve to obtain proper grade. Spools used for this purposes shall not have break–off grooves.
5. If proposed hydrant lateral length is greater than 50 feet, contact Water Engineering.
6. Blue reflective raised pavement markers shall be placed 6 inches from the street centerline stripe, or at the approximate centerline of the street where there is no centerline stripe, on the side nearest the fire hydrant. When located near the corner of an intersection, this applies to both streets.
7. Private fire hydrants shall be constructed per NFPA Standards and as approved by Santa Rosa Fire.

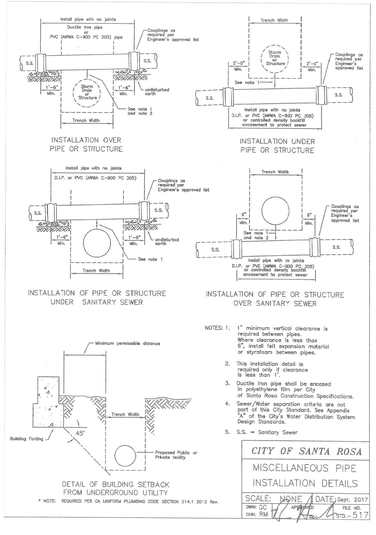
CITY OF SANTA ROSA PUBLIC FIRE HYDRANT AND LATERAL	
SCALE: NONE	DATE: Sept. 2017
DRN: DC CHK: RM	APPROVED: FILE NO. STD.– 515



NOTES:

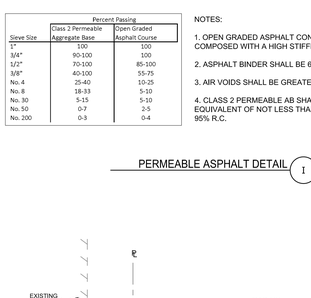
1. Where no sidewalk exists, or where hydrant is installed in planter strip, a 4" thick 4' x 4' concrete pad shall be installed.
2. Hydrants to be a minimum of 10 feet from driveway approach in commercial or multi–family developments and a minimum of 5 feet from driveway approach in one or two family developments.

CITY OF SANTA ROSA PUBLIC FIRE HYDRANT AND LATERAL PAGE 2 of 2	
SCALE: NONE	DATE: Sept. 2017
DRN: RS CHK: RS	APPROVED: FILE NO. STD.– 857



NOTES: 1. 1" minimum vertical clearance is required between pipes. Where clearance is less than 6", install fiel expansion material or styrofoam between pipes.
2. This installation detail is required only if clearance is less than 1".
3. Ductile iron pipe shall be encased in polyethylene film per City of Santa Rosa Construction Specifications.
4. Sewer/Water separation criteria are not part of this City Standard. See Appendix "A" of the City's Water Distribution System Design Standards.
5. S.S. = Sanitary Sewer

CITY OF SANTA ROSA MISCELLANEOUS PIPE INSTALLATION DETAILS	
SCALE: NONE	DATE: Sept. 2017
DRN: DC CHK: RM	APPROVED: FILE NO. STD.– 517

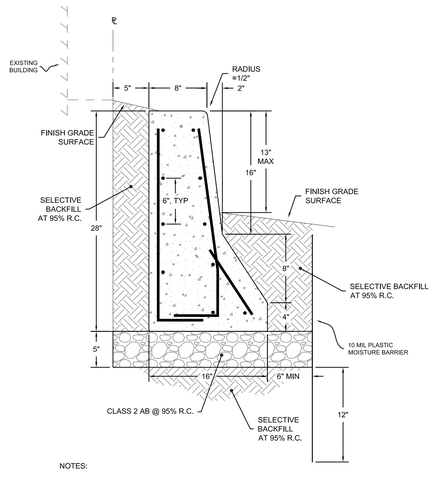


Sieve Size	Percent Passing: Class 2 Permeable Aggregate Base	Open Graded Asphalt Course
1"	100	100
3/4"	90-100	100
1/2"	70-100	85-100
3/8"	40-100	55-75
No.4	25-40	10-25
No.8	18-33	5-10
No. 30	5-15	5-10
No.50	0-7	2-5
No. 200	0-3	0-4

NOTES:

1. OPEN GRADED ASPHALT CONCRETE SHALL BE COMPOSED WITH A HIGH STIFFNESS BINDER.
2. ASPHALT BINDER SHALL BE 6-6.5% OF MIX.
3. AIR VOIDS SHALL BE GREATER THAN OR EQUAL TO 18%.
4. CLASS 2 PERMEABLE AB SHALL HAVE A SAND EQUIVALENT OF NOT LESS THAN 75 AND BE COMPACTED TO 95% R.C.

PERMEABLE ASPHALT DETAIL (I)



NOTES:

1. ALL CONCRETE SHALL BE CLASS "A" PCC
2. AGGREGATE BASE SHALL BE CLASS 2, COMPACTED TO 95% R.C.
3. REINFORCING STEEL SHALL BE NO. 5 REBAR, 12" O.C. AS SHOWN.
4. ALL REINFORCING STEEL SHALL HAVE MINIMUM 1.5" CONCRETE COVER
5. CONCRETE AND STEEL SHALL CONFORM TO GENERAL NOTES, SHEET D4
6. 12" BELOW AB SHALL BE SELECTIVE BACKFILL COMPACTED TO 95% R.C.

8" PCC CUT-OFF CURB (J)

REVIEWED FOR CODE COMPLIANCE BY CEMETLAND CIVIL ENGINEERING, INC. IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

NO.	DATE	DESCRIPTION
1	03/23/2020	SECTION DETAILS, CJC COMMENTS
2	05/12/2020	PLAN CHECK 2 COMMENT REVISIONS

DATE: 06-05-2020
SCALE: AS SHOWN
DRAWN BY: DDI
DESIGNED BY: DDI
CHECKED BY: DvS

CALIFORNIA ENGINEERING COMPANY INC
CIVIL ENGINEERING
LAND SURVEYING
PLAN DEVELOPMENT
CONSTRUCTION ADMINISTRATION
www.ceausa.net
1110 Civic Center Blvd, Suite 404 | Yuba City, CA 95993 | (530) 751-0952 Office

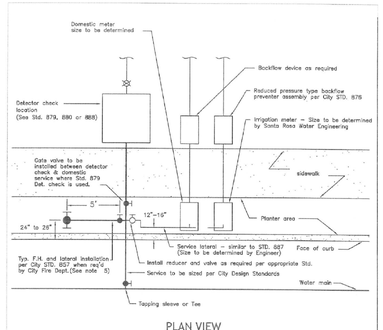
DANCO GROUP

DETAILS

SAGE COMMONS CIVIL IMPROVEMENT PLANS

PROJECT NUMBER 19-218

SHEET D2 OF 3



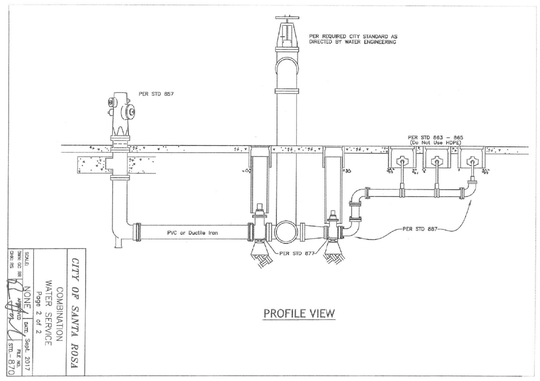
PLAN VIEW

NOTES:

1. This standard applies to commercial and multi-residential developments where domestic, irrigation, or fire protection requirements are established at the time of application.
2. When referring to this standard, specify meter and detector check sizes and appropriate standard plans.
3. When field conditions preclude the installation of meters at or near the curb line, submit detailed plans of the proposed installation for Water Department approval. All meter installations must be within public right-of-way.
4. Where a hydrant is required, install 8" x 6" or 12" x 6" cross as appropriate. Where a hydrant is not required, install manifold connection per the appropriate service lateral standard.
5. Orientation of fire hydrant outlets shall be determined in the field by the Water Department.
6. Restrained joints are required on all new construction.

CITY OF SANTA ROSA
COMBINATION WATER SERVICE
Page 1 of 2

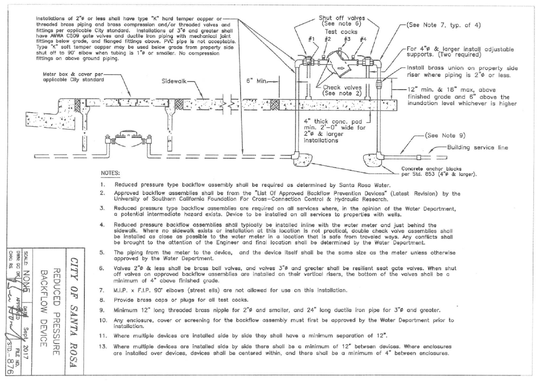
SCALE: NONE	DATE: Sept. 2017
DWN: GC 9/8	APPROVED
CHK: RS	
	FILE NO. STD.- 870



PROFILE VIEW

CITY OF SANTA ROSA
WATER SERVICE
Page 2 of 2

SCALE: NONE	DATE: Sept. 2017
DWN: GC 9/8	APPROVED
CHK: RS	
	FILE NO. STD.- 871

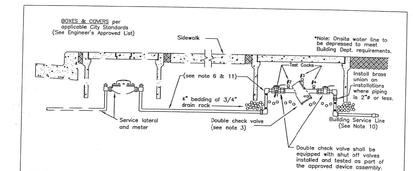


NOTES:

1. Reduced pressure type backflow assembly shall be required as determined by Santa Rosa Water.
2. Approved backflow assemblies shall be from the "List Of Approved Backflow Prevention Devices" (Latest Revision) by the University of Southern California Foundation For Cross-Connection Control & Hydraulic Research.
3. Reduced pressure type backflow assemblies are required on all services where, in the opinion of the Water Department, a potential intermediate hazard exists. Device to be installed on all services to properties with wells.
4. Reduced pressure backflow assemblies shall typically be installed inline with the water meter and just behind the sidewalk. Where no sidewalk exists or installation at this location is not practical, double check valve assemblies shall be installed as close as possible to the water meter in a location that is safe from traveled ways. Any conflicts shall be brought to the attention of the Engineer and final location shall be determined by the Water Department.
5. The piping from the meter to the device, and the device itself shall be the same size as the meter unless otherwise approved by the Water Department.
6. Valves 2"# & less shall be brass ball valves, and valves 3"# and greater shall be resilient seat gate valves. When shut off valves on approved backflow assemblies are installed on their vertical risers, the bottom of the valves shall be a minimum of 4" above finished grade.
7. M.I.P. x F.I.P. 90° elbows (street ells) are not allowed for use on this installation.
8. Provide brass caps or plugs for all test cocks.
9. Minimum 12" long threaded brass nipple for 2"# and smaller, and 24" long ductile iron pipe for 3"# and greater.
10. Any enclosure, cover or screening for the backflow assembly must first be approved by the Water Department prior to installation.
11. Where multiple devices are installed side by side they shall have a minimum separation of 12".
12. Where multiple devices are installed side by side there shall be a minimum of 12" between devices. Where enclosures are installed over devices, devices shall be centered within, and there shall be a minimum of 4" between enclosures.

CITY OF SANTA ROSA
REDUCED PRESSURE BACKFLOW DEVICE

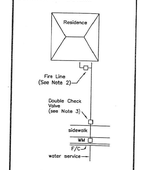
SCALE: NONE	DATE: Sept. 2017
DWN: GC 9/8	APPROVED
CHK: RS	
	FILE NO. STD.- 876



NOTES:

1. Upon written approval by the Water Department Director, this standard applies where there is a proposed residential connection to City water and there also may be an auxiliary water supply onsite, or where, in the opinion of the Water Department, a potential intermediate hazard may exist.
2. Upon written approval by the Fire Department, this standard applies where a residential fire sprinkler system is proposed. When approved, fire line to be installed in accordance with NFPA 130.
3. Approved double check valve assemblies shall be from the "List Of Approved Backflow Prevention Devices" (Latest Revision) by the University of Southern California Foundation For Cross-Connection Control & Hydraulic Research.
4. Double check valve assemblies shall typically be installed inline with the water meter and just behind existing or proposed sidewalk. Where no sidewalk exists or installation at this location is not practical, assemblies shall be installed as close as possible to the water meter. Any conflicts shall be brought to the attention of the Engineer and final location shall be determined by the Water Department.
5. For 2"# and smaller use brass compression and/or threaded fittings and threaded nipples. For 3"# and larger use ductile iron fittings with mechanical joint connections below ground and flanged in the box.
6. Piping between property side shut off and backflow device shall be type "K" soft or hard temper copper for 1"# and smaller, type"K" hard temper copper for 1-1/2" and 2"#, and ductile iron for 3"# and greater. Type "K" soft not be allowed. For all installations this piping shall be the same size as the meter unless otherwise approved by Water Department Engineering.
7. The device shall be centered in the box with a minimum of 2" clear between upper 90° elbows and box. The top of the highest point of the device shall be between 6" and 4" below the lid. Box shall not have "mouse holes" or removed "knock-outs". Installations using mouse holes, broken out sections or cracks have been grouted will be rejected.
8. M.I.P. x F.I.P. 90° elbows (street ells) are not allowed for use on this installation.
9. Provide brass caps or plugs for all test cocks.
10. Minimum 12" long threaded brass nipple for 2"# and smaller, and 24" long ductile iron pipe for 3"# and greater.
11. Compression fittings are not allowed on piping inside box

Typical Residential Fire Line Connection Details



This installation allows the connection of the fire line to the domestic supply line near the residence.

CITY OF SANTA ROSA
BELOW GROUND DOUBLE CHECK VALVE BACKFLOW DEVICE

SCALE: NONE	DATE: Sept. 2017
DWN: GC 9/8	APPROVED
CHK: RS	
	FILE NO. STD.- 875

NOTES:

1. This Standard is required for:
   a.) all connections serving commercial fire sprinkler systems.
   b.) any fire line connections to properties with auxiliary water supplies.
   c.) sites with multiple fire line connections to the City water system.
2. Approved double check detector backflow assemblies shall be shown on "List of approved backflow devices" of latest revision, by the University of Southern California Foundation for Cross Connection Control & Hydraulic Research.
3. All test valves shall be fitted with 1/4" female test cocks.
4. Double check detector assembly shall be located as close as possible to the sidewalk or public right-of-way.
5. Any cover or screening for this assembly must have both the Fire and Water Department's approval prior to installation.
6. Shut-off valves shall be resilient wedge type O.S. & Y. valves. Valves are to be chained and padlocked by device owner in the open position.
7. Must have specific approval of the Fire Dept. prior to installation.
8. The installation shall be provided with electronic supervision monitoring when required required by the Fire Department.
9. Double check detector shall be the same size as the fire line except when a 12" fire line is required, then a 10" double detector check backflow assembly is required.
10. Restrained joints are required for all new construction from gate valve to 90° elbow. Thrust blocks are only required where existing service is being modified and restrained joints are not used. Thrust block behind tee or looping sleeve is required on all installations.
11. For filling and disinfection when service has been topped or cut-in on existing main, add 2" piping as needed so "Fill line" is a minimum of 8" above all other piping. Install brass plug after disinfection and testing.
12. Regardless of detector device orientation, bypass meter shall be installed to set horizontally at a location easily accessed and read. See City Standard 885.
13. Contractor shall provide protection from corrosion in accordance with Fire Department requirements.

CITY OF SANTA ROSA
DOUBLE CHECK DETECTOR FIRE LINE BACKFLOW ASSEMBLY

SCALE: NONE	DATE: Sept. 2017
DWN: DK	APPROVED
CHK: RS	
	FILE NO. STD.- 880

SECTION A-A

Note: To be used for main sizes 10" or less and where sewer main will not be extended.

CITY OF SANTA ROSA
MAIN LINE CLEANOUT PERMANENT

SCALE: NONE	DATE: Sept. 2017
DWN: DK	APPROVED
CHK: RM	
	FILE NO. STD.- 505

12" DIAMETER PIPE AND LARGER

10" DIAMETER PIPE AND SMALLER

NOTES:

1. Pipe plugs shall be installed to the satisfaction of the Water Department Director.
2. Unless otherwise approved by the Director of Water abandoned pipes 12"# and larger shall be broken into every 50' and shall be filled completely with a flowable fill material approved by the City of Santa Rosa's Materials Engineer.

CITY OF SANTA ROSA
ABANDONED PIPE PLUG

SCALE: NONE	DATE: Sept. 2017
DWN: GC	APPROVED
CHK: RM	
	FILE NO. STD.- 507

NOTES:

1. The sewer service lateral shall be of sufficient depth to adequately serve the building site, and in no case shall be less than 3' deep at the cleanout unless otherwise authorized by the Water Department Director.
2. Where problems are anticipated in providing sewer service to a given building site, the lateral invert at the cleanout shall be elected by the owner's engineer.
3. Cleanout must be installed within the Public Right of Way or P.U.E. Cleanout to be installed behind sidewalk or at back of P.U.E. Cleanout must be in a driveway, install cleanout at back of sidewalk.
4. In cases where the cleanout installation conflicts with existing facilities, the contractor shall verify any alternate location with the City's Engineer prior to installation.
5. Minimum 2% slope for 4" laterals and a min. 1% slope for 6" laterals are required unless a variance is specifically approved by the Water Department Director and the Building Official.
6. A minimum of 12" when connecting to existing sewer lateral or extend to 1' behind P.U.E. or sidewalk for new construction.
7. For new construction, cap or plug end of service lateral watertight.
8. Lateral material shall be SDR 26 PVC or Ductile Iron pipe. Riser pipe shall be SDR 26 or 26 on 4" laterals and SDR 35 on 6" laterals.
9. Cleanout components shall be the same size as the lateral pipe, and all PVC fittings shall be SDR 26.
10. Tap fittings on mains smaller than 12" may only be used under the approval of the Water Department Director.

LATERAL CONNECTIONS TO EXISTING MAINS

Main Size & Material	Connection type	Couplings
8-1/2" ACP, VCP	Cut in PVC wye w/1/8" spools each end	Rubber w/Steel shear bands
8-1/2" PVC	Cut in PVC wye w/1/8" spools each end	Rigid slip adaptings
8-1/2" DIP	Cut in DIP wye w/1/8" spools each end	DIP couplings
12" and larger	Tap Sitting see Engineer's approved list	NA

CITY OF SANTA ROSA
4" & 6" SEWER SERVICE LATERAL and ONE WAY CLEANOUT

SCALE: NONE	DATE: Sept. 2017
DWN: GC 9/8	APPROVED
CHK: RS	
	FILE NO. STD.- 513

MANHOLE BASE, CHANNELIZATION PLAN AND LOCATION OF ECCENTRIC MANHOLE COVER

NOTES:

1. When manholes are installed in un-improved areas, the top of the cover shall be a min. of 1 foot above grade.
2. Min. of one 3" grade adjustment ring. Max. height of grade adjustment rings = 20". Alternately, contractor may cast grade adjustment rings in place.
3. Set all barrel sections & taper on an approved seal per the Engineer's List of Approved Seals, per manufacturer's instructions. Use 2 seals per joint in high water table areas.
4. Concentric taper sections shall be used on the manhole unless a flat top slab is installed. Eccentric taper section shall be use where one drop is required with opening over drop.
5. After lower ring section is set, break out top half of pipe flush with inside face of M.H. and form a smooth, semi-circular u-shaped channel. Make elevation changes gradually and directional changes with smooth curves. Slope and size of channels shall match upstream and downstream pipes. Manhole channels with a horizontal change in direction of 90° shall have a minimum vertical drop of 0.1' across the manhole or shall match the slope of the pipe, whichever is greater.
6. Poured-in-place base shall be poured full thickness on undisturbed soil. Precast bases to be from City Engineer's approved list, and placed on 6" minimum of 3/4" drain rock installed against undisturbed earth.
7. Concrete for collar shall be per Section 90 of the City Specifications, and shall be 2" below finished grade.
8. Standard manhole barrel section per ASTM C478.
9. 48"ø I.D. M.H. to be used for sewer mains less than 15"ø. 60"ø I.D. M.H. to be used for all trunk and collector sewers 18"ø to 48"ø or where drop fittings are used.
10. Couplers used to connect PVC to PVC pipe shall be a non-metallic flexible transition couplers shall have stainless steel sheer bands. For DIP see Water Standards. Coupler to be installed in mainline trench and out of manhole excavation.
11. Excavation shall be a minimum of 24" wider than barrel sections to allow for proper compaction and testing.
12. See Sewer Construction Specifications regarding poured-in-place base over existing asbestos cement pipe.

CITY OF SANTA ROSA
STANDARD PRECAST CONCRETE MANHOLE for SANITARY SEWER

SCALE: NONE	DATE: Sept. 2017
DWN: GC	APPROVED
CHK: RM	
	FILE NO. STD.- 500

NEW SANITARY SEWER LINE OVER OR UNDER NEW OR EXISTING WATER MAIN

NEW WATER MAIN OVER OR UNDER EXISTING SANITARY SEWER LINE

NOTES:

1. Only to be used upon approval by the Director of Santa Rosa Water, or designee, AND where conditions do not allow for the minimum vertical separation as specified in the California Waterworks Standards, Article 4, Section 64572 "Water Main Separations", See the City of Santa Rosa Water Distribution Design & Construction Standards for additional information.
2. This alternate installation applies only to water mains less than 24"ø. All crossings of 24"ø and larger water mains must be approved by the State Water Board AND the Director of Santa Rosa Water.
3. Do not remove bell. Where required for connection to adjacent piping, add additional (2' min.) section of pipe and connect with approved coupling.
4. Where the sanitary sewer line crosses below the water and there is 1' or more vertical clearance no special installation is required.
5. Any pipe / pipe crossings with 6" or less vertical clearance shall be padded with rubber sheets (neoprene or styrene-butadiene), felt expansion joint material, or other expansive materials between pipes as approved by Santa Rosa Water.
6. All bell & spigot, dresser type coupling or transition adapter joints shall have watertight rubber gasketed seals. Material submittal required.
7. Transitions between C900 pipe to SDR pipe shall be made with heavy wall bell by spigot adapters with the spigot facing down slope. Where material allows, the transition may be made with a coupling. Where Ductile Iron pipe is used, Where flexible couplers are allowed to couple lower class pipe, they shall be equipped with stainless steel sleeves and tightening bands. Material submittal required for all couplers.
8. All new Ductile Iron shall be wrapped in polyethylene per City of Santa Rosa Water Distribution Construction Specifications.

CITY OF SANTA ROSA
WATER MAIN CROSSING OVER OR UNDER SANITARY SEWER PIPE

SCALE: NONE	DATE: NOV 2017
DWN: DK	APPROVED
CHK: DP/DK	
	ELEVATION DATUM: NAVD 88 SHEET 3

DROP INLET			
MODEL NO.	A	B	*WEIGHT
DI242436	36"	42"	1900 LBS.
DI242448	48"	54"	2500 LBS.

*BOX ONLY

FRAME AND GRATE			
MODEL NO.	RATING	D	WEIGHT
SG2424--DP	PEDESTRIAN	1 1/2"	41 LBS.
SG2424--DT	TRAFFIC	3"	120 LBS.

EXTENSION		
MODEL NO.	C	WEIGHT
RS242406	6"	300 LBS.
RS242412	12"	600 LBS.

- FRAME AND GRATE ASSEMBLY AVALIABLE IN TRAFFIC OR PEDESTRIAN MODELS.
- DESIGN FOR H-20-44 BRIDGE LOADING.
- ASSEMBLY TO BE PLACED ON A 6" BASE OF CRUSHER RUN FOR EASE OF INSTALLATION AND EVEN LOAD DISTRIBUTION.
- FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN PRECAST.
- ILLUSTRATION IS TYPICAL ONLY OF GENERAL SERIES CONFIGURATION. FOR SPECIFIC CONFIGURATION, CALL JENSEN PRECAST.

24" X 24" DRAIN INLET

JENSEN PRECAST

DI2424

DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
			11-29-00

8.01

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

CASCADE SEPARATOR DESIGN NOTES

THE STANDARD CS-4 CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

CONFIGURATION DESCRIPTION
GRATED INLET ONLY (NO INLET PIPE)
GRATED INLET WITH INLET PIPE OR PIPES
CURB INLET ONLY (NO INLET PIPE)
CURB INLET WITH INLET PIPE OR PIPES

PLAN VIEW B-B
NOT TO SCALE

FRAME AND COVER
(DIAMETER VARIES)
NOT TO SCALE

ELEVATION A-A
NOT TO SCALE

SITE SPECIFIC DATA REQUIREMENTS			
STRUCTURE ID			
WATER QUALITY FLOW RATE (cfs [L/s])			
PEAK FLOW RATE (cfs [L/s])			
RETURN PERIOD OF PEAK FLOW (yrs)			
RIM ELEVATION			
PIPE DATA:	INVERT	MATERIAL	DIAMETER
INLET PIPE 1	139.69	HDPE	15"
INLET PIPE 2			
OUTLET PIPE	139.61	HDPE	15"
NOTES/ SPECIAL REQUIREMENTS:			

GENERAL NOTES

1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. CONTRACTOR TO VERIFY ALL STRUCTURE DIMENSIONS AND WEIGHT. PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE: www.ContechES.com
3. CASCADE SEPARATOR WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. CASCADE SEPARATOR STRUCTURE SHALL MEET AASHTO H20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 2' (610), AND GROUNDWATER ELEVATION AT OR BELOW THE BOTTOM OF THE STRUCTURE. CONTRACTOR TO RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
5. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.
6. CASCADE SEPARATOR STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C478 AND AASHTO LOAD FACTOR DESIGN METHOD.
7. ALTERNATE UNITS ARE SHOWN IN MILLIMETERS [mm.]

INSTALLATION NOTES

A. CONTRACTOR TO INSTALL INLET, BAFFLE WALL, DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CASCADE SEPARATOR MANHOLE STRUCTURE.
C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL AND GROUT INLET AND OUTLET PIPE(S). MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, INCLUDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

CONTECH ENGINEERED SOLUTIONS LLC
www.contechES.com
(800) 338-1122 (513) 645-7000 Fax: (513) 645-7993
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069

CASCADE separator™

CS-4
CASCADE SEPARATOR
STANDARD DETAIL

NO.	DATE	DESCRIPTION

DATE: 06-05-2020
SCALE: AS SHOWN
DRAWN BY: DDI
DESIGNED BY: DDI
CHECKED BY: DLS

CALIFORNIA ENGINEERING
CIVIL ENGINEERING
LAND SURVEYING
PROJECT MANAGEMENT
CONSTRUCTION ADMINISTRATION
COMPANY, INC.
www.cecusa.net
ESTD 1995
1110 Civic Center Blvd. Suite 404 | Yuba City, CA 95993 | (530) 751-0952 Office

DANCO GROUP

STANDARD DETAILS

SAGE COMMONS CIVIL IMPROVEMENT PLANS

PROJECT NUMBER 19-218

SHEET D3 OF 3

GENERAL NOTES

PROJECT IS A RISK LEVEL 2 SITE. CONTRACTOR SHALL PROVIDE SOIL STABILIZATION AND SEDIMENT CONTROL PRACTICES DURING CONSTRUCTION SCHEDULE CONSTRUCTION WORK TO AVOID EXCESS EXPOSURE DURING RAIN EVENTS. CONSTRUCTION ENTRY SHALL BE PLACED AS NEEDED BY CONTRACTOR. ALL STORM DRAIN INLETS ARE TO BE PROTECTED PRIOR TO GRADING OPERATIONS AND DURING CONSTRUCTION. TEMPORARY FIBER ROLLS SHALL BE PLACED DOWNSLOPE OF DISTURBED AREAS AS NEEDED, AND PER RISK LEVEL 2 MAXIMUM SHEET FLOW LENGTHS. TEMPORARY ROCK CHECK BAGS ARE TO BE PLACED IN DRAINAGE SWALES OR GUTTERS AS NEEDED TO FILTER RUNOFF.

A COPY OF THE SWPPP AND ALL RAIN EVENT ACTION PLANS (REAPs) SHALL BE KEPT ONSITE FOR THE DURATION OF CONSTRUCTION.

BMP DETAILS SHOWN ON THIS SHEET SHALL BE FOLLOWED, AT A MINIMUM. WHERE DISCREPANCIES EXIST BETWEEIN THESE DETAILS AND CASQA CALIFORNIA STORMWATER BMP HANDBOOK, THE LATTER SHALL GOVERN.

CONCRETE, PAINT, MORTAR, GROUT, ETC. MUST HAVE A DESIGNATED CLEANUP AREA. DUST CONTROL SHALL CONSIST OF APPLYING WATER TO ALLEVIATE OR PREVENT NUISANCE DUST. HYDROSEEDING IS TO BE APPLIED TO SLOPES AND BUILDING PAD LOTS FOR STABILIZATION. STREET SWEEPING SHALL OCCUR AT LOCATIONS WHERE TRUCKS AND EQUIPMENT CROSS FROM SOIL-DISTURBED AREAS TO PAVEMENT. CONTRACTOR'S MATERIAL AND EQUIPMENT STORAGE AREA LOCATION TO BE IN AN APPROVED STAGING AREA. SITE INSPECTIONS INCLUDE A MINIMUM OF WEEKLY AND PRE & POST RAIN DURING WET WEATHER.

EROSION CONTROL NOTES

1. CONTRACTOR MUST ENSURE THAT THE CONSTRUCTION SITE IS PREPARED PRIOR TO THE ONSET OF ANY STORM. CONTRACTOR SHALL HAVE ALL EROSION AND SEDIMENT CONTROL MEASURES IN PLACE FOR THE ENTIRETY OF THE PROJECT. BMPs ARE REQUIRED YEAR-ROUND.

2. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED UNTIL DISTURBED AREAS ARE STABILIZED. CHANGES TO THIS EROSION AND SEDIMENT CONTROL PLAN SHALL BE MADE TO MEET FIELD CONDITIONS ONLY WITH THE APPROVAL OF OR AT THE DIRECTION OF A REPRESENTATIVE OF THE GOVERNING AGENCY.

3. THIS PLAN MAY NOT COVER ALL OF THE SITUATIONS THAT ARISE DURING CONSTRUCTION DUE TO UNANTICIPATED FIELD CONDITIONS. VARIATIONS MAY BE MADE TO THE PLAN IN THE FIELD SUBJECT TO THE APPROVAL OF OR AT THE DIRECTION OF A REPRESENTATIVE OF THE GOVERNING AGENCY.

4. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CHECKED BEFORE AND AFTER ALL STORMS TO ENSURE MEASURES ARE FUNCTIONING PROPERLY. BMPS SHALL BE INSPECTED ON A WEEKLY BASIS.

5. CONTRACTOR SHALL MAINTAIN A LOG AT THE SITE OF ALL INSPECTIONS OR MAINTENANCE OF BMPS, AS WELL AS ANY CORRECTIVE CHANGES TO THE BMPS OR EROSION AND SEDIMENT CONTROL PLAN.

6. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS, GUTTERS, AND PUBLIC SIDEWALKS SHALL BE SWEPT USING STREET SWEEPING OR OTHER DRY SWEEPING METHOD AT THE END OF EACH WORKING DAY.

7. SITE TO BE WATERED WHEN WINDS EXCEED THE SPEED REQUIRED BY BAY AREA AIR QUALITY MANAGEMENT DISTRICT. STOCKPILES SHALL BE MAINTAINED AND PROTECTED SO AS TO BE DUST FREE. STRAW WATTLE SHALL BE INSTALLED AROUND THE BASE OF ALL STOCKPILES.

9. ON-SITE DEWATERING REQUIRED DISCHARGE INTO SEDIMENT TRAP. WATER SHALL ONLY BE DISCHARGED WHEN IT IS FREE FROM HIGH CONCENTRATIONS OF SUSPENDED PARTICLES.

10. CONTRACTOR SHALL PROVIDE DRAIN INLET PROTECTION (GRAVEL BAGS AND FILTER FABRIC OR PROPRIETARY TEMPORARY GEOTEXTILE INSERTS) FOR ALL CATCH BASINS LOCATED IN THE VICINITY OF WORK. THIS INCLUDES ANY CATCH BASINS IN THE PUBLIC RIGHT-OF-WAY, AS WELL AS ANY ON-SITE CATCH BASINS ON PRIVATE PROPERTY.

11. CONTRACTOR SHALL ENSURE THAT CONSTRUCTION ACTIVITIES DO NOT DEPOSIT SEDIMENT ONTO THE PUBLIC ROADWAY, SIDEWALKS AND GUTTERS, OR ENVIRONMENTALLY SENSITIVE HABITAT AREAS. ALL SEDIMENT AND CONSTRUCTION DEBRIS MUST BE REMOVED BY THE END OF EACH WORKING DAY.

12. CONTRACTOR SHALL SCHEDULE WORK FOR DRY-WEATHER DAYS WHEN NO RAIN IS IN THE IMMEDIATE FORECAST.

13. CONTRACTOR SHALL PROVIDE DUST CONTROL TO PREVENT THE NUISANCE OF BLOWING DUST WITHOUT CAUSING SEDIMENT, DEBRIS, OR LITTER TO LEAVE THE PROJECT SITE AREA.

14. CONTRACTOR SHALL INSTALL ANY OTHER BMPs AS NECESSARY TO CONTROL THE DISCHARGE OF POLLUTANTS FROM THE PROJECT SITE.

15. CONTRACTOR SHALL INSTALL A STABILIZED CONSTRUCTION ENTRANCE PRIOR TO COMMENCEMENT OF GRADING. LOCATION OF THE ENTRANCE MAY BE ADJUSTED BY THE CONTRACTOR TO FACILITATE GRADING OPERATIONS. ALL CONSTRUCTION TRAFFIC ENTERING THE PAVED ROAD MUST CROSS THE STABILIZED CONSTRUCTION ENTRANCE. THE STABILIZED CONSTRUCTION ENTRANCE SHALL REMAIN IN PLACE UNTIL THE ROAD BASE ROCK COURSE IS COMPLETED.

16. CONSTRUCTION EQUIPMENT SHALL BE PROPERLY MAINTAINED. EQUIPMENT IDLING TIME SHALL BE MINIMIZED.

17. TRUCKS HAULING CONSTRUCTION AND DEMOLITION DEBRIS FROM THE SITE SHALL BE COVERED.

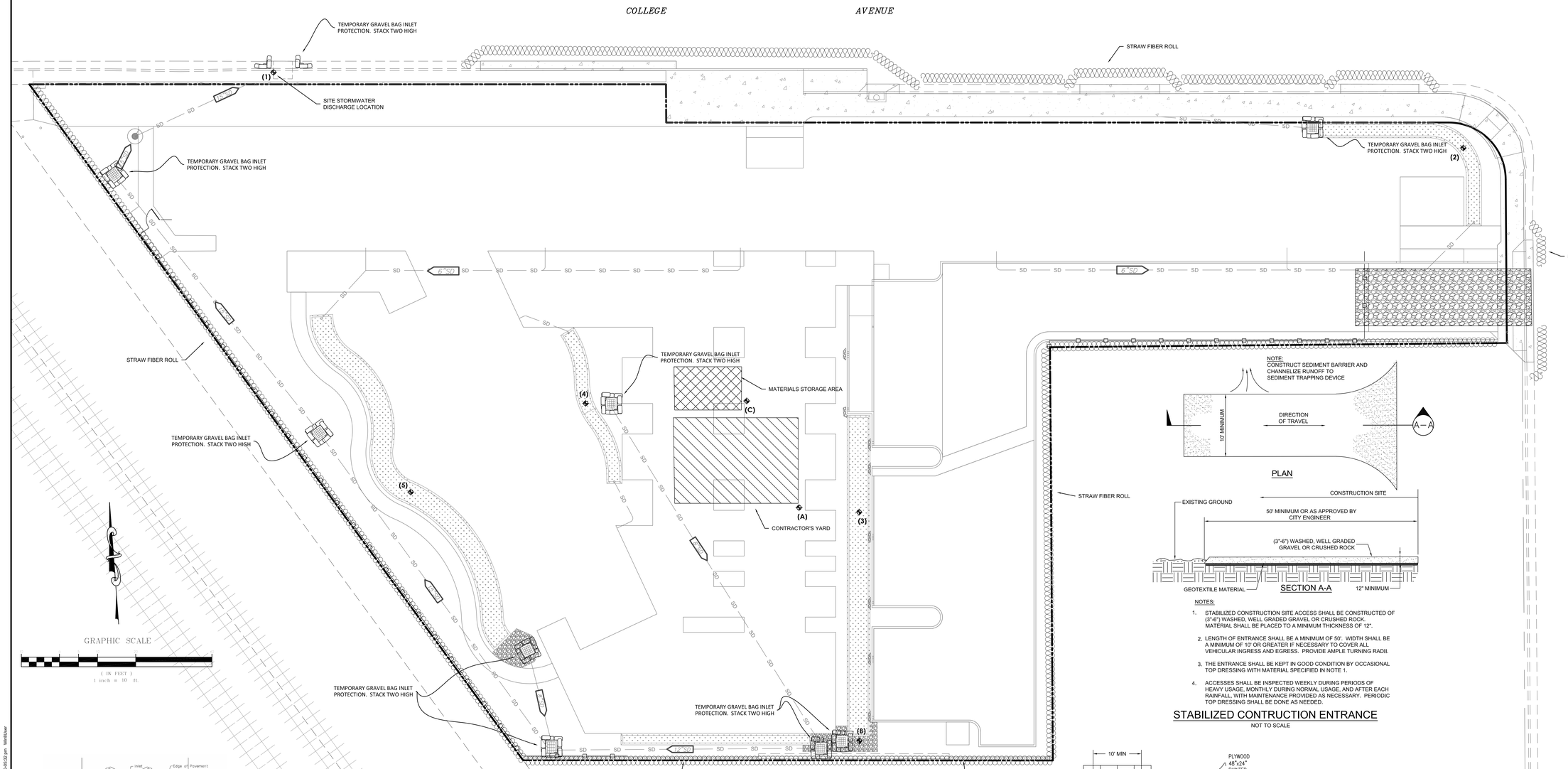
18. WATER ON A CONTINUOUS AS-NEEDED BASIS ALL EARTH SURFACES DURING CLEARING, GRUBBING, EARTHMOVING AND OTHER SITE PREPARATION ACTIVITIES.

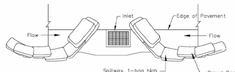
19. USE WATERING TO CONTROL DUST GENERATION DURING DEMOLITION OF STRUCTURES OR BREAK-UP OF PAVEMENT.

20. RENOVATION, DEMOLITION ACTIVITIES, REMOVAL OR DISTURBANCES OF ANY MATERIAL THAT CONTAIN ASBESTOS, LEAD PAINT, OR OTHER HAZARDOUS POLLUTANTS WILL BE CONDUCTED IN ACCORDANCE WITH BAAQMD RULES AND REGULATIONS.

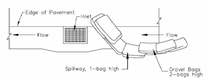
LEGEND

- PARCEL BOUNDARY
- BUILDING FOUNDATION
- STRAW FIBER ROLL
- STABILIZED CONST. ENTRANCE W/ TIRE WASH
- STAGING/STOCKPILE AREA
- CONCRETE WASHOUT





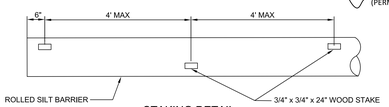
TYPICAL PROTECTION FOR INLET WITH OPPOSING FLOW DIRECTIONS



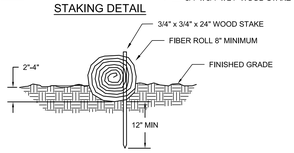
TYPICAL PROTECTION FOR INLET WITH SINGLE FLOW DIRECTION

NOTES:
1. Intended for short-term use.
2. Use to inhibit non-storm water flow.
3. Allow for proper maintenance and cleanup.
4. Bags must be removed after adjacent operation is completed
5. Not applicable in areas with high silts and clays without filter fabric.

CURB INLET PROTECTION
NOT TO SCALE



STAKING DETAIL



STRAW FIBER ROLL
NOT TO SCALE

P△1

NOTE:
CONSTRUCT SEDIMENT BARRIER AND CHANNELIZE RUNOFF TO SEDIMENT TRAPPING DEVICE

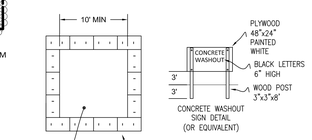
PLAN

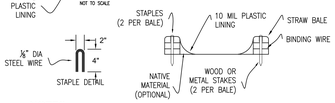
SECTION A-A

NOTES:

1. STABILIZED CONSTRUCTION SITE ACCESS SHALL BE CONSTRUCTED OF (3"-6") WASHED, WELL GRADED GRAVEL OR CRUSHED ROCK. MATERIAL SHALL BE PLACED TO A MINIMUM THICKNESS OF 12".
2. LENGTH OF ENTRANCE SHALL BE A MINIMUM OF 50'. WIDTH SHALL BE A MINIMUM OF 10' OR GREATER IF NECESSARY TO COVER ALL VEHICULAR INGRESS AND EGRESS. PROVIDE AMPLE TURNING RADII.
3. THE ENTRANCE SHALL BE KEPT IN GOOD CONDITION BY OCCASIONAL TOP DRESSING WITH MATERIAL SPECIFIED IN NOTE 1.
4. ACCESSES SHALL BE INSPECTED WEEKLY DURING PERIODS OF HEAVY USAGE, MONTHLY DURING NORMAL USAGE, AND AFTER EACH RAINFALL, WITH MAINTENANCE PROVIDED AS NECESSARY. PERIODIC TOP DRESSING SHALL BE DONE AS NEEDED.

STABILIZED CONTRUCTION ENTRANCE
NOT TO SCALE





NOTES:
1. ACTUAL LAYOUT DETERMINED IN FIELD
2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30 FEET OF THE TEMPORARY WASHOUT FACILITY

CONCRETE WASHOUT
NOT TO SCALE

P△1

REVIEWED FOR CODE COMPLIANCE BY COASTLAND CIVIL ENGINEERING, INC. IN ACCORDANCE WITH CBC §107.2.1 AS AMENDED BY THE LOCAL AGENCY.

WDID #:_____

P△2

NO.	DATE	DESCRIPTION
1	03/23/2020	SWPPP DETAILS REVISIONS
2	05/12/2020	WDID NUMBER CALLOUT

DATE: 06-05-2020
SCALE: 1"=10'
DRAWN BY: DDI
DESIGNED BY: DDI
CHECKED BY: DLS

CALIFORNIA ENGINEERING COMPANY INC
CIVIL ENGINEERING
LAND SURVEYING
PROJECT MANAGEMENT
CONSTRUCTION ADMINISTRATION
www.cecusa.net
ESTD 1995
1110 Civic Center Blvd. Suite 401 | Yuba City, CA 95993 | (530) 751-0952 Office

DANCO GROUP

WATER POLLUTION CONTROL DRAWING

SAGE COMMONS CIVIL IMPROVMENT PLANS

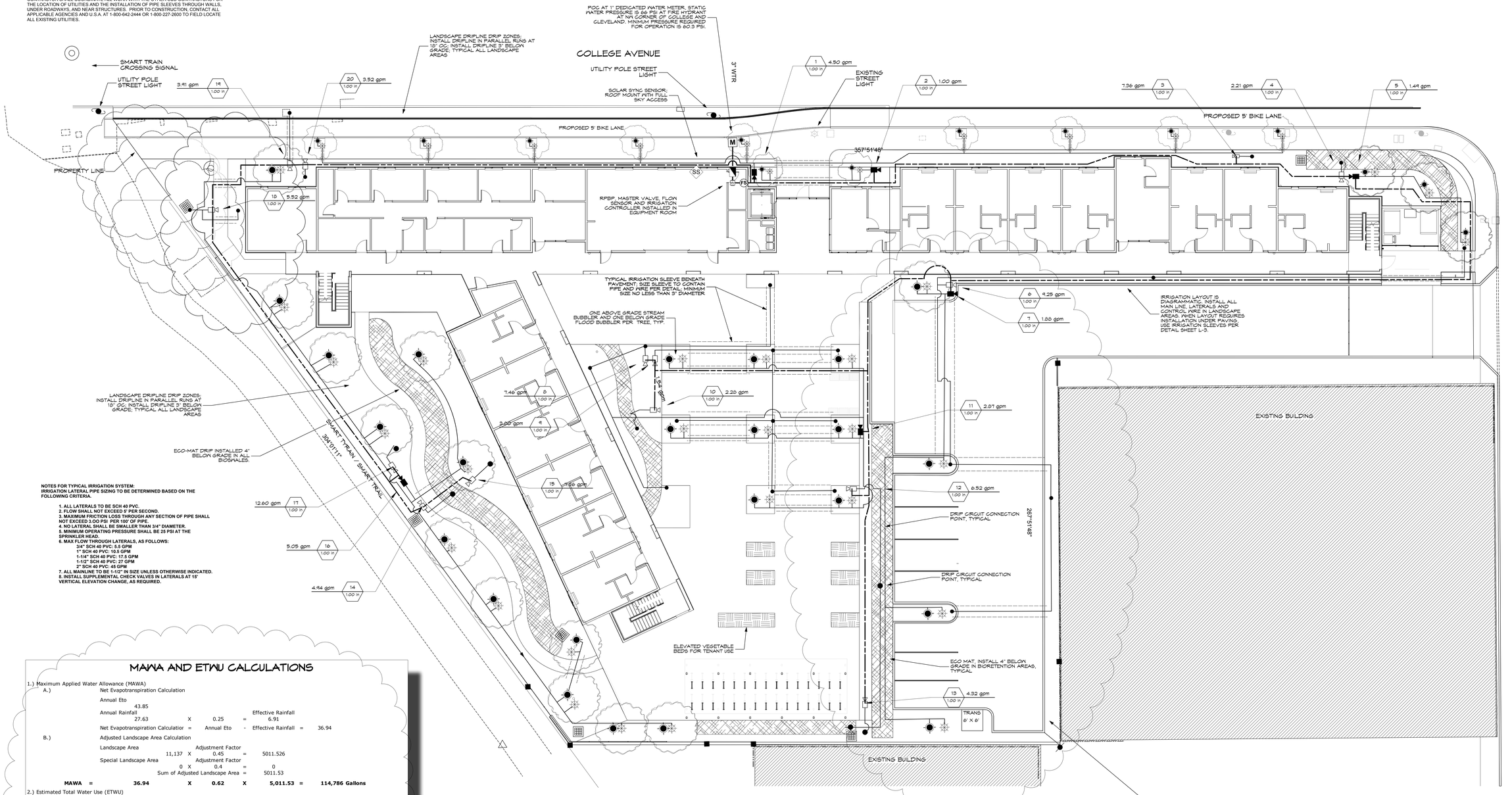
PROJECT NUMBER 19-218

SHEET W1 OF 1

U.S.A NOTE

IT IS THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR TO BE FAMILIAR WITH ALL GRADE DIFFERENCES, LOCATION OF WALLS, STRUCTURES, AND UTILITIES. THE IRRIGATION CONTRACTOR SHALL EXERCISE EXTREME CARE, AND BE RESPONSIBLE FOR ANY DAMAGE IN EXCAVATING AND WORKING NEAR UTILITIES. THE LANDSCAPE CONTRACTOR SHALL COORDINATE ALL WORK WITH THE OTHER SUB-CONTRACTORS FOR THE LOCATION OF UTILITIES AND THE INSTALLATION OF PIPE SLEEVES THROUGH WALLS, UNDER ROADWAYS, AND NEAR STRUCTURES. PRIOR TO CONSTRUCTION, CONTACT ALL APPLICABLE AGENCIES AND U.S.A. AT 1-800-642-2444 OR 1-800-227-2600 TO FIELD LOCATE ALL EXISTING UTILITIES.

THESE DRAWINGS COMPLY WITH THE CRITERIA OF THE ORDINANCE. ORDINANCE REQUIREMENTS HAVE BEEN APPLIED FOR THE EFFICIENT USE OF WATER IN THE IRRIGATION DESIGN PLAN AND THE LANDSCAPE DESIGN PLAN."



NOTES FOR TYPICAL IRRIGATION SYSTEM:
IRRIGATION LATERAL PIPE SIZING TO BE DETERMINED BASED ON THE FOLLOWING CRITERIA.

1. ALL LATERALS TO BE SCH 40 PVC.
2. FLOW SHALL NOT EXCEED 5' PER SECOND.
3. MAXIMUM FRICTION LOSS THROUGH ANY SECTION OF PIPE SHALL NOT EXCEED 3.OO PSI PER 100' OF PIPE.
4. NO LATERAL SHALL BE SMALLER THAN 3/4" DIAMETER.
5. MINIMUM OPERATING PRESSURE SHALL BE 25 PSI AT THE SPRINKLER HEAD.
6. MAX FLOW THROUGH LATERALS, AS FOLLOWS:
   - 3/4" SCH 40 PVC: 5.5 GPM
   - 1" SCH 40 PVC: 10.5 GPM
   - 1-1/4" SCH 40 PVC: 17.5 GPM
   - 1-1/2" SCH 40 PVC: 27 GPM
   - 2" SCH 40 PVC: 45 GPM
7. ALL MAINLINE TO BE 1-1/2" IN SIZE UNLESS OTHERWISE INDICATED.
8. INSTALL SUPPLEMENTAL CHECK VALVES IN LATERALS AT 15' VERTICAL ELEVATION CHANGE, AS REQUIRED.

MAWA AND ETWU CALCULATIONS

1.) Maximum Applied Water Allowance (MAWA)

A.) Net Evapotranspiration Calculation

Annual Eto: 43.85

Annual Rainfall			Effective Rainfall
27.63	X 0.25	=	6.91

Net Evapotranspiration Calculatior = Annual Eto - Effective Rainfall = 36.94

B.) Adjusted Landscape Area Calculation

Landscape Area	Adjustment Factor		
11,137	X 0.45	=	5011.526
Special Landscape Area	**Adjustment Factor**		
0	X 0.4	=	0
	Sum of Adjusted Landscape Area	=	5011.53

MAWA = 36.94 X 0.62 X 5,011.53 = 114,786 Gallons

2.) Estimated Total Water Use (ETWU)

A.) Net Evapotranspiration Calculation

Net Evapotranspiration Calculatior = Annual Eto - Effective Rainfall = 36.94

Very Low Water Plant Use SF			
1,273	X 0.10	=	127.28
Low Water Plant Use SF			
7,875	X 0.30	=	2362.52
Moderate Water Plant Use SF			
1,989	X 0.60	=	1193.31
High Water Plant Use SF			
-	X 1.00	=	0.00
	Sum of Adjusted Landscape Area	=	3683.11

ETWU (DRIP) = 36.94 X 0.62 X 3,683.11 / 0.81 = 104,147 Gallons

HYDROZONE TABLE

	VALVE NO./ HYDROZONE	IRRIGATION METHOD	PLANT TYPE	GPM	PRECIPITATION RATE IN INCHES PER HOUR	AREA IN SQUARE FEET	% OF LANDSCAPE
TREES	B-1	BUBBLER	LOW	4.5	5.35	81	1%
TREES	B-2	BUBBLER	MODERATE	1.0	0.70	137.42	1%
	D-3	IN-LINE DRIP	LOW	7.4	0.87	815.252	7%
BIOSWALE	S-4	ECOMAT	LOW	2.2	1.20	177.856	2%
TREES	B-5	BUBBLER	MODERATE	1.5	0.41	353.82	3%
	D-6	IN-LINE DRIP	LOW	9.3	0.97	921.63	8%
TREES	B-7	BUBBLER	LOW	1.9	0.25	714.14	6%
	D-8	IN-LINE DRIP	LOW	7.5	0.71	1016.82	9%
	D-9	IN-LINE DRIP	VERY LOW	3.8	1.43	256	2%
BIOSWALE	S-10	ECOMAT	LOW	2.2	0.98	215.82	2%
TREES	B-11	BUBBLER	VERY LOW	2.9	1.09	256	2%
BIOSWALE	S-12	ECOMAT	LOW	6.5	1.23	511.27	5%
	D-13	IN-LINE DRIP	LOW	4.3	1.76	236.64	2%
BIOSWALE	S-14	ECOMAT	LOW	4.9	0.69	689.58	6%
	D -15	IN-LINE DRIP	LOW	7.4	0.99	712.51	6%
TREES	B-16	BUBBLER	MODERATE	5.1	0.32	1497.61	13%
	D-17	IN-LINE DRIP	LOW	12.6	1.16	1046.86	9%
	D-18	IN-LINE DRIP	LOW	5.7	0.89	618.416	6%
	D-19	IN-LINE DRIP	LOW	3.9	0.70	541.36	5%
	D-20	IN-LINE DRIP	LOW	3.5	1.01	336.72	3%
				TOTAL SQUARE FEET		11,136.72	100%

SUMMARY HYDROZONE TABLE

PLANT TYPE	AREA (SF)	% OF LANDSCAPE
VERY LOW WATER USE	1,272.82	11.43%
LOW WATER USE (DRIP)	7,875.05	70.71%
MODERATE WATER USE	1,988.85	17.86%
HIGH WATER USE	-	0.00%
TOTAL	11,137	100%

CITY REQUIRED NOTES

1. A MINIMUM OF 5" OF NON-MECHANICALLY COMPACTED SOIL SHALL BE AVAILABLE FOR WATER ABSORPTION AND ROOT GROWTH IN PLANTED AREAS.

2. INCORPORATE COMPOST OR NATURAL FERTILIZER INTO THE SOIL TO A MINIMUM DEPTH OF 5" AT A MINIMUM RATE OF 5 CUBIC YARDS PER 1000 SQUARE FEET OR PER SPECIFIC AMENDMENT RECOMMENDATIONS FROM A SOILS LABORATORY REPORT.

3. A MINIMUM 3" LAYER OF MULCH SHALL BE APPLIED ON ALL EXPOSED SOIL SURFACES OF PLANTING AREAS EXCEPT IN TURF AREAS, CREEPING OR ROOTING GROUND COVERS OR DIRECT SEEDING APPLICATIONS.

CITY REQUIRED NOTES
(M.E.L.O. COMPLIANCE)

1. UPON COMPLETION OF INSTALLATION, CONTRACTOR SHALL SUBMIT TO THE ENGINEERING DEVELOPMENT SERVICES INSPECTOR A COMPLETED AND SIGNED "CERTIFICATE OF COMPLETION" STATING THE PROJECT HAS BEEN INSTALLED AS DESIGNED.

2. THE CERTIFICATE OF COMPLETION SHALL BE ACCOMPANIED BY AN IRRIGATION AUDIT, IRRIGATION SCHEDULE AND A MAINTENANCE SCHEDULE, AS DESCRIBED IN THE CITY ORDINANCE.

3. A FINAL CITY INSPECTION SHALL BE PERFORMED. THE INSTALLATION CONTRACTOR SHALL ATTEND THIS INSPECTION AND HANDLE ALL REQUIRED REPAIRS AND ADJUSTMENTS TO ACHIEVE APPROVAL AND COMPLETION FROM THE CITY. TO SCHEDULE AN INSPECTION, CONTACT ENGINEERING DEVELOPMENT SERVICES AT (707) 543-4611.

4. PURSUANT TO CITY OF SANTA ROSA POLICY, ALL SUBSTITUTIONS SHALL BE APPROVED BY THE CITY INSPECTOR.

PCC-1

IRRIGATION PLAN

Scale: 1" = 10'-0"

0 10 20 FT

IRRIGATION LEGEND

SYMBOL	EQUIPMENT	MANUFACTURER	MODEL	REMARKS
	STREAM BUBBLER: 6" POP-UP	HUNTER	PROS-06-PRSDN-MSBN-25Q	TREE WELL BUBBLER, AIM AT ROOT BALL: 1 PER TREE
	ROOT WATERING SYSTEM	HUNTER	RZWS-18-25-CV	1 PER TREE
	REMOTE CONTROL VALVE: TREE BUBBLER CIRCUIT	HUNTER	ICV-101G-AS-ADJ	TREE BUBBLER CIRCUIT VALVE
	1" NORMALLY CLOSED MASTER VALVE	HUNTER	ICV101-G	INSTALL DOWNSTREAM FROM BACKFLOW PREVENTER
	REMOTE CONTROL VALVE: DRIP CIRCUIT	HUNTER	ICZ-101-LF-25	DRIP CIRCUIT VALVE
	54 STATION CONTROLLER W/ DECODER MODULE	HUNTER	I2C-8000M-EZDM	MOUNT IN ENCLOSURE @ LOCATION SHOWN
	1" FLOW SENSOR	CREATIVE SENSOR TECHNOLOGY	FSI-T10-000	INSTALL DOWNSTREAM FROM POC OR METER
	SOLAR SYNC SENSOR (WIRELESS)	HUNTER	WSS-SEN	MOUNT AT ROOF LINE ABOVE CONTROLLER LOCATION
	R.P. BACKFLOW PREVENTER ; 1" SIZE	FEBCO	860U	
	QUICK COUPLER W/ COVER - 1"	RAINBIRD	44-LRC	SEE DETAIL
	BALL VALVE IN VALVE BOX	KBI	BTU-XXXX-V	MATCH MAINLINE SIZE
	AUTOMATIC LINE FLUSH VALVE	HUNTER	AFV-1	INST. IN 6" VALVE BOX @ END OF CIRCUIT
	AIR RELIEF VALVE	HUNTER	AVR-075	INST. IN 6" VALVE BOX @ END OF CIRCUIT
	PIPE AND WIRE CHASE	PVC	CL 200	SEE PLAN FOR SIZE; REFER TO CIVIL DRAWINGS
	SUB-SURFACE BIOSWALE IRRIGATION	HUNTER	ECO-MAT 17MM	INSTALL 4" BELOW GRADE ALL BIOSWALE AREAS
	LANDSCAPE DRIPLINE	HUNTER	HDL-06-12"-XXX-PC	INSTALL 3" BELOW 1GRADE @ 18" O.C.
	POLY TO PVC CONNECTOR W/ COMPRESSION FITTING		SEE DETAIL GL3	
	MAINLINE	PVC	SCH 40 (1-1/2" AND SMALLER)	
	LATERAL	PVC	SCH 40	
M	WATER METER			BY OTHER THAN LANDSCAPE CONTRACTOR
4.5	VALVE STATION AND SEQUENCE			
	ELECTRIC CONTROL VALVE SIZE			
	FLOW RATE IN GALLONS PER MINUTE			

IRRIGATION NOTES

1. ALL SPRINKLER HEADS SHALL BE SET PERPENDICULAR TO FINISH GRADE OF THE AREA TO BE IRRIGATED UNLESS OTHERWISE NOTED ON THE PLANS.
2. THE LOCATION OF THE CONTROLLER TO BE VERIFIED BY OWNER. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR CONNECTING ALL PROPOSED STATIONS TO THE CONTROLLER. CONTROLLER TO BE CONFIGURED TO OPERATE 20 STATIONS. CONTROLLER SHALL BE HUNTER ICC2 WITH 2 WIRE DECODER CAPABILITY.
3. ONE IRRIGATION CONTROLLER STATION SHALL BE DEDICATED FOR MANUAL OPERATION TO PRESSURIZE THE MAIN LINE FOR QUICK COUPLER AND HOSE BIB USE.
4. ALL CONSTRUCTION IS TO BE PER THE LATEST EDITION OF THE UNIFORM BUILDING CODE.
5. THIS DESIGN IS DIAGRAMMATIC. ALL PIPING, VALVES, ROOT BARRIERS, ETC. SHOWN WITHIN PAVED AREAS ARE FOR DESIGN CLARIFICATION ONLY. INSTALL PIPING AND VALVES IN PLANTING AREAS WHERE POSSIBLE, AND LOCATE ELECTRIC CONTROL AND QUICK COUPLING VALVES IN GROUND COVER/SHRUB AREAS, 6" TO 12" AWAY FROM HARDSCAPE OR TURF AREA FOR EASY ACCESS.
6. THE IRRIGATION CONTRACTOR SHALL FLUSH AND ADJUST ALL SPRINKLER HEADS FOR OPTIMUM PERFORMANCE AND TO PREVENT OVER SPRAY ONTO WALKS, ROADWAYS, AND/OR BUILDINGS. THIS SHALL INCLUDE SELECTING THE BEST DEGREE OF ARC TO FIT THE EXISTING SITE CONDITIONS AND THROTTLING THE FLOW CONTROL AT EACH VALVE TO OBTAIN THE OPTIMUM OPERATING PRESSURE FOR EACH SYSTEM.
7. IT IS THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO FAMILIARIZE HIMSELF WITH ALL GRADE DIFFERENCES, LOCATION OF WALLS, STRUCTURES, AND UTILITIES. THE IRRIGATION CONTRACTOR SHALL EXERCISE EXTREME CARE, AND BE RESPONSIBLE FOR ANY DAMAGE IN EXCAVATING AND WORKING NEAR UTILITIES. CONTRACTOR SHALL COORDINATE ALL WORK WITH THE GENERAL CONTRACTOR AND OTHER SUB-CONTRACTORS FOR THE LOCATION OF UTILITIES AND THE INSTALLATION OF PIPE SLEEVES THROUGH WALLS, UNDER ROADWAYS, AND NEAR STRUCTURES. PRIOR TO CONSTRUCTION, CONTACT ALL APPLICABLE AGENCIES AND U.S.A. AT 1-800-642-2444 TO FIELD LOCATE ALL EXISTING UTILITIES.
8. FIELD ADJUSTMENTS MAY BE REQUIRED TO PROVIDE OPTIMUM OPERATING EFFICIENCY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE LANDSCAPE ARCHITECT TO REVIEW FIELD ADJUSTMENTS PRIOR TO INSTALLATION. IN THE EVENT THAT NO CONTACT IS MADE WITH THE LANDSCAPE ARCHITECT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REVISIONS.
9. SLEEVE ALL IRRIGATION PIPE AND CONTROL WIRES UNDER STREETS AND CONCRETE WALKWAYS WITH THE PROPER SIZE CLASS 200 PVC PIPE TO DEPTH AS SPECIFIED.
10. FOR ADDITIONAL INFORMATION, SEE PROJECT DETAILS AND SPECIFICATIONS.
11. ALL WORK SHALL CONFORM TO ALL APPLICABLE CITY OF SANTA ROSA CONSTRUCTION STANDARDS.
12. NO GALVANIZED IRON PIPE OR FITTINGS SHALL BE ALLOWED.
13. A BALL VALVE IN A SEPARATE ROUND VALVE BOX IS TO BE INSTALLED IMMEDIATELY UPSTREAM FROM EACH REMOTE CONTROL VALVE. VALVE SHALL BE SIZED TO MAINLINE SUPPLY AT THE RC VALVE. SEE DETAIL.
14. INSTALL 3" HDE DETECTABLE TAPE (#3" DTP, AS MANUFACTURED BY T. CHRISTY). TAPE SHALL BE INSTALLED 6" ABOVE THE IRRIGATION MAIN.
15. INSTALL ALL LANDSCAPE DRIPLINE 3" BENEATH GRADE AND ALL LINES PARALLEL AT THE SPACING INDICATED. USE LANDSCAPE STAPLES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS TO SECURE TO TUBING TO GROUND.
16. CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY SUPPLEMENTAL IRRIGATION OF ALL BIO-RETENTION AREAS THROUGH THE SOD ESTABLISHMENT PERIOD. METHOD OF IRRIGATION APPLICATION IS DISCRETIONARY AND MAY INCLUDE HAND WATERING OR INSTALLATION OF A TEMPORARY, ABOVE GRADE OVERHEAD SPRAY CIRCUIT. ANY REPLACEMENT NECESSARY FOR LOSS OR DAMAGE TO SOD DUE TO LACK OF WATER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AT CONTRACTOR'S EXPENSE.
17. XA SIGNED CERTIFICATE OF COMPLETION IS REQUIRED PRIOR TO FINAL ACCEPTANCE BY THE CITY OF SANTA ROSA. IF THE INSTALLATION OF THE LANDSCAPE DOES MEET OR SUBSTANTIALLY COMPLY WITH THE APPROVED LANDSCAPE CONSTRUCTION DOCUMENTS, THE CERTIFICATE OF COMPLETION WILL NOT BE SIGNED OR APPROVED BY THE LANDSCAPE ARCHITECT OF RECORD.

REVIEWED FOR CODE COMPLIANCE BY COASTLAND CIVIL ENGINEERING, INC. IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

MacNair
LANDSCAPE ARCHITECTURE
POST OFFICE BOX 251
KENWOOD, CA 95452
TEL (707) 833-2288
FLA #2930
don@macnairlandscapes.com

STAMP

REGISTERED LANDSCAPE ARCHITECT DONALD S. MACNAIR NO. 2800 EXP. 8/31/21 STATE OF CALIFORNIA

REVISIONS TO THIS SHEET

REV.	DATE
PCC-1	2020-04-06

SHEET ISSUE DATE

JANUARY 27, 2020

PROJECT TRACKING

MLA #: 2019-32

CONT #: Don MacNair

P.I.C:

PM / PA:

Owner

DANCO

Project Name

SAGE COMMONS

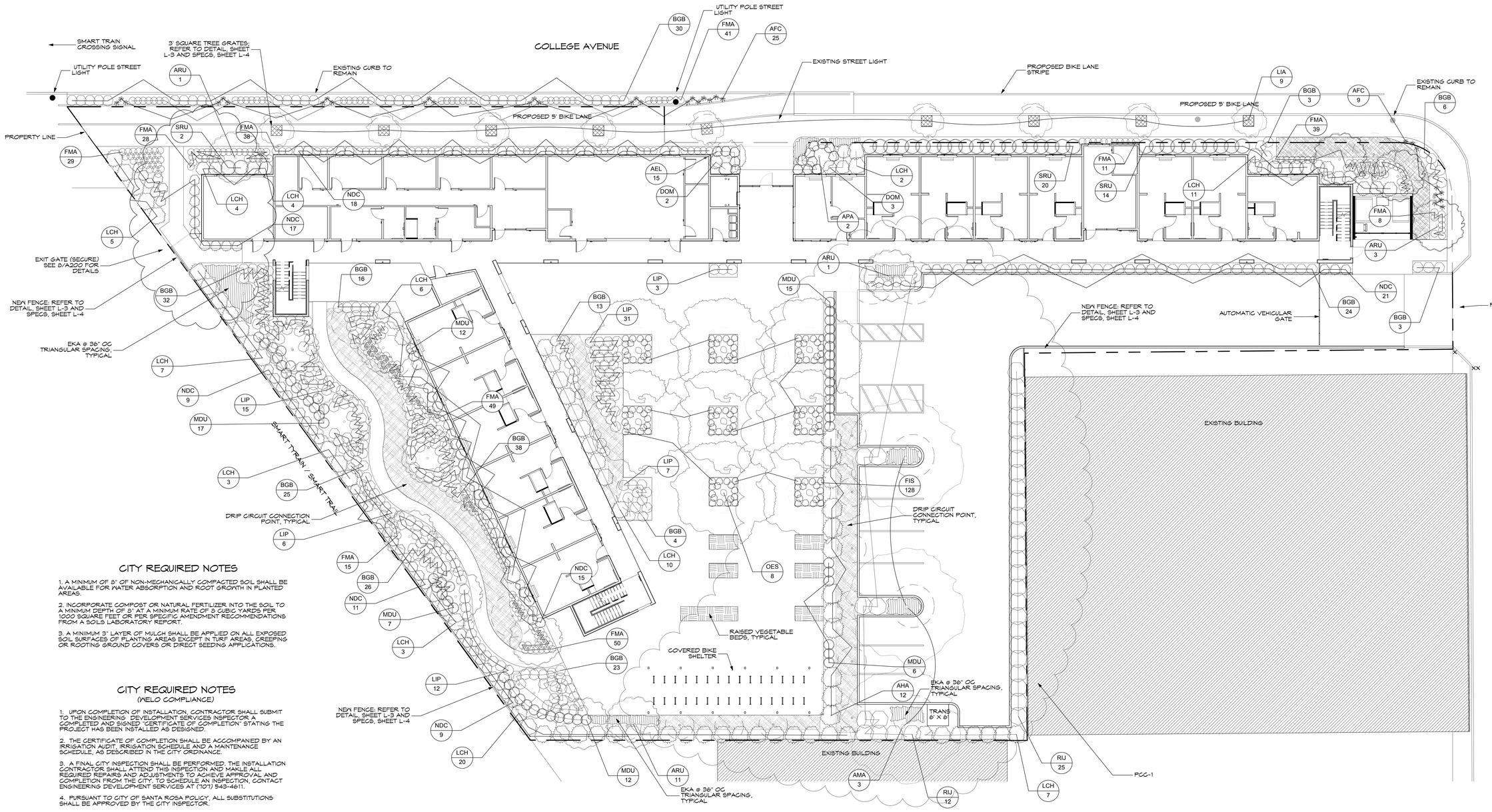
Project Address

80 COLLEGE AVENUE, SANTA ROSA, CA

IRRIGATION PLAN

L-1

THESE DRAWINGS COMPLY WITH THE CRITERIA OF THE ORDINANCE. ORDINANCE REQUIREMENTS HAVE BEEN APPLIED FOR THE EFFICIENT USE OF WATER IN THE IRRIGATION DESIGN PLAN AND THE LANDSCAPE DESIGN PLAN."



CITY REQUIRED NOTES

1. A MINIMUM OF 8" OF NON-MECHANICALLY COMPACTED SOIL SHALL BE AVAILABLE FOR WATER ABSORPTION AND ROOT GROWTH IN PLANTED AREAS.

2. INCORPORATE COMPOST OR NATURAL FERTILIZER INTO THE SOIL TO A MINIMUM DEPTH OF 6" AT A MINIMUM RATE OF 6 CUBIC YARDS PER 1000 SQUARE FEET OR PER SPECIFIC AMENDMENT RECOMMENDATIONS FROM A SOILS LABORATORY REPORT.

3. A MINIMUM 3" LAYER OF MULCH SHALL BE APPLIED ON ALL EXPOSED SOIL SURFACES OF PLANTING AREAS EXCEPT IN TURF AREAS, CREEPING OR ROOTING GROUND COVERS OR DIRECT SEEDING APPLICATIONS.

CITY REQUIRED NOTES
(WELO COMPLIANCE)

1. UPON COMPLETION OF INSTALLATION, CONTRACTOR SHALL SUBMIT TO THE ENGINEERING DEVELOPMENT SERVICES INSPECTOR A COMPLETED AND SIGNED "CERTIFICATE OF COMPLETION" STATING THE PROJECT HAS BEEN INSTALLED AS DESIGNED.

2. THE CERTIFICATE OF COMPLETION SHALL BE ACCOMPANIED BY AN IRRIGATION AUDIT, IRRIGATION SCHEDULE AND A MAINTENANCE SCHEDULE, AS DESCRIBED IN THE CITY ORDINANCE.

3. A FINAL CITY INSPECTION SHALL BE PERFORMED. THE INSTALLATION CONTRACTOR SHALL ATTEND THIS INSPECTION AND MAKE ALL REQUIRED REPAIRS AND ADJUSTMENTS TO ACHIEVE APPROVAL AND CONFIRMATION FROM THE CITY. TO SCHEDULE AN INSPECTION, CONTACT ENGINEERING DEVELOPMENT SERVICES AT (707) 543-4611.

4. PURSUANT TO CITY OF SANTA ROSA POLICY, ALL SUBSTITUTIONS SHALL BE APPROVED BY THE CITY INSPECTOR."

CITY REQUIREMENT OF DOCUMENT OF COMPLIANCE
(ITEMS TO BE INCLUDED WITH CERTIFICATE OF COMPLETION)

A. PROJECT APPLICANT MUST SUBMIT DOCUMENTATION VERIFYING IMPLEMENTATION OF SOIL ANALYSIS REPORT RECOMMENDATIONS TO THE CITY WITH CERTIFICATE OF COMPLETION.

B. THE CERTIFICATE OF COMPLETION MUST BE ACCOMPANIED BY AN IRRIGATION AUDIT THAT CONTAINS THE FOLLOWING:

- OPERATING PRESSURE OF THE IRRIGATION SYSTEM
- DISTRIBUTION UNIFORMITY OF OVERHEAD IRRIGATION
- PRECIPITATION RATE OF OVERHEAD IRRIGATION
- REPORT OF ANY OVERSPRAY OR BROKEN IRRIGATION EQUIPMENT
- IRRIGATION SCHEDULE INCLUDING:

1. PLANT ESTABLISHMENT IRRIGATION SCHEDULE
2. REGULAR IRRIGATION SCHEDULE BY MONTH (SEE ORDINANCE FOR DETAILS)
3. VERIFICATION THAT A DIAGRAM OF THE IRRIGATION PLAN SHOWING HYDROZONES IS KEPT WITH THE IRRIGATION CONTROLLER FOR SUBSEQUENT MANAGEMENT PURPOSES.

- ALL LANDSCAPE IRRIGATION AUDITS MUST BE CONDUCTED BY A CITY CERTIFIED LANDSCAPE IRRIGATION AUDITOR OR A THIRD PARTY CERTIFIED LANDSCAPE IRRIGATION AUDITOR.
- AN IRRIGATION MAINTENANCE SCHEDULE TIMELINE MUST BE ATTACHED TO THE CERTIFICATE OF COMPLETION (SEE ORDINANCE FOR DETAILS).

C. IRRIGATION AUDIT: AN IN-DEPTH EVALUATION OF THE PERFORMANCE OF AN IRRIGATION SYSTEM CONDUCTED BY A CERTIFIED LANDSCAPE IRRIGATION AUDITOR (SEE ORDINANCE FOR DETAILS). THE AUDIT MUST BE CONDUCTED IN A MANNER CONSISTENT WITH THE IRRIGATION ASSOCIATION'S LANDSCAPE IRRIGATION AUDITOR CERTIFICATION PROGRAM OR OTHER U.S. EPA " WATERSENSE " LABELED AUDITING PROGRAM .

SOIL ANALYSIS REPORT 14-30.035:
(REQUIRED BY CITY OF SANTA ROSA):

IN ORDER TO REDUCE RUNOFF AND ENCOURAGE HEALTHY PLANT GROWTH, A SOIL ANALYSIS REPORT SHALL BE COMPLETED BY THE PROJECT APPLICANT, OR THEIR DESIGNEE, AS FOLLOWS:

(1) SUBMIT SOIL SAMPLES TO A LABORATORY FOR ANALYSIS AND RECOMMENDATIONS.
(A) SOIL SAMPLING SHALL BE CONDUCTED IN ACCORDANCE WITH LABORATORY PROTOCOL, INCLUDING PROTOCOLS REGARDING ADEQUATE SAMPLING DEPTH FOR THE INTENDED PLANTS.
2) THE SOIL ANALYSIS SHALL INCLUDE:
(A) SOIL TEXTURE;
(B) INFILTRATION RATE DETERMINED BY LABORATORY TEST OR SOIL TEXTURE INFILTRATION RATE TABLE;
(C) PH;
(D) TOTAL SOLUBLE SALTS;
(E) SODIUM;
(F) PERCENT ORGANIC MATTER; AND
(G) RECOMMENDATIONS.
(3) IN PROJECTS WITH MULTIPLE LANDSCAPE INSTALLATIONS (I.E. PRODUCTION HOME DEVELOPMENTS) A SOIL SAMPLING RATE OF 1 IN 7 LOTS OR APPROXIMATELY 15% WILL SATISFY THIS REQUIREMENT. LARGE LANDSCAPE PROJECTS SHALL SAMPLE AT A RATE EQUIVALENT TO 1 IN 7 LOTS.
(4) THE SOIL ANALYSIS REPORT SHALL BE MADE AVAILABLE, IN A TIMELY MANNER, TO THE PROFESSIONALS PREPARING THE LANDSCAPE DESIGN PLANS AND IRRIGATION DESIGN PLANS TO MAKE ANY NECESSARY ADJUSTMENTS TO THE DESIGN PLANS.
(5) IF A GRADING PERMIT IS REQUIRED, THE SOIL ANALYSIS REPORT SHALL BE SUBMITTED TO THE CITY WITH THE CERTIFICATE OF COMPLETION. IF A GRADING PERMIT IS NOT REQUIRED, THE SOIL ANALYSIS REPORT SHALL BE SUBMITTED TO THE CITY WITH THE LANDSCAPE DOCUMENTATION PACKAGE.
(6) THE PROJECT APPLICANT, OR HIS/HER DESIGNEE, SHALL SUBMIT DOCUMENTATION VERIFYING IMPLEMENTATION OF SOIL ANALYSIS REPORT RECOMMENDATIONS TO THE CITY WITH CERTIFICATE OF COMPLETION."

PCC-1

PLANTING PLAN
Scale: 1" = 10'-0"

0 10 20 FT

PLANTING NOTES

1. ALL GROUND COVER TO BE SPACED IN A TRIANGULAR PATTERN. CONTRACTOR RESPONSIBLE FOR COMPLETE COVERAGE.
2. SUPPLY AGRIFORM 21 GRAM TABLETS AS FOLLOWS: 5-15 GAL., 3-5 GAL., 1-1 GAL.
3. DIG PLANTING PITS 2 TIMES THE DIAMETER AND EQUAL THE HEIGHT OF ROOTBALL.
4. BACKFILL PITS WITH 2/3 EXISTING SOIL, 1/3 ORGANIC AMENDMENT
5. ALL PLANTS TO BE SPOTTED IN THE FIELD BY LANDSCAPE ARCHITECT PRIOR TO PLANTING.
6. WHEN LANDSCAPING IN EXISTING PLANTED AREAS, CONTRACTOR SHALL TAKE CARE NOT TO DAMAGE OR DESTROY ANY EXISTING PLANT MATERIAL OR IRRIGATION. EXISTING PLANT MATERIAL AND IRRIGATION THAT IS DAMAGED SHALL BE REPLACED WITH LIKE, SIZE, QUALITY, ETC. BY THE CONTRACTOR AT HIS EXPENSE.
7. SPECIAL ATTENTION IS TO BE PAID TO THE PLANTING AREAS SURROUNDING THE BUILDINGS. COMPACTED SOIL IS TO BE SUFFICIENTLY EXCAVATED TO ALLOW FOR PROPER ROOT GROWTH AND DRAINAGE OF ALL AREAS. CHECK SOIL FOR PROPER DRAINAGE PRIOR TO PLANTING. AUGER THROUGH COMPACTED SOIL WHERE NECESSARY. DO NOT PLANT IN THE DRAINAGE SWALES.
8. ALL CONSTRUCTION IS TO BE PER ALL APPLICABLE AND PREVAILING CITY OF SANTA ROSA CONSTRUCTION STANDARDS .
9. A SIGNED CERTIFICATE OF COMPLETION IS REQUIRED PRIOR TO FINAL ACCEPTANCE BY THE CITY OF SANTA ROSA. IF THE INSTALLATION OF THE LANDSCAPE DOES MEET OR SUBSTANTIALLY COMPLY WITH THE APPROVED LANDSCAPE CONSTRUCTION DOCUMENTS, THE CERTIFICATE OF COMPLETION WILL NOT BE SIGNED OR APPROVED BY THE LANDSCAPE ARCHITECT OF RECORD.

PLANT LEGEND

SYMBOL	SIZE		COMMON NAME	REMARKS
		TREES		
APA	24	ACER PALMATUM 'BLOODGOOD'	JAPANESE MAPLE	MULTI-TRUNK
ARU	24	ACER RUBRUM 'ARMSTRONG'	SCARLET MAPLE	
AMA	24	ARBUTUS 'MARINA'	MARINA MADRONE	MULTI TRUNK FORM
LIA	24	LAGERSTROEMIA FAUREI X 'ARAPAHO'	CRAPE MYRTLE	
OSH	24	OLEA EUROPAEA 'SWAN HILL'	FRUITLESS OLIVE	MULTI-TRUNK
		SHRUBS		
AHA	5	ARCTOSTAPHYLOS D. 'HARMONY'	HARMONY MANZANITA	
DOM	5	DAPHNE ODORA 'MARGINATA'	WINTER DAPHNE	
LCR	5	LOROPETALUM CHINENSE 'RAZZLEBERRY'	NCN	
NDC	5	NANDINA DOMESTICA 'COMPACTA'	COMPACT HEAVENLY BAMBOO	
RIJ	5	RHAPHIOLEPIS INDICA 'JACK EVANS'	INDIA HAWTHORN	
SRU	5	SARCOCOCCA RUSIFOLIA	SWEET BOX	
		GROUNDCOVER		
CCB	1	COTONEASTER 'CORAL BEAUTY'	COTONEASTER	6' O.C. TRI. SPACING
EKA	1	ERIGERON KARVINSKIANUS	SANTA BARBARA DAISY	36" OC, TRI. SPACING
		PERENNIALS		
AFC	1	ACHILLEA FILIPENDULINA 'CORONATION GOLD'	FERNLEAF YARROW	
BGB	1	BOUTELOUA GRACILIS 'BLONDE AMBITION'	BLONDE AMBITION BLUE GAMA	2' OC, TRI. SPACING
FIS	1	FESTUCA IDAHOENSIS 'SISKIYOU'	IDAHO FESCUE	CALIFORNIA NATIVE
MDU	1	MUHLENBERGIA DUBIA	PINE MUHLY	36" OC, TRI. SPACING
		BIOSWALE/BIORETENTION		
SOD		BIO-FILTER GRASSES	"BIO-FILTRATION SOD"	AS PRODUCED BY DELTA BLUEGRASS (CALIFORNIA NATIVES)
		OTHER		
		MULCH: FIR BARK, 3/4" MINUS		3" DEPTH; ALL LANDSCAPE AREAS

REVIEWED FOR CODE COMPLIANCE BY SSARTLAND CIVIL ENGINEERING, INC. IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

MacNair
LANDSCAPE ARCHITECTURE
POST OFFICE BOX 251
KENWOOD, CA 95452
TEL (707) 833-2288
RLA #2930
don@macnairlandscapes.com

STAMP

REGISTERED LANDSCAPE ARCHITECT DONALD S. MACNAIR NO. 2800 EXP. 8/31/21 STATE OF CALIFORNIA

REVISIONS TO THIS SHEET

REV.	DATE
PCC-1	2020-04-06

SHEET ISSUE DATE

JANUARY 27, 2020

PROJECT TRACKING

MLA #: 2019-32

CONT #: Don MacNair

P.I.C:

PM / PA:

Owner

DANCO

Project Name

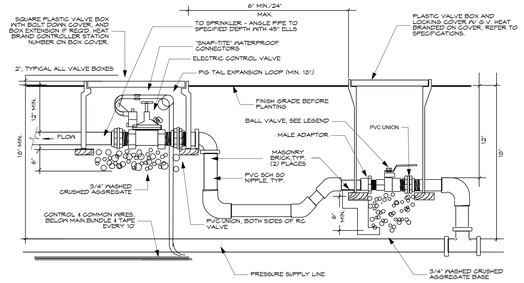
SAGE COMMONS

Project Address

80 COLLEGE AVENUE, SANTA ROSA, CA

PLANTING PLAN

L-2

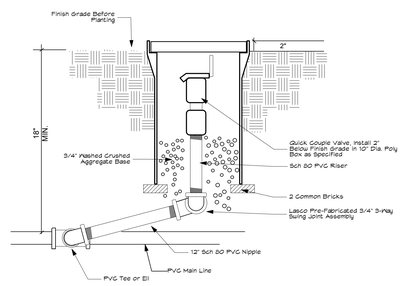


NOTES:

1) INSTALL CONTROL VALVES A MINIMUM OF 18" FROM STRUCTURES OR HARDSCAPING.
2) INSTALL VALVES IN PLANT BEDS WHEREVER POSSIBLE.
3) PLACE VALVE BOX AT RIGHT ANGLES TO STRUCTURES OR HARDSCAPING.
4) INSTALL VALVE BOX SO THAT TOP OF BOX IS FLUSH WITH ADJACENT HARDSCAPING.
5) PLACE AGGREGATE PRIOR TO INSTALLATION OF VALVE BOX.
6) INSTALL VALVE BOXES SO THAT TOP OF BOX IS FLUSH WITH ADJACENT HARDSCAPE.
7) INSTALL ONE BALL VALVE IN BOX IMMEDIATELY UPSTREAM FROM EACH REMOTE CONTROL VALVE.

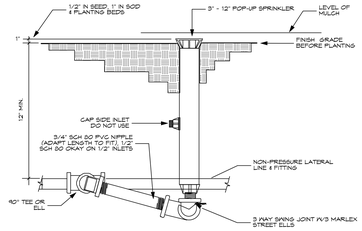
A L-3 ELECTRIC CONTROL VALVE WITH SHUT OFF

NTS



B L-3 QUICK COUPLER DETAIL

NTS



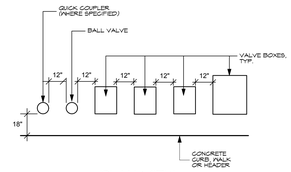
NOTES

1) LOCATE HEAD 6" FROM ALL EDGES IN LAWN AREAS. LOCATE HEAD 12" FROM ALL EDGES IN SHRUB AREAS.
2) LOCATE STREAM SPRAY AND BUBBLERS HEADS 6" FROM ALL EDGES.
3) USE TEFLON PASTE ON ALL MALE THREADS.

C L-3 POP-UP SPRINKLER DETAIL

INCLUDES 4", 6" AND 12"

NTS



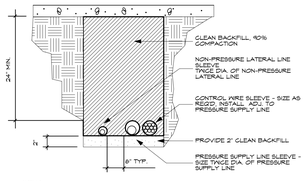
PLAN VIEW

NOTES:

1) CENTER VALVE BOX OVER VALVE ASSEMBLY.
2) LOCATE VALVE BOXES IN GROUND COVER/SHRUB AREAS WHEN POSSIBLE
3) SET VALVE BOXES PARALLEL TO EACH OTHER AND PERPENDICULAR TO EDGE.

D L-3 VALVE BOX LAYOUT

NTS

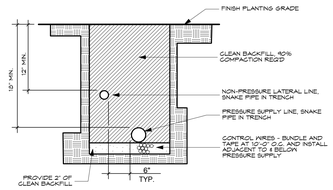


NOTES:

1) ALL SLEEVES TO BE SCH 40 PVC.
2) EXTEND ALL SLEEVES 12" BEYOND EDGE OF HARDSCAPING AT BOTH ENDS.

E L-3 PIPE INSTALLATION UNDER PAVING

NTS

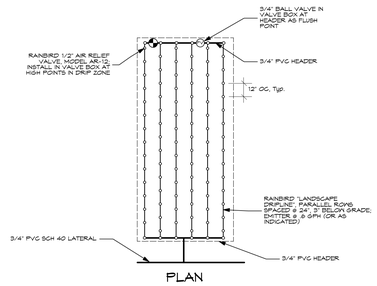


NOTE:

1) PIGTAIL AND LOOP CONTROL WIRE AT ALL CHANGES IN DIRECTION.
2) PROVIDE 10' EXPANSION LOOP AT ALL 90° ANGLES, AND EVERY 100' OF STRAIGHT CURVE RUN.

F L-3 PIPE INSTALLATION UNDER PLANTED AREA

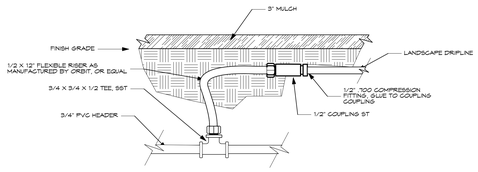
NTS



PLAN

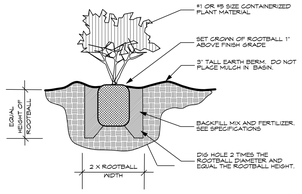
G L-3 DRIP CIRCUIT LAYOUT

NTS



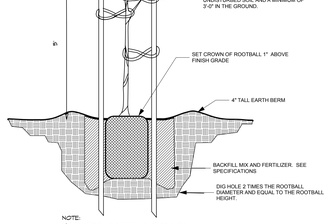
H L-3 POLY TO PVC COMPRESSION FITTING DETAIL

NTS



I L-3 SHRUB PLANTING DETAIL

NTS

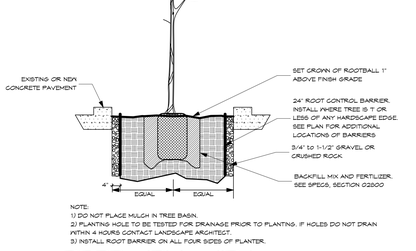


NOTE:

1) DO NOT PLACE MULCH IN TREE BASIN.
2) DETAIL NOT TO SCALE.

J L-3 TREE PLANTING DETAIL

NTS

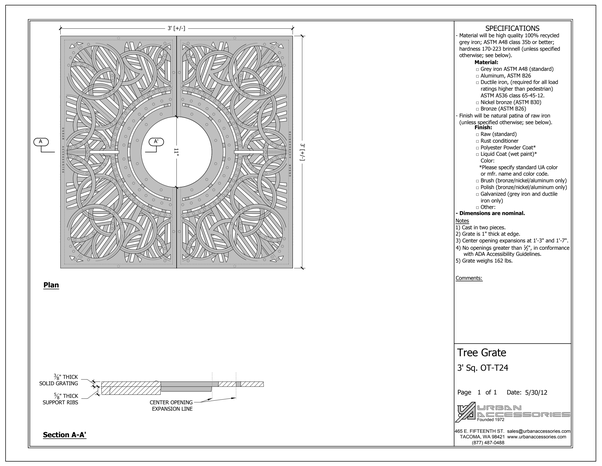


NOTE:

1) DO NOT PLACE MULCH IN TREE BASIN.
2) PLANTING HOLE TO BE TESTED FOR DRAINAGE PRIOR TO PLANTING. IF HOLES DO NOT DRAIN WITHIN 4 HOURS CONTACT LANDSCAPE ARCHITECT.
3) INSTALL ROOT BARRIER ON ALL FOUR SIDES OF PLANTER.

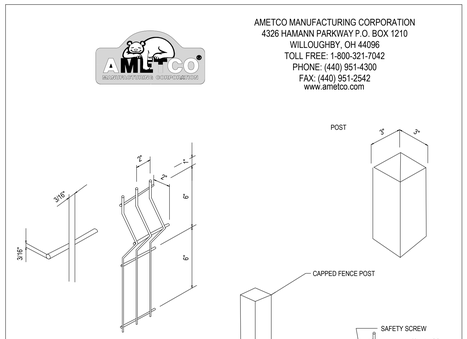
K L-3 TREE WELL WITH ROOT BARRIER

NTS



L L-3 TREE GRATE DETAIL

NTS



NOTES:

1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. DO NOT SCALE DRAWING.
3. THIS DRAWING IS INTENDED FOR USE BY ARCHITECTS, ENGINEERS, CONTRACTORS, CONSULTANTS AND DESIGN PROFESSIONALS FOR PLANNING PURPOSES ONLY. THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION.
4. ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT BUT MUST BE REVIEWED AND APPROVED BY THE PRODUCT MANUFACTURER TO BE CONSIDERED ACCURATE.
5. CONTRACTOR'S NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info AND ENTER REFERENCE NUMBER 048-062.

M L-3 AMOPANEL PANELS

2" x 6" MESH, BASIC SECURITY

048-062 REVISION DATE 08/03/2016

MacNAIR
LANDSCAPE ARCHITECTURE
POST OFFICE BOX 251
KENWOOD, CA 95452
TEL (707) 833-2288
RLA #2930
don@macnairlandscapes.com

STAMP

REGISTERED LANDSCAPE ARCHITECT DONALD G. MACNAIR NO. 2800 EXP. 8/31/21 STATE OF CALIFORNIA

REVISIONS TO THIS SHEET

REV.	DATE

SHEET ISSUE DATE

JANUARY 27, 2020

PROJECT TRACKING

MLA #: 2019-32

CONT #: 2019-32
P.I.C:
PM / PA:

Owner

DANCO

Project Name

SAGE COMMONS

Project Address

80 COLLEGE AVENUE, SANTA ROSA, CA

LANDSCAPE DETAILS

REVIEWED FOR CODE COMPLIANCE BY COASTLAND CIVIL ENGINEERING, INC. IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

L-3

DIVISION 2 SITE WORK
SECTION 02750

UNDERGROUND IRRIGATION SYSTEM

PART 1 GENERAL

1.01 SCOPE

A. Work Included: perform all work necessary and required for the construction of the project as indicated. Such work includes but is not limited to the following:

1. Furnish and install complete irrigation system.
2. Trenching and backfilling.
3. Sleeves for irrigation piping and remote control valve wiring under pavements and walls as noted.

B. Related Work in Other Sections: The following items of associated work are included in other sections of these specifications:

1. Landscaping, Section 02800

C. By Others: The following items of work will be performed by others and are not included in the contract.

1. Electrical stub-out for irrigation controller.
2. Irrigation water meter.
3. Water stub-out(s) for irrigation system.

1.02 INSPECTION OF CONDITIONS: Examine related work and surfaces before starting work of this section. Report to the landscape architect, in writing, conditions which will prevent the proper provision of this work. Beginning the work of this section without reporting unsuitable conditions to the landscape architect constitutes acceptance of conditions by the contractor. Any required removal, repair, or replacement of this work caused by unsuitable conditions to be done at no additional cost to the owner.

1.03 CODES, RULES AND SAFETY ORDERS

A. All work and materials to be in full accordance with the latest rules and regulations of safety orders of Division of Industrial Safety; the Uniform Plumbing Code published by the Western Plumbing Officials' Association; and other applicable laws or regulations, including the presiding local plumbing code. Nothing in these drawings or specifications is to be construed to permit work not conforming to these codes. Should the construction documents, or instructions, be at variance with the aforementioned rules and regulations, notify the landscape architect and get instructions before proceeding with the work affected.

B. Furnish and maintain all warning signs, shoring, barricades, red lanterns, etc., as required by the Safety Orders of the Division of Industrial Safety and local ordinances.

C. Contact U.S.A. for location of underground utilities.

1.04 STANDARDS: American Society of Testing and Materials (ASTM).

1.05 PERMITS AND FEES: Obtain all permits and pay required fees to any governmental agency having jurisdiction over the work. Arrange inspections required by local agencies and ordinances during the course of construction as required.

1.06 APPROVAL: Wherever the terms "approve", "approval", or "approved" are used in the specifications, they mean approval of landscape architect in writing.

1.07 WORK SCHEDULE: Submit a proposed work schedule to landscape architect at least 5 days prior to start of work under this Section. After approval, no modification shall be made to this schedule with out written authorization by the landscape architect.

1.08 OBSERVATION SCHEDULE
Schedule a job start meeting with the landscape architect at least 5 days before beginning work under this Section. All requests for observation must be made 72 hours in advance.

A. Job start meeting

The purpose of this conference is to review questions the contractor may have regarding the work, administrative procedures during construction and project work schedule.

B. Irrigation installation and hydrostatic tests

Observation of installation and hydrostatic test results to be made by the landscape architect prior to backfilling of trenches.

C. Pre-maintenance

When all work has been completed a pre-maintenance walk-through will be conducted. If approved, the 90 calendar day maintenance period will begin.

D. Final Observation

Final Observation will be after the 90 calendar day maintenance period and all required work is completed. Please give 1 week notice for this observation meeting.

1.09 SUBSTITUTIONS

A. Specific reference to manufacturer's names and products specified in this Section are used as standards, but this implies no right to substitute other material or methods without written approval of the landscape architect.

B. Installation of any approved substitution is contractor's responsibility. Any changes required for installation of any approved substitution must be made to the satisfaction of the landscape architect and without additional cost to the owner.

1.10 PROTECTION OF EXISTING CONDITIONS

A. Contractor shall acquaint themself with all site conditions. Should utilities or other work not shown on the plans be found during excavations, contractor shall promptly notify landscape architect for instructions as to further action. Failure to do so will make contractor liable for any and all damage thereto arising from their operations subsequent to discovery of such utilities not shown on plans.

1.11 COORDINATION: Coordinate and cooperate with other contractors to enable the work to proceed as rapidly and efficiently as possible.

1.12 PRODUCT HANDLING: Protect work and materials under this Section from damage during construction and storage. Protect polyvinyl chloride (PVC) pipe and fittings from direct sunlight. Beds on which PVC is stored must be full length of pipe. Do not use any pipe or fitting that has been damaged or dented.

1.13 SAMPLES: Landscape architect reserves the right to take and analyze samples of materials for conformity to specifications at any time. Contractor shall furnish samples upon request by the landscape architect. Rejected material shall be removed from the site immediately and replaced at the contractors expense. Cost of testing materials not meeting specifications shall be paid by contractor.

1.14 HYDROSTATIC TESTS
A. Make hydrostatic tests when welded PVC joints have cured at least 24 hours. Apply continuous static water pressure of 100 psi as follows:

1. All piping on the pressure side of control valves shall be tested for two hours.
2. At completion of hydrostatic test, mainline shall be opened at farthest most point from the location of the pump to verify continuity of the mainline.

B. Leaks resulting from tests shall be repaired and tests repeated until system passes tests.

1.15 "AS-BUILT" IRRIGATION DRAWINGS: Contractor shall furnish Record Drawings of the complete irrigation system. Procure from the landscape architect full sized sepias of Contract Drawings. Construction drawings shall be on the construction site at all times while the irrigation system is being installed. Actual location of valves and all irrigation and drainage piping shall be shown on the prints by dimensions from easily identified permanent features, such as buildings, curbs, fences, walks or property lines. Drawings shall show approved substitutions, if any, of material including manufacturer's name and catalog number. The drawings shall be at scale and all indications shall be neat. All information noted on the print shall be transferred to the prints by contractor and all indications shall be recorded in a neat, orderly way. The record drawings shall be turned over to the landscape architect at or before the Final Acceptance of the project.

1.16 CONTROLLER CHARTS

1. As-built drawings shall be approved by the landscape architect before charts are prepared.
2. Provide one controller chart for each controller supplied.
3. The chart shall show the area controlled by automatic controller and shall be the maximum size controller door will allow.
4. The chart is to be reduced drawing of the actual as-built system. However, in the event the controller sequence is not legible when the drawing is reduced, it shall be enlarged to a size that will be readable when reduced.
5. Chart shall be black line print and a different color shall be used to show area of coverage for each station.
6. The chart shall be mounted using Velcro, or an approved equal.
7.When completed and approved, the chart shall be hermetically sealed between two pieces of plastic, each piece being a minimum 20 mils. thick.
8. These charts shall be completed and approved prior to final inspection of the irrigation system.

1.17 MATERIALS TO BE FURNISHED

A. Prior to final inspection the contractor shall furnish the following materials to the owner:

1. Two wrenches for disassembling and adjusting each type of sprinkler head supplied.
2. Two keys for each automatic controller.
3. Four keys for loose key hose bibs and/or hose bibs.
4. Twelve 12 inch pop-up sprinkler bodies.

1.18 CLEAN-UP: Keep all areas of work clean, neat and orderly at all times. Keep paved areas clean during installation. Clean up and remove all debris from the entire work area prior to Final Acceptance to satisfaction of landscape architect.

1.19 FINAL ACCEPTANCE: Work under this Section will be accepted by landscape architect upon satisfactory completion of all work. Upon Final Acceptance, owner will assume responsibility for maintenance of the work. Said assumption does not relieve contractor of obligations under Warranty.

1.20 WARRANTY: In addition to manufacturer's guarantees or warranties, all work shall be warranted for one year from the date of Final Acceptance against defects in material, equipment and workmanship by contractor. Warranty shall also cover repair of damage to any part of the premises resulting from leaks or other defects in materials, equipment and workmanship to the satisfaction of the owner.

PART 2 MATERIALS

2.01 GENERAL: Materials throughout the system shall be new and in perfect condition. At least 14 days prior to beginning work, submit for approval 2 copies of manufacturer's catalog cuts, specifications, and operating instructions of the complete list of materials and assemblies to be installed. Quantities of materials and equipment need not be included. No deviations from the specifications shall be allowed. The decision of the landscape architect shall be final in the determination of the quality of materials and equipment.

2.02 WATER METERS: Shall be provided by others.

2.03 PIPE

A. Mainline piping on pressure side of irrigation control valves:

1. 2" size and greater to be Polyvinyl Chloride (P.V.C.) 1120-1220, Class 315 and shall conform to ASTM D 2241-73 and D 2672-73.
2. Up to and including 1-1/2" size to be Polyvinyl Chloride (P.V.C.) 1120-1220, Schedule 40 and shall conform to ASTM D 1785-73.
3. Galvanized Steel: Standard wall, Schedule 40, capable of working pressure up to 600 psi shall run from the point of connection to back flow prevention device.
4. Piping from the point of connection to the back flow prevention device shall be as approved by local code.

B. Lateral line piping on non-pressure side of irrigation control valves:

1. 2" size and greater to be Polyvinyl Chloride (P.V.C.) 1120-1220, Class 315 and shall conform to ASTM D 2241-73 and D 2672-73.
2. Up to and including 1-1/2" size to be Polyvinyl Chloride (P.V.C.) 1120-1220, Schedule 40 and shall conform to ASTM D 1785-73.

2.04 FITTINGS

A. PVC Fittings: Schedule 40, Polyvinyl Chloride, high impact weight, as manufactured by Sloane, Lasco, medium or approved equal.

B. Fittings for Galvanized Steel Pipe: Schedule 40, standard weight as manufactured by Grinnell, or approved equal.

C. Connections between main and valves shall be PVC Schedule 80 nipples and fittings.

2.05 SLEEVE MATERIALS

A. For Control Wires: PVC 1120-1220, Class 200 pipe or heavy wall galvanized steel conduit.

B. For Water Lines: PVC 1120-1220, Class 200 pipe or heavy wall galvanized steel conduit.

2.06 IRRIGATION CONTROLLERS

A. Controller to be as shown on plans and is to be installed as per detail and manufacturer's specifications.

2.07 IRRIGATION CONTROL VALVES

A. Remote Control Valves: Valves to be as shown on plans and installed per details and manufacturer's specifications.

2.08 CONTROL WIRE

A. Wire: Solid copper wire, U.L. approved for direct burial in ground. Minimum gauge: #14. Common ground wire shall be white.

B. Splicing Materials: Wire connectors shall be Pentite or snap connectors.

C. All wires shall be labeled with the valve number at the controller and valve.

D. 120 wiring shall be as required by local code and installed by an electrician. It shall not be on a switched circuit.

E. Common wire shall be white. Control wires shall be other than white. Use a different color control wire for each controller.

2.09 VALVE BOXES

A. Remote Control Valves: To be Brooks, Green or approved equal, one per valve.

B. Gate Valves and Control Wire Stub-out Locations: To be Brooks, Green or approved equal, one per valve or stub-out location.

2.10 QUICK-COUPLING VALVES

A. Quick coupling valves to be as per plans and details.

B. Furnish 2 valve keys fitted with hose valve assembly.

C. All valve boxes shall be purple in color or clearly labeled by the manufacturer to designate reclaimed water.

2.11 LANDSCAPE DRIP-LINE: Tubing as shown in legend and drawings.

A. Install in parallel and consistent rows at spacing indicated in all specified areas.

B. Install 3" below grade.

2.12 SPRINKLER HEADS

A. Heads as shown in legend and drawings.

2.13 BACK-FLOW PREVENTION ASSEMBLIES

A. Back-flow prevention device as shown in legend and drawings.

PART 3 EXECUTION

3.01 LAYOUT

A. Layout work as accurately as possible to drawings. Drawings are diagrammatic to the extent that swing joints, offsets and all fittings are not shown.

B. Full and complete coverage is required. Contractor shall make any necessary minor adjustments to layout required to achieve full coverage of irrigated areas at no additional cost to owner.

C. Dig trenches wide enough to allow a minimum of 6 in. between parallel pipe lines. Trenches shall be of sufficient depth to provide minimum cover from finish grade as follows:

1. Over PVC pipe on pressure side of irrigation control valve, control wires and quick coupling valves: 18 inches.
2. Over pipe on non-pressure side of irrigation control valve: 12 inches.

3.03 BACK FLOW PREVENTION DEVICE INSTALLATION

A. Install according to local code and manufacturer's instructions.

B. Install with union on discharge side for servicing, or with flanges, as required.

3.04 SLEEVING

A. Where pipes or wires must be installed under paving place them in sleeves with a 24" minimum depth and sufficient size to accommodate irrigation lines and/or wires.

B. Lack of pipe chase coordination does not relieve the contractor from installing the pipes and control wire shown on the drawing. In the event pipe chases were not installed prior to paving the contractor shall bore under the paving to accommodate pipes and wires.

C. All control wire shall be in Schedule 40 conduit from trench to controller. When valves are grouped together allow 12" between valve boxes, each valve in a separate box, (not to be placed in drainage swales, but kept in ground cover areas.)

3.05 PIPE LINE ASSEMBLY

A. Install pipe in accordance with manufacturer's instructions.

B. Solvent weld all PVC pipe and fittings using solvents (including primer) and methods as recommended by the manufacturer, except where screw connections are required. Clean pipe and fittings of dirt and moisture before assembly. PVC pipe may be assembled on ground surface beside trench. Snake pipe from side to side of trench bottom to allow for expansion and contraction. Make all connections between PVC pipe and metal valves or pipe with threaded fittings using PVC male adapters.

C. Use Teflon tape on all threaded fittings.

D. Thrust blocks shall be installed where the irrigation main changes direction as at ells and tees and where the irrigation main terminates. Pressure tests shall not be made for a period of 36-48 hours following the completion of pouring of the thrust blocks. Concrete thrust blocks for supply mains shall be sized and placed in strict accordance with the pipe manufacturer's specifications and shall be of an adequate size and so placed as to take all thrust created by the maximum internal water pressure.

3.06 IRRIGATION CONTROL VALVES:

A. Install control valves in valve boxes where shown and group together where practical. Place no closer than 18 in. to walk edges, buildings and walls and other valves. Valve boxes shall be placed in relation to finish grade as follows:

1. 1" above grade when no mulch is used
2. 1/2" with seeded lawn
3. 1 1/2" with sod lawn
4. 2" with plant beds

B. The contractor shall paint on the cover of each valve box in 2" white stenciled letters with the value number as designated on the plan.

C. Clearance between the highest part of the valve and the bottom of the valve box lid shall be 2" minimum and 4" maximum. (Lid must not rest on any part of valve and valves must not be buried too deep for convenient access.)

D. Clearance between the top of the piping and the bottom of the valve box and/or the valve box knock outs, shall be a minimum of 2". (The box must not rest on the piping.)

E. Clearance between the valve and the sides of the valve box shall be a minimum of 3".

3.07 SPRINKLER HEADS

A. Install heads as per details.

B. Nozzles may be changed to control precipitation rate and G.P.M. with approval from the landscape architect.

3.08 QUICK COUPLING VALVES: Quick coupling valves to be installed as per detail.

3.09 AUTOMATIC CONTROLLER

A. Install per local code and manufacturer's instructions.

B. Grounding of Irrigation controller shall be as per manufacturer's recommendations and as per local code.

3.10 CONTROL WIRING

A. Install control wires with sprinkler mains and laterals in common trenches wherever possible. Lay to the side of pipe line. Provide looped slack at valves of 18" and snake wires in trench to allow for contraction of wires. Tie wires in bundles at 10 ft. intervals. Provide expansion loop at all 90 degree angles, and every 100' of straight wire run.

B. Control wire splices at remote control valves to be crimped and sealed with specified splicing materials. Line splices will be allowed only on runs of more than 500 ft. All line splices to be in separate valve box.

C. Install one continuous ground wire and one extra wire to all valves.

3.11 CLOSING OF PIPE AND FLUSHING OF LINES

A. Thoroughly flush out all water lines before installing heads, valves and other hydrants.

B. Test as specified.

3.12 PRESSURE TESTS

A. The contractor shall partially backfill, leaving all fittings exposed before testing.

B. Cap all valve openings and test the mainline pipe at full line working pressure and visually check all fittings.

3.13 BACKFILL AND COMPACTING

A. After system is operating and required tests and inspections have been made, backfill excavations and trenches with clean soil, free of rubbish. All pipe shall have a bedding of 2" under and 4" over of select, rock free backfill.

B. Backfill for all trenches, regardless of the type of pipe covered, shall be compacted to minimum 95% density under pavements, 85% under planted areas.

C. Compact trenches in areas to be planted by thoroughly flooding the backfill. Jetting process may be used in those areas.

D. Dress off all areas to finish grades.

E. Any settling more than 1" which may occur during the guarantee period shall be brought to finish grade by the contractor at his expense.

END OF SECTION 02750

SECTION 02800
LANDSCAPING

PART 1 GENERAL

1.01 SCOPE

A. Work Included: Perform all work necessary and required for the construction of the project as indicated. Such work includes but is not limited to the following:

1. Site preparation including weed and rubble removal.
2. Laboratory soil analysis.
3. Furnishing and spreading topsoil.
4. Finish grading of planted areas.
5. Soil amendment.
6. Planting.

B. Related Work: The following items of associated work are included in other sections of these specifications.

1. Section 02750: Underground Irrigation System.

C. By Others: The following items of work will be performed by others and are not included in the contract.

1.02 REQUIREMENTS OF REGULATORY AGENCIES

A. Perform work in accordance with all applicable laws, codes, and regulations required by authorities having jurisdiction over such work and provide for all inspections and permits required by federal, state, and local authorities in furnishing, transporting and installing materials.

B. Certificates of inspection required by law for transportation shall accompany the invoice for each shipment of plants. File copies of certificates with landscape architect after acceptance of material. Inspections of federal and state governments at place of growth does not preclude rejection of plants at project site.

1.03 SELECTION, TAGGING AND ORDERING OF PLANT MATERIAL

A. Submit documentation to landscape architect at least 7 days prior to start of work under this section that all plant material has been ordered. Arrange procedure for observation with landscape architect at time of submission.

B. Plants shall be subject to observation and approval by landscape architect at place of growth or upon delivery for conformity to specifications. Such approval shall not impair the right of observation and rejection during progress of the work. Submit written request for observation of plant material at place of growth to landscape architect. Written request shall state the place of growth and the quantity and variety of plants to be observed. Landscape architect reserves the right to refuse observation at this time if, in his judgment, a sufficient number of plants are not available for observation or not in the landscape architect's contract.

C. Substitution of plant material will not be permitted unless authorized in writing by landscape architect. If proof is submitted that any plant specified is not obtainable, a proposal will be considered for use of the nearest equivalent size or variety with corresponding adjustment of contract price.

1.04 COORDINATION: Contractor shall coordinate and cooperate with other contractors to enable the work to proceed as rapidly and efficiently as possible.

1.05 INSPECTION OF SITE: Contractor shall visit site and inspect conditions as they exist prior to submitting bid. Site dimensions, water pressure and general conditions shall be verified prior to beginning of any work.

1.06 INTENT OF DRAWINGS AND SPECIFICATIONS: It is the intent of the drawings and specifications to provide planting with plants in vigorous growth, ready for owner's use. Any items not specifically shown in the drawings or called for in the specifications, but normally required to conform with such intent, are to be considered as part of the work. Written dimensions take precedence over scale dimensions.

1.07 APPROVAL: Wherever the terms "approve", "approval" or "approved" are used herein, they mean approval of landscape architect in writing.

1.08 PRODUCT HANDLING

A. Furnish standard products in manufacturer's standard containers bearing original labels showing quantity, analysis and name of manufacturer.

B. Store products with protection from weather or other conditions which would damage or impair the effectiveness of the product.

1.09 PROTECTION OF EXISTING PLANTS TO REMAIN

A. Do not store materials or equipment, permit burning, or operate or park equipment within designated plant protection zones as specified on the plans.

B. Notify landscape architect in any case where contractor feels grading or other construction called for by Contract Documents may damage existing plants to remain. Do not proceed with such work until directed by landscape architect.

C. If existing plants are damaged during construction, contractor shall replace such plants of the same species and size as those damaged at no cost to owner. Determination of extent of damage and value of damaged plant shall rest solely with landscape architect.

1.10 GRADING

A. Prior to planting grading will be brought to within .10 + foot of finish grade with soil suitable for planting by the landscape contractor. It is the responsibility of the landscape contractor to verify that no conflict exists with the grading plan. Fine finish grading will be done by the landscape contractor.

B. Finish grade in ground cover areas shall be 2 inches below surrounding concrete or asphalt. In lawn areas, sodded areas shall be 2 inches and seeded areas shall be 1 inch below sidewalks, header boards, or mow strips and examined by the landscape architect, owner, or his representative.

1.11 CLEAN-UP: Keep all areas of work clean, neat and orderly at all times. Keep all paved areas clean during planting and maintenance operations. Clean up and remove all deleterious materials and debris from the entire work area prior to Final Acceptance to the satisfaction of landscape architect. The landscape contractor shall bear final responsibility for proper surface drainage of planted areas. Any prior work done by another party or obstructions on the site which the contractor feels precludes establishing proper drainage shall be brought to the attention of the landscape architect, owner or his representative for correction or the relief of responsibility.

1.12 SAMPLES, TESTS AND SUBMITTALS: Landscape architect reserves the right to take and analyze samples of materials for conformity to specifications at any time. Contractor shall furnish samples and/or manufacturer's specification sheets for any construction material or item upon request by the landscape architect. Rejected materials shall be immediately removed from the site at contractor's expense. The cost of testing materials not meeting specifications shall be paid by the contractor.

1.13 PROJECT SCHEDULE: Contractor shall submit for approval a complete work schedule indicating tentative dates for inspections. This schedule is to be submitted prior to the job start meeting.

1.14 OBSERVATION SCHEDULE: Schedule a job start meeting with the landscape architect at least 5 days before beginning work under this Section. All requests for observation must be made 72 hours in advance.

A. Job Start Meeting
The purpose of this conference is to review questions the contractor may have regarding the work, administrative procedures during construction and project work schedule.
B. Planting - Fine Grading and Soil Preparation
The fine grading and soil preparation of all planting areas must be observed prior to installation of plant material.
C. Plant Material
Landscape architect shall observe plant material for quality prior to planting. Plants shall be subject to observation and approval at place of growth or upon delivery for quality, size and variety; such approval shall not impair the right of inspection and condition of ball and roots, latent defects or injuries. Rejected plants shall be removed immediately from site.
D. Plant Layout
Layout plants (in containers) in locations shown on drawings. Landscape architect will check location of plants in the field and adjust to exact position before planting begins. Landscape architect reserves the right to refuse inspection if, in his opinion, an insufficient quantity of plants is available for layout check.
E. Pre-maintenance
When all work has been completed a pre-maintenance walk-through will be conducted. If approved, the 90 calendar day maintenance period will begin.
F. Final Observation
Final Observation will be after the 90 calendar day maintenance period and all required work is completed. Please give 1 week notice for this observation meeting.

1.15 MAINTENANCE

A. All landscape areas shall be substantially weed free at beginning of maintenance period and at final acceptance.

B. Begin maintenance after each plant and each portion of lawn or ground cover is installed and continue until Final Acceptance.

C. Maintenance Period shall begin upon inspection and approval by landscape architect and shall be for 90 calendar days.

D. Maintenance of new planting shall consist of watering, cultivating, weeding, fertilizing, mulching, re-staking, tightening and repairing of guys, resetting plants to proper grades or upright position, restoration of the plant saucer, and furnishing and applying such sprays and fertilizers as are necessary to keep the plants free of insects and disease and in thriving condition.

E. Protect planting areas and plants at all times against damage of all kinds for duration of maintenance period. Maintenance includes temporary protection fences, barriers and signs as required for protection. If any plants become damaged or injured, treat or replace as directed by landscape architect at no additional cost to owner.

1.16 FINAL ACCEPTANCE: Work under this Section will be accepted by landscape architect upon satisfactory completion of all work, including maintenance, but exclusive of replacement of plant materials under the Warranty Period. Upon Final Acceptance, the owner will assume responsibility for maintenance of the work.

1.17 WARRANTY PERIOD AND REPLACEMENTS

A. Contractor shall warrant that all plant material except annual color planted under this contract will be healthy and in flourishing condition of active growth one year from date of Final Acceptance.

B. Any delay in completion of planting operations which extends the planting period shall extend the Maintenance and Warranty Periods correspondingly.

C. Replace, without cost to owner, and as soon as weather conditions permit, all dead plants and all plants not in vigorous, thriving condition, as determined by landscape architect during and at the end of Warranty Period. Plants shall be free of dead or dying branches and branch tips, and shall bear foliage of a normal density, size and color. Replacements shall closely match adjacent specimens of the same species and shall be subject to all requirements of this specification.

D. Contractor shall not be held responsible for failures due to neglect by owner, vandalism, or acts of god, etc., during Warranty Period. Report such conditions to landscape architect in writing.

PART 2 MATERIALS

2.01 PLANTS

A. Plant Quality: Plants shall be fresh, well established, vigorous, of normal habit of growth, free of disease, insects, insect eggs and larvae. Roots shall be healthy and extend to the bottom and sides of the container, and rooting shall be extensive enough to hold the rood ball together during planting, but not so dense as to discourage root establishment into surrounding soils. Roots shall not show any signs of restriction due to kinked, circular, or distorted growth. No trees will be accepted that will not stand on their own trunks after the nursery stakes have been removed. All plants will be inspected prior to planting and may be rejected if noted quality standards are not met.

B. Plant Quantity: Plant materials shall be furnished in size, quantities, species and at the spacing indicated or as noted on the plans. Ground cover material shall be provided in quantity adequate to fill the entire ground cover areas at the spacing shown.

C. Plant Spacing: No planting, except for ground covers, espaliers and vines shall be placed closer than two feet to pavement, structures or other landscape edges. Ground covers adjacent to pavement, structures or landscape edges shall be no closer to these than 75% of their spacing. No plants that would obstruct the sprinkler coverage shall be placed closer than 30% of the radius of the sprinkler throw as specified by the sprinkler manufacturer at the optimum operating pressure unless approved by the landscape architect.

2.02 LANDSCAPE AREA PLANTING SOILS

A. Soil to be tested by testing agency as per specifications.

B. All landscape area planting soils shall be equal or coarser in texture to the original on-site topsoil. All landscape area soils shall be free from stones larger than 1 in. in size, sub-soil, refuse, plants or roots, clods, weeds, sticks, or other extraneous material. All landscape area soils shall be tested by an approved soils laboratory for horticultural suitability and verified to be capable of sustaining healthy plant life. Landscape area planting soils may be obtained through stockpiling of existing topsoil or imported soil of equal texture and quality as determined by approved soil laboratory analysis.

C. Soil Chemistry: All planting soils shall meet the following soil chemistry paramete rs.

1. Reaction - pH of saturated paste = 5.5 to 7.5
2. Salinity (Electrical conductivity in mmho/cm) = <4.0
3. Sodium Adsorption Ratio (SAR) = <6.0
4. Sodium = <5.0 milliequivalents per liter
5. Chloride = <5.0 milliequivalents per liter
6. Boron (Parts Per Million in extract) = <1.0

D. Soil Fertility: Adequate amounts of nitrogen, potassium, phosphorus, calcium, and magnesium shall be available to support healthy plant growth. Soil shall be analyzed for fertility and any deficiencies shall be treated with inorganic fertilizer amendments prior to planting.

E. Lime Treated Soil: If lime is used for soil compaction in landscape areas, all lime treated soil shall be removed to a depth equal or more to the depth of the treated soil. Soil shall be replaced with import soil as described in the landscape specifications.

2.03 PREPARATION OF LANDSCAPE AREA PLANTING SOILS

A. Prior to any work in planting areas all construction debris shall be removed.

B. Structural fill and/or compacted engineered fill and/or any other soil deemed unsuitable for horticultural use as defined by Sections 2.2-A, 2.2-B and 2.2-C, shall be excavated and removed to a depth of 12 inches in landscape planting areas by the landscape contractor. Replacement planting soil shall be equal or coarser to the on-site soil in texture. This may be obtained through stockpiling of existing topsoil or imported soil of equal quality as determined by approved soil laboratory analysis. It shall be free from stones larger than 1 in. in size, sub-soil, refuse, plants or roots, clods, weeds, sticks, or other extraneous material. It shall be capable of sustaining healthy plant life.

C. All landscape area soils shall be ripped in two directions to a depth of 12 inches. In areas not accessible by large equipment, ripping shall be accomplished by small backhoe or manually to thoroughly cultivate the soil to a depth of 12 inches.

D. Landscape area planting soil, imported or otherwise, shall be spread evenly over the site. Minimum depth of friable soil shall be 12 inches deep in all landscape planting areas and finish surface shall be within one inch of finish grade. Import topsoil shall be supplied by the landscape contractor to meet this requirement and shall meet all specifications as defined Sections 2.2-A, 2.2-B and 2.2-C. Imported landscape area planting soils shall be compacted to 85%± relative compaction. Never apply the topsoil when the site or the topsoil is wet.

2.04 COMMERCIAL FERTILIZER

A. Pre-plant fertilizer for soil incorporation shall consist of the following percent by weight

6% Nitrogen
20% Phosphoric Acid
20% Potash

B. Post Planting/Surface Application Fertilizer:

16% Nitrogen
8% Phosphoric Acid
8% Potash

C. Fertilizer requirement is subject to change based on soil testing for horticultural suitability.

2.05 SOIL AMENDMENTS

A. Organic Amendment: Shall be nitrolized and derived from fir wood residuals.

B. Physical Properties: 1/2" minus fir bark, nitrolized fortified or entranced.

C. Chemical Amendments: As required by soil analysis with approval of landscape architect.

2.06 STAKING MATERIALS

A. Contractor shall use staking materials necessary to meet requirements of specifications, subject to approval of landscape architect.

B. Tree Stakes: 2" x 2" X 8' lodgepole pine pressure treated stakes. Construction heart grade. (Do not drive stakes through the rootball). Use 2 stakes per tree.

C. Tree Ties: Corded rubber tree ties, 18" without wire.

2.07 ROOT BARRIERS

A. "Root Solutions" control planter, or equal. Install according to local code and manufacturer's instructions. Use in all areas where tree is within 7 feet of any walkway, wall, building or other structural edge. Linear type barrier shall be used in all cases. Linear barriers shall be installed a minimum of 7 feet to either side of tree's relative position to sidewalk or structural edge.

B. All root barriers to be 24" deep, interlocking linear panels.

C. All root barriers shall be installed 4" from the back of curb or other hardscape edge with 4" of 3/4" gravel drain rock 24" deep on the root barrier side away from the tree.

2.08 WATER: Furnished by owner. Transport as required.

2.09 MULCH: Fir bark 1" to 2", free of sticks, dirt, dust and other debris, as approved, to a depth of 3" to be placed in all landscaped areas except where flats have been planted or annual beds and drainage swales. Fir bark, 1/2" minus, free of sticks, dirt, dust and other debris, as approved, to a depth of 1" to be placed in all landscaped areas where flats have been planted or in annual beds. Shredded bark mulch shall be used in conjunction with jute netting on all slopes greater than 6:1.

2.10 PRE-EMERGENT WEED CONTROL: All herbicides used to control weeds shall comply with all governmental regulations and shall be appropriate to weed species. Contact the local county agricultural agent or pest control advisor for proper herbicide recommendations. Follow manufacturers instructions carefully

PART 3 EXECUTION

3.01 HANDLING OF PLANT MATERIAL

A. Canned stock shall be removed carefully after cans have been cut on two sides. Do not use spade to cut cans. Do not lift or handle container plants by tops, stems, or trunks at any time.

3.02 PREPARATION OF SUB-GRADE AND/OR EXISTING SOILS

A. Prior to any work in planting areas by landscape contractor, the general contractor shall clear all construction debris from planting areas.

B. Soil shall be ripped in two directions to a depth of 12". In areas not accessible by large equipment, ripping shall be accomplished by small backhoe or manually.

3.03 SPREADING OF TOPSOIL

A. After sub-grade has been prepared, the landscape contractor shall be responsible for furnishing and installing topsoil to within (1) inches of finish grade.

B. Topsoil should be spread evenly over the site. Minimum depth of friable to be 12 inches within five feet of all structures and 24 inches deep in all other areas. If this condition does not exist on the site, the balance of topsoil shall be imported by the landscape contractor to meet this requirement. Import soil shall be compacted to 85% relative compaction. Never apply the topsoil when the site or the topsoil is wet.

3.04 AMENDMENT OF SOIL

A. Apply amendments to all planting and lawn areas at the following rates per 1,000 sq.ft. at zero to eight inches depth:

8 cubic yards organic amendment as specified.
20 pounds pre-plant fertilizer
Additional amendments as determined from soil test

B. Incorporate thoroughly with top 8 in. soil layer and remove stones over 1 in. in diameter, roots, clods, weeds, and other extraneous material. Bring amended soil to finish grades and elevations shown on Contract Documents. Do not work soils under frozen or muddy conditions.

3.05 SURFACE DRAINAGE OF PLANTED AREAS: Landscape Contractor shall bear final responsibility for proper surface drainage of planted areas. Any discrepancy in the drawings or specifications, obstructions on the site, or prior work done by another party, which contractor feels precludes establishing proper drainage shall be bought to the attention of landscape architect in writing for correction or relief of said responsibility.

3.06 EXCAVATION OF PLANTING AREAS

A. Excavate container grown tree, shrub, and vine pits to the following dimensions:

1. Two times as large in diameter as the original growing container (Rhododendron and azaleas 3 times the diameter)
2. The depth should be equal to the root ball height.

B. Scarify all sides of planting hole. Auger through structural fill, compacted soil or hardpan if encountered or as directed by landscape architect.

3.07 DRAINAGE, DETRIMENTAL SOIL AND OBSTRUCTIONS

A. Notify landscape architect in writing of all soil or drainage conditions contractor considers detrimental to growth of plant material. State condition and submit proposal and cost estimate for correcting condition.

3.08 PLANTING OPERATIONS

A. Protect plants at all times from sun or drying winds. Plants that cannot be planted immediately on delivery shall be kept in the shade, well protected, and shall be kept well watered.

B. Planting Soil (excluding trees):

2/3 Existing Soil
1/3 Organic Amendments

C. Prior to planting test hole for drainage by filling with water, if hole does not drain within four hours, do not plant. Contact landscape architect.

D. Use planting soil to backfill plant pits. Crown of root ball shall be 1" above finished grade. Set plant plumb and brace rigidly in position until planting soil has been tamped solidly around the ball and roots. When plant pits have been backfilled approximately 2/3 full, water thoroughly, saturating rootball, before installing remainder of the planting soil to top of pit, eliminating all air pockets.

E. Smooth planting areas to conform to specified grades after full settlement has occurred.

F. Form saucer with 4 in. high berm around tree and shrub pits 12 inches wider that the root ball diameter.

G. Water all plants immediately after planting.

3.09 STAKING

A. Staking shall be completed immediately after planting. Plants shall stand plumb after staking.

B. Locate stakes in position relative to the prevailing wind as shown on detail.

C. Attach tree straps as per details.

D. Need for auxiliary stake shall be determined in the field by the landscape architect and shall only be used when trees are exceptionally spindly. If necessary, place auxiliary stake adjacent to tree leader and tie with polyethylene nursery tape at 10 inch intervals. Auxiliary stake to be bamboo or equal.

3.10 PRUNING: Prune plants only at the time of planting and according to standard horticultural practices to preserve the natural character of the plant. Trees shall be pruned at the direction of the landscape architect in accordance with current I.S.A. Standards. Remove all dead wood, suckers and broken or badly bruised branches. Use only clean sharp tools. Do not prune to compensate for root loss. Landscape contractor is responsible for replacement of all improperly pruned plant material.

3.11 GROUND COVER PLANTING

A. Plant ground cover plant at optimum depth for proper growth. Do not bury deeper than the original soil level which was established in the nursery can. Avoid air pockets.

B. Apply post plant or surface application fertilizer at the rate of 5 lbs. per 1000 sq.ft. Water bed thoroughly after fertilizer application. Wash all fertilizer from leaves of plant materials.

3.11 BIOSWALE SOD

A. To be "Biofiltration Sod" as produced by Delta Bluegrass Company, or approved equal.

3.12 SOD BED PREPARATION

A. Roll amended soil with 200 lb. water ballast roller.

B. Sod immediately thereafter, provided the sod bed has remained in a friable condition.

3.13 SODDING OPERATIONS

A. Sod must be delivered to site within 24 hours of cutting. Lay sod so that adjacent strips butt tightly with no spaces between strips. Lay sod on slopes and mounds with strips parallel to contours. Stagger joints and do not overlap seams. Sodded areas shall be flush with adjoining seeded areas.

B. Tamp and roll sod thoroughly to make contact with sod bed.

C. Apply post planting fertilizer at a rate of 5 lbs. per 1000 s.f.

D. Water sod thoroughly.

E. No portion of the sod lawn will be allowed to dry out until the sod is well rooted.

F. Supplemental Temporary Irrigation: Contractor shall be responsible for temporary supplemental irrigation of all bio-retention areas through the sod establishment period. Method of irrigation application is discretionary and may include hand watering or installation of a temporary, above grade overhead spray circuit. Any replacement of sod necessary for loss or damage to sod due to lack of water shall be the responsibility of the contractor at contractor's expense.

PART 4 TREE PRESERVATION

4.01 CONSTRUCTION IMPACT: The impact of construction within the project area will be minimal when appropriate protection measures are implemented. The following specifications have been developed to minimize impact on the area.

A. The landscape architect shall be called to inspect and verify staked location of trenches within the project zone. No trenching, pruning or tree removal shall take place without the approval of the landscape architect.

B. The smallest possible equipment shall be used for all construction work to minimize damage to the existing trees.

C. If the installation of storm drains or irrigation lines is to occur within the drip line of any major tree, a professional arborist shall be called upon to inspect the tree and determine whether head pruning will be necessary to balance the projected loss of roots.

D. Following completion of grading, all soil shall be brought back to original grade. No additional soil shall be allowed to remain at the base of any shrub or tree, and grade shall not be changed to allow collection of surface drainage at the base of any shrub or tree.

E. Minimal disturbance to the natural setting is to occur during trenching and installation of pipe lines. The mainlines are to be set 18" below grade.

F. Trenches shall be the minimum width possible to accommodate the specified diameter of pipe.

G. Existing foliage shall be preserved wherever possible. When it becomes necessary to remove any limbs from remaining trees the following guidelines shall be followed:

1. No branches shall be damaged or broken.
2. Prior to installation of lines it shall be determined what foliage needs to be removed and pruning shall be done using a sharp saw.
3. Limbs shall be removed back to the nearest lateral branch or trunk, using a flush cut.
4. All cuts shall be painted with a commercial asphaltic compound designed specifically for covering pruning wounds.

H. No roots over 2" in diameter shall be torn or damaged. When it becomes necessary to remove any major roots over 2" in diameter, a sharp saw shall be used and the wound treated as described in G-4 above.

I. Following the installation of the pipelines all soil from the trenches shall be brought back to the original grade. No soil shall be allowed to remain at the base of any tree or shrub, and grade shall not be changed to allow collection of surface drainage at the base of any tree or shrub.

J. All pruning and plant debris associated with the installation shall be removed from the site and disposed in an appropriate manner.

4.02 IMPACT OF GRADING :Protection of all existing trees within the construction zone is to be given the highest priority. As described in the following section, the trees within the project area will be protected by a temporary construction fence during all construction phases, including rough and final grading. Grade changes will be prevented around the base of these trees by this fence, and the impact of grading will be negligible as it will occur outside the drip line of all trees.

4.03 MEASURES TO PROTECT VEGETATION FROM CONSTRUCTION ACTIVITIES: A minimum six foot cyclone fence shall be erected aRound the drip line of all trees located within the project area prior to the beginning of any construction activities, including grading. General Contractor shall direct all equipment, subcontractors and personnel to remain outside the fenced area. Warning signs shall be posted on the fence indicating a protected area. As shown on the irrigation plan the cyclone fence will be placed around all existing trees to be saved. The purpose of this fence is to discourage the parking of vehicles under the trees and prevent grading or storage of material too close to the tree trunks.

END OF SECTION 02800

SECTION 32 31 16

ORNAMENTAL WELDED WIRE FENCES AND GATES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes: Welded wire mesh, modular fencing panels, including tubular steel posts and gates.

B. Related sections:

1. Section 03 30 00 - Cast-in-Place Concrete: Concrete footings for support of fence posts.

1.2 REFERENCES

A. ASTM International (ASTM):

1. ASTM A123 - Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.

2. ASTM A500 - Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.

1.3 SUBMITTALS

A. Provide in accordance with Section 01 33 00 - Submittal Procedures:

1. Product data for components and accessories.

2. Shop drawings showing layout, dimensions, spacing of components, and anchorage and installation details.

3. Sample: 8 by 10 inches minimum size sample of fence panel illustrating design, fabrication workmanship, and selected color coating.

4. Copy of warranty specified in Paragraph 1.4 for review by Architect.

1.4 WARRANTY

A. Provide in accordance with Section 01 77 00 - Closeout Procedures:

1. Factory finish: 20-year warranty against cracking, peeling, and blistering under normal use.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Ametco Manufacturing Corporation, 4326 Hamann Parkway, P.O. Box 1210, Willoughby, Ohio 44096; 800-362-1360.

B. Requests to use equivalent products of other manufacturers shall be submitted in accordance with Section 01 25 13 - Product Substitution Procedures.

2.2 MATERIALS

A. Wire: Galvanized steel wire.

B. Steel bar stock: ASTM A36.

C. Steel tubing: ASTM A500, Grade B.

D. Steel sheet: ASTM A526 galvanized or ASTM A792 Galvalume.

E. Grout: Non-shrink type, pre-mixed compound consisting of non-metallic aggregate, cement, and water-reducing and plasticizing additives.

2.3 FENCE SYSTEM

A. Type: Ornamental steel fencing system consisting of welded wire mesh modular fence panels with formed reinforcing ribs, tubular steel posts, and strap-type panel fasteners and designed for basic-security applications; Amopanel Design as manufactured by Ametco Manufacturing Corporation.

B. Fence panels: Fabricated from 3/16 inch diameter galvanized wire welded to form open mesh.

1. Vertical wire spacing: 2 inches.

2. Horizontal wire spacing: 8 inches

3. Reinforcing ribs: V shaped, horizontal ribs formed by bends in vertical wires and 3 welded horizontal wires. Locate at top and bottom of fence panel and at intermediate points as required by panel height.

4. Pickets: Form by extending vertical wires 1 inch above top horizontal wire.

5. Size: 98-13/16 inches wide by 78 inches high.

6. Panel fastener: K-shaped strap fastener, synthetic retainer, and safety screw to anchor panels to face of post.

2.4 POSTS

A. Type: Steel tubes fabricated from ASTM A526 galvanized steel or ASTM A792 Galvalume steel as selected by manufacturer for type and size of fencing. [Provide post faced with vertical, V-shaped, recessed channels to receive wire edge of fence panel.

B. Size:

1. Fence posts: 2 by 2 inches.

2. Gate posts: 4 by 4 inches.

C. Wall thickness: 12 gage.

D. Length: 86 inches.

E. Equip posts with plastic top caps.

F. Factory drill posts to receive fence panel attachment fasteners.

2.5 GATES

A. Type: Hinged swinging single gate.

B. Construction: Welded frame fabricated from 2 by 2 inches steel tubing with welded wire panel to match fencing.

C. Nominal size: 48 inches wide by 78 high.

D. Hardware: Equip gates with manufacturer's standard hardware required for functional operation.

1. Hinges: Size and type as determined by manufacturer. Provide 2 hinges for each leaf up to 6 feet height and 1 additional hinge for each additional 24 inches in height or fraction thereof.

2. Latch: 3/4 inch slide bolt to accommodate padlock.

3. For double gates provide pad-lockable, center cane bolt assembly and strike.

2.6 FACTORY FINISH

A. Steel fence panels and posts shall be hot-dip galvanized to 1.25 ounces per square foot minimum zinc coating in accordance with ASTM A123 or provided with Galvalume coating complying with ASTM A792. Standard size components shall receive polyester powder coating. Large gate panels shall be coated with 2-part polyurethane coating.

B. Polyester powder coating: Electrostatically applied colored polyester powder coating heat cured to chemically bond finish to metal substrate.

1. Minimum hardness measured in accordance with ASTM D3363: 2H.

2. Direct impact resistance tested in accordance with ASTM D2794. Withstand 160 inch-pounds.

3. Salt spray resistance tested in accordance with ASTM B117: No undercutting, rusting, or blistering after 500 hours in 5 percent salt spray at 95 degrees F and 95 percent relative humidity and after 1000 hours less than [3/16 inch] [5 mm] undercutting.

4. Weatherability tested in accordance with ASTM D822: No film failure and 88 percent gloss retention after 1 year exposure in South Florida with test panels tilted at 45 degrees.

C. Polyurethane coating: 1.0 mil dry film thickness of coating of steel test panel cured 30 minutes at 180 degrees F and aged 14 days shall resist the following test conditions without failure:

1. 5 percent salt spray for 500 hours.

2. 100 percent relative humidity for 1000 hours.

3. Water immersion for 100 hours.

4. 20 double rubs with cloth saturated with either lacquer thinner, acetone, MEK, gasoline, or xylene.

5. Exposure to lubricating oils, hydraulic fluids, and cutting oils.

6. 16 cycles of 24 hours at 100 percent humidity, 24 hours at 10 degrees F, and 24 hours at 77 degrees F.

7. Hardness: H to 2H.

8. Flexibility: 1/8 inch conical mandrel.

D. Color: Black Velvet as manufactured by Ametco Manufacturing Company.

PART 3 - EXECUTION

3.1 PREPARATION

A. Prior to fabrication, field verify required dimensions.

B. Cast concrete footings in accordance with Section 03 30 00 - Cast-in-Place Concrete as detailed on Drawings and approved shop drawings.

1. Minimum footing diameter:

a. Terminal and gate posts: 12 inches.

b. Intermediate line posts: 10 inches.

2. Allow 8 inches minimum embedment of posts.

3. Allow 6 inches minimum concrete beneath post bottom.

C. Provide setting holes for embedment of fence posts. Hole shall be 2 inches minimum greater than post width.

3.2 INSTALLATION

A. Install fencing in accordance with manufacturer's installation instructions and approved shop drawings.

B. Install fence posts plumb and level by setting post in hole drilled in concrete and grouting solid. Temporarily brace fence posts with 2 by 4 wood supports until concrete is set.

C. Do not install bent, bowed, or otherwise damaged panels. Remove damaged components from site and replace.

D. Install fence panels to posts after posts have been set in footings and concrete is cured.

1. Secure wire fence panels with fastener type as recommended by manufacturer.

2. Space fasteners and secure to posts at spacing indicated on approved shop drawings.

3. Attach channel-shaped connectors over joints between abutting horizontal bars.

E. Install gates and adjust hardware for smooth operation.

F. Attach plastic caps to steel posts.

G. Touch-up damaged finish with paint supplied by manufacturer and matching original coating.

END OF SECTION

SECTION 32 94 43

TREE GRATES

PART 1 GENERAL

1.1 SECTION INCLUDES
A. Tree Grate and installation frames.

1.2 SUBMITTALS

A. Contractor shall submit three set(s) of drawings of tree grates and frames for review by architect prior to purchase and installation.

1.3 QUALITY ASSURANCE

A. Manufacturer Qualifications: Minimum 25 years tree grate manufacturing experience.

a. Castings will be squared and flat, free of burrs, slag, air pockets, blow holes, flashing and grinding or welding on exposed surfaces. Excessive warping or shrinkage is not acceptable.

b. All visible welds on installation frames to be ground smooth. Frames will be true to specified diameter.

B. Installer qualifications: 2 years minimum experience installing tree grates and support frames.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Inspect material immediately upon delivery, noting on delivery receipt all damage and/or discrepancy between delivered material and packing slip

B. Store product in manufacturer's packaging until ready to install.

1.5 WARRANTY

A. Tree grates and frames shall be warranted by the Manufacturer against defects in materials and workmanship for a minimum of one (1) year.

PART 2 PRODUCTS

2.1 TREE GRATES AND FRAMES:

A. Manufacturer: Tree Grates and Frames shall be as supplied by Urban Accessories, Inc., 465 East Fifteenth Street, Tacoma, WA 98421 - PH: (253) 572-1112 or sales@urbanaccessories.com.

B. Tree Grates shall be: OT Title 24, 3' square, as per drawings.

a. Tree Grate material shall be high quality, 100% recycled, cast grey iron, per ASTM A48 class 35b or better; hardness 170-223 brinnell.

b. Finish on Tree Grates shall be Raw Natural Finish.

C. Tree Grate Frames shall be Type "S" Frames, for embedded installation into new concrete surround.

a. Tree Grate Frame material shall be mild steel angle iron and other shapes as necessary, per ASTM A36

b. Finish on Tree Grate Frames shall Raw Natural Finish

PART 3 EXECUTION

3.1 EXAMINATION

A. Do not begin installation until site is properly prepared.

B. If substrate preparation is the responsibility of another trade, please coordinate with and notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPERATION
A. Clean surfaces thoroughly prior to installation

B. Prepare surface as needed to perform installation per manufacturer's recommendation.

3.3 INSTALLATION
A. Install tree grates in relation to adjacent paving surface with uniformity of appearance, in locations as indicated on plans.

B. Install tree grate frames by incorporating them into the tree pit forming material, taking care to insure that the frame is on an FLAT PLANE, and sufficient bracing is in place to prevent frame deformation during concrete pouring and curing.

C. Clean concrete debris from tree grate frame.

D. Install tree grate, grinding leveling pads and shimming as needed to hold tree grates level and prevent rocking. Gap between grate and frame in finished installation shall not exceed 1/8" on all sides.

END OF SECTION

MACNAIR
LANDSCAPE ARCHITECTURE
POST OFFICE BOX 251
KENWOOD, CA 95452
TEL (707) 833-2288
RLA #2800
don@macnairlandscapes.com

STAMP

REGISTERED LANDSCAPE ARCHITECT
DONALD G. MACNAIR
NO. 2800
EXP. 8/31/21
STATE OF CALIFORNIA

REVISIONS TO THIS SHEET
REV. DATE

SHEET ISSUE DATE

JANUARY 27, 2020

PROJECT TRACKING
MLA #: 2019-32

CONT #: 2019-32
P.I.C:
PM / PA:

Owner
DANCO

Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE,
SANTA ROSA, CA

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

LANDSCAPE SPECIFICATIONS

L-4

ARCHITECTURAL ABBREVIATIONS

&	AND
(E)	EXISTING
@	AT
ACT	ACOUSTIC CEILING TILE
ADJ	ADJACENT
AFF	ABOVE FINISHED FLOOR
AV	AUDIO / VISUAL
BD.	BOARD
BLW	BELOW
BOC	BOTTOM OF CONCRETE
BOS	BOTTOM OF SLAB
BOT	BOTTOM
BOTT	BOTTOM
CJ	CONTROL JOINT
CL	CENTER LINE
CLG	CEILING
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
COMP	COMPENSATING
CONC	CONCRETE
CONT.	CONTINUOUS
D.J.	DRIFT JOINT
DBL	DOUBLE
DEPR	DEPRESSION
DIA.	DIAMETER
DS	DOWN SPOUT
DW	DISHWASHER
DWG	DRAWING
DWR	DRAWER
ELEV	ELEVATION
ELEV	ELEVATOR
ENC	ENCLOSURE
ENT.	ENTRY
EQ	EQUAL
F.O.	FACE OF
F.O.F.	FACE OF FINISH
FC	FAN COIL
FCS	FIBER CEMENT SIDING
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FIN	FINISH
FLR, FL	FLOOR

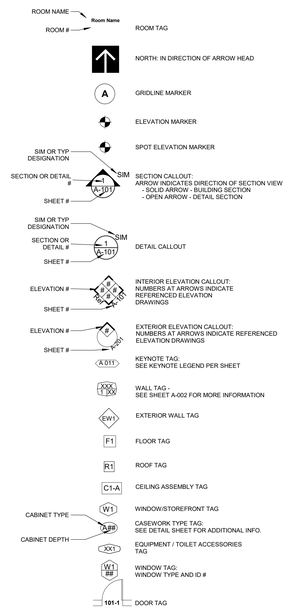
ARCHITECTURAL ABBREVIATIONS

FO	FACE OF
FR	FIRE RATED
FRMG	FRAMING
FRP	FIBER REINFORCED PLASTIC
FS	FIRE SPRINKLER
GF	GROUND FLOOR
GL	GLAZING
GWB	GYPSUM WALL BOARD
GYP	GYPSUM WALL BOARD
HGT	HEIGHT
HR	HOUR
HR	HANDRAIL
HS	HOLLOW STEEL
INSUL	INSULATION
LCKR	LOCKER
LOC	LOCATION
MATL	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MEMB	MEMBRANE
MFR	MANUFACTURER
MIN	MINIMUM
MIR	MIRRORED
N.I.C.	NOT IN CONTRACT
N.T.S.	NOT TO SCALE
N/A	NOT APPLICABLE
O.C.	ON CENTER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED OWNER INSTALLED
OPNG	OPENING
OPP	OPPOSITE
PLAM	PLASTIC LAMINATE
PTD	PAINTED
R.O.	ROUGH OPENING
RCB	RUBBER COVE BASE
RCP	REFLECTED CEILING PLAN
REF	REFRIGERATOR
REINF	REINFORCING
REQ	REQUIRED
SAM	SELF-ADHERING MEMBRANE
SF	STOREFRONT
SF	SQUARE FEET
SHWR	SHOWER
SIM	SIMILAR
SPEC	SPECIFICATIONS

ARCHITECTURAL ABBREVIATIONS

SQ	SQUARE
SS	STAINLESS STEEL
STFT	STOREFRONT
STL	STEEL
STRUC	STRUCTURE
SUSP	SUSPENDED
TBD	TO BE DETERMINED
TOC	TOP OF CONCRETE
TOF	TOP OF FOOTING
TOS	TOP OF SLAB
TWF	THROUGH WALL FLASHING
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
W/	WITH
W/I	WITHIN
W/O	WITHOUT
WA	WALL ASSEMBLY
WH	WATER HEATER
WP	WATER PROOFING
WRB	WEATHER RESISTANT BARRIER

DRAWING SYMBOLS KEY AND ABBREVIATIONS



ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REVISIONS TO THIS SHEET

REV.	DATE

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner

DANCO

Project Name

SAGE COMMONS

Project Address

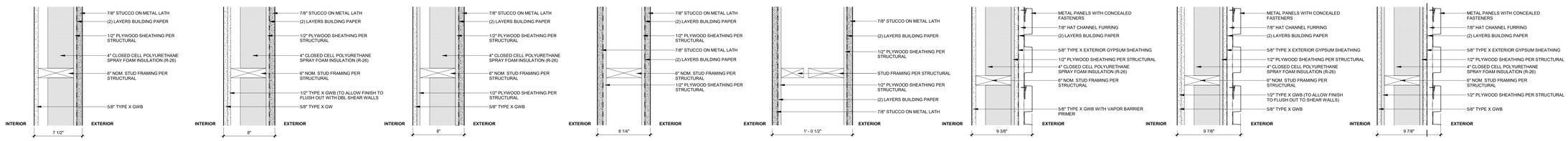
80 COLLEGE AVENUE
SANTA ROSA, CA

LEGENDS - NOTES - ABBREVIATIONS

A-001

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

6/4/2020 4:44:28 PM



EW1
STUCCO EXTERIOR / GWB INTERIOR

1HR RATED
CBC 721.1(2)15-1.3 / UL V333

STUCCO EXTERIOR / GWB INTERIOR

1HR RATED
CBC 721.1(2)15-1.3 / UL V333

ARCHITECTURAL DRAWINGS TO NOT SHOW SHEAR WALL LOCATIONS ON PLANS--REFER TO STRUCTURAL DRAWINGS FOR LOCATIONS

STUCCO EXTERIOR / GWB INTERIOR - DOUBLE SHEAR

1HR RATED
CBC 721.1(2)15-1.3 / UL V333

ARCHITECTURAL DRAWINGS TO NOT SHOW SHEAR WALL LOCATIONS ON PLANS--REFER TO STRUCTURAL DRAWINGS FOR LOCATIONS

EW2
STUCCO EXTERIOR ALL SIDES

1HR RATED
CBC 721.1(2)15-1.3

EW3
STUCCO EXTERIOR ALL SIDES

1HR RATED
CBC 721.1(2)15-1.3

EW4
METAL PANEL EXTERIOR / GWB INTERIOR

1HR RATED
GA 8105

METAL PANEL EXTERIOR / GWB INTERIOR

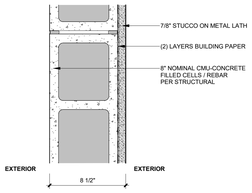
1HR RATED
GA 8105

ARCHITECTURAL DRAWINGS TO NOT SHOW SHEAR WALL LOCATIONS ON PLANS--REFER TO STRUCTURAL DRAWINGS FOR LOCATIONS

METAL PANEL EXTERIOR / GWB INTERIOR - DBL SHEAR

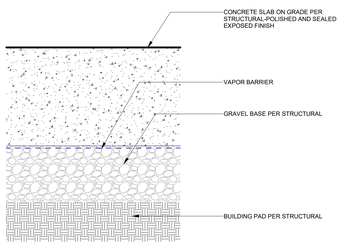
1HR RATED
GA 8105

ARCHITECTURAL DRAWINGS TO NOT SHOW SHEAR WALL LOCATIONS ON PLANS--REFER TO STRUCTURAL DRAWINGS FOR LOCATIONS

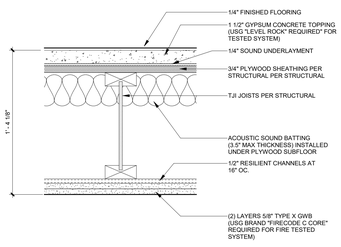


EW5
STUCCO / CMU EXTERIOR

1 WALL TYPES - EXTERIOR
1 : 6



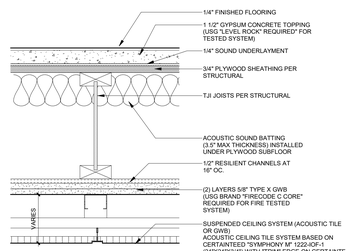
F1
CONCRETE SLAB ON GRADE



F2
TYPICAL WOOD FLOOR SYSTEM

1HR RATED
GA FC 5011 (PROPRIETARY)

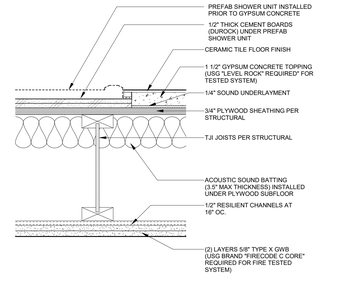
SOUND RATING:
60-64 STC (RAL OT03-05)



F2-A
TYPICAL WOOD FLOOR SYSTEM

1HR RATED
GA FC 5011 (PROPRIETARY)

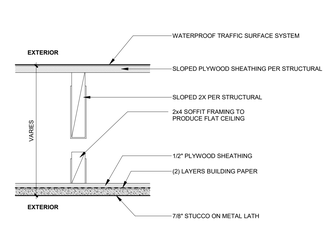
SUSPENDED ACOUSTIC CEILING TILE PER SEISMIC ZONE "E" ASSEMBLY REQUIREMENTS BY MANUFACTURER SEISMIC BRACING NOT REQUIRED FOR CEILINGS UNDER 1000 SF PER ASTM E580 REF 5.2.8.1.



F2-B
TYPICAL WOOD FLOOR SYSTEM-UNDER PREFAB SHOWERS

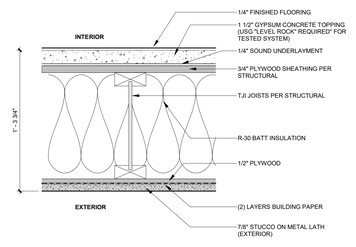
1HR RATED
GA FC 5011 (PROPRIETARY) UNDER CERAMIC TILE FINISH

GA FC 5241 (GENERIC) UNDER PREFAB SHOWER UNIT.
NOTE: THIS ASSEMBLY DOES NOT REQUIRE GYPSUM CONCRETE TOPPING FOR 1-HOUR RATING.



F3
EXTERIOR WALKWAY FLOOR SYSTEM

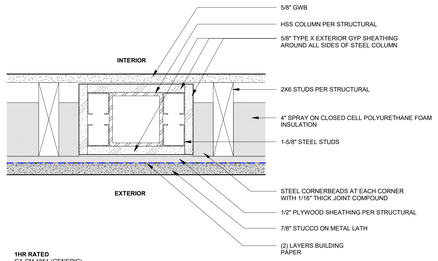
1 HR RATED
GA RC 2601 AND CBC 721.1(2)15-1.3 FOR STUCCO LAYER



F4
CANTILEVERED WOOD FLOOR SYSTEM (EXTERIOR SOFFIT)

1HR RATED
GA FC 5011 (PROPRIETARY) AND CBC 721.1(2)15-1.3 FOR STUCCO LAYER

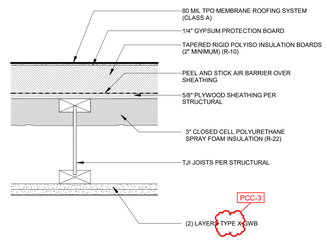
2 FLOOR TYPES
1 : 6



1HR RATED
GA CM 1851 (GENERIC)

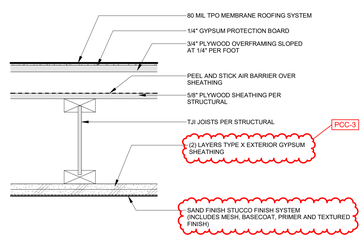
REQUIRED FOR ALL PRIMARY STRUCTURAL STEEL COLUMNS LOCATED WITHIN FRAMED WALL ASSEMBLY. THE ENCASEMENT ASSEMBLY MUST BE INTALLED PRIOR TO GWB INSTALLATION

4 TYPICAL STEEL COLUMN ENCASEMENT DETAIL
3" = 1'-0"



R1
TYPICAL ROOF SYSTEM

1HR RATED
CBC TABLE 721.1 (3) FLOOR OR ROOF #21



R2
TYPICAL ROOF SYSTEM

1HR RATED
CBC TABLE 721.1 (3) FLOOR OR ROOF #21

3 ROOF TYPES
1 : 6

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REGISTERED ARCHITECT JOHN ROWELL C28507 12-31-2021 Renewal Date STATE OF CALIFORNIA

REVISIONS TO THIS SHEET

REV.	DATE
PCC-3	2020.06.05
PCC-2	2020.05.15
PCC-1	2020.04.06

SHEET ISSUE DATE
2020-01-27 PERMIT SET

PROJECT TRACKING
RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

Project Name
SAGE COMMONS

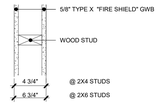
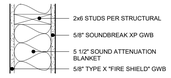
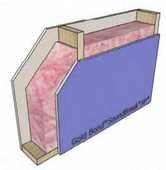
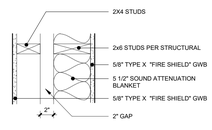
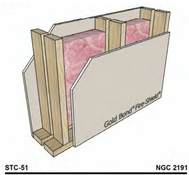
Project Address
80 COLLEGE AVENUE SANTA ROSA, CA

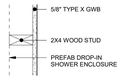
ASSEMBLIES

REVIEWED FOR CODE COMPLIANCE BY CSAGTLAND CIVIL ENGINEERING, INC. IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

A-002

6/4/2020 4:44:30 PM

ASSEMBLY	FIRE / STC RATING REFERENCE(S)
W1 **FIRE RATING NOTE:** **@ NON-RATED AND 1HR RATED LOCATIONS.** FIRE RATED ASSEMBLY SHALL CONFORM TO UL DESIGN U305 **W1A** **SAME AS W2 WITH ADDED 3 1/2" SOUND BATT INSULATION** STC 36  LOCATIONS: NON-DEMISING WALLS NOTE: 1/2" PLYWOOD SHEAR PANELS MAY OCCUR ON ONE OR BOTH SIDES. 5/8 in. thick paper or vinyl surfaced, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads. When used in widths other than 48 in., gypsum panels are to be installed horizontally.	 **STC-36** **NGC 2008029** Framing: 2x4 wood studs, 16" o.c. Insulation: 3-1/2" glass fiber Side 1: 5/8" Fire-Shield Gypsum Board Side 2: 5/8" Fire-Shield Gypsum Board UL Design: U305 - 1 hour Figure 104
W2A **FIRE RATING NOTE:** **@ 1 HR RATED LOCATIONS** UL DESIGN U309 50 STC RATING NGC2009013  LOCATIONS: DEMISING WALLS NOTE: 1/2" PLYWOOD SHEAR PANELS MAY OCCUR ON ONE OR BOTH SIDES. 5/8 in. thick, 4 ft wide, applied either horizontally or vertically, nailed to studs and bearing plates with 6d cement coated nails min. 1-7/8 in. long, 0.0915 in. shank diam and 1/4 in. diam heads spaced 7 in. OC. Finish Rating 27 Min. When used in widths other than 48 in., gypsum board to be installed horizontally.	 **STC-50** **NGC 2009013** Framing: 2x6 wood studs, 24" o.c. Insulation: 5-1/2" glass fiber Side 1: 5/8" Fire-Shield Gypsum Board Side 2: 5/8" SoundBreak XP Gypsum Board UL Design: U309 - 1 hour
W3A **FIRE RATING NOTE:** **@ 1 HR RATED LOCATIONS** UL DESIGN U341 50 STC RATING NGC2191  LOCATIONS: DEMISING WALLS NOTE: 1/2" PLYWOOD SHEAR PANELS MAY OCCUR ON ONE OR BOTH SIDES. Nom 5/8 in. thick 4 ft wide. Gypsum board applied horizontally or vertically, unless specified below, and nailed to studs and bearing plates 7 in. OC with 6d cement coated nails, 1-7/8 in. long, 0.0915 in. shank diam and 1/4 in. diam head. As an alternate, No. 6 bugle head drywall screws, 1-7/8 in. long, may be substituted for the 6d cement coated nails.	 **STC-51** **NGC 2191** Framing: Double row 2x4 wood studs, 16" o.c. Insulation: 3-1/2" glass fiber one side Side 1: 5/8" Fire-Shield Gypsum Board Side 2: 5/8" Fire-Shield Gypsum Board UL Design: U341 - 1 hour Figure 143

ASSEMBLY	FIRE / STC RATING REFERENCE(S)
W4 **FIRE RATING NOTE:** **AT NON-RATED LOCATIONS ONLY**  	**N/A: NO RATING REQD**
SH1 **FIRE RATING NOTE:** **@ 1 HR RATED SHAFT LOCATIONS** UL DESIGN: UL499  5/8 in. thick, 4 ft wide, applied horizontally or vertically and attached to studs with 1 in. long Type S steel screws spaced 12 in. OC along the edges and in the field of the boards. When Furring Channels (Item 2C) are used, gypsum board attached vertically to furring channels with 1 in. long Type S steel screws spaced 12 in. OC.	 **STC-34** **NGC 2001001** Framing: 2-1/2" steel CT studs, 25 gauge, 24" o.c. Insulation: None Side 1: 1" Fire-Shield Shaftliner Side 2: 5/8" Fire-Shield Gypsum Board UL Design: U499, W419 - 1 hour Figure 78

GENERAL WALL ASSEMBLY NOTES:

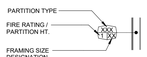
1. PER GA MANUAL NOTE 4, "SCREWS MEETING ASTM C 1002 SHALL BE PERMITTED TO BE SUBSTITUTED FOR THE PRESCRIBED NAILS, ONE FOR ONE WHEN THE LENGTH AND DIAMETER OF THE SCREWS MEET OR EXCEED THOSE OF THE NAILS SPECIFIED IN THE TESTED SYSTEM AND THE SCREW SPACING DOES NOT EXCEED THE SPACING SPECIFIED FOR THE NAILS IN THE SYSTEM."
2. PER GA MANUAL NOTE 11," WHEN NOT SPECIFIED AS A COMPONENT OF A FIRE TESTED WALL OR PARTITION SYSTEM, MINERAL FIBER, GLASS FIBER OR CELLULOSE FIBER INSULATION OF A THICKNESS NOT EXCEEDING THAT OF THE OPEN STUD DEPTH SHALL BE PERMITTED TO BE ADDED WITHIN THE STUD CAVITY."
3. PER GA MANUAL NOTE 22, "ADDITIONAL LAYERS OF TYPE X OR REGULAR GYPSUM PANELS SHALL BE PERMITTED TO BE ADDED TO ANY SYSTEM."
4. PER GA MANUAL NOTE 23, "...WOOD STRUCTURAL PANELS SHALL BE PERMITTED TO BE ADDED TO ONE OR BOTH SIDES..."
5. 1-HOUR FIRE BARRIER WALLS SHALL EXTEND THE GYPSUM BOARD BOTH SIDES TO B.O. FLOOR OR ROOF SHEATHING ABOVE PER CBC 707.5.

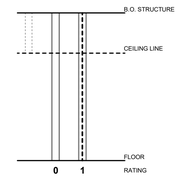
1 PARTITION TYPES W/ REFERENCES
N.T.S.

GENERAL NOTES
1. WALL ASSEMBLIES WHERE NOTED AS FIRE RATED SHALL CONFORM TO CONFIGURATIONS AS NOTED IN GA FILE, UL FILE, ESR, OR OTHER TESTED ASSEMBLY INFORMATION.
2. STOREFRONT SYSTEMS ARE CALLED OUT SEPARATELY FROM WALL TYPES AND ARE SCHEDULED ELSEWHERE IN THE DOCUMENT SET.
3. SEE FINISH SCHEDULE FOR WALL AND CEILING FINISHES. SEE INTERIOR ELEVATIONS AND FINISH SCHEDULE FOR TILE EXTENTS.

EXTERIOR WALL TYPE TAG


FLOOR, ROOF, & CEILING TYPE TAG


INTERIOR PARTITION TYPE TAG


FIRE RATING / PARTITION HEIGHT DESIGNATION


KEY
0 : NON RATED. EXTEND STUDS TO B.O. STRUCTURE ABOVE. EXTEND GYP. BOARD BOTH SIDES TO B.O. STRUCTURE ABOVE U.N.O.

1 : (1) HOUR FIRE RATED ASSEMBLY

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

LICENSED ARCHITECT JOHN ROWELL C28507 12-31-2021 Renewal Date STATE OF CALIFORNIA

REVISIONS TO THIS SHEET

REV.	DATE
PCC-1	2020.04.06

SHEET ISSUE DATE
2020-01-27 PERMIT SET

PROJECT TRACKING
RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

ASSEMBLIES - PARTITIONS

A-003

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

6/4/2020 4:44:32 PM

1 ARCHITECTURAL SITE PLAN
1" = 10'-0"

GENERAL NOTES: ARCHITECTURAL SITE PLAN

1. SEE LANDSCAPE AND CIVIL PLANS FOR ADDITIONAL INFORMATION ON LAND USE REQUIREMENTS, HORIZONTAL CONTROL DIMENSIONS, GRADING, SIDEWALKS, ETC.

CONSTRUCTION HOURS SHALL BE LIMITED TO 7:00 A.M. TO 7:00 P.M. MONDAY THROUGH FRIDAY AND 8:00 A.M. TO 6:00 P.M. SATURDAYS. NO CONSTRUCTION IS PERMITTED ON SUNDAYS AND HOLIDAYS.

IMPLEMENT CONTROL MEASURES FOR CONSTRUCTION AND DEMOLITION-RELATED AIR EMISSIONS TO ENSURE THAT EACH PROJECT SPONSOR AND CONTRACTOR REDUCES PARTICULATE, ROG AND NOX EMISSIONS BY COMPLYING WITH THE BAAQMD POLICIES AND GUIDELINES. EACH PROJECT SPONSOR AND CONTRACTOR SHALL IMPLEMENT THE FOLLOWING CONTROL MEASURES:

- COVER ALL TRUCKS HAULING CONSTRUCTION AND DEMOLITION DEBRIS FROM THE SITE.
- WATER ON A CONTINUOUS AS-NEEDED BASIS ALL EARTH SURFACES DURING CLEARING, GRADING, EARTHMOVING AND OTHER SITE PREPARATION ACTIVITIES.
- USE WATERING TO CONTROL DUST GENERATION DURING DEMOLITION OF STRUCTURES OR BREAK-UP OF PAVEMENT.
- WATER ALL EXPOSED AREAS THREE TIMES DAILY, OR APPLY (NON-TOXIC) SOIL STABILIZERS ON ALL UNPAVED PARKING AREAS AND STAGING AREAS.
- SWEEP DAILY (WITH WATER SWEEPERS) ALL PAVED AREAS AND STAGING AREAS.
- PROVIDE DAILY CLEAN UP OF MUD AND DIRT CARRIED ONTO PAVED STREETS FROM THE SITE.
- RENOVATION, DEMOLITION ACTIVITIES, REMOVAL OR DISTURBANCES OF ANY MATERIAL THAT CONTAIN ASBESTOS, LEAD PAINT OR OTHER HAZARDOUS POLLUTANTS WILL BE CONDUCTED IN ACCORDANCE WITH BAAQMD RULES AND REGULATIONS.
- PROPERLY MAINTAIN ALL CONSTRUCTION EQUIPMENT.
- REDUCE EQUIPMENT IDLING TIME.
- FOR CONSTRUCTION NEAR SENSITIVE RECEPTORS:
- INSTALL WHEEL WASHERS FOR ALL EXITING TRUCKS, OR WASH OFF THE TIRES OR TRACKS OF TRUCKS AND EQUIPMENT LEAVING THE SITE.
- SUSPEND DUST-PRODUCING ACTIVITIES DURING PERIODS WHEN INSTANTANEOUS GUSTS EXCEED 25 MPH WHEN DUST CONTROL MEASURES ARE UNABLE TO AVOID VISIBLE PLUMES.
- LIMIT THE AREA SUBJECT TO EXCAVATION, GRADING AND OTHER CONSTRUCTION OR DEMOLITION ACTIVITY AT ANY ONE TIME.

ARCHEOLOGICAL MONITORING SHALL BE CONDUCTED DURING EARTH-DISTURBING ACTIVITIES. IF CONSTRUCTION PERSONNEL LOCATE BURIED CULTURAL MATERIALS, WORK SHALL BE HALTED AND A QUALIFIED ARCHAEOLOGIST SHALL BE CONTACTED TO DETERMINE PROPER TREATMENT OF THE FIND.

A QUALIFIED WILDLIFE BIOLOGIST SHALL CONDUCT PRE-CONSTRUCTION SURVEYS. IF AN ACTIVE BIRD NEST IS FOUND, THE BIRD SHALL BE IDENTIFIED TO SPECIES AND THE APPROXIMATE DISTANCE FROM THE CLOSEST WORK SITE TO THE NEST ESTIMATED. NO ADDITIONAL MEASURES NEED BE IMPLEMENTED IF ACTIVE NESTS ARE MORE THAN THE FOLLOWING DISTANCES FROM THE NEAREST WORK SITE: (A) 300 FEET FOR RAPTORS; OR (B) 75 FEET FOR OTHER NON-SPECIAL-STATUS BIRD SPECIES. DISTURBANCE OF ACTIVE NESTS SHALL BE AVOIDED TO THE EXTENT POSSIBLE UNTIL IT IS DETERMINED THAT NESTING IS COMPLETE AND THE YOUNG HAVE FLEDGED.

DEVELOPERS SHALL ENSURE THAT CONSTRUCTION EQUIPMENT BE WELL MAINTAINED AND USED JUDICIOUSLY TO BE AS QUIET AS PRACTICAL. THE FOLLOWING MEASURES, WHEN APPLICABLE, WILL BE REQUIRED FROM DEVELOPERS TO REDUCE NOISE FROM CONSTRUCTION ACTIVITIES:

- EQUIP ALL INTERNAL COMBUSTION ENGINE-DRIVEN EQUIPMENT WITH MUFFLERS, WHICH ARE IN GOOD CONDITION AND APPROPRIATE FOR THE EQUIPMENT.
- UTILIZE "QUIET" MODELS OF AIR COMPRESSORS AND OTHER STATIONARY NOISE SOURCES WHERE TECHNOLOGY EXISTS.
- LOCATE STATIONARY NOISE-GENERATING EQUIPMENT AS FAR AS FEASIBLE FROM SENSITIVE RECEPTORS WHEN SENSITIVE RECEPTORS ADJOIN OR ARE NEAR A CONSTRUCTION PROJECT AREA.
- PROHIBIT UNNECESSARY IDLING OF INTERNAL COMBUSTION ENGINES.
- PRE-DRILL FOUNDATION PILE HOLES TO MINIMIZE THE NUMBER OF IMPACTS REQUIRED TO SEAT THE PILE.
- CONSTRUCT SOLID PLYWOOD FENCES AROUND CONSTRUCTION SITES ADJACENT TO OPERATIONAL BUSINESS, RESIDENCES OR NOISE-SENSITIVE LAND USES.
- A TEMPORARY NOISE CONTROL BLANKET BARRIER SHALL BE ERECTED, IF NECESSARY, ALONG BUILDING FACADES FACING CONSTRUCTION SITES.
- THIS MITIGATION WOULD ONLY BE NECESSARY IF CONFLICTS OCCURRED WHICH WERE IRRESOLVABLE BY PROPER SCHEDULING. NOISE CONTROL BLANKET BARRIERS CAN BE RENTED AND ERECTED RAPIDLY.
- ROUTE CONSTRUCTION-RELATED TRAFFIC ALONG MAJOR ROADWAYS AND AS FAR AS FEASIBLE FROM SENSITIVE RECEPTORS.
- ENSURE THAT CONSTRUCTION ACTIVITIES (INCLUDING THE LOADING AND UNLOADING OF MATERIALS AND TRUCK MOVEMENTS) ARE LIMITED TO THE HOURS OF 7:00 A.M. TO 7:00 P.M.
- BUSINESSES, RESIDENCES OR NOISE-SENSITIVE LAND USES ADJACENT TO CONSTRUCTION SITES SHALL BE NOTIFIED OF THE CONSTRUCTION SCHEDULE IN WRITING. DESIGNATE A "CONSTRUCTION LIAISON" THAT WILL BE RESPONSIBLE FOR RESPONDING TO ANY LOCAL COMPLAINTS ABOUT CONSTRUCTION NOISE. THE LIAISON WOULD DETERMINE THE CAUSE OF THE NOISE COMPLAINTS AND INSTITUTE REASONABLE MEASURES TO CORRECT THE PROBLEM. CONSPICUOUSLY POST A TELEPHONE NUMBER FOR THE LIAISON AT THE CONSTRUCTION SITE.

KEYNOTE LEGEND

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

LICENSED ARCHITECT
JOHN ROWELL
C28507
12-31-2021
Renewal Date
STATE OF CALIFORNIA

REVISIONS TO THIS SHEET

REV.	DATE
PCC-2	2020.05.15
PCC-1	2020.04.06

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner

DANCO

Project Name

SAGE COMMONS

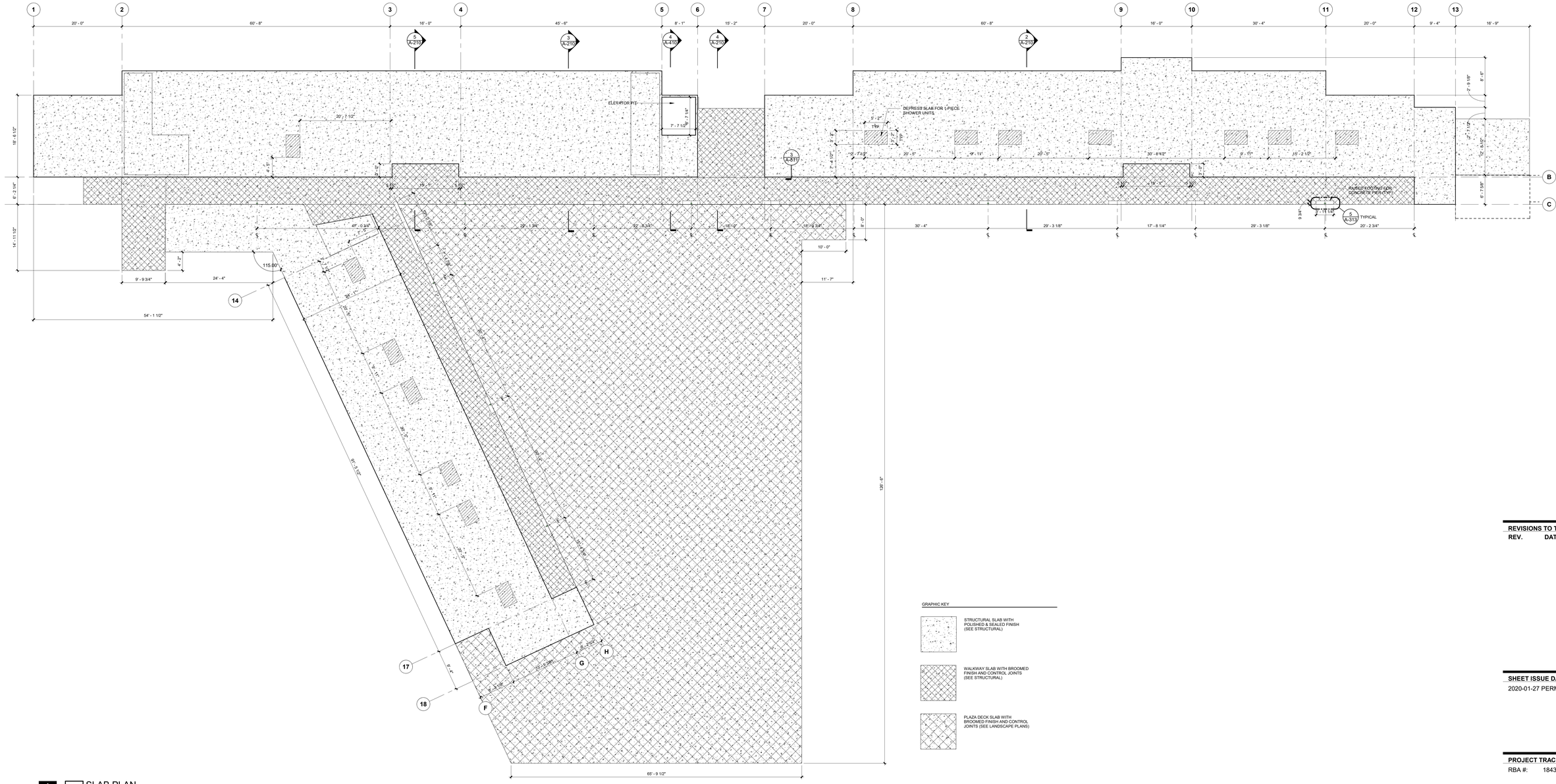
Project Address

80 COLLEGE AVENUE
SANTA ROSA, CA

ARCHITECTURAL SITE PLAN

A-100

6/4/2020 4:44:38 PM



1 SLAB PLAN
1/8" = 1'-0"

GRAPHIC KEY

- STRUCTURAL SLAB WITH POLISHED & SEALED FINISH (SEE STRUCTURAL)
- WALKWAY SLAB WITH BROOMED FINISH AND CONTROL JOINTS (SEE STRUCTURAL)
- PLAZA DECK SLAB WITH BROOMED FINISH AND CONTROL JOINTS (SEE LANDSCAPE PLANS)

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

LICENSED ARCHITECT
JOHN ROWELL
C28507
12-31-2021
Renewal Date
STATE OF CALIFORNIA

REVISIONS TO THIS SHEET

REV.	DATE

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner

DANCO

Project Name

SAGE COMMONS

Project Address

80 COLLEGE AVENUE
SANTA ROSA, CA

SLAB PLAN

A-110

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

6/4/2020 4:44:40 PM

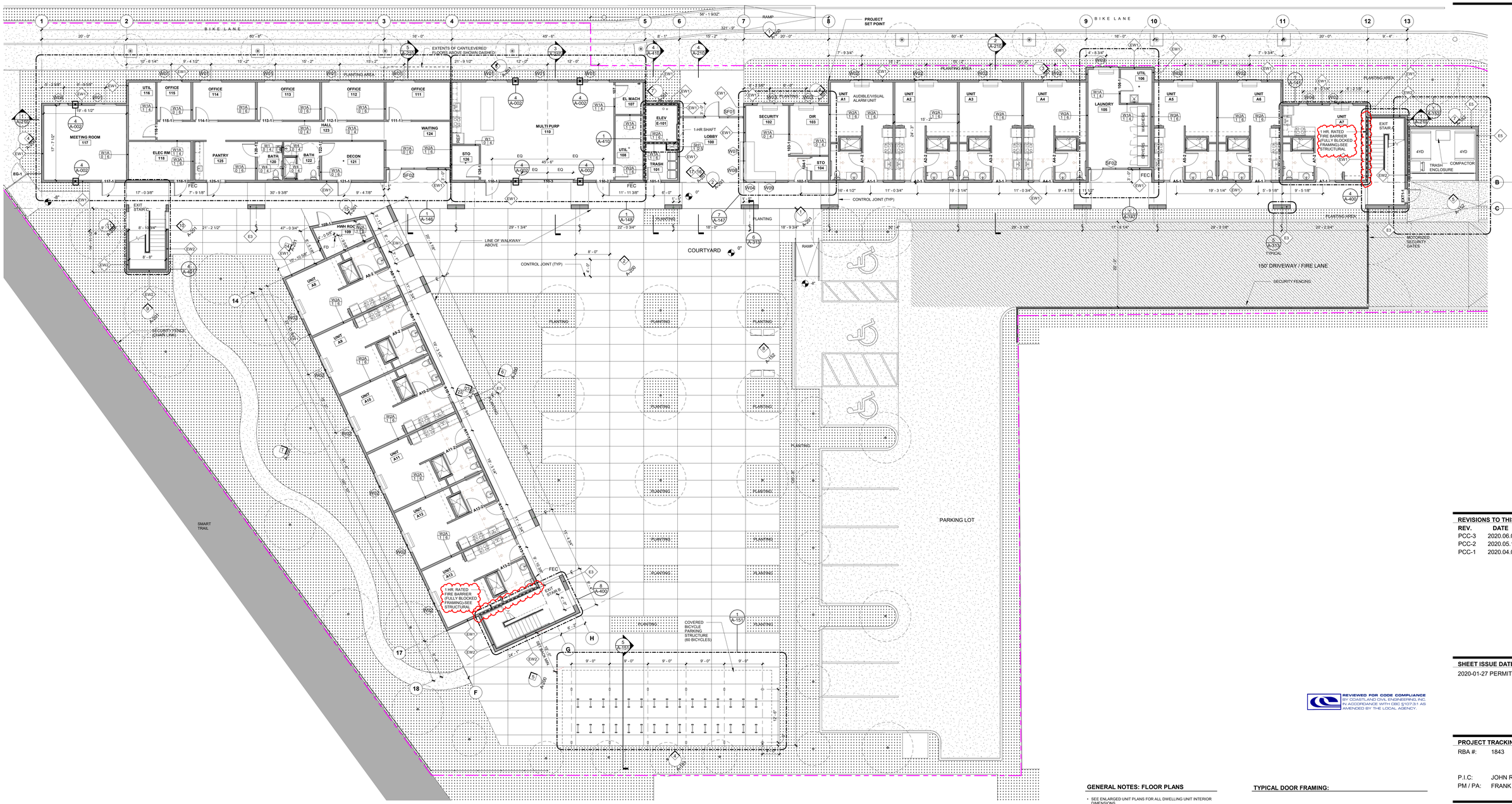
ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

LICENSED ARCHITECT
JOHN ROWELL
C28507
12-31-2021
Renewal Date
STATE OF CALIFORNIA



1 1ST FLOOR
1/8" = 1'-0"

EG-1
EG-1

GENERAL NOTES: FLOOR PLANS

- SEE ENLARGED UNIT PLANS FOR ALL DWELLING UNIT INTERIOR DIMENSIONS.
- SEE FLOOR PLANS FOR UNIT DEMISING WALLS. DEMISING WALL DIMENSIONS ARE TO CENTER OF WALL PLATE U.N.O.
- COORDINATE EXTERIOR WALL DIMENSIONS WITH DIMENSIONED STOREFRONT ELEVATIONS FOR WALL AND ROUGH OPEN LAYOUTS
- RATED WALL ASSEMBLIES TO BE CONTINUOUS AT INTERSECTIONS WITH NON-RATED WALLS. TYP.
- COORDINATE WITH REFLECTED CEILING PLANS FOR SOFFITS.
- SHEAR WALL PANELS ARE NOT SHOWN ON ARCHITECTURAL PLANS--REFER TO STRUCTURAL.
- WHERE SHEAR WALL SHEATHING OR OTHER FRAMING OFFSETS OCCUR, PROVIDE CONTINUOUS FLUSH INTERIOR WALL FINISH TO THE NEAREST PERPENDICULAR WALL INTERSECTION. FURR FACE OF FRAMING OR PROVIDE ADDITIONAL GWB TO MAINTAIN CONTINUOUS FLAT FINISH WALL SURFACE.

WALL TYPES:

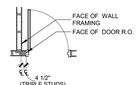
SEE WALL ASSEMBLIES SHEET A-002 FOR:
- EXTERIOR WALL TYPES
- INTERIOR PARTITION TYPES

EXTERIOR WALL TYPES:
SEE WALL TYPE TAGS ON FLOOR PLANS.

INTERIOR PARTITIONS:
SEE PARTITION TAGS ON FLOOR PLANS AND UNIT PLANS.

FIRE RATING: INTERIOR WALLS
- FIRE RATING PER TAG CALL OUT.
- RATED WALLS TO BE FIRE PARTITION CONSTRUCTION U.N.O.
- FIRE BARRIER CONSTRUCTION AT DASHED LOCATIONS.

TYPICAL DOOR FRAMING:



UNLESS NOTED OTHERWISE, DOORS TO BE FRAMED SO THAT THE OUTSIDE FACE OF THE DOOR R.O. IS 4 1/2" OFF ADJACENT WALL.

ENLARGED UNIT PLANS:

SEE UNIT PLANS FOR ALL UNIT INFORMATION INCLUDING:
- PARTITION DIMENSIONS
- PARTITION, DOOR AND CASEWORK CALLOUTS
- INTERIOR ELEVATIONS CALLOUTS
- ENLARGED PLAN CALL OUTS

UNIT PLAN CALL OUT TAG: 1 / A-XXX — DRAWING # / SHEET #

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

REVISIONS TO THIS SHEET

REV.	DATE
PCC-3	2020.06.05
PCC-2	2020.05.15
PCC-1	2020.04.06

SHEET ISSUE DATE
2020-01-27 PERMIT SET

PROJECT TRACKING
RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

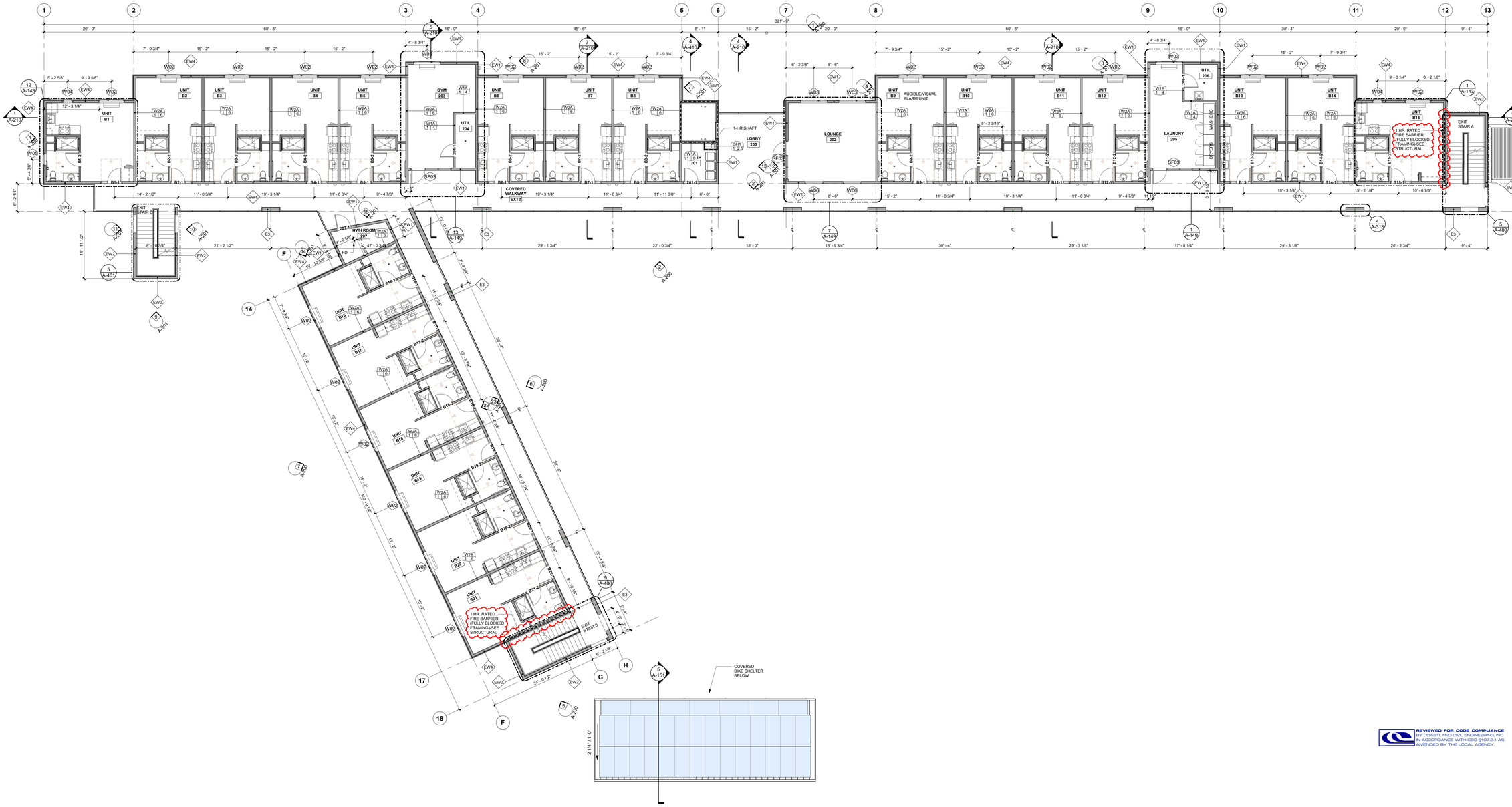
Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

1ST FLOOR PLAN

A-111

6/4/2020 4:44:49 PM



1 2ND FLOOR
1/8" = 1'-0"

GENERAL NOTES: FLOOR PLANS

- SEE ENLARGED UNIT PLANS FOR ALL DWELLING UNIT INTERIOR DIMENSIONS.
- SEE FLOOR PLANS FOR UNIT DEMISING WALLS. DEMISING WALL DIMENSIONS ARE TO CENTER OF WALL PLATE U.N.O.
- COORDINATE EXTERIOR WALL DIMENSIONS WITH DIMENSIONED STOREFRONT ELEVATIONS FOR WALL AND ROUGH OPEN LAYOUTS
- RATED WALL ASSEMBLIES TO BE CONTINUOUS AT INTERSECTIONS WITH NON-RATED WALLS. TYP.
- COORDINATE WITH REFLECTED CEILING PLANS FOR SOFFITS.
- SHEAR WALL PANELS ARE NOT SHOWN ON ARCHITECTURAL PLANS--REFER TO STRUCTURAL.
- WHERE SHEAR WALL SHEATHING OR OTHER FRAMING OFFSETS OCCUR, PROVIDE CONTINUOUS FLUSH INTERIOR WALL FINISH TO THE NEAREST PERPENDICULAR WALL INTERSECTION. FURR FACE OF FRAMING OR PROVIDE ADDITIONAL GWB TO MAINTAIN CONTINUOUS FLAT FINISH WALL SURFACE.

WALL TYPES:

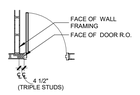
SEE WALL ASSEMBLIES SHEET A-002 FOR:
- EXTERIOR WALL TYPES
- INTERIOR PARTITION TYPES

EXTERIOR WALL TYPES:
SEE WALL TYPE TAGS ON FLOOR PLANS.

INTERIOR PARTITIONS:
SEE PARTITION TAGS ON FLOOR PLANS AND UNIT PLANS.

FIRE RATING: INTERIOR WALLS
- FIRE RATING PER TAG CALL OUT.
- RATED WALLS TO BE FIRE PARTITION CONSTRUCTION U.N.O.
- FIRE BARRIER CONSTRUCTION AT DASHED LOCATIONS.

TYPICAL DOOR FRAMING:



UNLESS NOTED OTHERWISE, DOORS TO BE FRAMED SO THAT THE OUTSIDE FACE OF THE DOOR R.O. IS 4 1/2" OFF ADJACENT WALL.

ENLARGED UNIT PLANS:

SEE UNIT PLANS FOR ALL UNIT INFORMATION INCLUDING:
- PARTITION DIMENSIONS
- PARTITION, DOOR AND CASEWORK CALLOUTS
- INTERIOR ELEVATIONS CALLOUTS
- ENLARGED PLAN CALL OUTS

UNIT PLAN CALL OUT TAG: 1 / A-XXX — DRAWING # / SHEET #

REVIEWED FOR CODE COMPLIANCE
BY CSA STL AND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

LICENSED ARCHITECT
JOHN ROWELL
C28507
12-31-2021
Renewal Date
STATE OF CALIFORNIA

REVISIONS TO THIS SHEET

REV.	DATE
PCC-3	2020.06.05
PCC-2	2020.05.15
PCC-1	2020.04.06

SHEET ISSUE DATE
2020-01-27 PERMIT SET

PROJECT TRACKING
RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

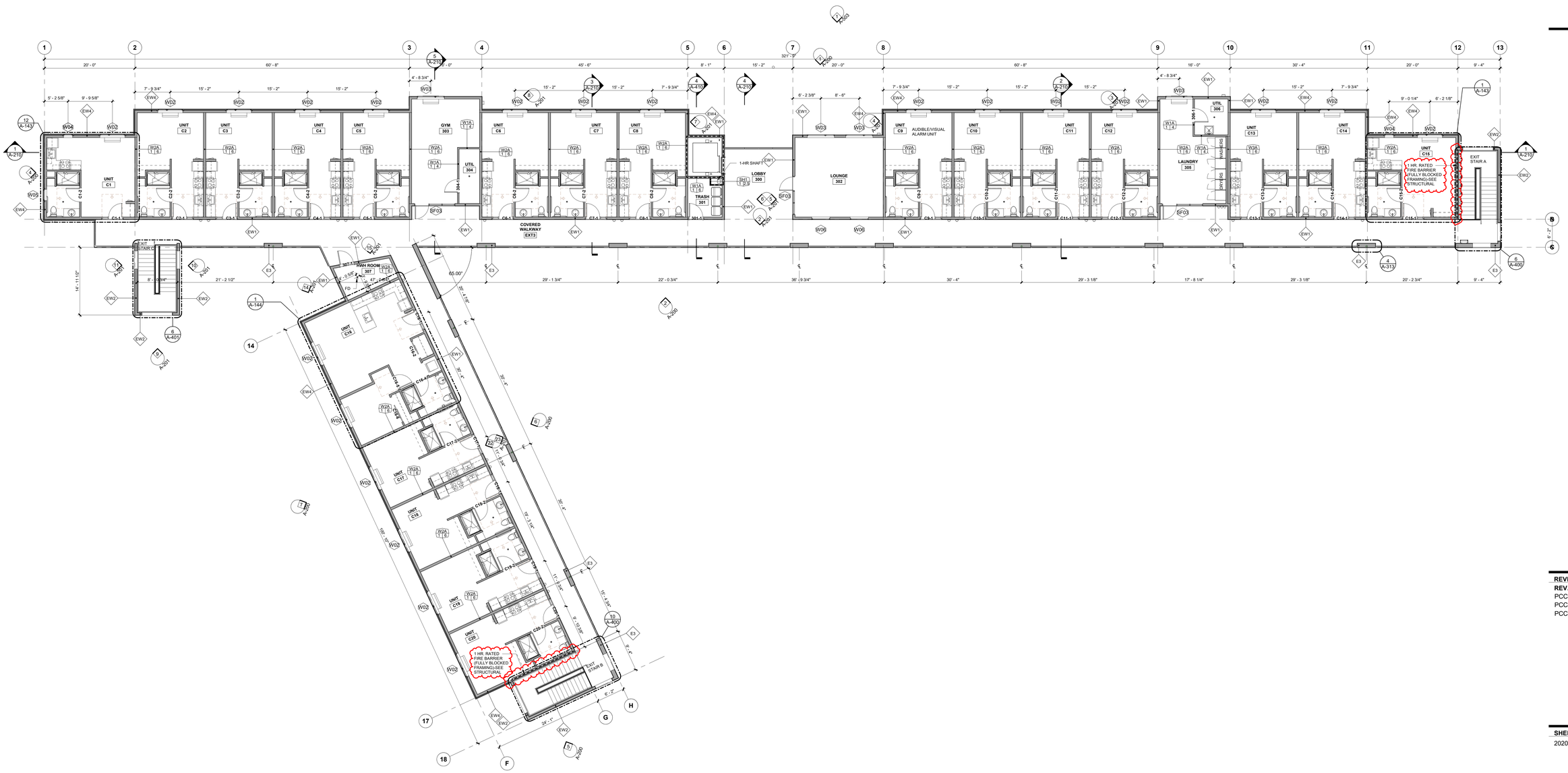
Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

2ND FLOOR PLAN

A-112

6/4/2020 4:44:54 PM



1 3RD FLOOR
1/8" = 1'-0"

GENERAL NOTES: FLOOR PLANS

- SEE ENLARGED UNIT PLANS FOR ALL DWELLING UNIT INTERIOR DIMENSIONS.
- SEE FLOOR PLANS FOR UNIT DEMISING WALLS. DEMISING WALL DIMENSIONS ARE TO CENTER OF WALL PLATE U.N.O.
- COORDINATE EXTERIOR WALL DIMENSIONS WITH DIMENSIONED STOREFRONT ELEVATIONS FOR WALL AND ROUGH OPEN LAYOUTS
- RATED WALL ASSEMBLIES TO BE CONTINUOUS AT INTERSECTIONS WITH NON-RATED WALLS. TYP.
- COORDINATE WITH REFLECTED CEILING PLANS FOR SOFFITS.
- SHEAR WALL PANELS ARE NOT SHOWN ON ARCHITECTURAL PLANS--REFER TO STRUCTURAL.
- WHERE SHEAR WALL SHEATHING OR OTHER FRAMING OFFSETS OCCUR, PROVIDE CONTINUOUS FLUSH INTERIOR WALL FINISH TO THE NEAREST PERPENDICULAR WALL INTERSECTION. FURR FACE OF FRAMING OR PROVIDE ADDITIONAL GWB TO MAINTAIN CONTINUOUS FLAT FINISH WALL SURFACE.

WALL TYPES:

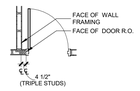
SEE WALL ASSEMBLIES SHEET A-002 FOR:
- EXTERIOR WALL TYPES
- INTERIOR PARTITION TYPES

EXTERIOR WALL TYPES:
SEE WALL TYPE TAGS ON FLOOR PLANS.

INTERIOR PARTITIONS:
SEE PARTITION TAGS ON FLOOR PLANS AND UNIT PLANS.

FIRE RATING: INTERIOR WALLS
- FIRE RATING PER TAG CALL OUT.
- RATED WALLS TO BE FIRE PARTITION CONSTRUCTION U.N.O.
- FIRE BARRIER CONSTRUCTION AT DASHED LOCATIONS.

TYPICAL DOOR FRAMING:



UNLESS NOTED OTHERWISE, DOORS TO BE FRAMED SO THAT THE OUTSIDE FACE OF THE DOOR R.O. IS 4 1/2" OFF ADJACENT WALL.

ENLARGED UNIT PLANS:

SEE UNIT PLANS FOR ALL UNIT INFORMATION INCLUDING:
- PARTITION DIMENSIONS
- PARTITION, DOOR AND CASEWORK CALLOUTS
- INTERIOR ELEVATIONS CALLOUTS
- ENLARGED PLAN CALL OUTS

UNIT PLAN CALL OUT TAG:
1 A-XXX — DRAWING # / SHEET #

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

ROWELL BROKAW
1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com
Architecture. Design. Strategy.

STAMP
LICENSED ARCHITECT
JOHN ROWELL
C28027
12-31-2021
Renewal Date
STATE OF CALIFORNIA

REVISIONS TO THIS SHEET

REV.	DATE
PCC-3	2020.06.05
PCC-2	2020.05.15
PCC-1	2020.04.06

SHEET ISSUE DATE
2020-01-27 PERMIT SET

PROJECT TRACKING
RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

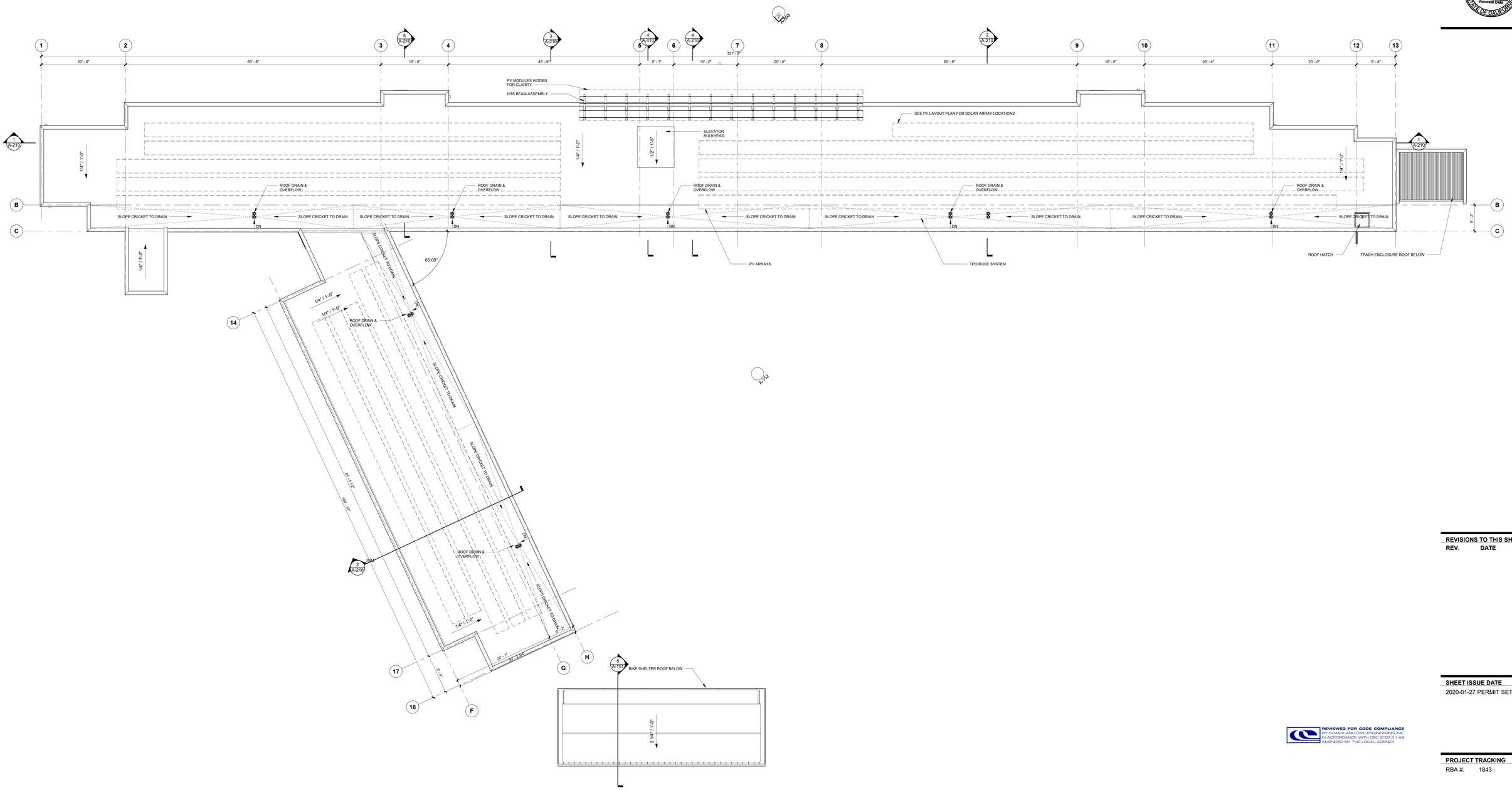
Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

3RD FLOOR PLAN

A-113

6/4/2020 4:45:04 PM



1 ROOF
1/8" = 1'-0"

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

LICENSED ARCHITECT
JOHN ROWELL
C28507
12-31-2021
Renewal Date
STATE OF CALIFORNIA

REVIEWED FOR CODE COMPLIANCE
BY CSAEETLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

GENERAL NOTES: FLOOR PLANS

- SEE ENLARGED UNIT PLANS FOR ALL DWELLING UNIT INTERIOR DIMENSIONS.
- SEE FLOOR PLANS FOR UNIT DEMISING WALLS. DEMISING WALL DIMENSIONS ARE TO CENTER OF WALL PLATE U.N.O.
- COORDINATE EXTERIOR WALL DIMENSIONS WITH DIMENSIONED STOREFRONT ELEVATIONS FOR WALL AND ROUGH OPEN LAYOUTS
- RATED WALL ASSEMBLIES TO BE CONTINUOUS AT INTERSECTIONS WITH NON-RATED WALLS. TYP.
- COORDINATE WITH REFLECTED CEILING PLANS FOR SOFFITS.
- SHEAR WALL PANELS ARE NOT SHOWN ON ARCHITECTURAL PLANS--REFER TO STRUCTURAL.
- WHERE SHEAR WALL SHEATHING OR OTHER FRAMING OFFSETS OCCUR, PROVIDE CONTINUOUS FLUSH INTERIOR WALL FINISH TO THE NEAREST PERPENDICULAR WALL INTERSECTION. FURR FACE OF FRAMING OR PROVIDE ADDITIONAL GWB TO MAINTAIN CONTINUOUS FLAT FINISH WALL SURFACE.

WALL TYPES:

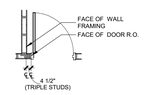
SEE WALL ASSEMBLIES SHEET A-002 FOR:
- EXTERIOR WALL TYPES
- INTERIOR PARTITION TYPES

EXTERIOR WALL TYPES:
SEE WALL TYPE TAGS ON FLOOR PLANS.

INTERIOR PARTITIONS:
SEE PARTITION TAGS ON FLOOR PLANS AND UNIT PLANS.

FIRE RATING: INTERIOR WALLS
- FIRE RATING PER TAG CALL OUT.
- RATED WALLS TO BE FIRE PARTITION CONSTRUCTION U.N.O.
- FIRE BARRIER CONSTRUCTION AT DASHED LOCATIONS.

TYPICAL DOOR FRAMING:



UNLESS NOTED OTHERWISE, DOORS TO BE FRAMED SO THAT THE OUTSIDE FACE OF THE DOOR R.O. IS 4 1/2" OFF ADJACENT WALL.

ENLARGED UNIT PLANS:

SEE UNIT PLANS FOR ALL UNIT INFORMATION INCLUDING:
- PARTITION DIMENSIONS
- PARTITION, DOOR AND CASEWORK CALLOUTS
- INTERIOR ELEVATIONS CALLOUTS
- ENLARGED PLAN CALL OUTS

UNIT PLAN CALL OUT TAG: 1 / A-XXX — DRAWING # / SHEET #

REVISIONS TO THIS SHEET

REV.	DATE

SHEET ISSUE DATE
2020-01-27 PERMIT SET

PROJECT TRACKING
RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

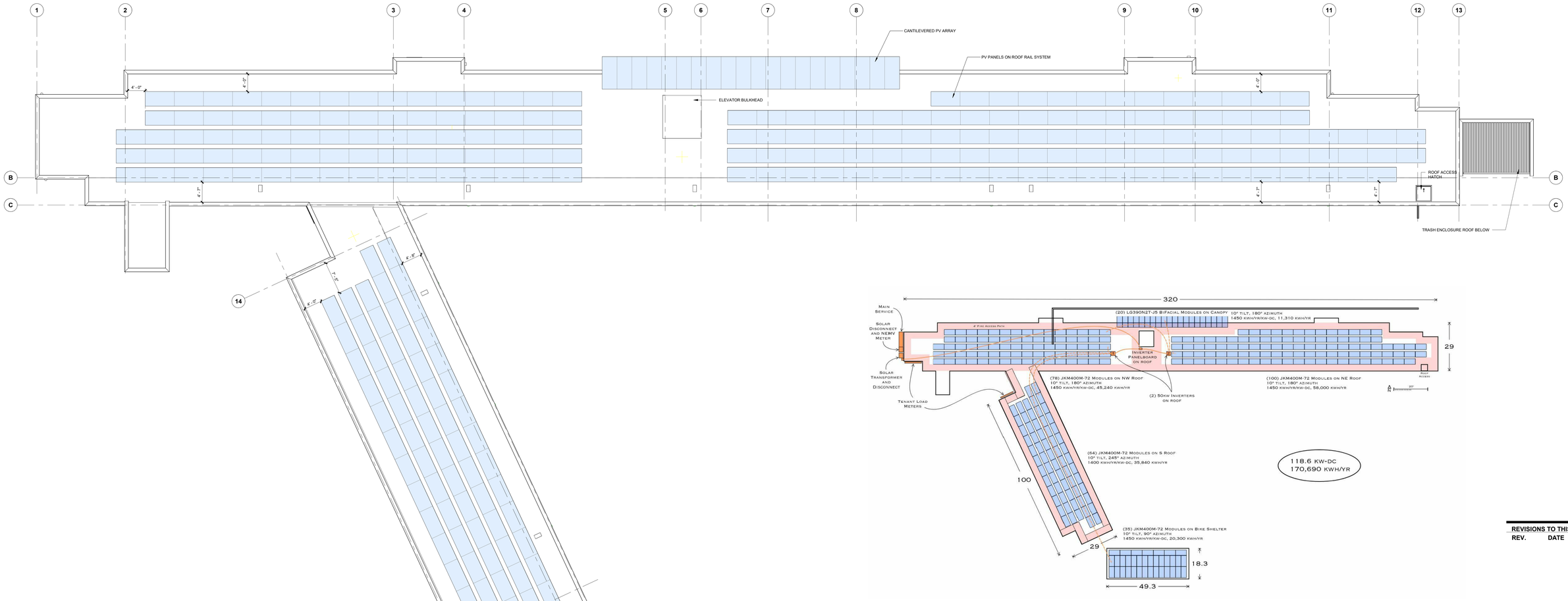
Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

ROOF PLAN

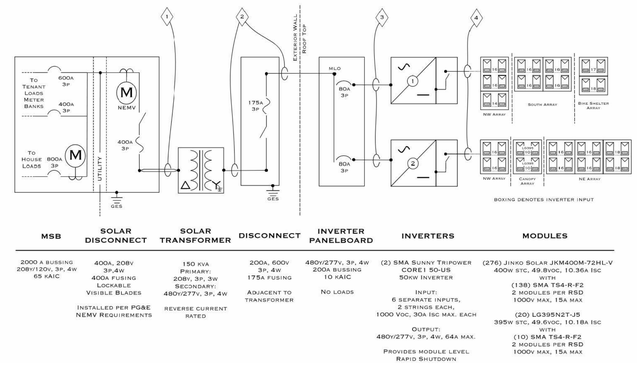
A-114

6/4/2020 4:45:07 PM



1 PV LAYOUT
1/8" = 1'-0"

PANEL DISTRIBUTION DIAGRAM NTS



MSB	SOLAR DISCONNECT	SOLAR TRANSFORMER	DISCONNECT	INVERTER PANELBOARD	INVERTERS	MODULES
2000 A BUSSING 208Y/120V, 3P, 4W 65 KAIC	400A, 208V 3P,4W 400A FUSING LOCKABLE VISIBLE BLADES INSTALLED PER PG&E NEMV REQUIREMENTS	150 KVA PRIMARY: 208Y, 3P, 3W SECONDARY: 480Y/277V, 3P, 4W REVERSE CURRENT RATED	200A, 600V 3P, 4W 175A FUSING ADJACENT TO TRANSFORMER	480Y/277V, 3P, 4W 200A BUSSING 10 KAIC NO LOADS	(2) SMA SUNNY TRIPOWER CORE1 50-US 50KW INVERTER INPUT: 6 SEPARATE INPUTS, 2 STRINGS EACH; 1000 VDC, 30A ISC MAX. EACH OUTPUT: 480Y/277V, 3P, 4W, 64A MAX. PROVIDES MODULE LEVEL RAPID SHUTDOWN	(276) JINKO SOLAR JKM400M-72HL-V 400W STC, 49.8VOC, 10.36A ISC WITH (138) SMA TS4-R-F2 2 MODULES PER RSD 1000V MAX, 15A MAX (20) LG395N2T-J5 395W STC, 49.6VOC, 10.18A ISC WITH (10) SMA TS4-R-F2 2 MODULES PER RSD 1000V MAX, 15A MAX

PV PANEL SINGLE LINE DIAGRAM

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

6/4/2020 4:45:09 PM

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

LICENSED ARCHITECT
JOHN ROWELL
C28507
12-31-2021
Renewal Date
STATE OF CALIFORNIA

REVISIONS TO THIS SHEET

REV.	DATE

SHEET ISSUE DATE
2020-01-27 PERMIT SET

PROJECT TRACKING
RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

PV LAYOUT DIAGRAM

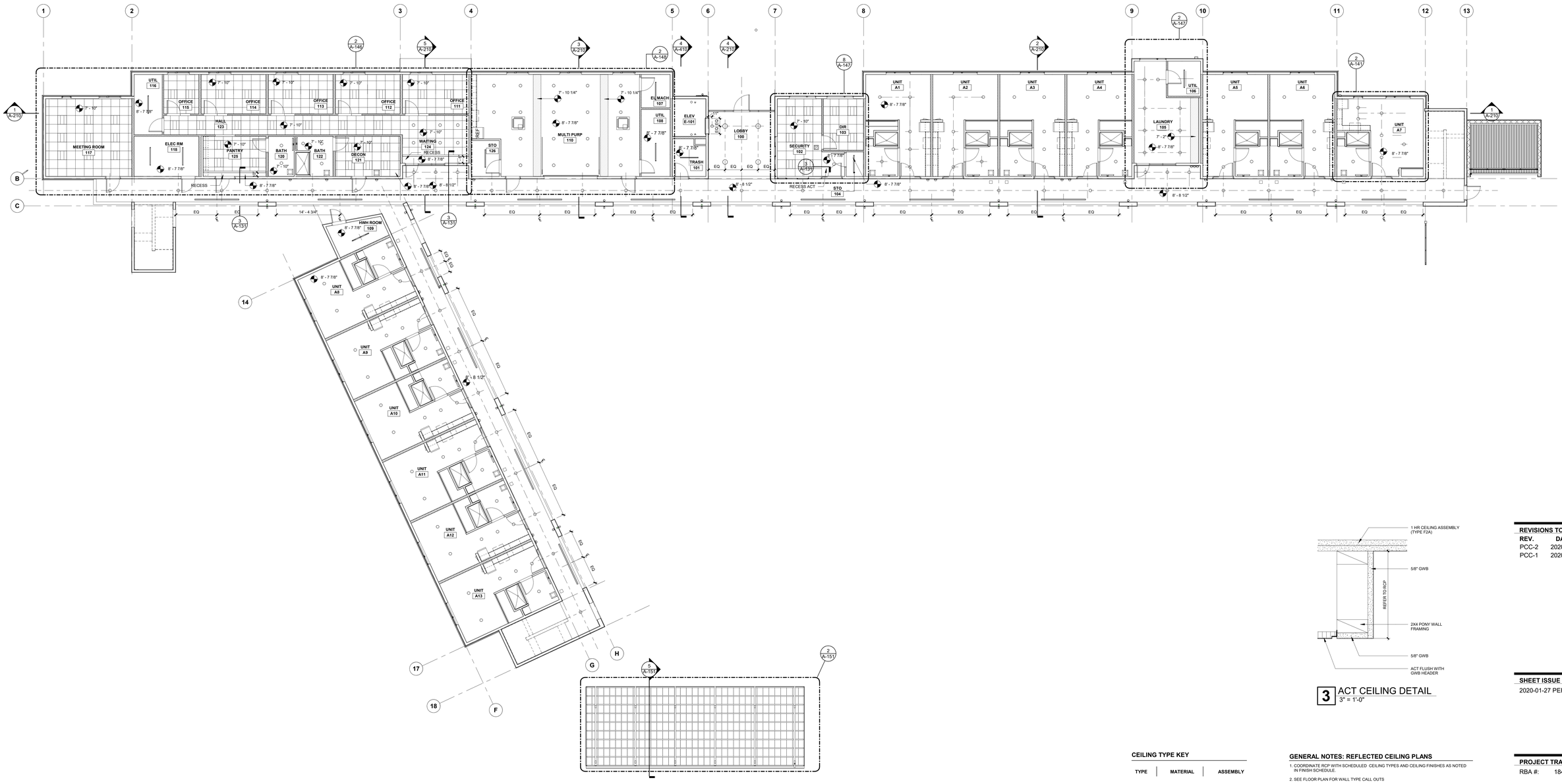
A-115

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP



1 1ST FLOOR RCP
1/8" = 1'-0"

3 ACT CEILING DETAIL
3" = 1'-0"

CEILING TYPE KEY

TYPE	MATERIAL	ASSEMBLY
CLG-1		5/8" GWB
CLG-2		5/8" GWB SOFFIT
CLG-3		2' x 2' ACT-1
CLG-4		7/8" STUCCO (WALKWAY CEILING)
		CEILING VENT

GENERAL NOTES: REFLECTED CEILING PLANS

1. COORDINATE RCP WITH SCHEDULED CEILING TYPES AND CEILING FINISHES AS NOTED IN FINISH SCHEDULE.
2. SEE FLOOR PLAN FOR WALL TYPE CALL OUTS
3. COORDINATE ARCHITECTURAL RCP WITH MECHANICAL , ELECTRICAL, PLUMBING AND FIRE PROTECTION DRAWINGS. NOTIFY ARCHITECT OF ANY DISCREPANCIES.
4. SEE ELECTRICAL SHEETS FOR LIGHTING SCHEDULES AND ADDITIONAL FIXTURE LOCATIONS.
5. SEE MECHANICAL SHEETS FOR AIR SUPPLY, RETURN, AND EXHAUST DUCT ROUTING.
6. SEE FIRE PROTECTION (FIRE SPRINKLER) SHEETS FOR SPRINKLER PIPE ROUTING. COORDINATE LAYOUT TO AVOID MECHANICAL, PLUMBING, ELECTRICAL AND LIGHTING EQUIPMENT.
7. FOR REQUIRED CEILING GRID SEISMIC BRACING REFER TYPICAL SUSPENDED CEILING DETAILS AND MANUFACTURER'S REQUIREMENTS FOR SEISMIC ZONE E.
8. REFER TO FIREPROOFING FLOOR FRAMING DIAGRAMS FOR FIREPROOFING LOCATION AT STRUCTURE AND FLOOR ASSEMBLIES.

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

REVISIONS TO THIS SHEET

REV.	DATE
PCC-2	2020.05.15
PCC-1	2020.04.06

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

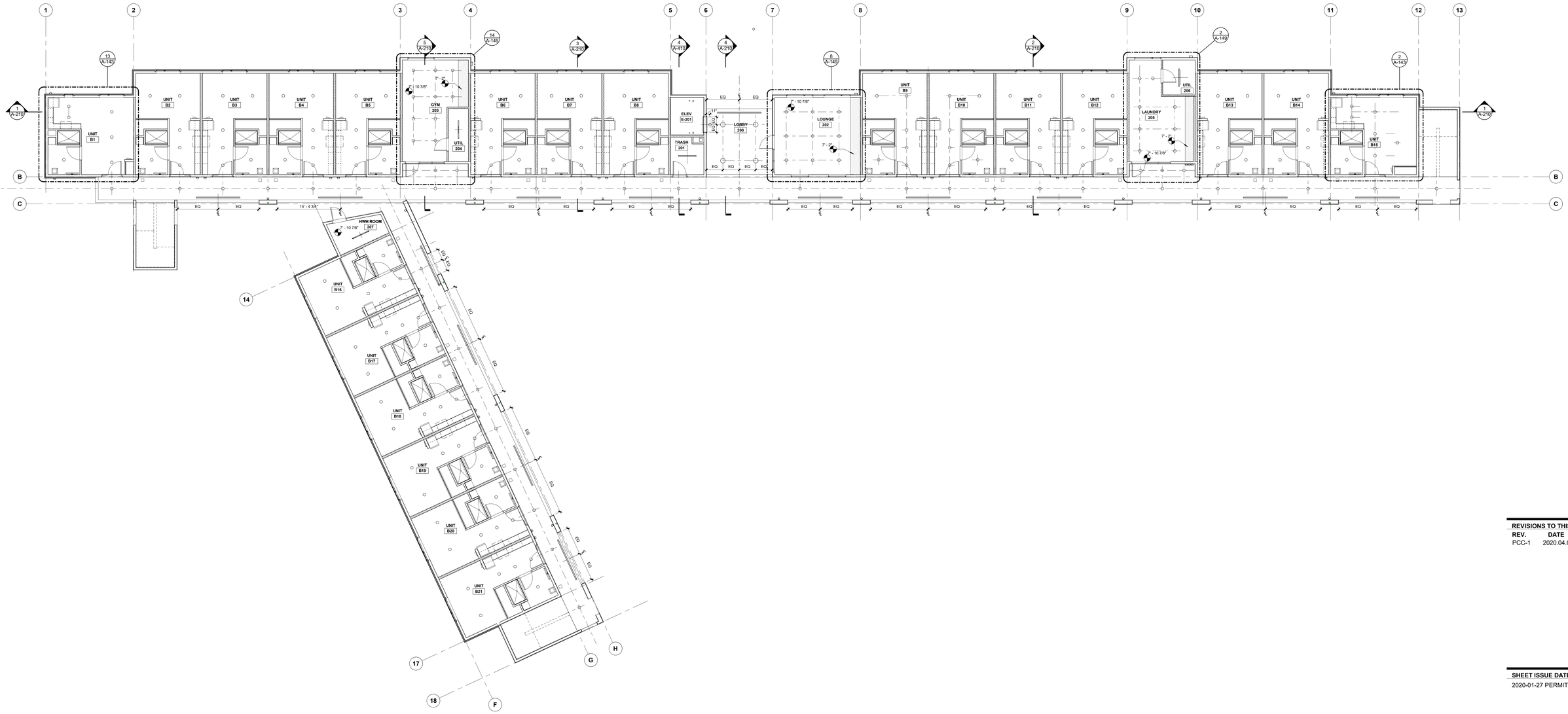
Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

1ST FLOOR RCP

A-131

6/4/2020 4:45:15 PM



2 2ND FLOOR RCP
1/8" = 1'-0"

CEILING TYPE KEY

TYPE	MATERIAL	ASSEMBLY
CLG-1		5/8" GWB
CLG-2		5/8" GWB SOFFIT
CLG-3		2' x 2' ACT-1
CLG-4		7/8" STUCCO (WALKWAY CEILING)
		CEILING VENT

GENERAL NOTES: REFLECTED CEILING PLANS

1. COORDINATE RCP WITH SCHEDULED CEILING TYPES AND CEILING FINISHES AS NOTED IN FINISH SCHEDULE.
2. SEE FLOOR PLAN FOR WALL TYPE CALL OUTS
3. COORDINATE ARCHITECTURAL RCP WITH MECHANICAL , ELECTRICAL, PLUMBING AND FIRE PROTECTION DRAWINGS. NOTIFY ARCHITECT OF ANY DISCREPANCIES.
4. SEE ELECTRICAL SHEETS FOR LIGHTING SCHEDULES AND ADDITIONAL FIXTURE LOCATIONS.
5. SEE MECHANICAL SHEETS FOR AIR SUPPLY, RETURN, AND EXHAUST DUCT ROUTING.
6. SEE FIRE PROTECTION (FIRE SPRINKLER) SHEETS FOR SPRINKLER PIPE ROUTING. COORDINATE LAYOUT TO AVOID MECHANICAL, PLUMBING, ELECTRICAL AND LIGHTING EQUIPMENT.
7. FOR REQUIRED CEILING GRID SEISMIC BRACING REFER TYPICAL SUSPENDED CEILING DETAILS AND MANUFACTURER'S REQUIREMENTS FOR SEISMIC ZONE E.
8. REFER TO FIREPROOFING FLOOR FRAMING DIAGRAMS FOR FIREPROOFING LOCATION AT STRUCTURE AND FLOOR ASSEMBLIES.

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

6/4/2020 4:45:18 PM

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

LICENSED ARCHITECT
JOHN ROWELL
C28507
12-31-2021
Renewal Date
STATE OF CALIFORNIA

REVISIONS TO THIS SHEET

REV.	DATE
PCC-1	2020.04.06

SHEET ISSUE DATE
2020-01-27 PERMIT SET

PROJECT TRACKING
RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

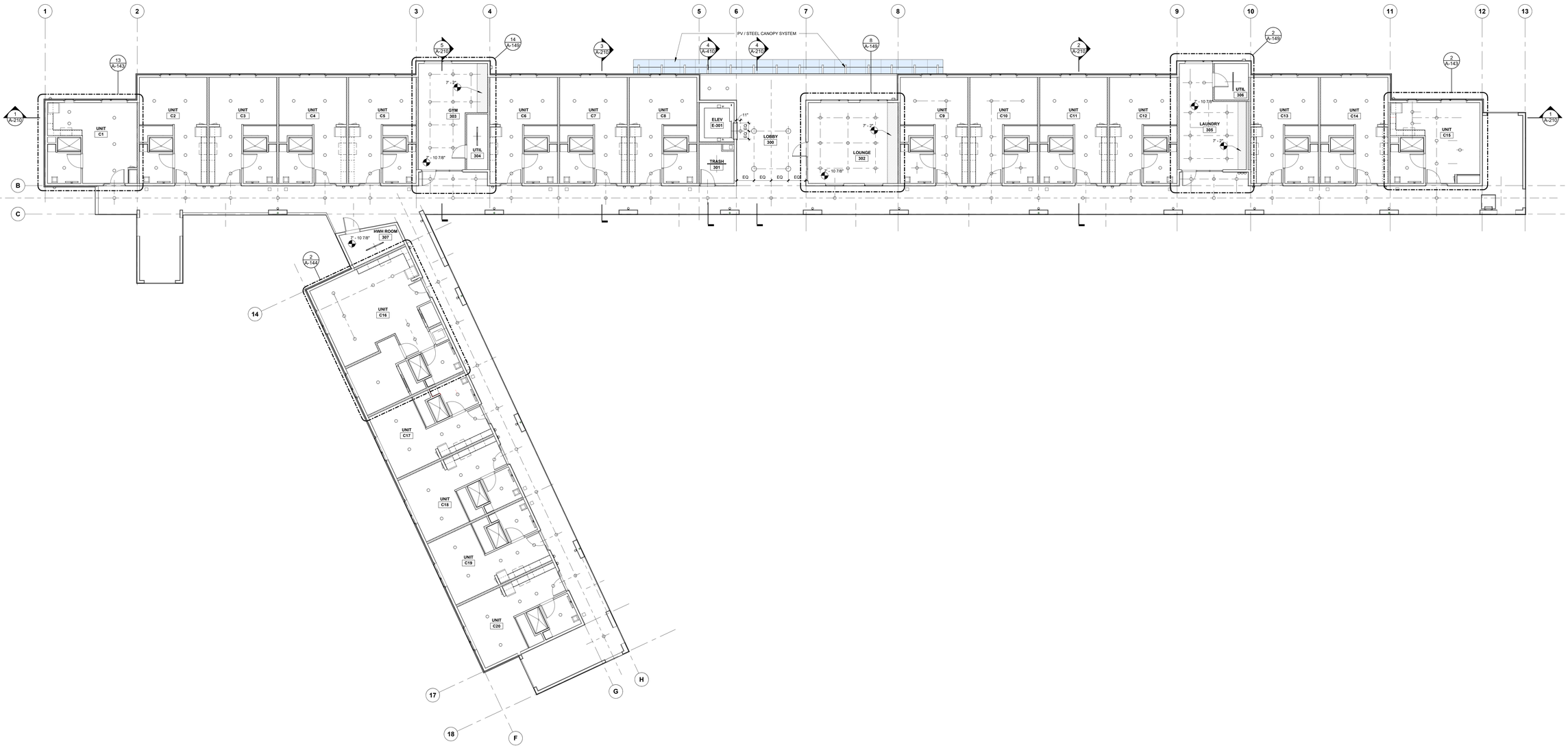
Owner
DANCO

Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

2ND FLOOR RCP

A-132



1 3RD FLOOR RCP
1/8" = 1'-0"

CEILING TYPE KEY

TYPE	MATERIAL	ASSEMBLY
CLG-1		5/8" GWB
CLG-2		5/8" GWB SOFFIT
CLG-3		2' x 2' ACT-1
CLG-4		7/8" STUCCO (WALKWAY CEILING)
		CEILING VENT

GENERAL NOTES: REFLECTED CEILING PLANS

1. COORDINATE RCP WITH SCHEDULED CEILING TYPES AND CEILING FINISHES AS NOTED IN FINISH SCHEDULE.
2. SEE FLOOR PLAN FOR WALL TYPE CALL OUTS
3. COORDINATE ARCHITECTURAL RCP WITH MECHANICAL , ELECTRICAL, PLUMBING AND FIRE PROTECTION DRAWINGS. NOTIFY ARCHITECT OF ANY DISCREPANCIES.
4. SEE ELECTRICAL SHEETS FOR LIGHTING SCHEDULES AND ADDITIONAL FIXTURE LOCATIONS.
5. SEE MECHANICAL SHEETS FOR AIR SUPPLY, RETURN, AND EXHAUST DUCT ROUTING.
6. SEE FIRE PROTECTION (FIRE SPRINKLER) SHEETS FOR SPRINKLER PIPE ROUTING. COORDINATE LAYOUT TO AVOID MECHANICAL, PLUMBING, ELECTRICAL AND LIGHTING EQUIPMENT.
7. FOR REQUIRED CEILING GRID SEISMIC BRACING REFER TYPICAL SUSPENDED CEILING DETAILS AND MANUFACTURER'S REQUIREMENTS FOR SEISMIC ZONE E.
8. REFER TO FIREPROOFING FLOOR FRAMING DIAGRAMS FOR FIREPROOFING LOCATION AT STRUCTURE AND FLOOR ASSEMBLIES.

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

6/4/2020 4:45:21 PM

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

LICENSED ARCHITECT
JOHN ROWELL
C28507
12-31-2021
Renewal Date
STATE OF CALIFORNIA

REVISIONS TO THIS SHEET

REV.	DATE
PCC-1	2020.04.06

SHEET ISSUE DATE
2020-01-27 PERMIT SET

PROJECT TRACKING
RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

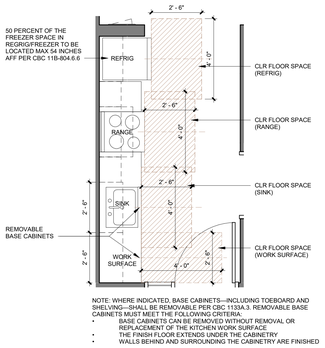
Owner
DANCO

Project Name
SAGE COMMONS

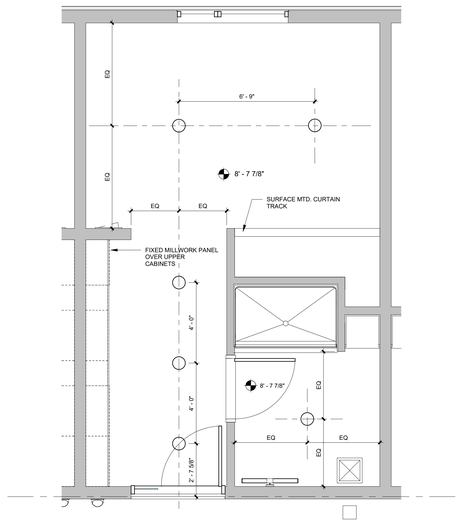
Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

3RD FLOOR RCP

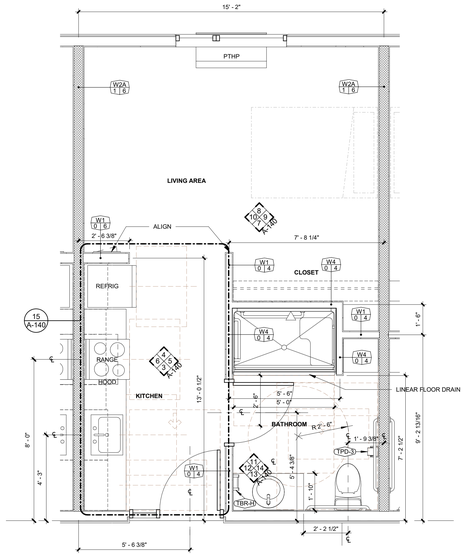
A-133



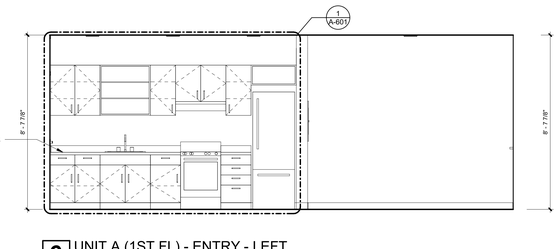
15 UNIT A KITCHEN ACCESSIBILITY
3/8" = 1'-0"



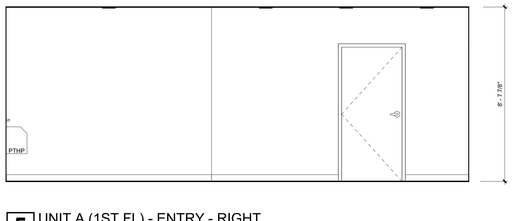
2 UNIT A RCP - 1ST FLOOR
3/8" = 1'-0"



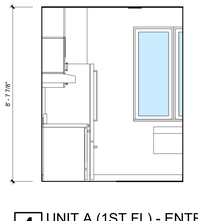
1 UNIT A PLAN - 1ST FLOOR
3/8" = 1'-0"



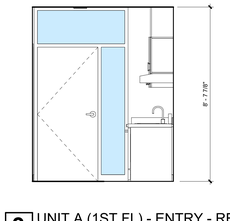
6 UNIT A (1ST FL) - ENTRY - LEFT
3/8" = 1'-0"



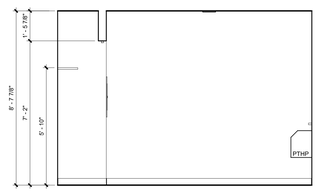
5 UNIT A (1ST FL) - ENTRY - RIGHT
3/8" = 1'-0"



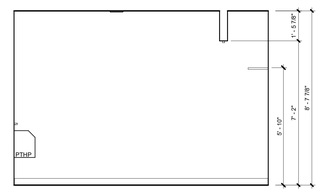
4 UNIT A (1ST FL) - ENTRY - FRONT
3/8" = 1'-0"



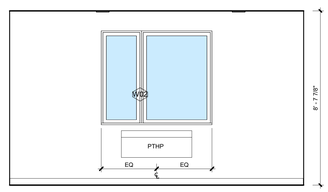
3 UNIT A (1ST FL) - ENTRY - REAR
3/8" = 1'-0"



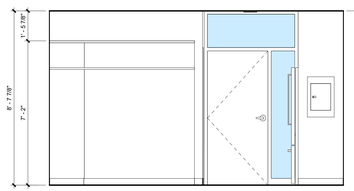
10 UNIT A (1ST FL) - LIVING AREA - LEFT
3/8" = 1'-0"



9 UNIT A (1ST FL) - LIVING AREA - RIGHT
3/8" = 1'-0"

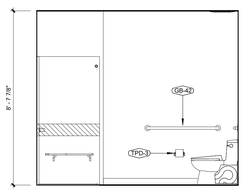


8 UNIT A (1ST FL) - LIVING AREA - FRONT
3/8" = 1'-0"

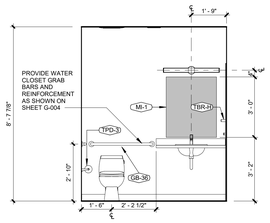


7 UNIT A (1ST FL) - LIVING AREA - REAR
3/8" = 1'-0"

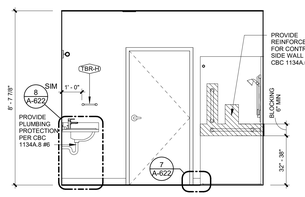
TOILET ACCESORIES KEY	
EQUIP. TAG	**PRODUCT TYPE**
GB-36	GRAB BAR - 36"
GB-42	GRAB BAR 42"
TBR-H	Chrome Mini Towel Bar
TPD-3	TOILET PAPER DISPENSER - SURFACE MOUNT



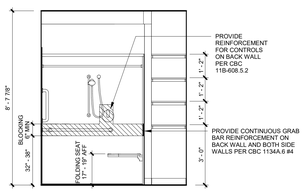
14 UNIT A (1ST FL) - BATH - RIGHT
3/8" = 1'-0"



13 UNIT A (1ST FL) - BATH - REAR
3/8" = 1'-0"



12 UNIT A (1ST FL) - BATH - LEFT
3/8" = 1'-0"



11 UNIT A (1ST FL) - BATH - FRONT
3/8" = 1'-0"

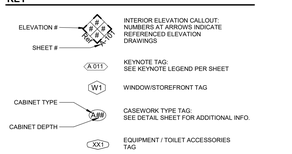
GENERAL NOTE: UNIT BATHROOMS

- SEE SHEET G-004 FOR MORE INFORMATION ON GRAB BAR REINFORCEMENT AND KNEE AND TOE CLEARANCES.
- ONE-PIECE SHOWERS ARE PROPRIETARY AND INCLUDE SEATS AND GRAB BARS.

GENERAL NOTES: UNIT PLAN SHEETS

- UNIT PLAN TYPE A IS MIRRORED THROUGHOUT THE PROJECT. CONTRACTOR TO COORDINATE REFERENCED TYPICAL UNIT PLANS AND ELEVATIONS WITH CONFIGURATIONS SHOWN IN OVERALL FLOOR PLANS. SEE ENLARGED PLANS FOR INTERIOR ELEVATION TAG LOCATIONS.
- WHERE SHEAR WALL SHEATHING OR OTHER FRAMING OFFSETS OCCUR, PROVIDE CONTINUOUS FLUSH INTERIOR WALL FINISH TO THE NEAREST PERPENDICULAR WALL INTERSECTION. FUR FACE OF FRAMING OR PROVIDE ADDITIONAL GWB TO MAINTAIN CONTINUOUS FLAT FINISH WALL SURFACE.
- PROVIDE NATURAL STONE COUNTERTOPS FOR ALL UNIT KITCHENS.
- SEE FINISH SCHEDULES ON DRAWINGS AND IN PROJECT MANUAL FOR ADDITIONAL INFORMATION ON FINISH MATERIALS

KEY



REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §1127.3.1 AS AMENDED BY THE LOCAL AGENCY.

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REVISIONS TO THIS SHEET

REV.	DATE
PCC-2	2020.05.15
PCC-1	2020.04.06

SHEET ISSUE DATE
2020-01-27 PERMIT SET

PROJECT TRACKING
RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

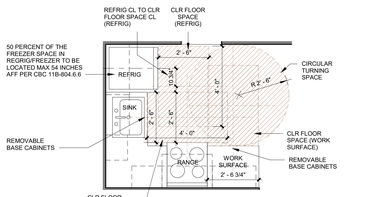
Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE SANTA ROSA, CA

ENLARGED UNIT PLANS AND ELEVATIONS - UNIT A - 1ST FLOOR

A-140

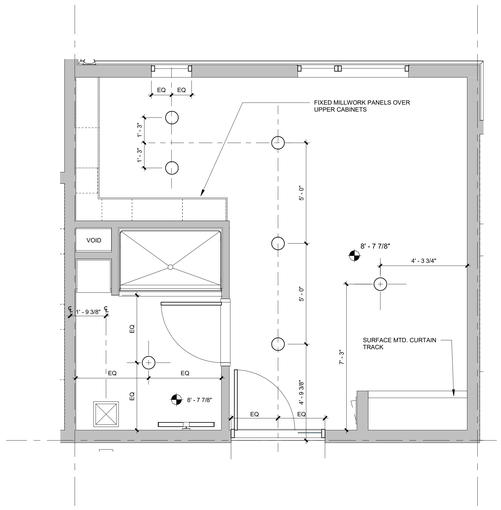
6/4/2020 4:45:27 PM



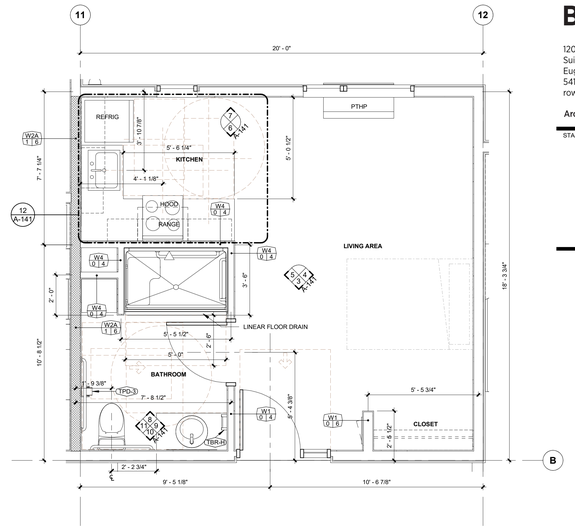
NOTE: WHERE INDICATED, BASE CABINETS—INCLUDING TOEBOARD AND SHELVING—SHALL BE REMOVABLE PER CBC 1133A.3 REMOVABLE BASE CABINETS MUST MEET THE FOLLOWING CRITERIA:

- BASE CABINETS CAN BE REMOVED WITHOUT REMOVAL OR REPLACEMENT OF THE KITCHEN WORK SURFACE
- THE FINISH FLOOR EXTENDS UNDER THE CABINETRY
- WALLS BEHIND AND SURROUNDING THE CABINETRY ARE FINISHED

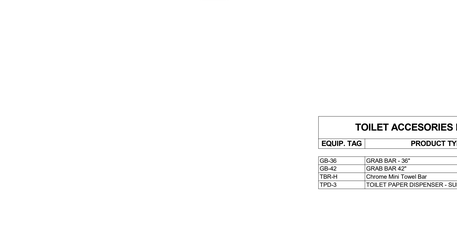
12 UNIT B KITCHEN ACCESSIBILITY
3/8" = 1'-0"



2 UNIT B RCP - 1ST FLOOR
3/8" = 1'-0"

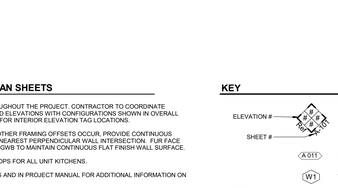


1 UNIT B PLAN - 1ST FLOOR
3/8" = 1'-0"

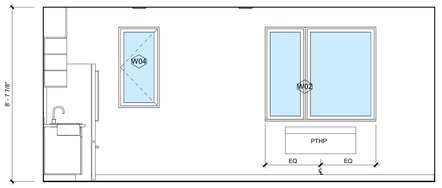


5 UNIT B (1ST FL) - LIVING AREA - LEFT
3/8" = 1'-0"

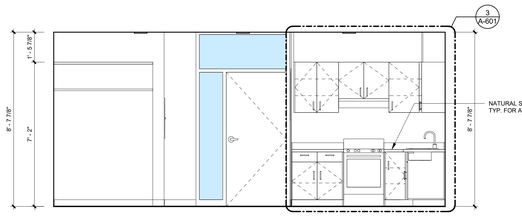
4 UNIT B (1ST FL) - LIVING AREA - RIGHT
3/8" = 1'-0"



3 UNIT B (1ST FL) - LIVING AREA - REAR
3/8" = 1'-0"

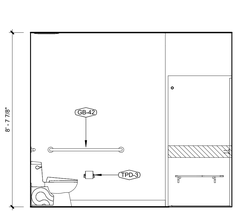


7 UNIT B (1ST FL) - KITCHEN - FRONT
3/8" = 1'-0"

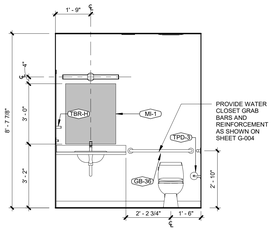


6 UNIT B (1ST FL) - KITCHEN - REAR
3/8" = 1'-0"

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §1127A.1 AS AMENDED BY THE LOCAL AGENCY.

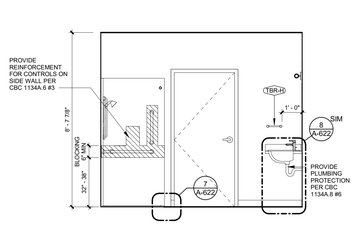


11 UNIT B (1ST FL) - BATH - LEFT
3/8" = 1'-0"

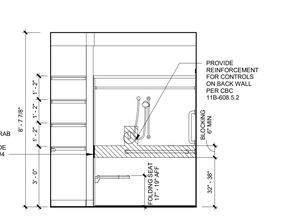


PROVIDE WATER CLOSET GRAB BARS AND REINFORCEMENT AS SHOWN ON SHEET G-004

10 UNIT B (1ST FL) - BATH - REAR
3/8" = 1'-0"



9 UNIT B (1ST FL) - BATH - RIGHT
3/8" = 1'-0"



8 UNIT B (1ST FL) - BATH - FRONT
3/8" = 1'-0"

TOILET ACCESORIES KEY

EQUIP. TAG	PRODUCT TYPE
GB-36	GRAB BAR - 36"
GB-42	GRAB BAR 42"
TBR-H	Chrome Mini Towel Bar
TPD-3	TOILET PAPER DISPENSER - SURFACE MOUNT

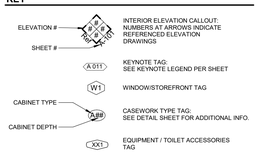
GENERAL NOTE: UNIT BATHROOMS

- SEE SHEET G-004 FOR MORE INFORMATION ON GRAB BAR REINFORCEMENT AND KNEE AND TOE CLEARANCES.
- ONE-PIECE SHOWERS ARE PROPRIETARY AND INCLUDE SEATS AND GRAB BARS.

GENERAL NOTES: UNIT PLAN SHEETS

- UNIT PLAN TYPE A IS MIRRORED THROUGHOUT THE PROJECT. CONTRACTOR TO COORDINATE REFERENCED TYPICAL UNIT PLANS AND ELEVATIONS WITH CONFIGURATIONS SHOWN IN OVERALL FLOOR PLANS. SEE ENLARGED PLANS FOR INTERIOR ELEVATION TAG LOCATIONS.
- WHERE SHEAR WALL SHEATHING OR OTHER FRAMING OFFSETS OCCUR, PROVIDE CONTINUOUS FLUSH INTERIOR WALL FINISH TO THE NEAREST PERPENDICULAR WALL INTERSECTION. FUR FACE OF FRAMING OR PROVIDE ADDITIONAL GWB TO MAINTAIN CONTINUOUS FLAT FINISH WALL SURFACE.
- PROVIDE NATURAL STONE COUNTERTOPS FOR ALL UNIT KITCHENS.
- SEE FINISH SCHEDULES ON DRAWINGS AND IN PROJECT MANUAL FOR ADDITIONAL INFORMATION ON FINISH MATERIALS

KEY



ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REGISTERED ARCHITECT JOHN ROWELL C28507 12-31-2021 Renewal Date STATE OF CALIFORNIA

REVISIONS TO THIS SHEET

REV.	DATE
PCC-2	2020.05.15
PCC-1	2020.04.06

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner

DANCO

Project Name

SAGE COMMONS

Project Address

**80 COLLEGE AVENUE
SANTA ROSA, CA**

ENLARGED UNIT PLANS AND ELEVATIONS - UNIT B - 1ST FLOOR

A-141

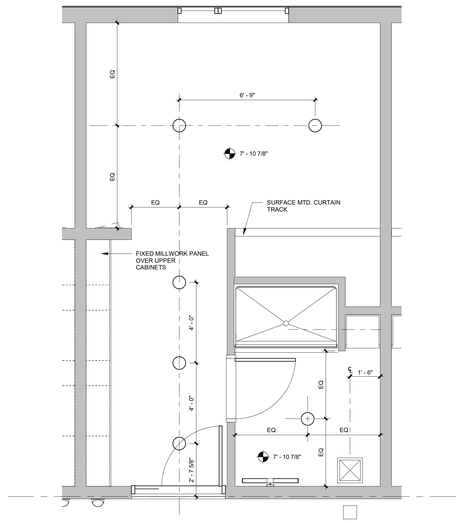
6/4/2020 4:45:31 PM

ROWELL BROKAW

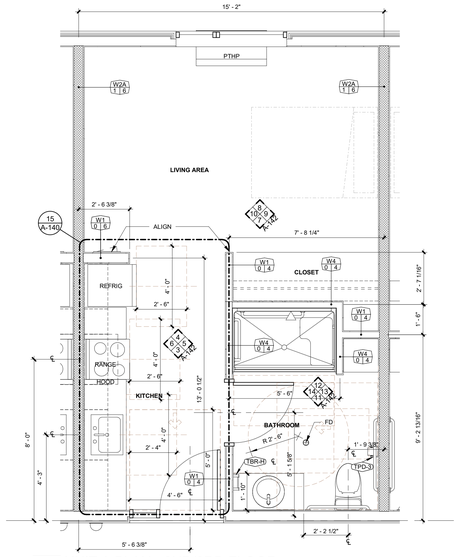
1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

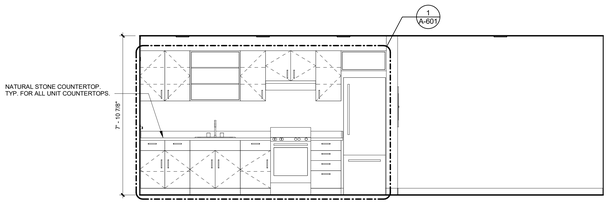
STAMP



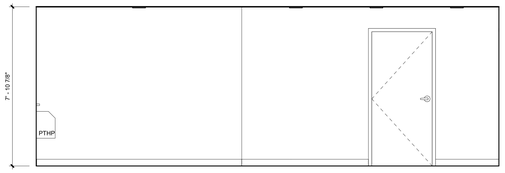
2 UNIT A RCP - 2ND/3RD FLOOR
3/8" = 1'-0"



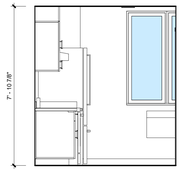
1 UNIT A PLAN - 2ND/3RD FLOOR
3/8" = 1'-0"



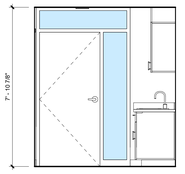
6 UNIT A (2ND/3RD FL) - ENTRY - LEFT
3/8" = 1'-0"



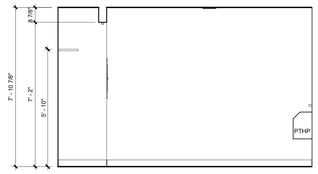
5 UNIT A (2ND/3RD FL) - ENTRY - RIGHT
3/8" = 1'-0"



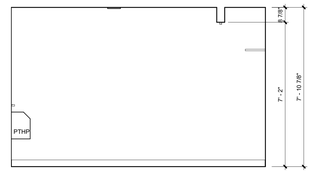
4 UNIT A (2ND/3RD FL) - ENTRY - FRONT
3/8" = 1'-0"



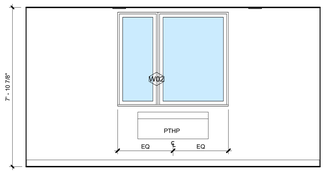
3 UNIT A (2ND/3RD FL) - ENTRY - REAR
3/8" = 1'-0"



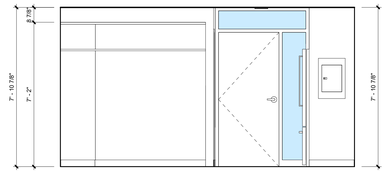
10 UNIT A (2ND/3RD FL) - LIVING AREA - LEFT
3/8" = 1'-0"



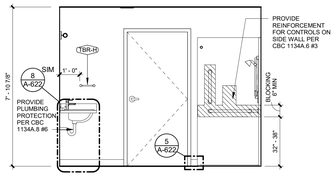
9 UNIT A (2ND/3RD FL) - LIVING AREA - RIGHT
3/8" = 1'-0"



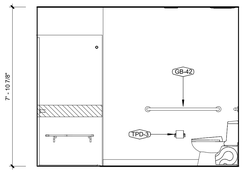
8 UNIT A (2ND/3RD FL) - LIVING AREA - FRONT
3/8" = 1'-0"



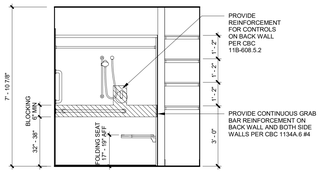
7 UNIT A (2ND/3RD FL) - LIVING AREA - REAR
3/8" = 1'-0"



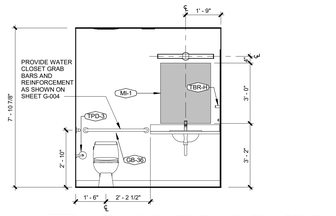
14 UNIT A (2ND/3RD FL) - BATH - LEFT
3/8" = 1'-0"



13 UNIT A (2ND/3RD FL) - BATH - RIGHT
3/8" = 1'-0"



12 UNIT A (2ND/3RD FL) - BATH - FRONT
3/8" = 1'-0"



11 UNIT A (2ND/3RD FL) - BATH - REAR
3/8" = 1'-0"

REVIEWED FOR CODE COMPLIANCE
BY CEASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

TOILET ACCESORIES KEY

EQUIP. TAG	PRODUCT TYPE
GB-36	GRAB BAR - 36"
GB-42	GRAB BAR 42"
TBR-H	Chrome Mini Towel Bar
TPD-3	TOILET PAPER DISPENSER - SURFACE MOUNT

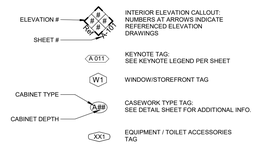
GENERAL NOTE: UNIT BATHROOMS

- SEE SHEET G-004 FOR MORE INFORMATION ON GRAB BAR REINFORCEMENT AND KNEE AND TOE CLEARANCES.
- ONE-PIECE SHOWERS ARE PROPRIETARY AND INCLUDE SEATS AND GRAB BARS.

GENERAL NOTES: UNIT PLAN SHEETS

- UNIT PLAN TYPE A IS MIRRORED THROUGHOUT THE PROJECT. CONTRACTOR TO COORDINATE REFERENCED TYPICAL UNIT PLANS AND ELEVATIONS WITH CONFIGURATIONS SHOWN IN OVERALL FLOOR PLANS. SEE ENLARGED PLANS FOR INTERIOR ELEVATION TAG LOCATIONS.
- WHERE SHEAR WALL SHEATHING OR OTHER FRAMING OFFSETS OCCUR, PROVIDE CONTINUOUS FLUSH INTERIOR WALL FINISH TO THE NEAREST PERPENDICULAR WALL INTERSECTION. FUR FACE OF FRAMING OR PROVIDE ADDITIONAL GWB TO MAINTAIN CONTINUOUS FLAT FINISH WALL SURFACE.
- PROVIDE NATURAL STONE COUNTERTOPS FOR ALL UNIT KITCHENS.
- SEE FINISH SCHEDULES ON DRAWINGS AND IN PROJECT MANUAL FOR ADDITIONAL INFORMATION ON FINISH MATERIALS

KEY



REVISIONS TO THIS SHEET

REV.	DATE
PCC-2	2020.05.15
PCC-1	2020.04.06

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner

DANCO

Project Name

SAGE COMMONS

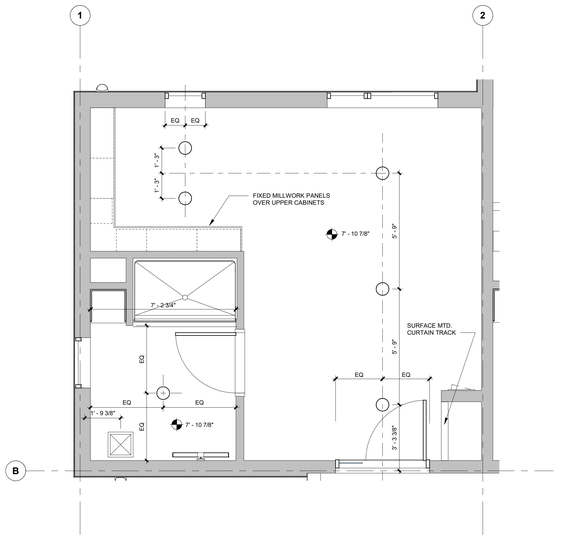
Project Address

**80 COLLEGE AVENUE
SANTA ROSA, CA**

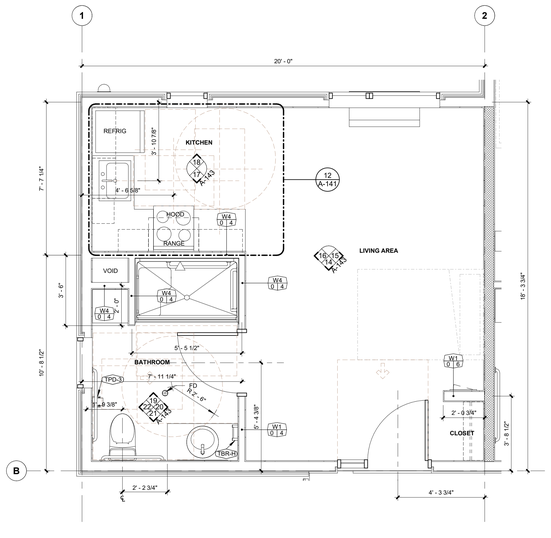
ENLARGED UNIT PLANS AND ELEVATIONS - UNIT A - 2ND/3RD FL

A-142

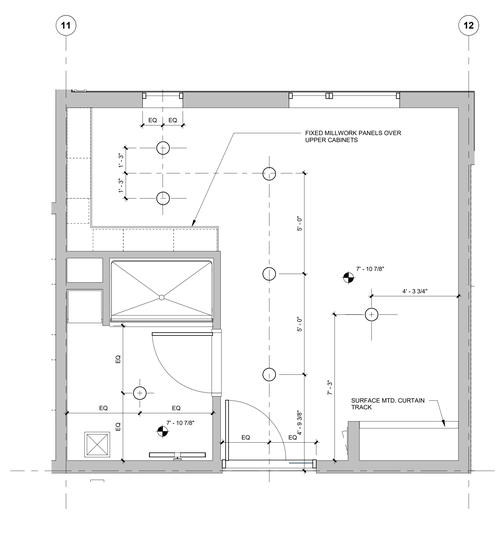
6/4/2020 4:45:36 PM



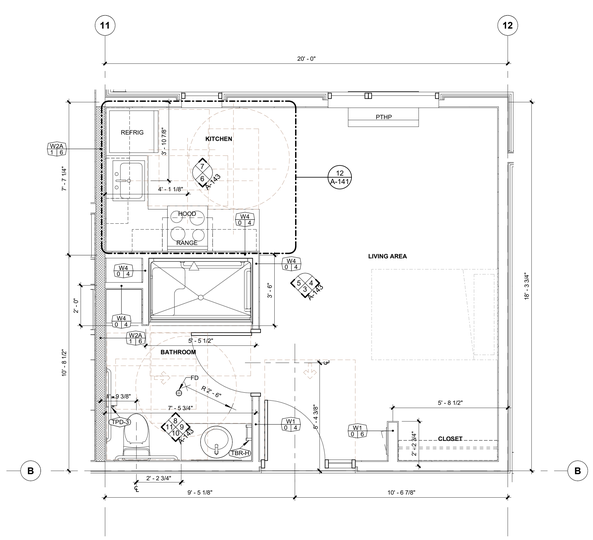
13 UNIT B RCP - 2ND/3RD FLOOR - WEST
3/8" = 1'-0"



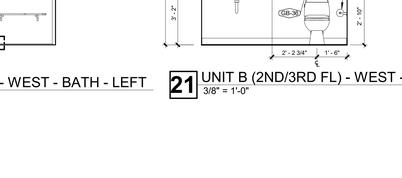
12 UNIT B PLAN - 2ND/3RD FLOOR - WEST
3/8" = 1'-0"



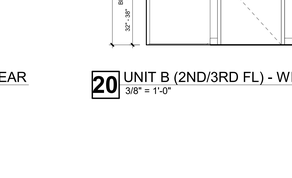
2 UNIT B RCP - 2ND/3RD FLOOR - EAST
3/8" = 1'-0"



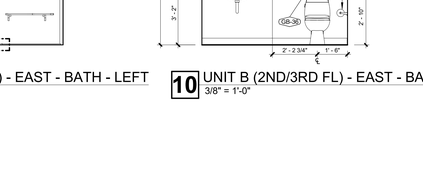
1 UNIT B PLAN - 2ND/3RD FLOOR - EAST
3/8" = 1'-0"



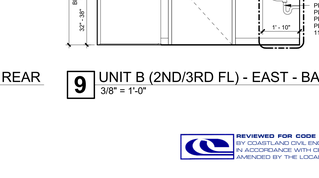
15 UNIT B (2ND/3RD FL) - WEST - LIVING AREA - RIGHT
3/8" = 1'-0"



14 UNIT B (2ND/3RD FL) - WEST - LIVING AREA - REAR
3/8" = 1'-0"



4 UNIT B (2ND/3RD FL) - EAST - LIVING AREA - RIGHT
3/8" = 1'-0"



3 UNIT B (2ND/3RD FL) - EAST - LIVING AREA - REAR
3/8" = 1'-0"

17 UNIT B (2ND/3RD FL) - WEST - KITCHEN - REAR
3/8" = 1'-0"

16 UNIT B (2ND/3RD FL) - WEST - LIVING AREA - LEFT
3/8" = 1'-0"

6 UNIT B (2ND/3RD FL) - EAST - KITCHEN - REAR
3/8" = 1'-0"

5 UNIT B (2ND/3RD FL) - EAST - LIVING AREA - LEFT
3/8" = 1'-0"

19 UNIT B (2ND/3RD FL) - WEST - BATH - FRONT
3/8" = 1'-0"

18 UNIT B (2ND/3RD FL) - WEST - KITCHEN - FRONT
3/8" = 1'-0"

8 UNIT B (2ND/3RD FL) - EAST - BATH - FRONT
3/8" = 1'-0"

7 UNIT B (2ND/3RD FL) - EAST - KITCHEN - FRONT
3/8" = 1'-0"

22 UNIT B (2ND/3RD FL) - WEST - BATH - LEFT
3/8" = 1'-0"

21 UNIT B (2ND/3RD FL) - WEST - BATH - REAR
3/8" = 1'-0"

20 UNIT B (2ND/3RD FL) - WEST - BATH - RIGHT
3/8" = 1'-0"

11 UNIT B (2ND/3RD FL) - EAST - BATH - LEFT
3/8" = 1'-0"

10 UNIT B (2ND/3RD FL) - EAST - BATH - REAR
3/8" = 1'-0"

9 UNIT B (2ND/3RD FL) - EAST - BATH - RIGHT
3/8" = 1'-0"

TOILET ACCESORIES KEY

EQUIP. TAG	PRODUCT TYPE
GB-36	GRAB BAR - 36"
GB-42	GRAB BAR 42"
TBR-H	Chrome Mini Towel Bar
TPD-3	TOILET PAPER DISPENSER - SURFACE MOUNT

GENERAL NOTE: UNIT BATHROOMS

- SEE SHEET G-004 FOR MORE INFORMATION ON GRAB BAR REINFORCEMENT AND KNEE AND TOE CLEARANCES.
- ONE-PIECE SHOWERS ARE PROPRIETARY AND INCLUDE SEATS AND GRAB BARS.

GENERAL NOTES: UNIT PLAN SHEETS

- UNIT PLAN TYPE A IS MIRRORED THROUGHOUT THE PROJECT. CONTRACTOR TO COORDINATE REFERENCED TYPICAL UNIT PLANS AND ELEVATIONS WITH CONFIGURATIONS SHOWN IN OVERALL FLOOR PLANS. SEE ENLARGED PLANS FOR INTERIOR ELEVATION TAG LOCATIONS.
- WHERE SHEAR WALL SHEATHING OR OTHER FRAMING OFFSETS OCCUR, PROVIDE CONTINUOUS FLUSH INTERIOR WALL FINISH TO THE NEAREST PERPENDICULAR WALL INTERSECTION. FUR FACE OF FRAMING OR PROVIDE ADDITIONAL GWB TO MAINTAIN CONTINUOUS FLAT FINISH WALL SURFACE.
- PROVIDE NATURAL STONE COUNTERTOPS FOR ALL UNIT KITCHENS.
- SEE FINISH SCHEDULES ON DRAWINGS AND IN PROJECT MANUAL FOR ADDITIONAL INFORMATION ON FINISH MATERIALS

KEY

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

LICENSED ARCHITECT
JOHN ROWELL
C28507
12-31-2021
Renewal Date
STATE OF CALIFORNIA

REVISIONS TO THIS SHEET

REV.	DATE
PCC-2	2020.05.15
PCC-1	2020.04.06

SHEET ISSUE DATE
2020-01-27 PERMIT SET

PROJECT TRACKING
RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

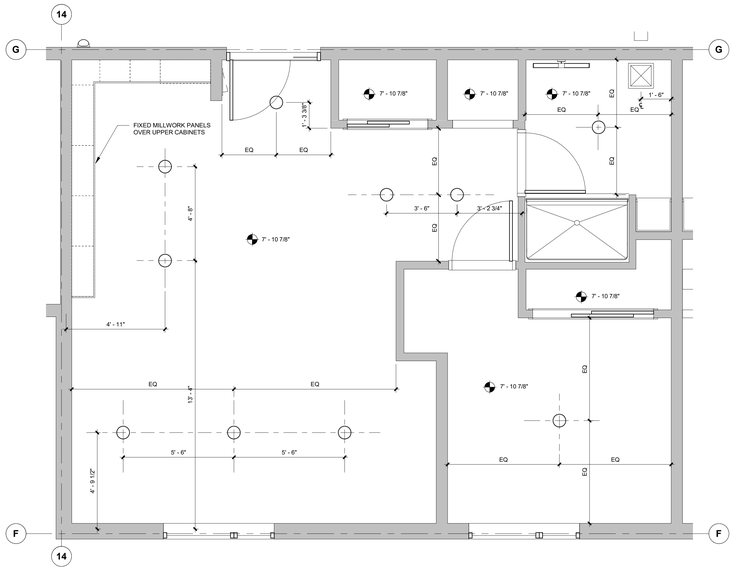
Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

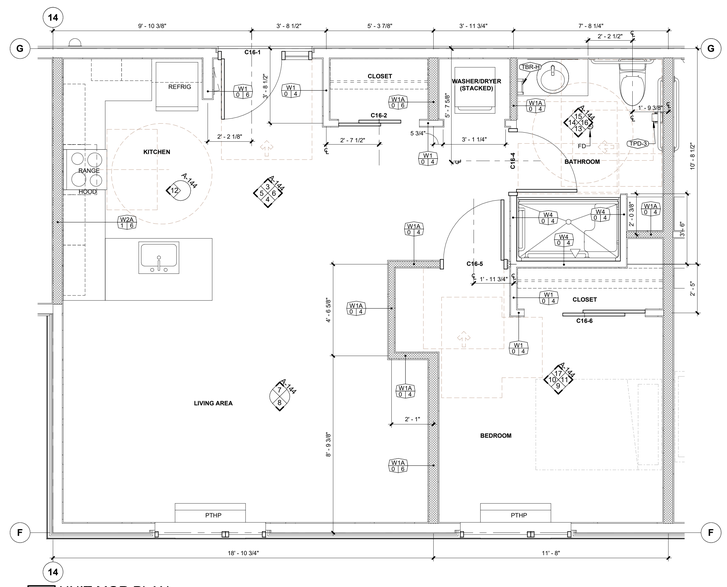
ENLARGED UNIT PLANS AND ELEVATIONS - UNIT B - 2ND/3RD FL

A-143

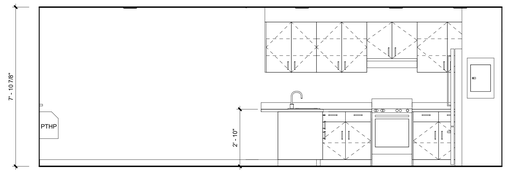
6/4/2020 4:45:43 PM



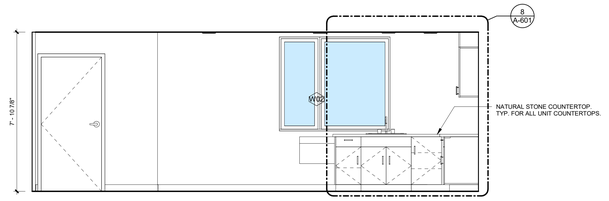
2 UNIT MGR RCP
3/8" = 1'-0"



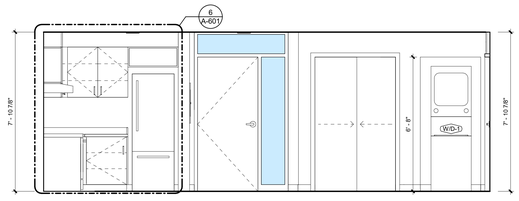
1 UNIT MGR PLAN
3/8" = 1'-0"



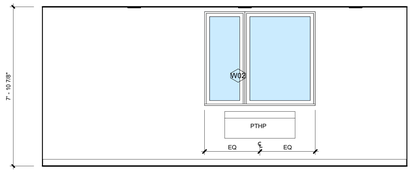
5 UNIT MGR - ENTRY - RIGHT
3/8" = 1'-0"



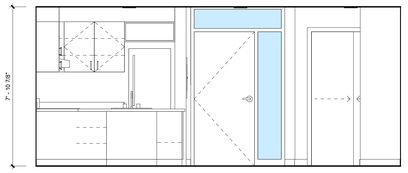
4 UNIT MGR - ENTRY - FRONT
3/8" = 1'-0"



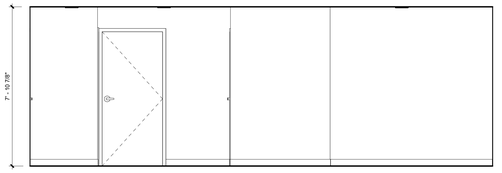
3 UNIT MGR - ENTRY - REAR
3/8" = 1'-0"



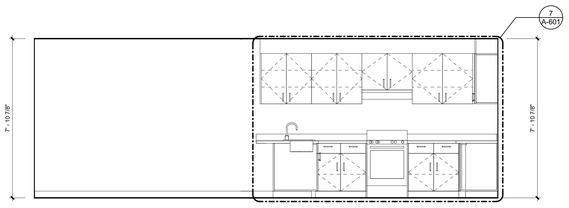
8 UNIT MGR - LIVING AREA - FRONT
3/8" = 1'-0"



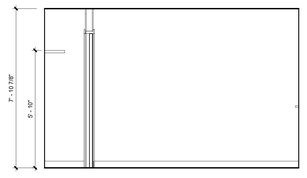
7 UNIT MGR - LIVING AREA - REAR
3/8" = 1'-0"



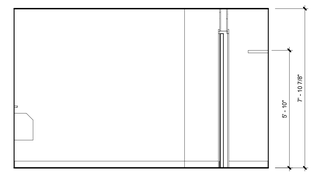
6 UNIT MGR - ENTRY - LEFT
3/8" = 1'-0"



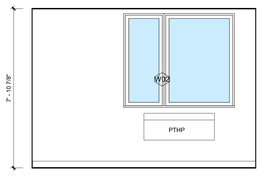
12 UNIT MGR - KITCHEN - RIGHT
3/8" = 1'-0"



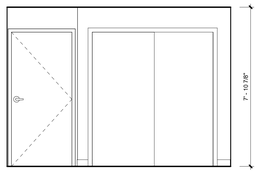
11 UNIT MGR - BEDROOM - LEFT
3/8" = 1'-0"



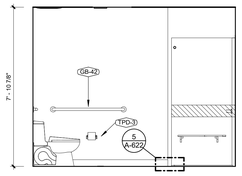
10 UNIT MGR - BEDROOM - RIGHT
3/8" = 1'-0"



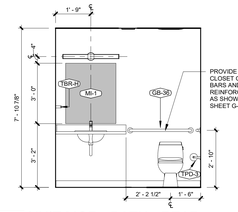
9 UNIT MGR - BEDROOM - FRONT
3/8" = 1'-0"



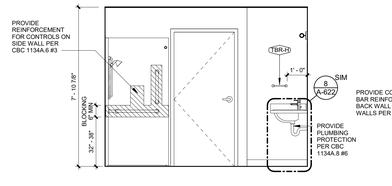
17 UNIT MGR - BEDROOM - REAR
3/8" = 1'-0"



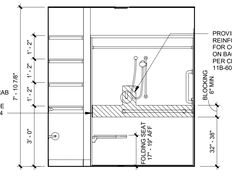
16 UNIT MGR - BATH - LEFT
3/8" = 1'-0"



15 UNIT MGR - BATH - REAR
3/8" = 1'-0"



14 UNIT MGR - BATH - RIGHT
3/8" = 1'-0"



13 UNIT MGR - BATH - FRONT
3/8" = 1'-0"

TOILET ACCESORIES KEY

EQUIP. TAG	PRODUCT TYPE
GB-36	GRAB BAR - 36"
GB-42	GRAB BAR 42"
TBR-H	Chrome Mini Towel Bar
TPD-3	TOILET PAPER DISPENSER - SURFACE MOUNT

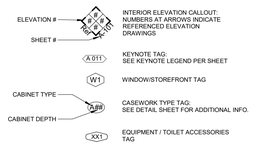
GENERAL NOTE: UNIT BATHROOMS

- SEE SHEET G-004 FOR MORE INFORMATION ON GRAB BAR REINFORCEMENT AND KNEE AND TOE CLEARANCES.
- ONE-PIECE SHOWERS ARE PROPRIETARY AND INCLUDE SEATS AND GRAB BARS.

GENERAL NOTES: UNIT PLAN SHEETS

- UNIT PLAN TYPE A IS MIRRORED THROUGHOUT THE PROJECT. CONTRACTOR TO COORDINATE REFERENCED TYPICAL UNIT PLANS AND ELEVATIONS WITH CONFIGURATIONS SHOWN IN OVERALL FLOOR PLANS. SEE ENLARGED PLANS FOR INTERIOR ELEVATION TAG LOCATIONS.
- WHERE SHEAR WALL SHEATHING OR OTHER FRAMING OFFSETS OCCUR, PROVIDE CONTINUOUS FLUSH INTERIOR WALL FINISH TO THE NEAREST PERPENDICULAR WALL INTERSECTION. FUR FACE OF FRAMING OR PROVIDE ADDITIONAL GWB TO MAINTAIN CONTINUOUS FLAT FINISH WALL SURFACE.
- PROVIDE NATURAL STONE COUNTERTOPS FOR ALL UNIT KITCHENS.
- SEE FINISH SCHEDULES ON DRAWINGS AND IN PROJECT MANUAL FOR ADDITIONAL INFORMATION ON FINISH MATERIALS

KEY



ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REVISIONS TO THIS SHEET

REV.	DATE
PCC-2	2020.05.15
PCC-1	2020.04.06

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner

DANCO

Project Name

SAGE COMMONS

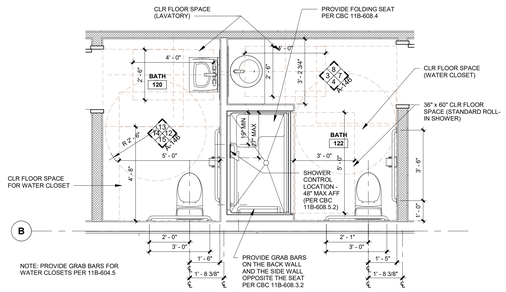
Project Address

80 COLLEGE AVENUE SANTA ROSA, CA

ENLARGED UNIT PLANS AND ELEVATIONS - MGR APARTMENT

A-144

6/4/2020 4:45:48 PM

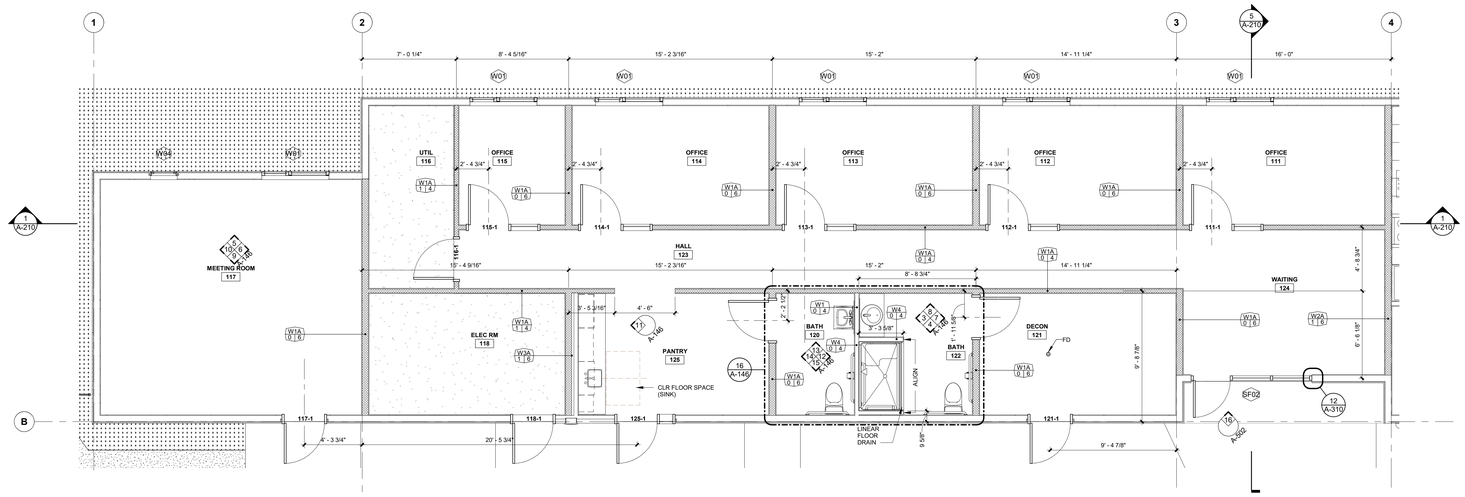


16 OFFICE BATHROOMS - ENLARGED PLAN
3/8" = 1'-0"

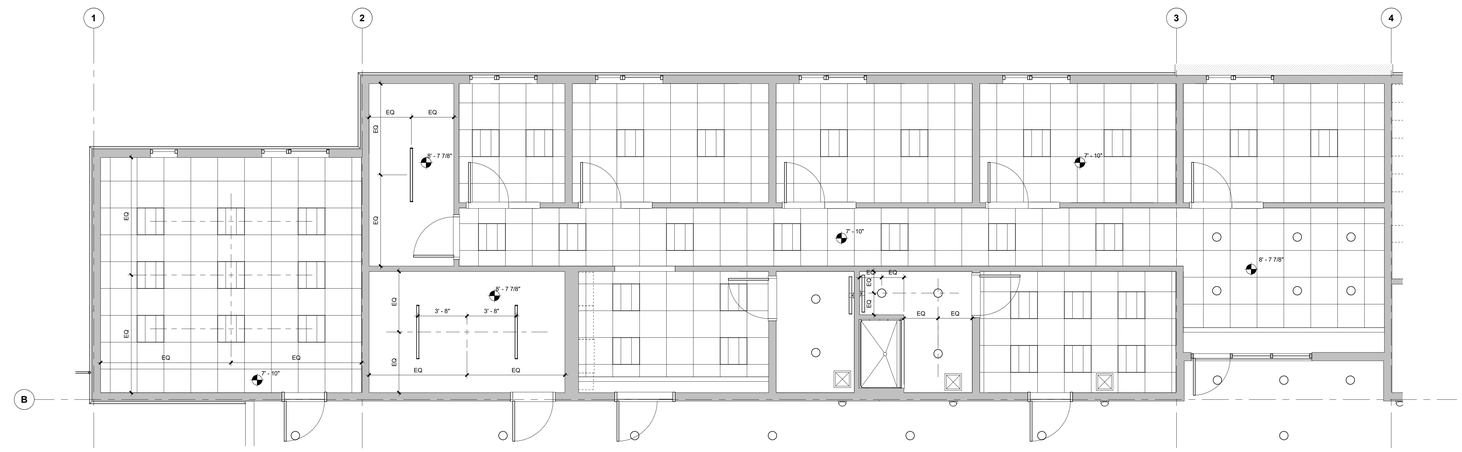
TOILET ACCESORIES KEY	
EQUIP. TAG	**PRODUCT TYPE**
GB-36	GRAB BAR - 36"
GB-42	GRAB BAR 42"
TBR-H	Chrome Mini Towel Bar
TPD-3	TOILET PAPER DISPENSER - SURFACE MOUNT

GENERAL NOTE: UNIT BATHROOMS

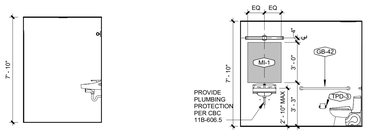
- SEE SHEET G-004 FOR MORE INFORMATION ON GRAB BAR REINFORCEMENT AND KNEE AND TOE CLEARANCES.
- ONE-PIECE SHOWERS ARE PROPRIETARY AND INCLUDE SEATS AND GRAB BARS.



1 1ST FLOOR - ENLARGED - OFFICES
1/4" = 1'-0"

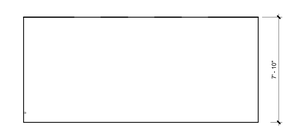


2 1ST FLOOR - ENLARGED RCP - OFFICES
1/4" = 1'-0"

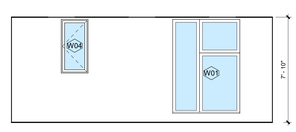


13 BATH 120 - LEFT
1/4" = 1'-0"

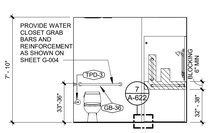
12 BATH 120 - FRONT
1/4" = 1'-0"



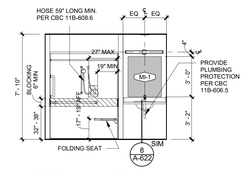
6 1ST FLOOR - MEETING RM - RIGHT
1/4" = 1'-0"



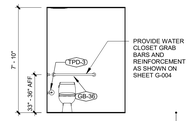
5 1ST FLOOR - MEETING RM - FRONT
1/4" = 1'-0"



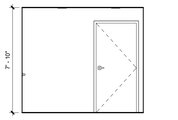
4 BATH 122 - LEFT
1/4" = 1'-0"



3 BATH 122 - FRONT
1/4" = 1'-0"



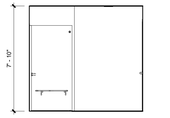
15 BATH 120 - RIGHT
1/4" = 1'-0"
EW1



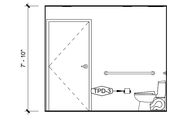
14 BATH 120 - REAR
1/4" = 1'-0"

10 1ST FLOOR - MEETING RM - LEFT
1/4" = 1'-0"

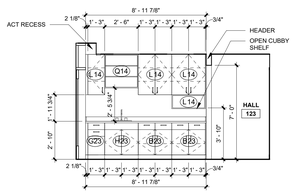
9 1ST FLOOR - MEETING RM - REAR
1/4" = 1'-0"



8 BATH 122 - RIGHT
1/4" = 1'-0"



7 BATH 122 - REAR
1/4" = 1'-0"



11 OFFICES - PANTRY
1/4" = 1'-0"

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

LICENSED ARCHITECT
JOHN ROWELL
C28507
12-31-2021
Renewal Date
STATE OF CALIFORNIA

REVISIONS TO THIS SHEET

REV.	DATE
PCC-2	2020.05.15
PCC-1	2020.04.06

SHEET ISSUE DATE
2020-01-27 PERMIT SET

PROJECT TRACKING
RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

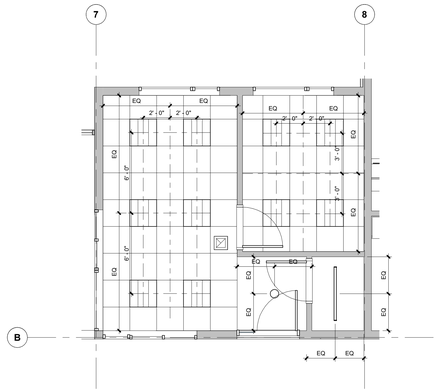
Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE SANTA ROSA, CA

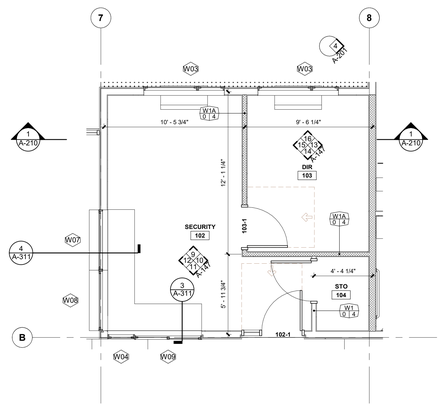
ENLARGED PLANS AND ELEVATIONS - 1ST FLOOR - OFFICES

A-146

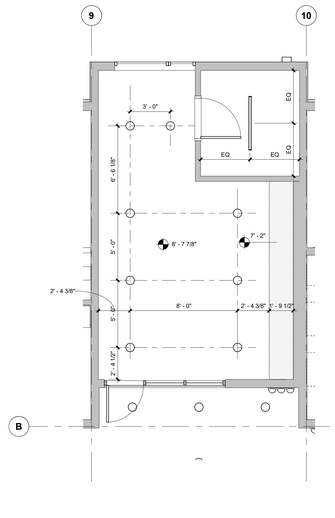
6/4/2020 4:45:54 PM



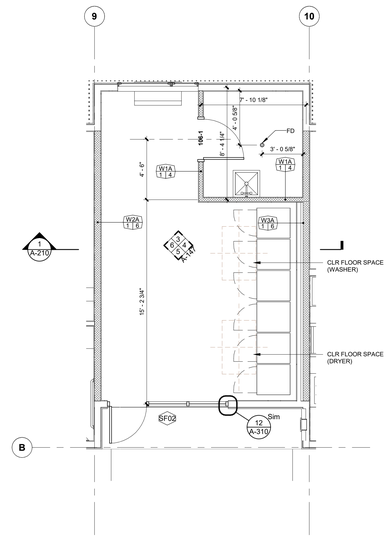
8 1ST FLOOR - ENLARGED RCP - ENTRY OFFICES
1/4" = 1'-0"



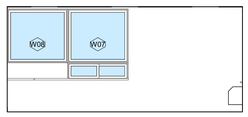
7 1ST FLOOR - ENLARGED - ENTRY OFFICES
1/4" = 1'-0"



2 1ST FLOOR - ENLARGED RCP - LAUNDRY
1/4" = 1'-0"

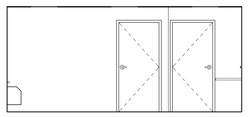


1 1ST FLOOR - ENLARGED - LAUNDRY
1/4" = 1'-0"

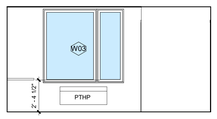


12 1ST FLOOR - SECURITY - LEFT
1/4" = 1'-0"

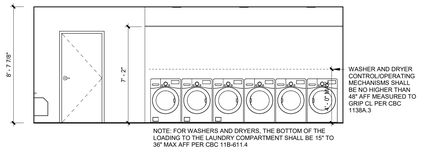
11 1ST FLOOR - SECURITY - REAR
1/4" = 1'-0"



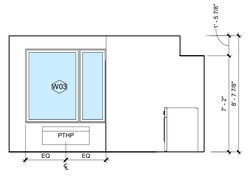
10 1ST FLOOR - SECURITY - RIGHT
1/4" = 1'-0"



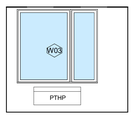
9 1ST FLOOR - SECURITY - FRONT
1/4" = 1'-0"



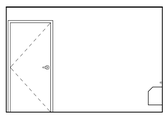
4 1ST FLOOR - LAUNDRY - RIGHT
1/4" = 1'-0"



3 1ST FLOOR - LAUNDRY - FRONT
1/4" = 1'-0"



16 1ST FLOOR - DIR. OFFICE - LEFT
1/4" = 1'-0"

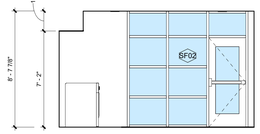


15 1ST FLOOR - DIR. OFFICE - REAR
1/4" = 1'-0"

14 1ST FLOOR - DIR. OFFICE - RIGHT
1/4" = 1'-0"

13 1ST FLOOR - DIR. OFFICE - FRONT
1/4" = 1'-0"

6 1ST FLOOR - LAUNDRY - LEFT
1/4" = 1'-0"



5 1ST FLOOR - LAUNDRY - REAR
1/4" = 1'-0"

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

LICENSED ARCHITECT
JOHN ROWELL
C26507
12-31-2021
Renewal Date
STATE OF CALIFORNIA

REVISIONS TO THIS SHEET

REV.	DATE
PCC-1	2020.04.06

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner

DANCO

Project Name

SAGE COMMONS

Project Address

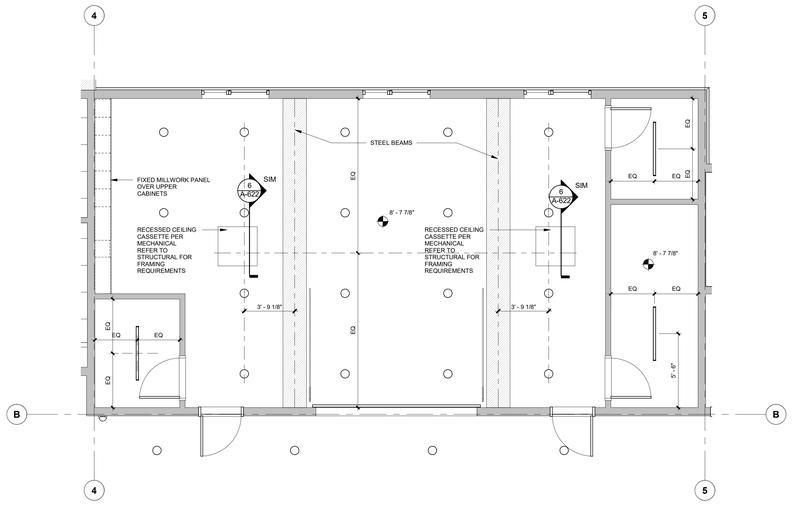
**80 COLLEGE AVENUE
SANTA ROSA, CA**

ENLARGED PLANS AND ELEVATIONS - 1ST FLOOR - DIRECTOR'S OFFICE AND LAUNDRY

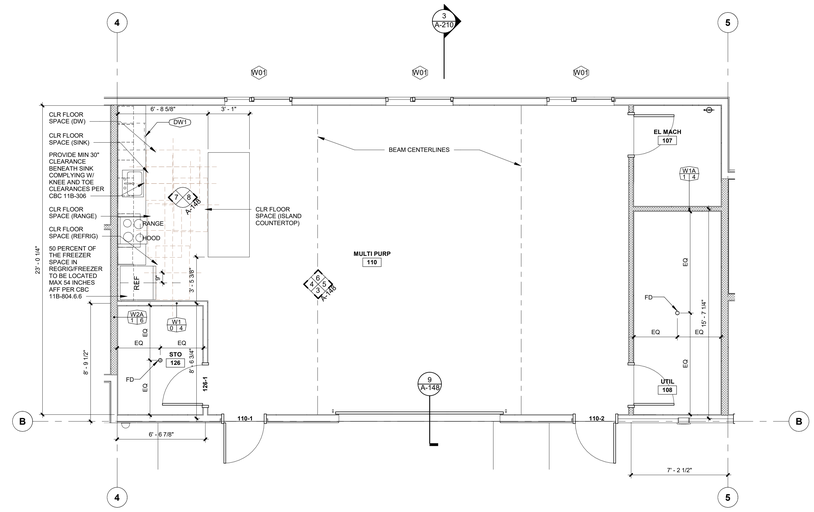
A-147

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

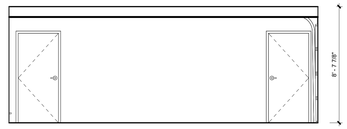
6/4/2020 4:45:58 PM



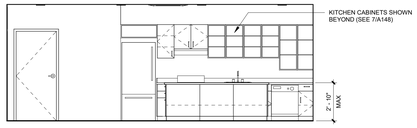
2 MULTIPURP ROOM RCP
1/4" = 1'-0"



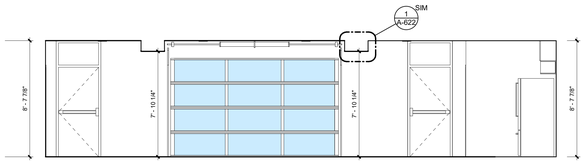
1 MULTIPURP ROOM PLAN
1/4" = 1'-0"



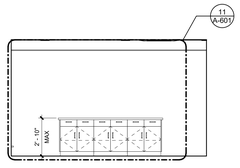
5 MULTIPURP RM - ENTRY - RIGHT
1/4" = 1'-0"



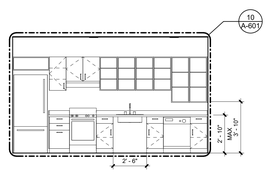
4 MULTIPURP RM - ENTRY - LEFT
1/4" = 1'-0"



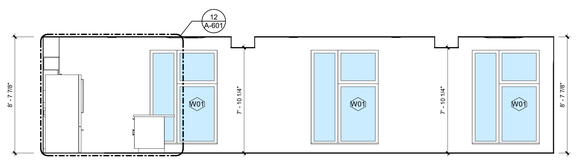
3 MULTIPURP RM - ENTRY - REAR
1/4" = 1'-0"



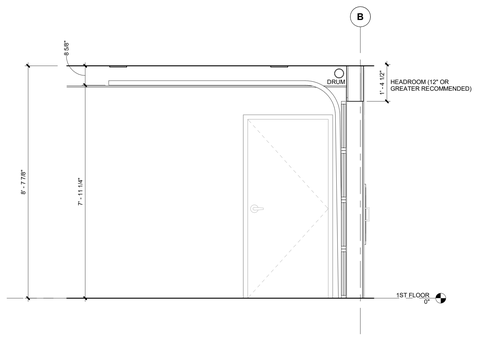
8 MULTIPURP RM - KITCHEN - ISLAND
1/4" = 1'-0"



7 MULTIPURP RM - KITCHEN - FRONT
1/4" = 1'-0"



6 MULTIPURP RM - ENTRY - FRONT
1/4" = 1'-0"



9 OVERHEAD DOOR CLEARANCE DIAGRAM
1/2" = 1'-0"

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

LICENSED ARCHITECT
JOHN ROWELL
C28507
12-31-2021
Renewal Date
STATE OF CALIFORNIA

REVISIONS TO THIS SHEET

REV.	DATE
PCC-2	2020.05.15
PCC-1	2020.04.06

SHEET ISSUE DATE
2020-01-27 PERMIT SET

PROJECT TRACKING
RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

Project Name
SAGE COMMONS

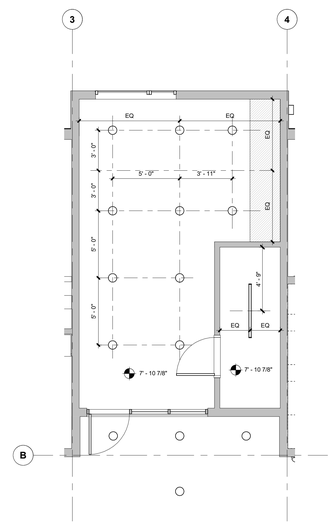
Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

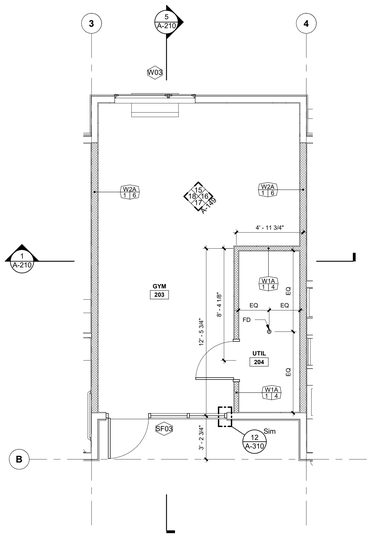
ENLARGED PLANS AND ELEVATIONS - 1ST FLOOR - MULTIPURP ROOM

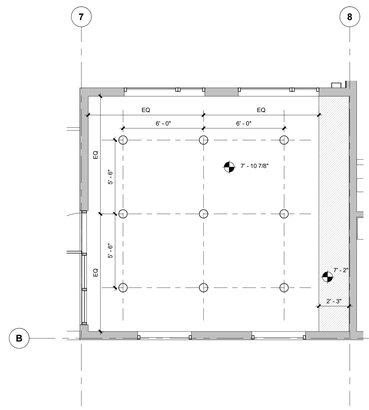
A-148

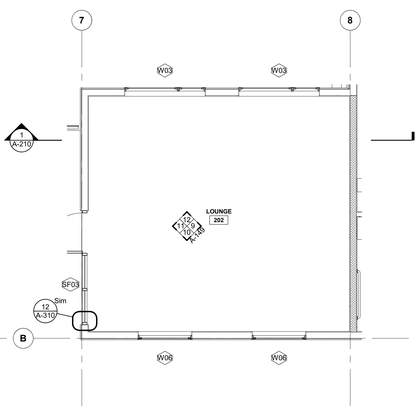
REVIEWED FOR CODE COMPLIANCE
BY CSASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

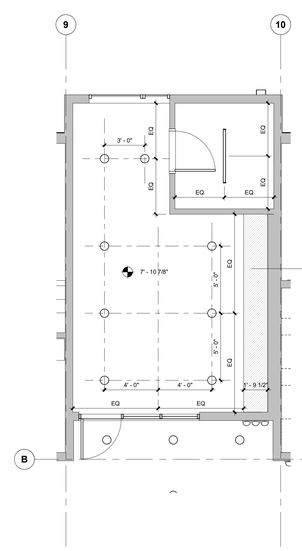
6/4/2020 4:46:02 PM

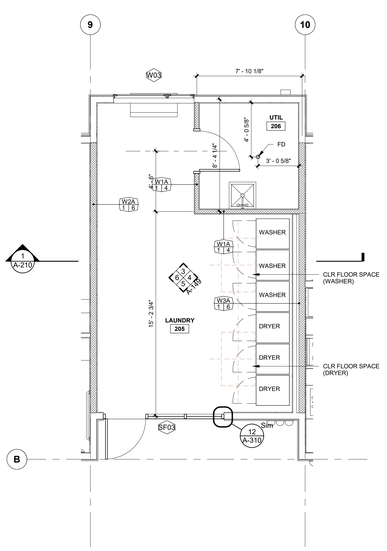












14 2ND/3RD FL - ENLARGED RCP - GYM
1/4" = 1'-0"

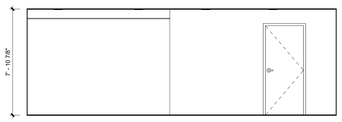
13 2ND/3RD FL - ENLARGED - GYM
1/4" = 1'-0"

8 2ND/3RD FL - ENLARGED RCP - LOUNGE
1/4" = 1'-0"

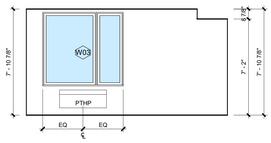
7 2ND/3RD FL - ENLARGED - LOUNGE
1/4" = 1'-0"

2 2ND/3RD FL - ENLARGED RCP - LAUNDRY
1/4" = 1'-0"

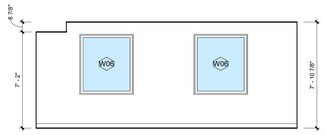
1 2ND/3RD FL - ENLARGED - LAUNDRY
1/4" = 1'-0"



16 2ND/3RD FL - GYM - RIGHT
1/4" = 1'-0"

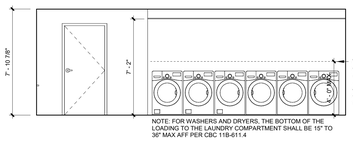


15 2ND/3RD FL - GYM - FRONT
1/4" = 1'-0"

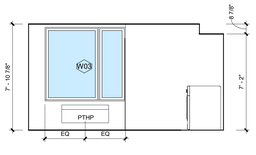


10 2ND/3RD FL - LOUNGE - RIGHT
1/4" = 1'-0"

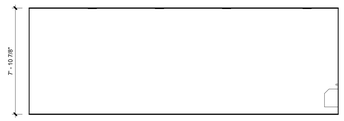
9 2ND/3RD FL - LOUNGE - FRONT
1/4" = 1'-0"



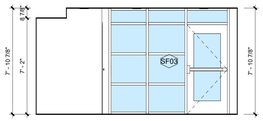
4 2ND/3RD FL - LAUNDRY - RIGHT
1/4" = 1'-0"



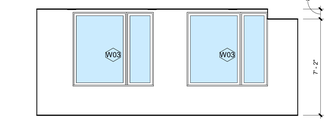
3 2ND/3RD FL - LAUNDRY - FRONT
1/4" = 1'-0"



18 2ND/3RD FL - GYM - LEFT
1/4" = 1'-0"

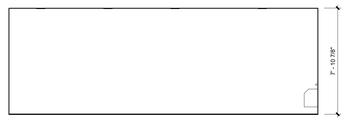


17 2ND/3RD FL - GYM - REAR
1/4" = 1'-0"



12 2ND/3RD FL - LOUNGE - LEFT
1/4" = 1'-0"

11 2ND/3RD FL - LOUNGE - REAR
1/4" = 1'-0"



6 2ND/3RD FL - LAUNDRY - LEFT
1/4" = 1'-0"

5 2ND/3RD FL - LAUNDRY - REAR
1/4" = 1'-0"

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

LICENSED ARCHITECT
JOHN ROWELL
C28587
12-31-2021
Renewal Date
STATE OF CALIFORNIA

REVISIONS TO THIS SHEET

REV.	DATE
PCC-1	2020.04.06

SHEET ISSUE DATE
2020-01-27 PERMIT SET

PROJECT TRACKING
RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

Project Name
SAGE COMMONS

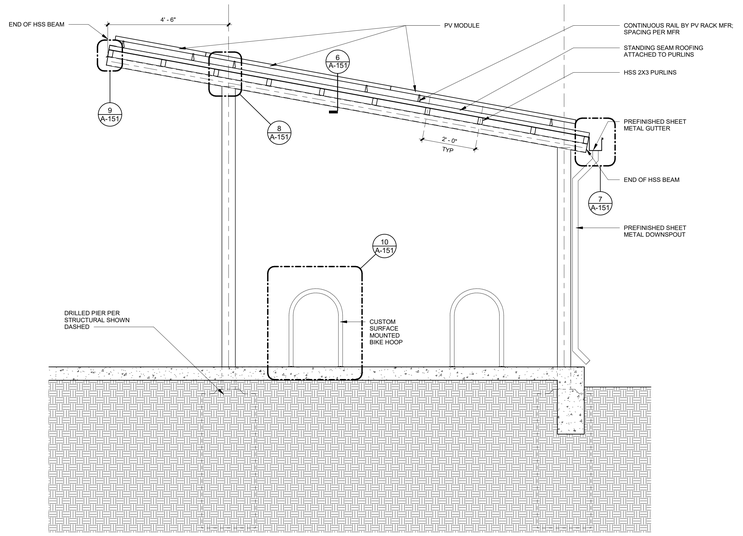
Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

ENLARGED PLANS AND ELEVATIONS - GYM, LOUNGE & LAUNDRY 2ND / 3RD FL

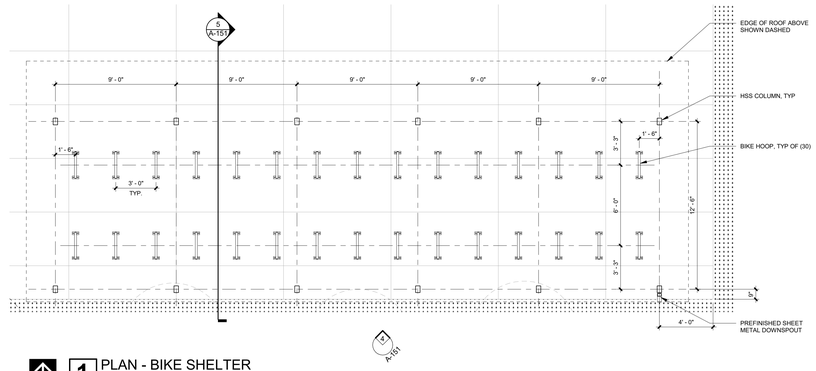
A-149

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

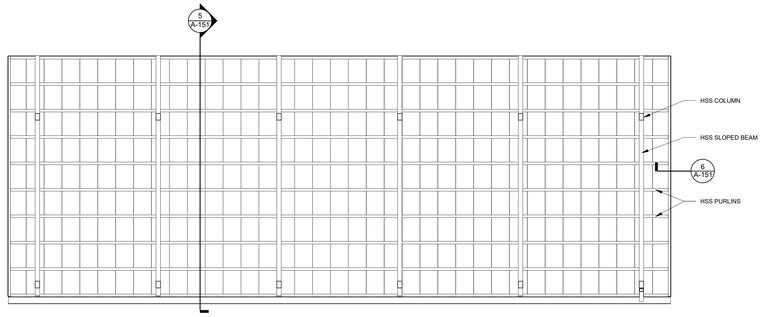
6/4/2020 4:46:07 PM



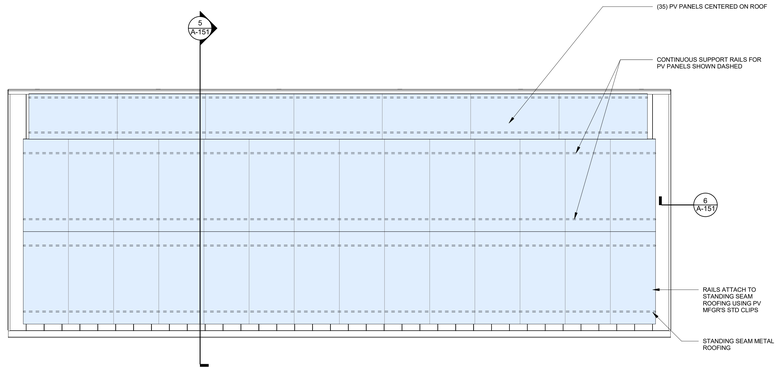
5 SECTION - BIKE SHELTER
1/2" = 1'-0"



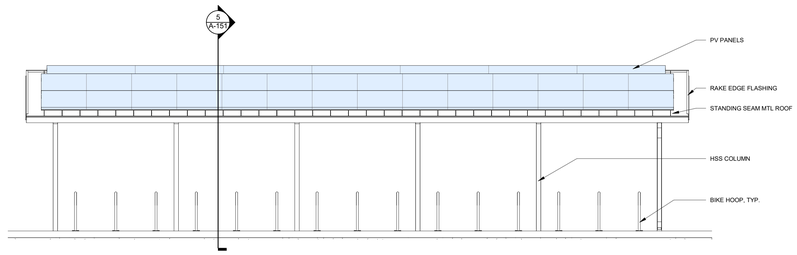
1 PLAN - BIKE SHELTER
1/4" = 1'-0"



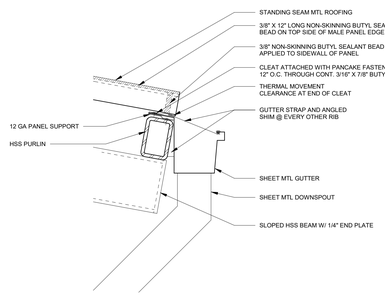
2 RCP - BIKE SHELTER
1/4" = 1'-0"



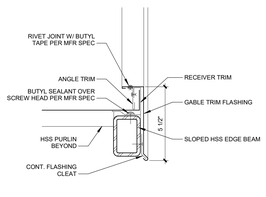
3 ROOF PLAN - BIKE SHELTER
1/4" = 1'-0"



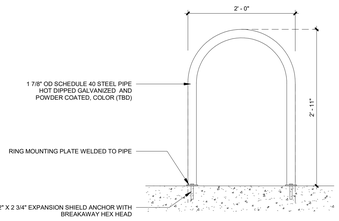
4 BIKE SHELTER ELEV SOUTH
1/4" = 1'-0"



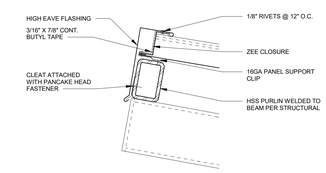
7 METAL ROOF - BOTTOM EDGE
3" = 1'-0"



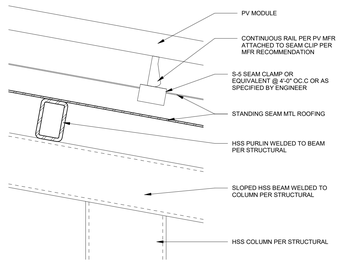
6 METAL ROOF - RAKE EDGE
3" = 1'-0"



10 CUSTOM BIKE HOOP
1" = 1'-0"



9 METAL ROOF - TOP EDGE
3" = 1'-0"



8 TOP OF COLUMN CONNECTION - SIDE
3" = 1'-0"

6/4/2020 4:46:10 PM

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

LICENSED ARCHITECT JOHN ROWELL C28507 12-31-2021 Renewal Date STATE OF CALIFORNIA

REVISIONS TO THIS SHEET

REV.	DATE
PCC-1	2020.04.06

SHEET ISSUE DATE
2020-01-27 PERMIT SET

PROJECT TRACKING
RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

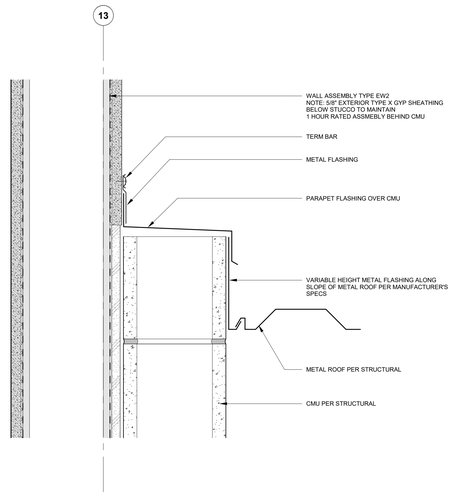
Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE SANTA ROSA, CA

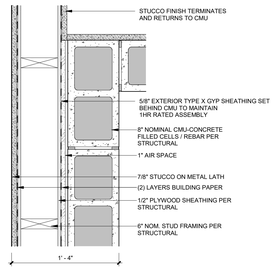
SITE DETAILS - BIKE SHELTER

A-151

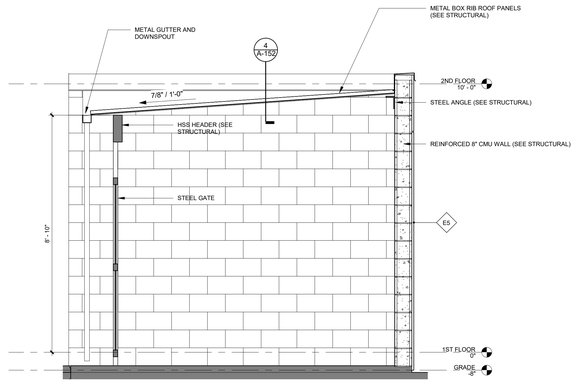
REVIEWED FOR CODE COMPLIANCE BY COASTLAND CIVIL ENGINEERING, INC. IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.



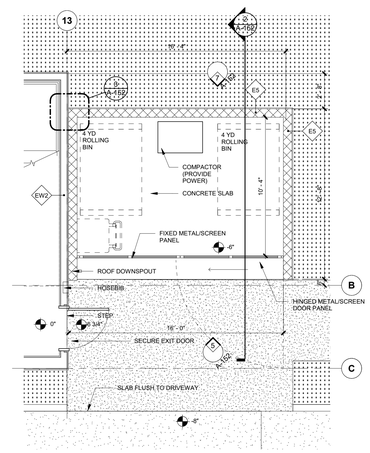
4 FLASHING DETAIL
3" = 1'-0"



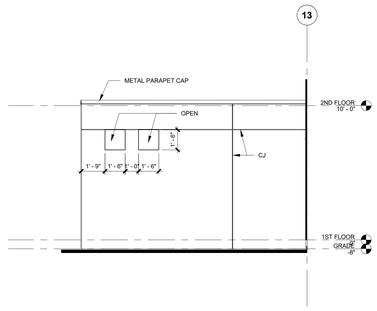
3 PLAN DETAIL
1 1/2" = 1'-0"



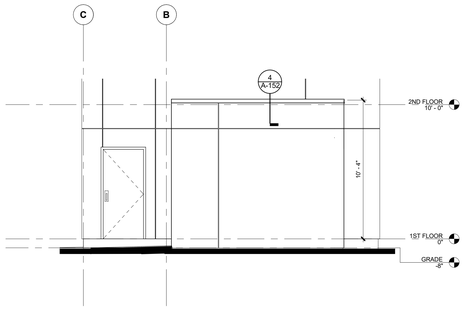
2 TRASH ENCLOSURE SECTION
1/2" = 1'-0"



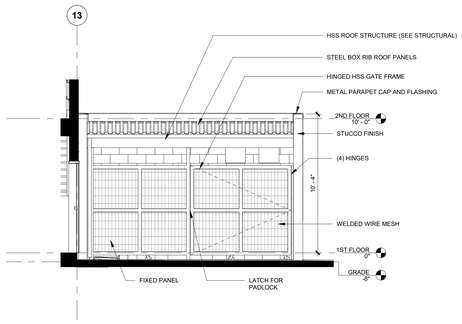
1 PLAN - TRASH ENCLOSURE
1/4" = 1'-0"



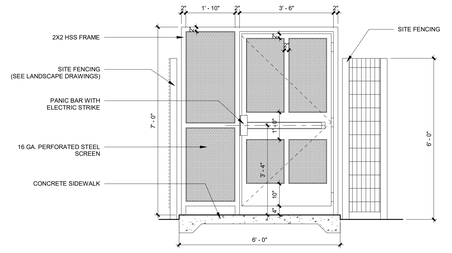
7 TRASH ENCLOSURE ELEV NORTH
1/4" = 1'-0"



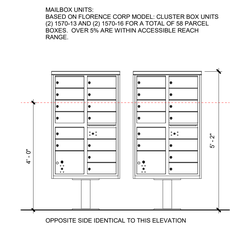
6 TRASH ENCLOSURE ELEV EAST
1/4" = 1'-0"



5 TRASH ENCLOSURE ELEV SOUTH
1/4" = 1'-0"



9 WEST GATE ELEVATION
1/2" = 1'-0"



8 MAILBOX ELEVATION
1/2" = 1'-0"

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REGISTERED ARCHITECT JOHN ROWELL C-28587 Renewal Date 12-31-2021 STATE OF CALIFORNIA

REVISIONS TO THIS SHEET

REV.	DATE
PCC-2	2020.05.15
PCC-1	2020.04.06

SHEET ISSUE DATE
2020-01-27 PERMIT SET

PROJECT TRACKING
RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

Project Name
SAGE COMMONS

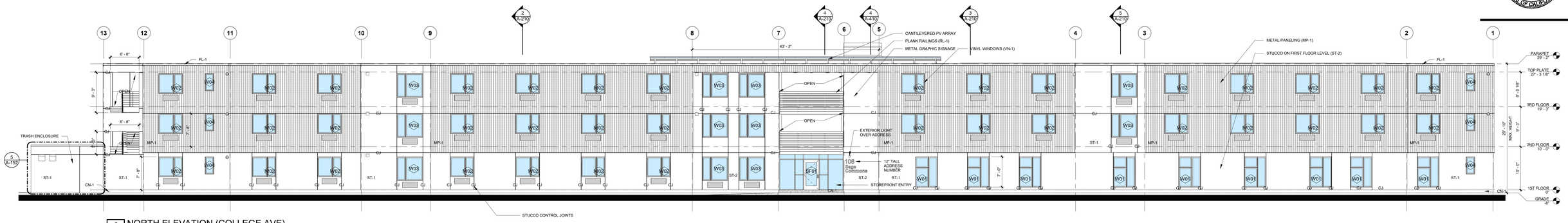
Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

SITE DETAILS - TRASH ENCLOSURE, MAILBOXES, GATES

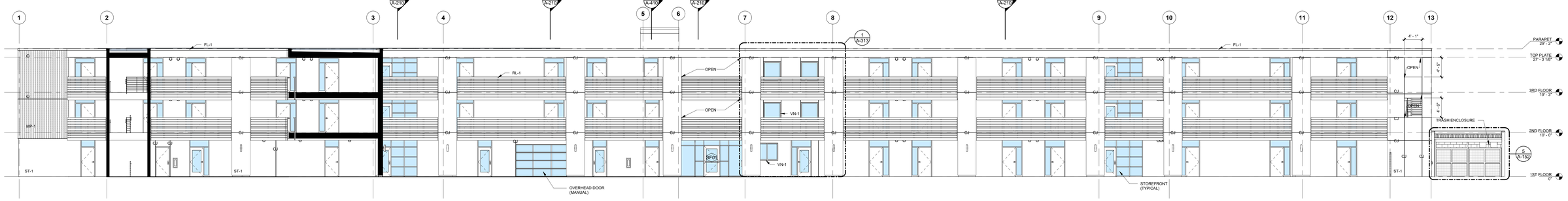
A-152

REVIEWED FOR CODE COMPLIANCE BY EDGELAND CIVIL ENGINEERING, INC. IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

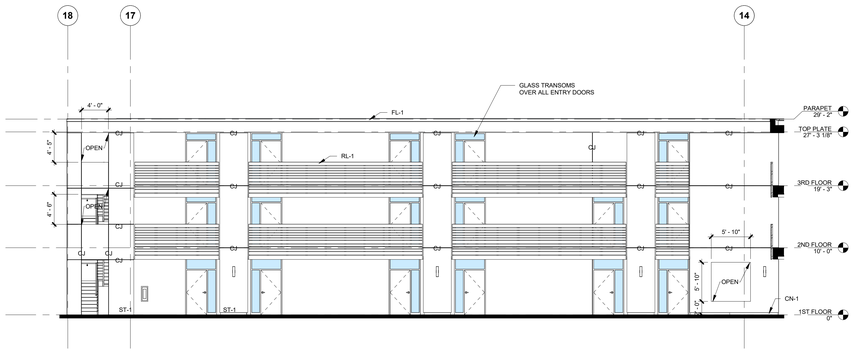
6/4/2020 4:46:13 PM



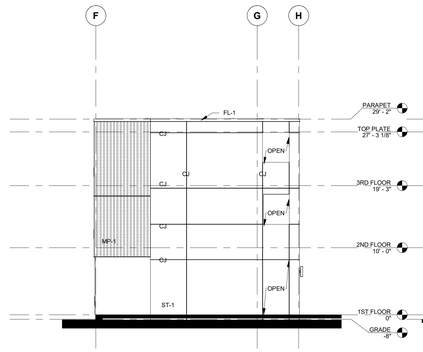
1 NORTH ELEVATION (COLLEGE AVE)
1/8" = 1'-0"



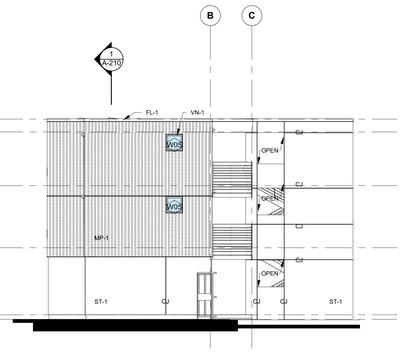
2 SOUTH ELEVATION
1/8" = 1'-0"



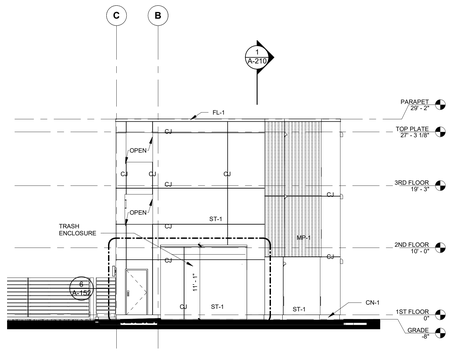
6 EAST ELEVATION - WING
1/8" = 1'-0"



5 SOUTH ELEVATION - WING
1/8" = 1'-0"

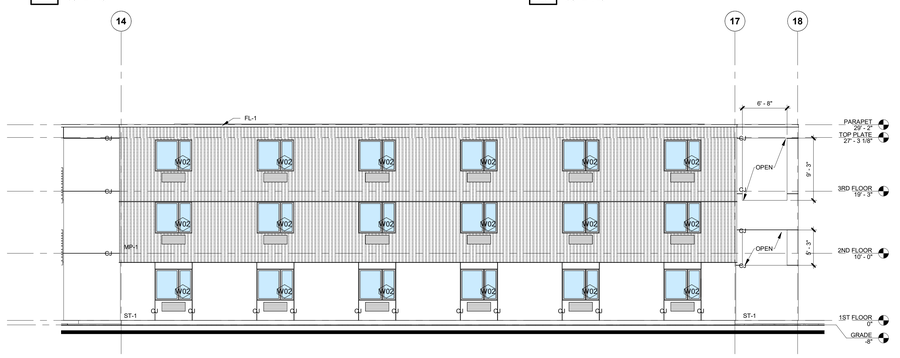


4 WEST ELEVATION
1/8" = 1'-0"



3 EAST ELEVATION (CLEVELAND AVE)
1/8" = 1'-0"

EXTERIOR MATERIALS KEY		
ID	MATERIAL	DESCRIPTION
CN-1	CONCRETE	EXPOSED CONCRETE
FL-1	FLASHING AND TRIM	PRE-FINISHED GALVANIZED STEEL TO MATCH METAL PANELS
MP-1	METAL PANELING	VERTICAL METAL PANEL. 22 GAUGE CONCEALED FASTENER 2"-4"-2"-4" PATTERN. COOL ZACTIQUE COLOR. (SIM TO AEP SPAN FLEX SERIES)
RL-1	PLANK RAILING	SYNTHETIC WOOD BOARDS FASTENED TO GALVANIZED STEEL FRAME
ST-1	STUCCO	WHITE
ST-2	STUCCO	ACCENT COLOR
VN-1	VINYL WINDOW FRAME	WHITE VINYL



7 WEST ELEVATION - WING
1/8" = 1'-0"

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

LICENSED ARCHITECT
JOHN ROWELL
C28587
12-31-2021
Renewal Date
STATE OF CALIFORNIA

REVISIONS TO THIS SHEET

REV.	DATE
PCC-2	2020.05.15
ADD-1	2020.04.27
PCC-1	2020.04.06

SHEET ISSUE DATE
2020-01-27 PERMIT SET

PROJECT TRACKING
RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

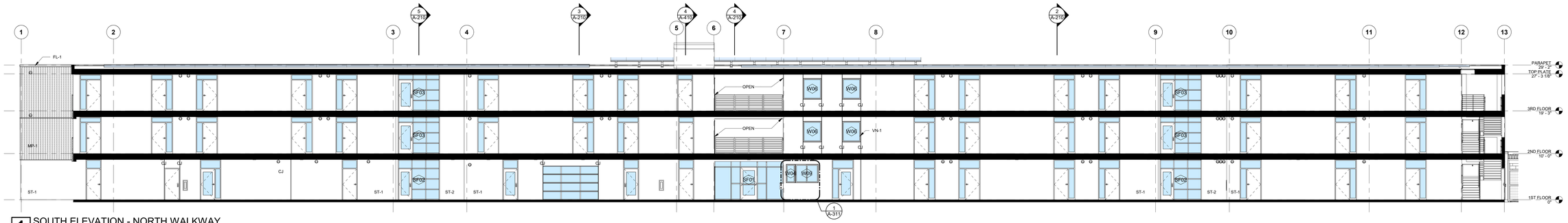
Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

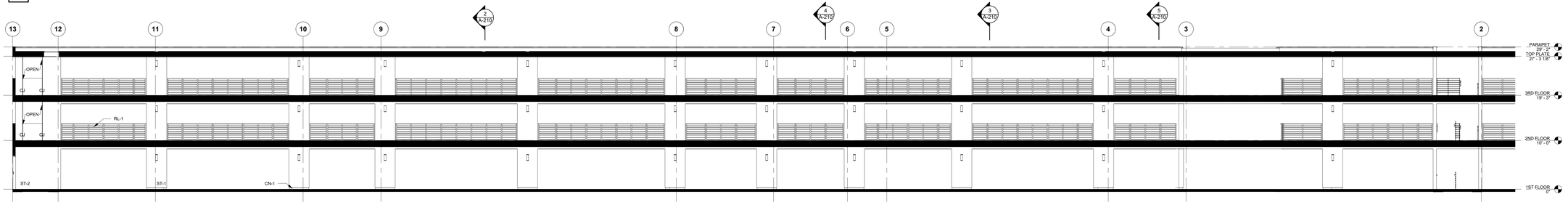
BUILDING ELEVATIONS

A-200

6/4/2020 4:46:21 PM

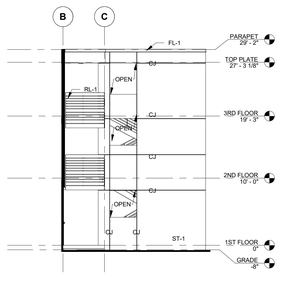


1 SOUTH ELEVATION - NORTH WALKWAY
1/8" = 1'-0"

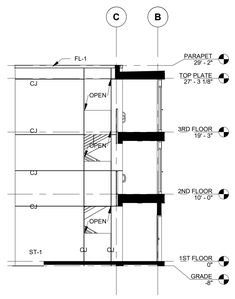


2 NORTH ELEVATION - NORTH WALKWAY
1/8" = 1'-0"

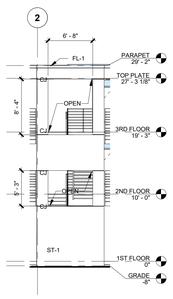
KEYNOTE LEGEND



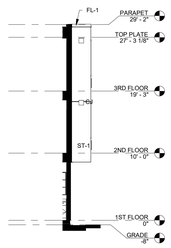
11 WEST - WEST STAIR
1/8" = 1'-0"



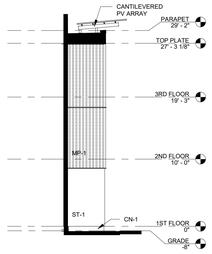
10 EAST - WEST STAIR
1/8" = 1'-0"



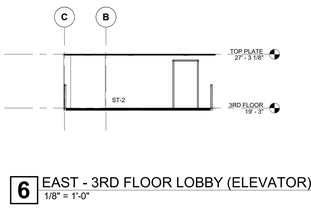
9 SOUTH - WEST STAIR
1/8" = 1'-0"



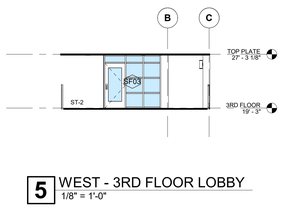
8 EAST - WEST PROJECTION
1/8" = 1'-0"



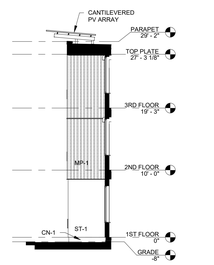
7 EAST - LOBBY INSET
1/8" = 1'-0"



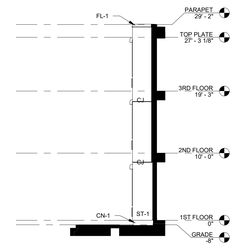
6 EAST - 3RD FLOOR LOBBY (ELEVATOR)
1/8" = 1'-0"



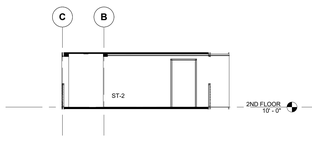
5 WEST - 3RD FLOOR LOBBY
1/8" = 1'-0"



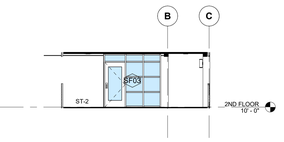
4 WEST - LOBBY INSET
1/8" = 1'-0"



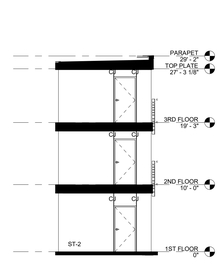
3 WEST - EAST PROJECTION
1/8" = 1'-0"



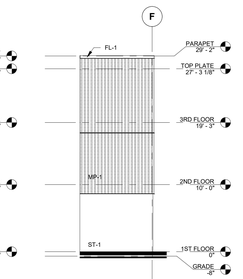
13 EAST - 2ND FLOOR LOBBY (ELEVATOR)
1/8" = 1'-0"



12 WEST - 2ND FLOOR LOBBY
1/8" = 1'-0"

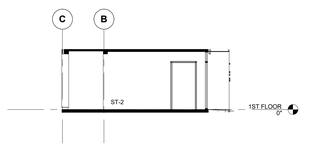


15 NORTH - WING - HWH RM
1/8" = 1'-0"

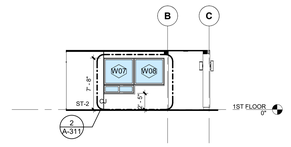


14 NORTH - WING
1/8" = 1'-0"

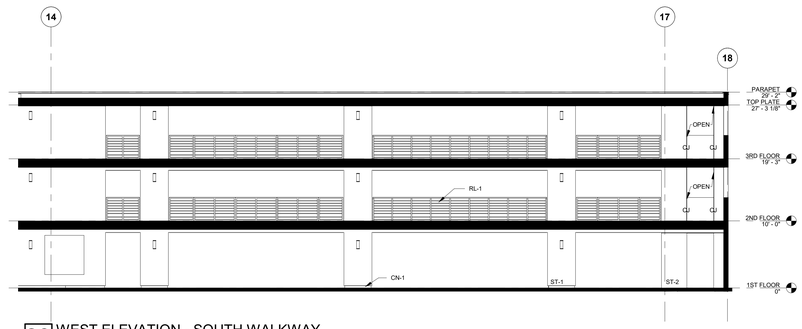
EXTERIOR MATERIALS KEY		
ID	**MATERIAL**	**DESCRIPTION**
CN-1	**CONCRETE**	**EXPOSED CONCRETE**
FL-1	**FLASHING AND TRIM**	**PRE-FINISHED GALVANIZED STEEL TO MATCH METAL PANELS**
MP-1	**METAL PANELING**	**VERTICAL METAL PANEL. 22 GAUGE CONCEALED FASTENER 2"-4"-2"-4" PATTERN. COOL ZACTIQUE COLOR. (SIM TO AEP SPAN FLEX SERIES)**
RL-1	**PLANK RAILING**	**SYNTHETIC WOOD BOARDS FASTENED TO GALVANIZED STEEL FRAME**
ST-1	**STUCCO**	**WHITE**
ST-2	**STUCCO**	**ACCENT COLOR**
VN-1	**VINYL WINDOW FRAME**	**WHITE VINYL**



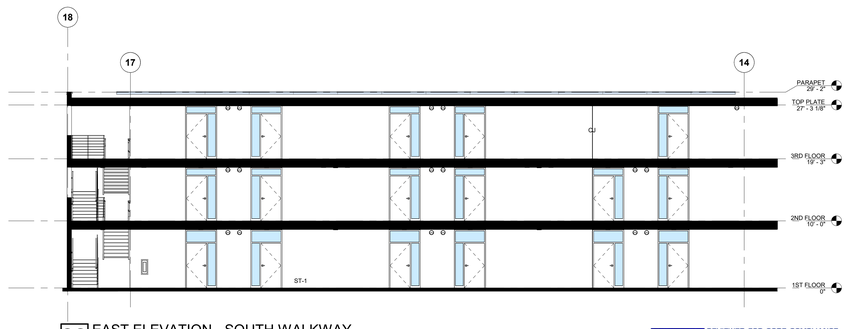
17 EAST - 1ST FLOOR LOBBY (ELEVATOR)
1/8" = 1'-0"



16 WEST - 1ST FLOOR LOBBY
1/8" = 1'-0"



23 WEST ELEVATION - SOUTH WALKWAY
1/8" = 1'-0"



22 EAST ELEVATION - SOUTH WALKWAY
1/8" = 1'-0"

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

LICENSED ARCHITECT
JOHN ROWELL
C35537
12-31-2021
Renewal Date
STATE OF CALIFORNIA

REVISIONS TO THIS SHEET

REV.	DATE
PCC-1	2020.04.06

SHEET ISSUE DATE
2020-01-27 PERMIT SET

PROJECT TRACKING
RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

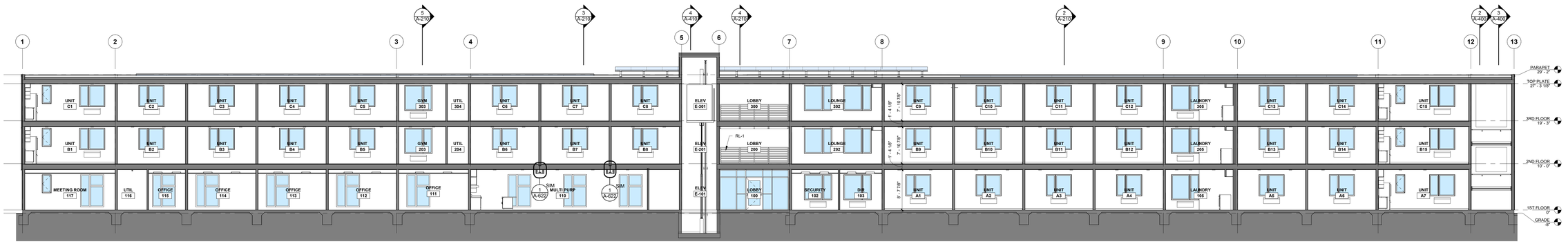
Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

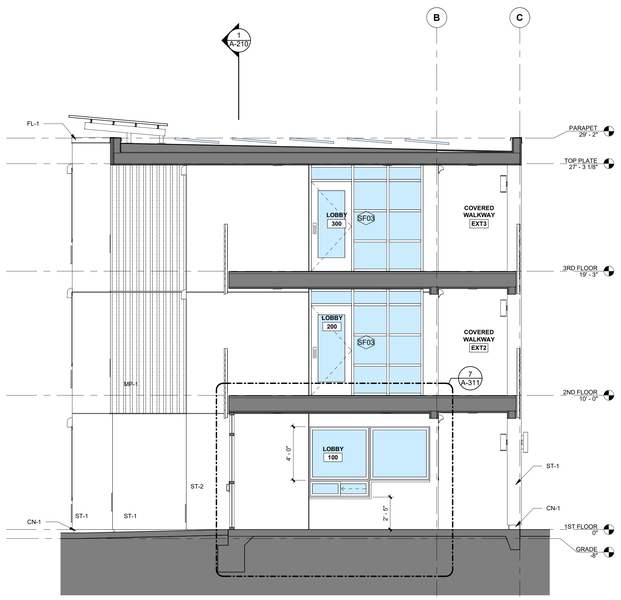
BUILDING ELEVATIONS

A-201

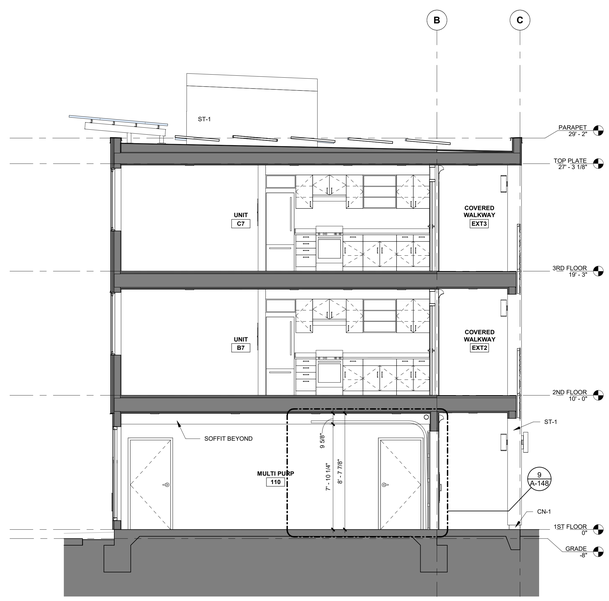
6/4/2020 4:46:30 PM



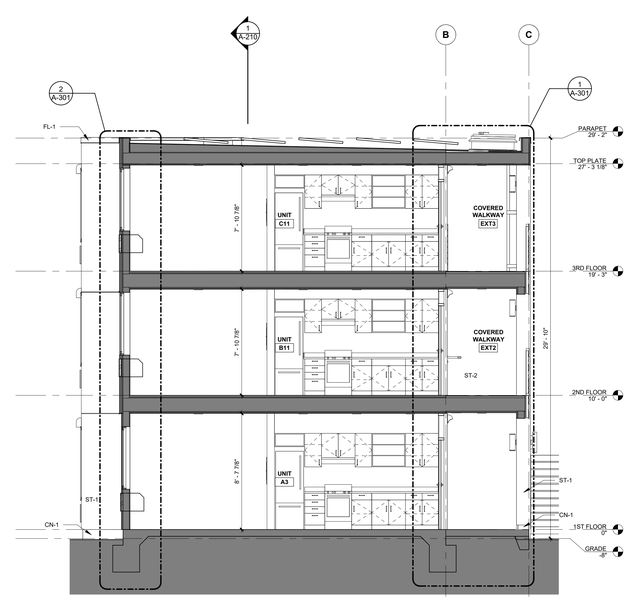
1 EAST WEST LONGITUDINAL SECTION A
1/8" = 1'-0"



4 NORTH SOUTH SECTION D - LOBBY
1/4" = 1'-0"



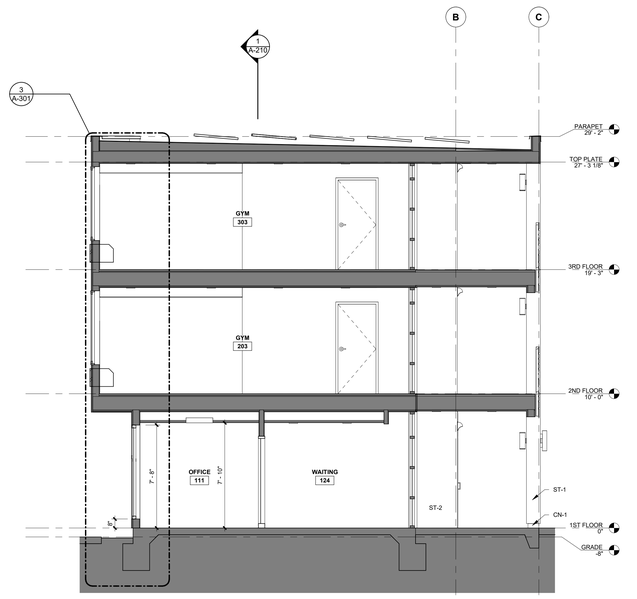
3 NORTH SOUTH SECTION F
1/4" = 1'-0"



2 NORTH SOUTH SECTION A
1/4" = 1'-0"

EXTERIOR MATERIALS KEY		
ID	MATERIAL	DESCRIPTION
CN-1	CONCRETE	EXPOSED CONCRETE
FL-1	FLASHING AND TRIM	PRE-FINISHED GALVANIZED STEEL TO MATCH METAL PANELS
MP-1	METAL PANELING	VERTICAL METAL PANEL. 22 GAUGE CONCEALED FASTENER 2"-4"-2"-4" PATTERN. COOL ZACTIQUE COLOR. (SIM TO AEP SPAN FLEX SERIES)
RL-1	PLANK RAILING	SYNTHETIC WOOD BOARDS FASTENED TO GALVANIZED STEEL FRAME
ST-1	STUCCO	WHITE
ST-2	STUCCO	ACCENT COLOR
VN-1	VINYL WINDOW FRAME	WHITE VINYL

APPROVAL ANNOTATION



5 NORTH SOUTH SECTION G
1/4" = 1'-0"

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

6/4/2020 4:46:36 PM

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REVISIONS TO THIS SHEET

REV.	DATE
PCC-1	2020.04.06

SHEET ISSUE DATE
2020-01-27 PERMIT SET

PROJECT TRACKING
RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

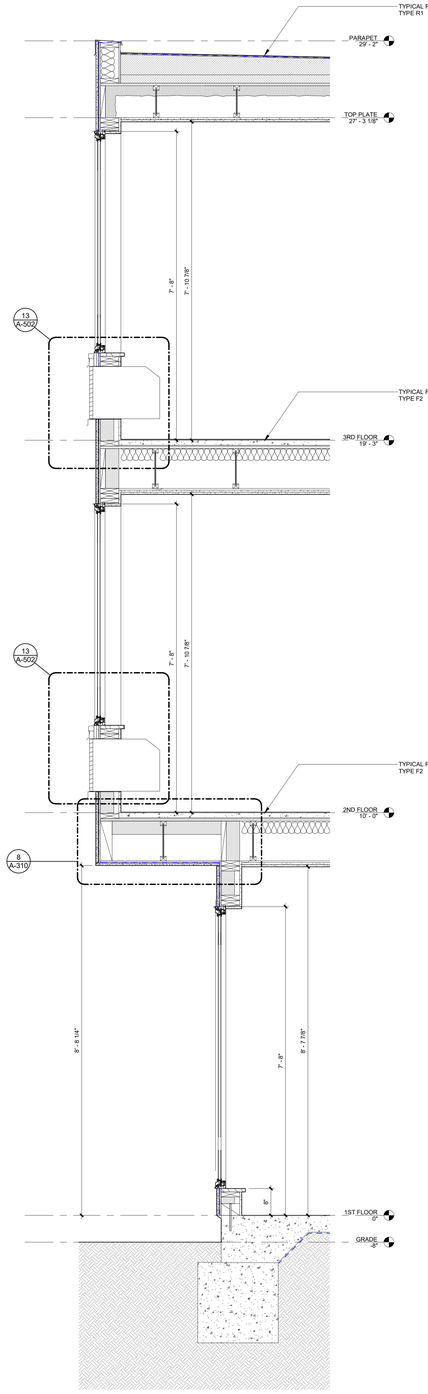
Owner
DANCO

Project Name
SAGE COMMONS

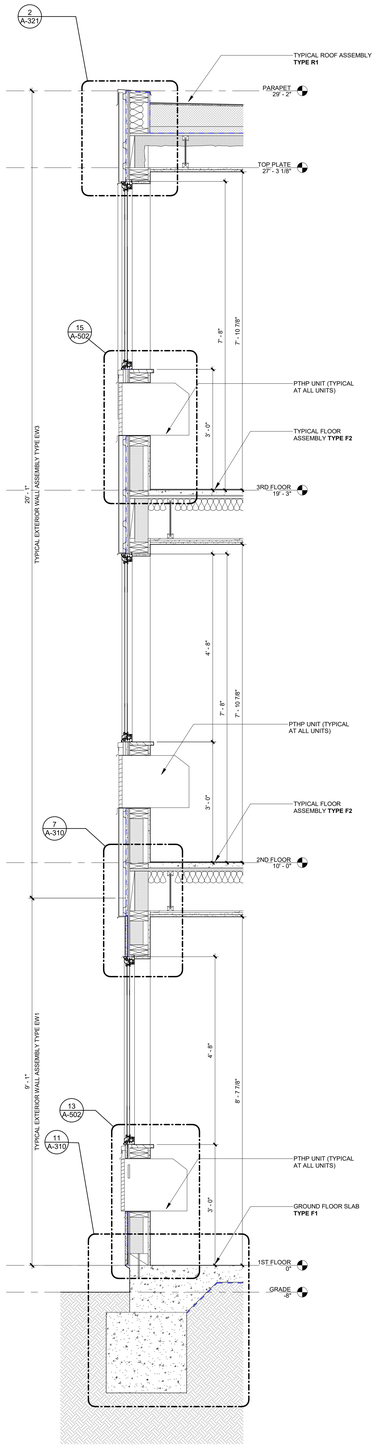
Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

BUILDING SECTIONS

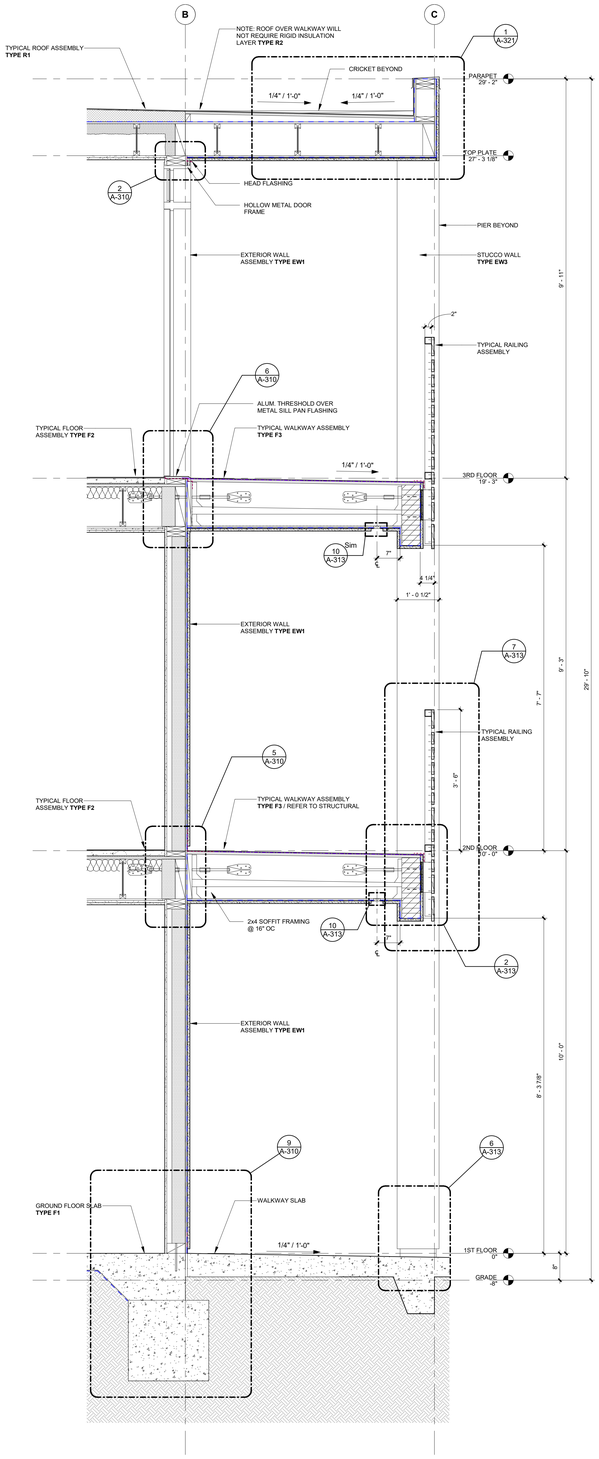
A-210



3 WALL SECTION AT CANTILEVER
3/4" = 1'-0"



2 TYPICAL WALL SECTION
3/4" = 1'-0"



1 WALL SECTION AT TYP WALKWAY
3/4" = 1'-0"

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REVISIONS TO THIS SHEET

REV.	DATE
PCC-1	2020.04.06

SHEET ISSUE DATE
2020-01-27 PERMIT SET

PROJECT TRACKING
RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

WALL SECTIONS

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

A-301

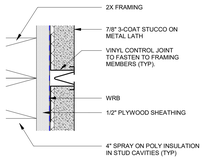
6/4/2020 4:46:38 PM

ROWELL BROKAW

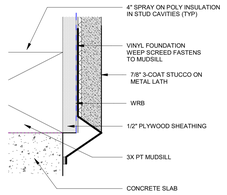
1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

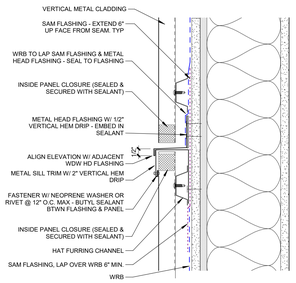


STUCCO CONTROL JOINT DETAIL (TYP)

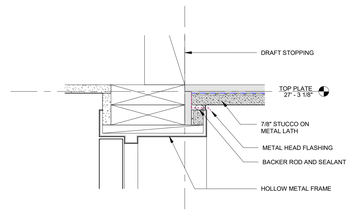


STUCCO CONTROL WEEP SCREED DETAIL (TYP)

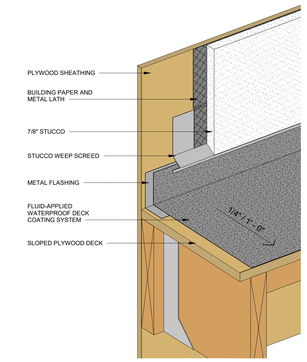
4 STUCCO ACCESSORY DETAILS
6" = 1'-0"



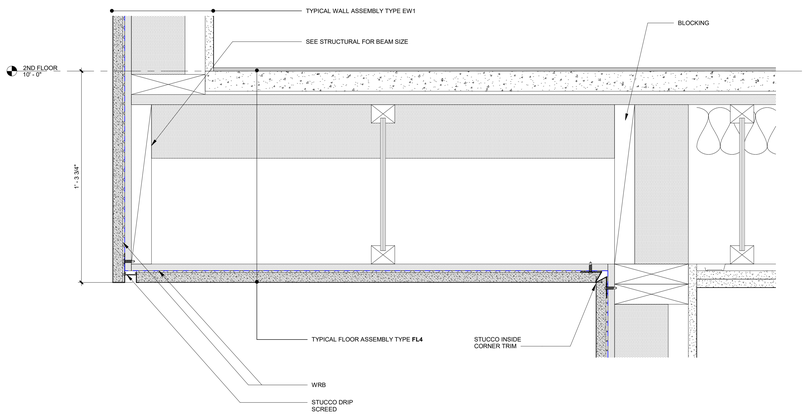
3 METAL PANEL HORIZONTAL JOINT
3" = 1'-0"



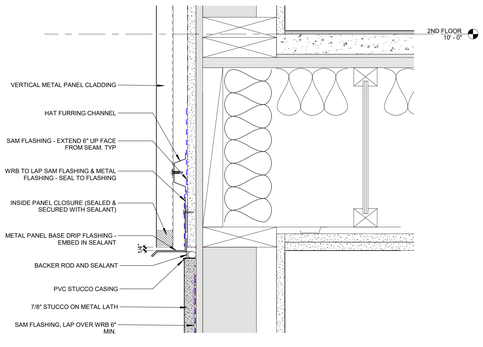
2 TYPICAL DOOR HEAD DETAIL AT WALKWAY
3" = 1'-0"



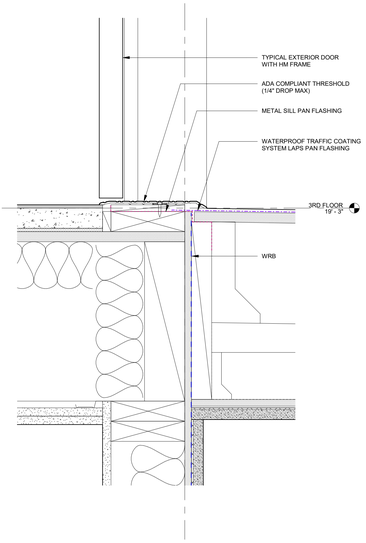
1 TYPICAL WALL FLASHING DETAIL AT 2ND AND 3RD FLOOR WALKWAYS



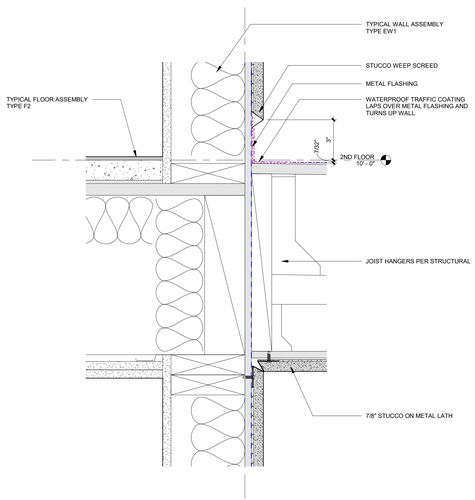
8 WALL OFFSET @ NORTH ELEVATION
3" = 1'-0"



7 METAL PANEL TO STUCCO
3" = 1'-0"



6 TYPICAL DOOR SADDLE DETAIL AT WALKWAY
3" = 1'-0"

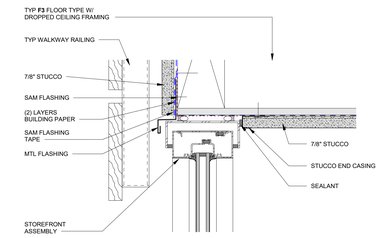


5 WALKWAY DETAIL TO EXTERIOR WALL
3" = 1'-0"

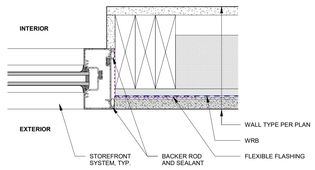
REVISIONS TO THIS SHEET

REV.	DATE

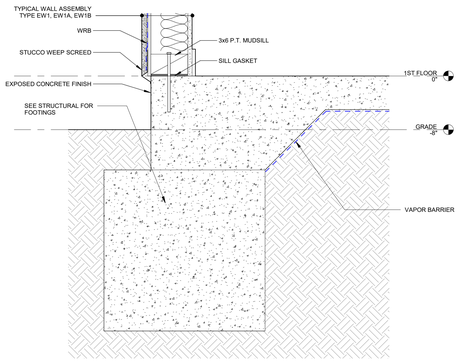
REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.



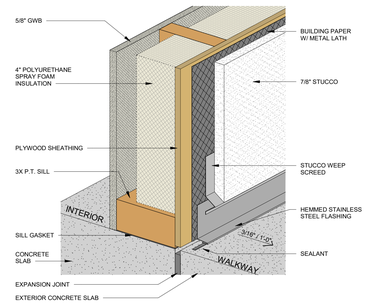
13 STOREFRONT HEAD AT ENTRY
3" = 1'-0"



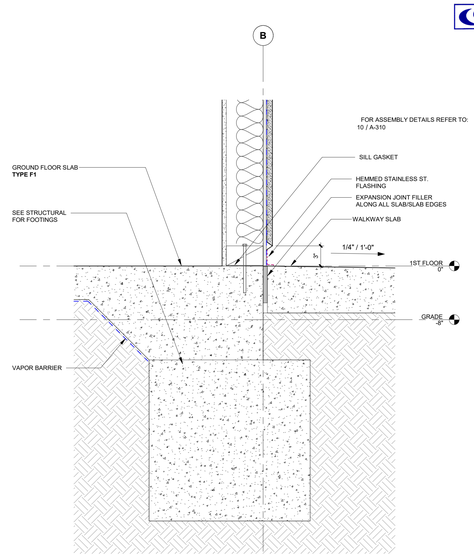
12 TYPICAL STOREFRONT JAMB
3" = 1'-0"



11 TYPICAL FOUNDATION EDGE DETAIL
1 1/2" = 1'-0"



10 TYPICAL WALL FLASHING DETAIL AT 1ST FLOOR WALKWAY



9 WALL SECTION DETAIL AT TYP WALKWAY
1 1/2" = 1'-0"

SHEET ISSUE DATE
2020-01-27 PERMIT SET

PROJECT TRACKING
RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

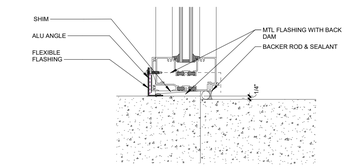
Owner
DANCO

Project Name
SAGE COMMONS

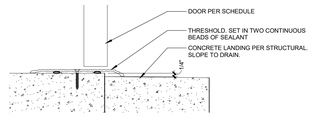
Project Address
80 COLLEGE AVENUE SANTA ROSA, CA

EXTERIOR DETAILS

A-310

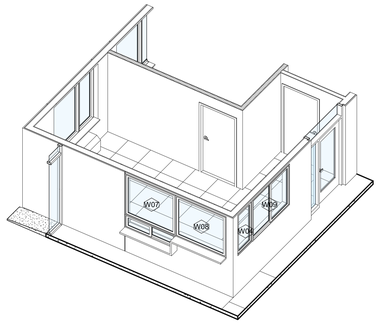


15 STOREFRONT SILL DETAIL AT SLAB ENTRY
3" = 1'-0"

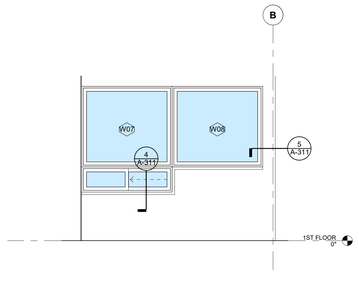


14 ALUMINUM STOREFRONT THRESHOLD
3" = 1'-0"

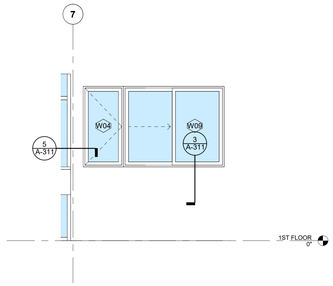
6/4/2020 4:46:42 PM



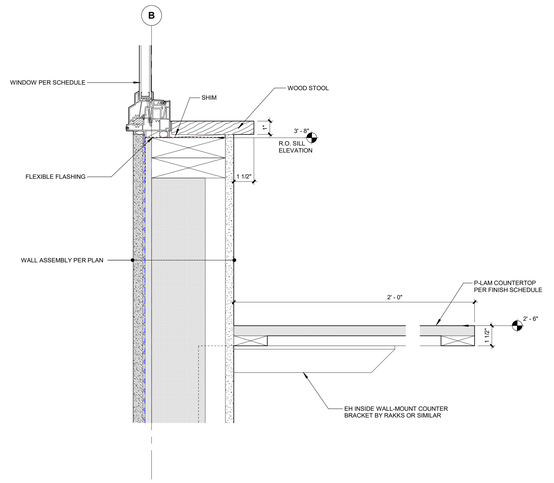
6 SECURITY OFFICE ISOMETRIC



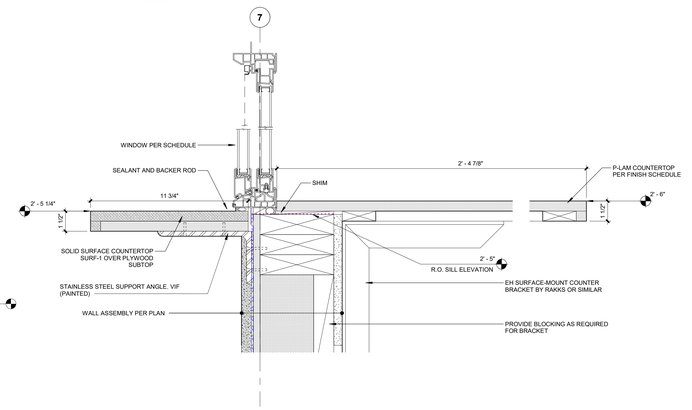
2 SECURITY WINDOWS - WEST ELEVATION
3/8" = 1'-0"



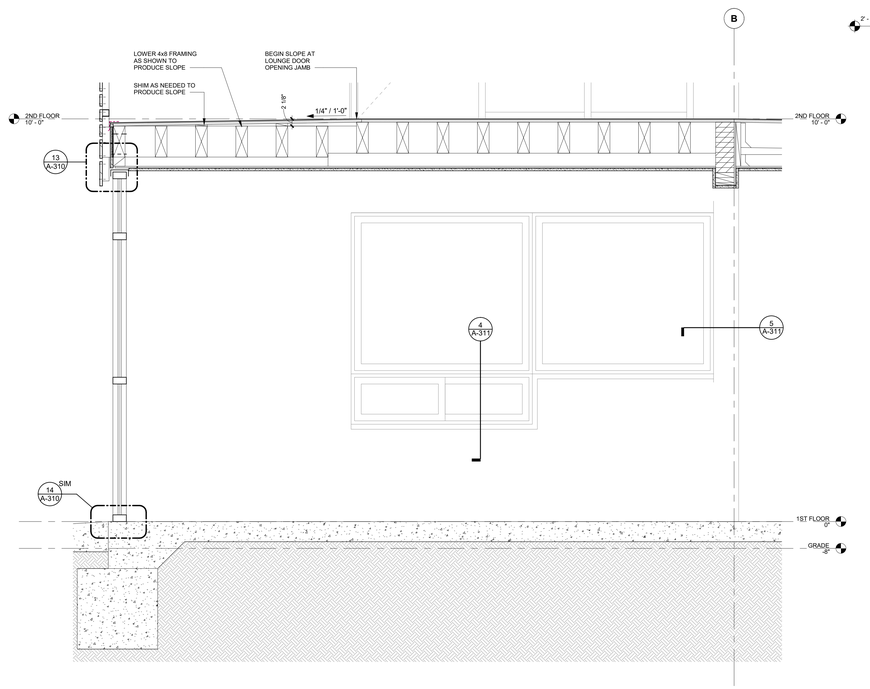
1 SECURITY WINDOWS - SOUTH ELEVATION
3/8" = 1'-0"



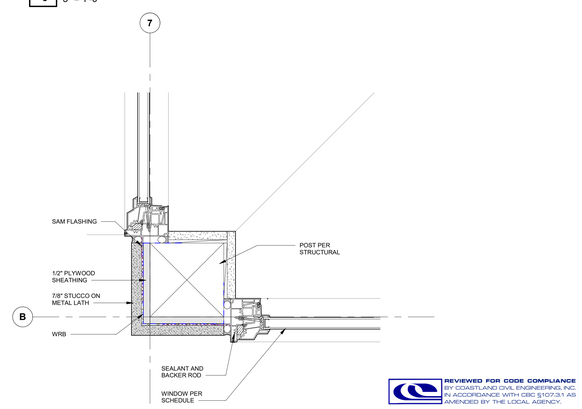
3 DETAIL - SILL AT SECURITY
3" = 1'-0"



4 DETAIL - SILL AT SECURITY LOW COUNTER
3" = 1'-0"



7 N-S SECTION THROUGH LOBBY
3/4" = 1'-0"



5 PLAN DETAIL - JAMB AT SW CORNER OF SECURITY
3" = 1'-0"

REVIEWED FOR CODE COMPLIANCE
BY CGA&TLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

6/4/2020 4:46:44 PM

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

LICENSED ARCHITECT
JOHN ROWELL
C28507
12-31-2021
Renewal Date
STATE OF CALIFORNIA

REVISIONS TO THIS SHEET

REV.	DATE

SHEET ISSUE DATE
2020-01-27 PERMIT SET

PROJECT TRACKING
RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

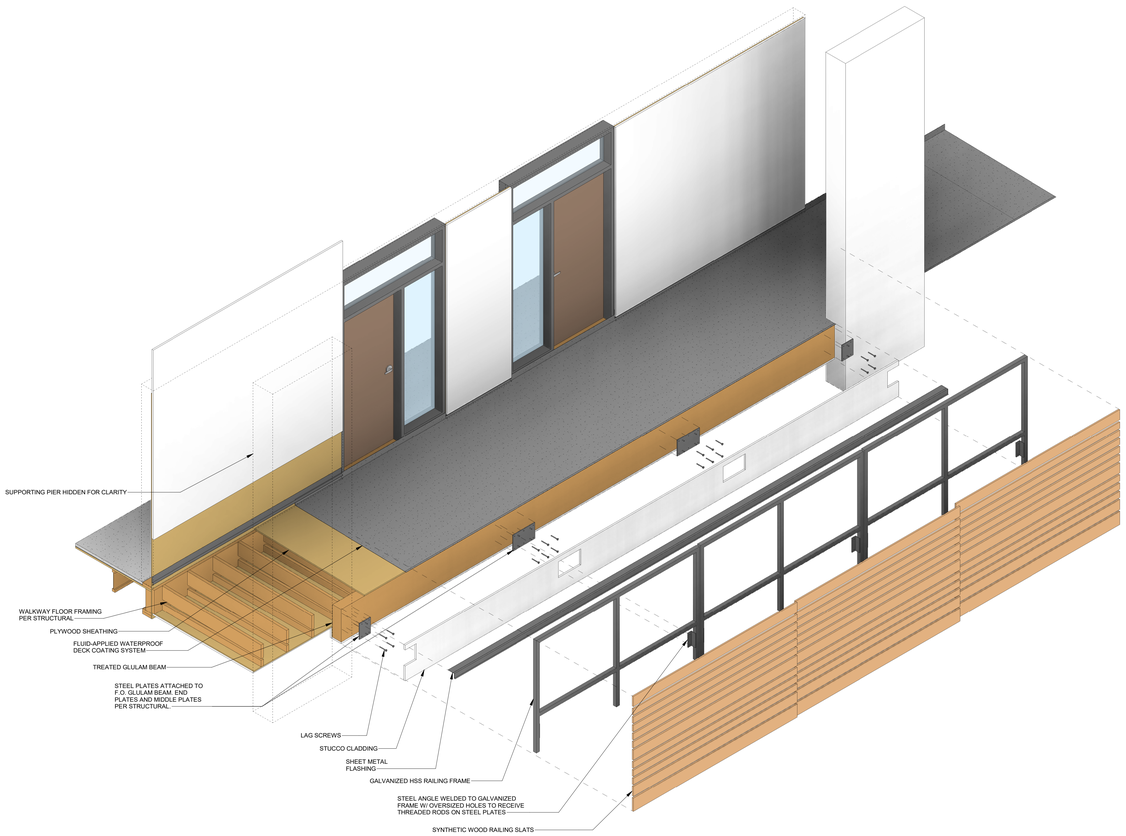
Owner
DANCO

Project Name
SAGE COMMONS

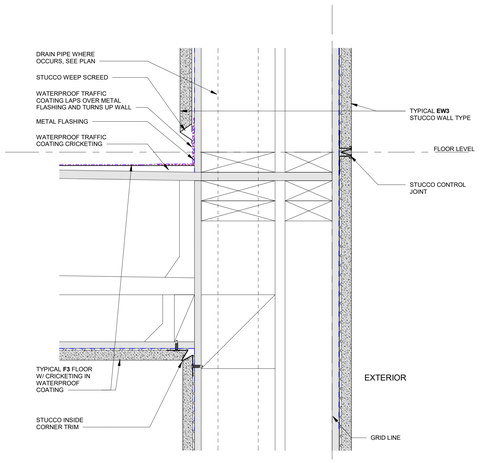
Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

EXTERIOR DETAILS - LOBBY

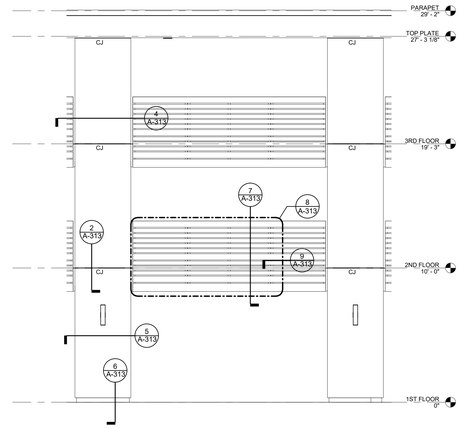
A-311



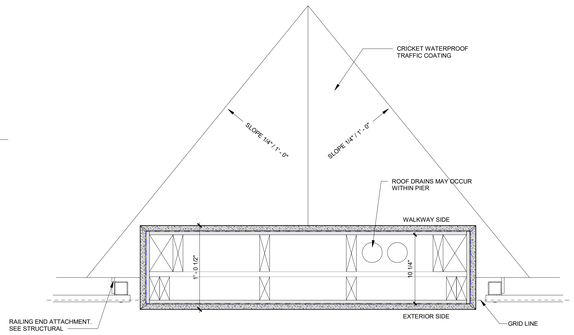
3 WALKWAY AND RAILING EXPLODED ISO



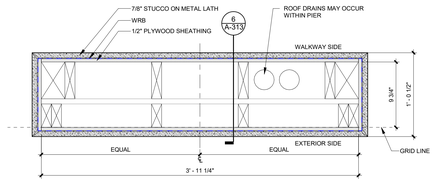
2 WALKWAY TO PIER DETAIL
3" = 1'-0"



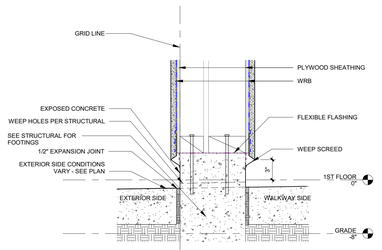
1 WALKWAY ELEVATION - TYP
1/4" = 1'-0"



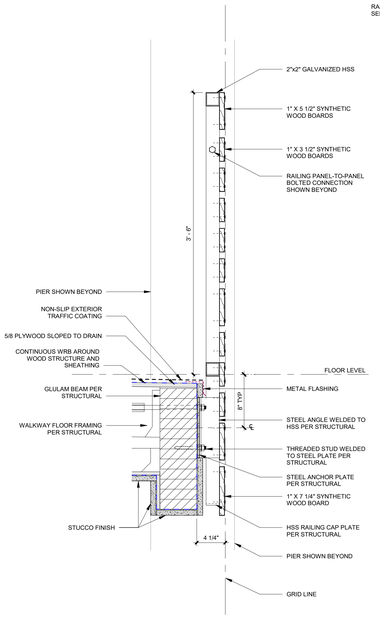
4 PIER PLAN DETAIL @ UPPER FL WALKWAY
1 1/2" = 1'-0"



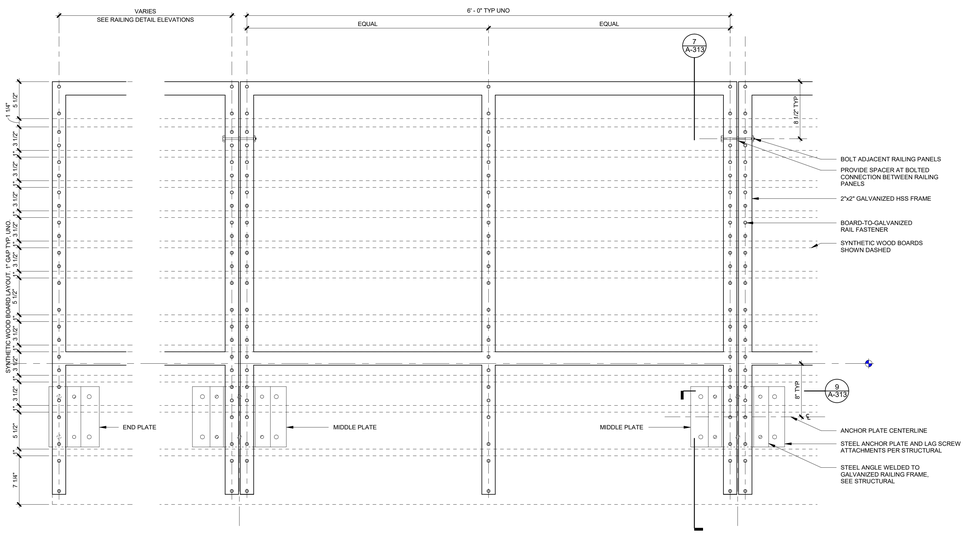
5 PIER PLAN DETAIL @ 1ST FLOOR
1 1/2" = 1'-0"



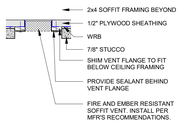
6 COURTYARD WALL BASE
1 1/2" = 1'-0"



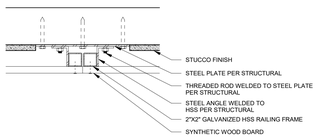
7 RAILING SECTION DETAIL
1 1/2" = 1'-0"



8 TYP. RAILING PANEL ELEVATION
1 1/2" = 1'-0"



10 WALKWAY CEILING VENT
3" = 1'-0"



9 RAILING PLAN DETAIL AT MIDDLE PLATE
1 1/2" = 1'-0"

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REGISTERED ARCHITECT JOHN ROWELL C28507 12-31-2021 Renewal Date STATE OF CALIFORNIA

REVISIONS TO THIS SHEET

REV.	DATE
PCC-1	2020.04.06

SHEET ISSUE DATE
2020-01-27 PERMIT SET

PROJECT TRACKING
RBA #: 1843

P.I.C.: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

Project Name
SAGE COMMONS

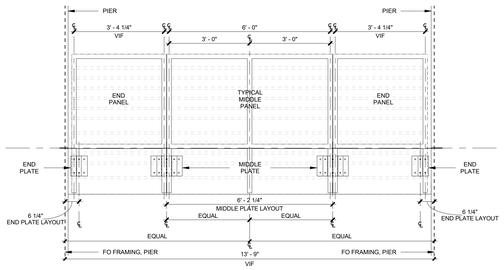
Project Address
80 COLLEGE AVENUE SANTA ROSA, CA

EXTERIOR DETAILS - WALKWAY AND RAILINGS

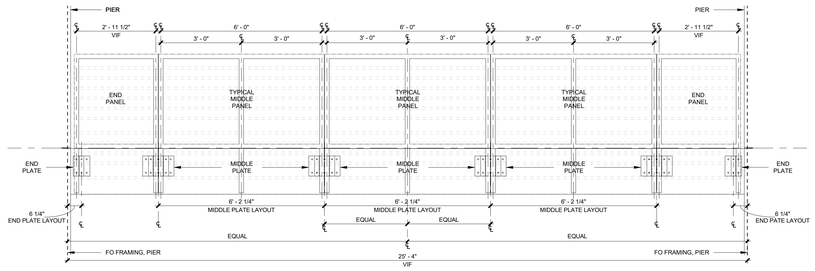
A-313

REVIEWED FOR CODE COMPLIANCE BY CSI/STLAND CIVIL ENGINEERING, INC. IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

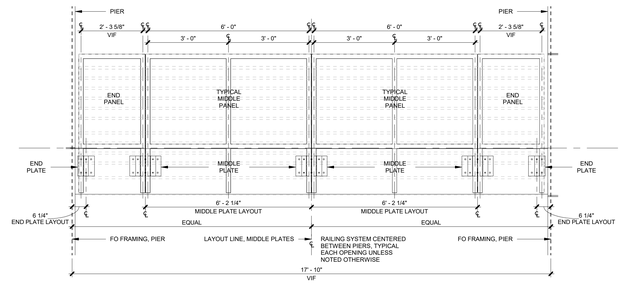
6/4/2020 4:46:49 PM



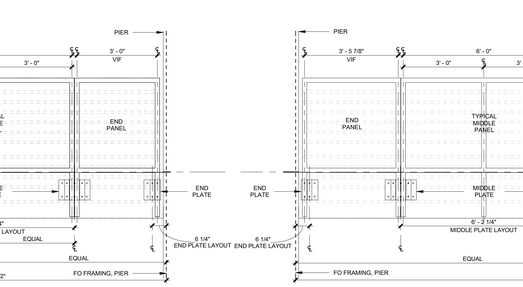
3 RAILING C
1/2" = 1'-0"



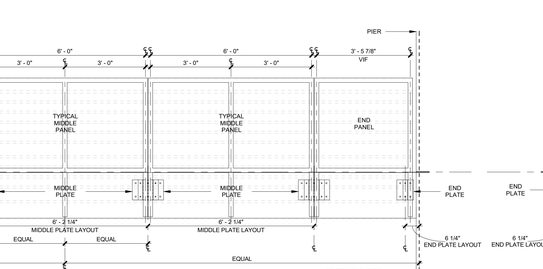
2 RAILING B
1/2" = 1'-0"



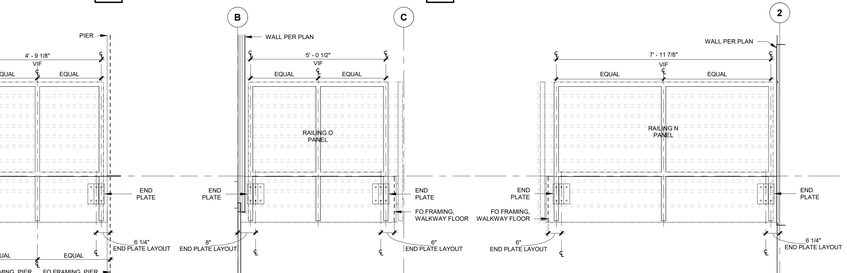
1 RAILING A
1/2" = 1'-0"



6 RAILING F
1/2" = 1'-0"

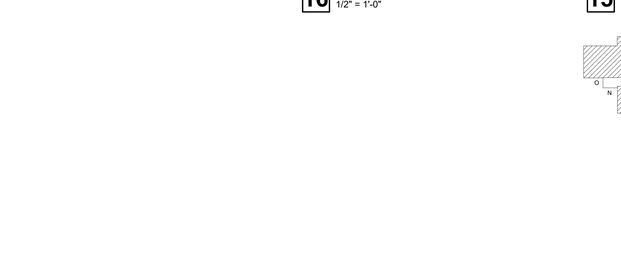


5 RAILING E
1/2" = 1'-0"

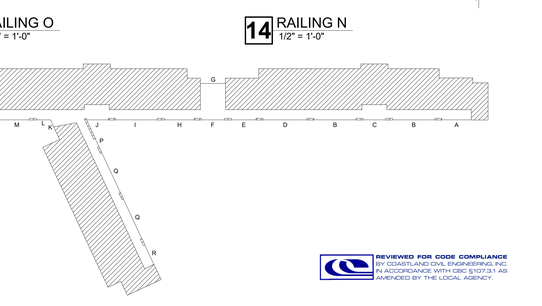


4 RAILING D
1/2" = 1'-0"

9 RAILING I
1/2" = 1'-0"



8 RAILING H
1/2" = 1'-0"



7 RAILING G
1/2" = 1'-0"

13 RAILING M
1/2" = 1'-0"

12 RAILING L
1/2" = 1'-0"

11 RAILING K
1/2" = 1'-0"

10 RAILING J
1/2" = 1'-0"

18 RAILING R
1/2" = 1'-0"

17 RAILING Q
1/2" = 1'-0"

16 RAILING P
1/2" = 1'-0"

15 RAILING O
1/2" = 1'-0"

14 RAILING N
1/2" = 1'-0"

RAILING KEY PLAN

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

6/4/2020 4:46:54 PM

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

LICENSED ARCHITECT
JOHN ROWELL
C28507
12-31-2021
Renewal Date
STATE OF CALIFORNIA

REVISIONS TO THIS SHEET

REV.	DATE

SHEET ISSUE DATE
2020-01-27 PERMIT SET

PROJECT TRACKING
RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

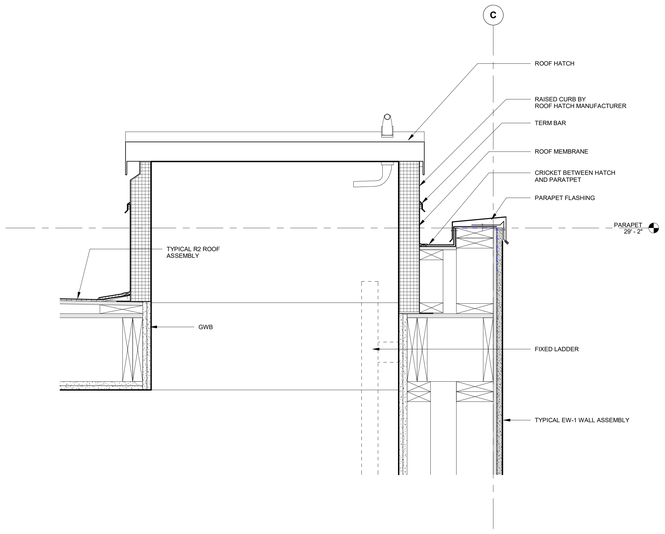
Owner
DANCO

Project Name
SAGE COMMONS

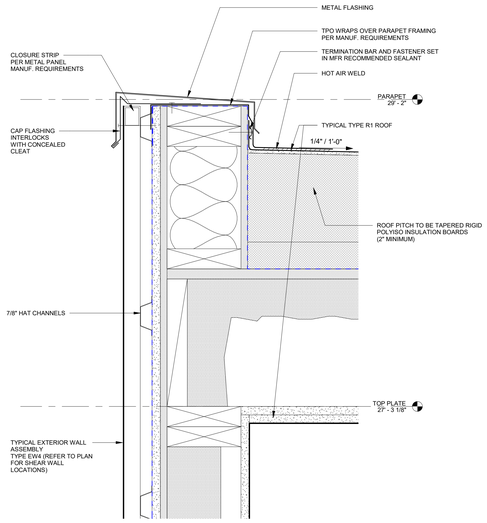
Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

EXTERIOR DETAILS - RAILINGS

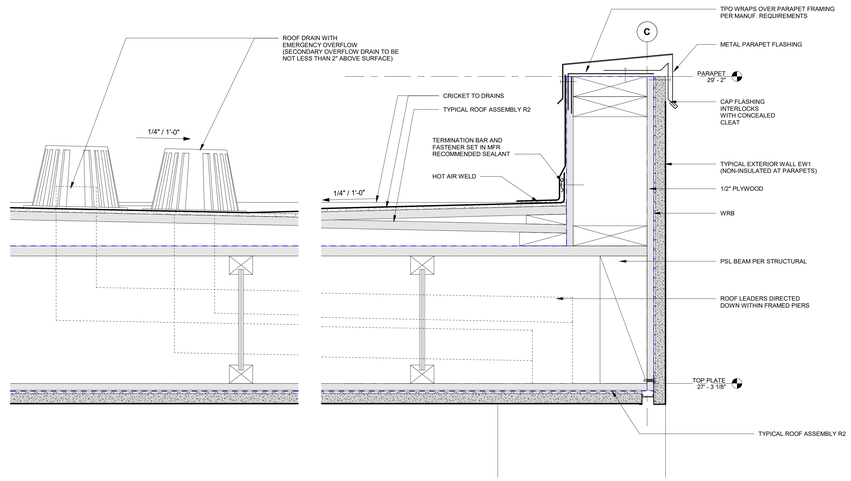
A-314



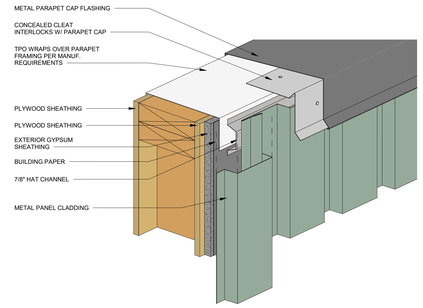
6 ROOF HATCH DETAIL
1 1/2" = 1'-0"



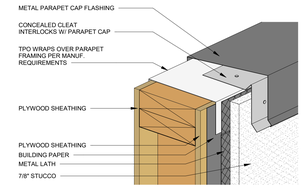
2 DETAIL - METAL PANEL WALL TO ROOF
3" = 1'-0"



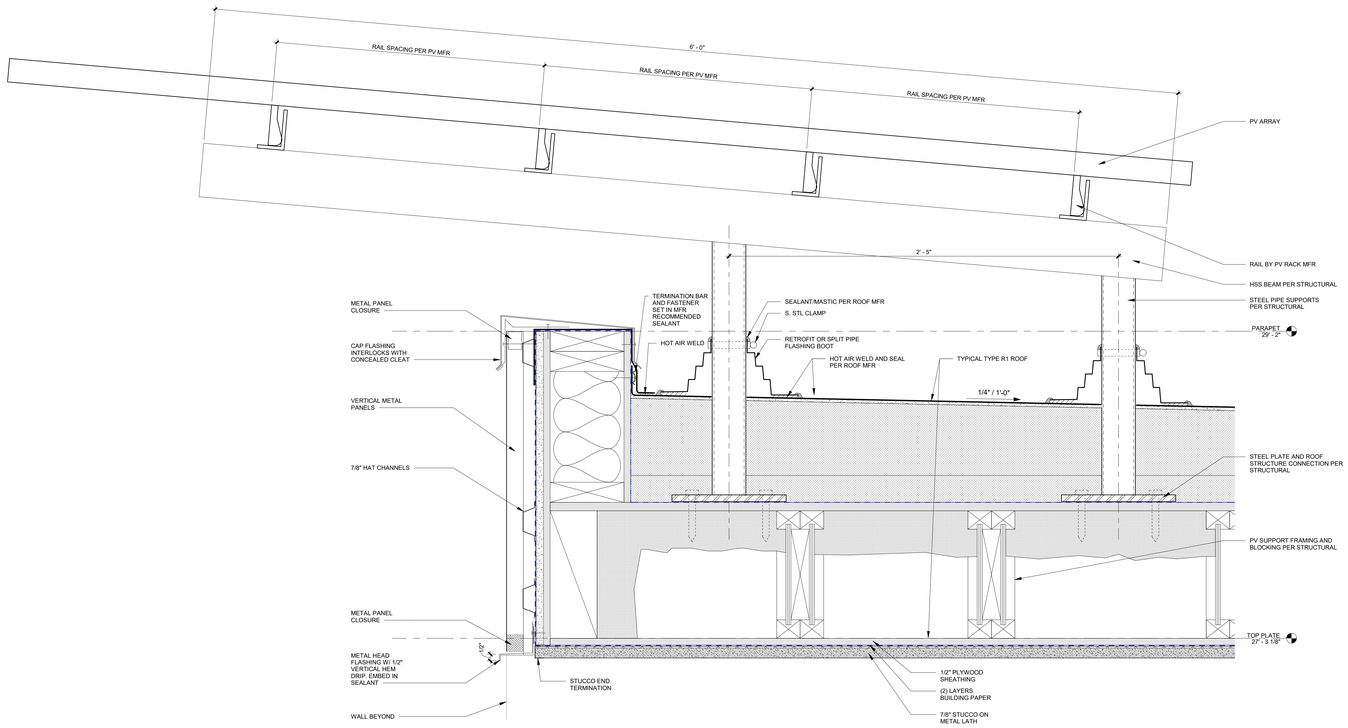
1 ROOF EDGE AT WALKWAY
3" = 1'-0"



4 ROOF EDGE AT METAL PANEL - CUTAWAY ISO



3 ROOF EDGE AT WALKWAY - CUTAWAY ISO



5 PV SUPPORT AT ENTRY ROOF
3" = 1'-0"

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

6/4/2020 4:46:57 PM

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REGISTERED ARCHITECT
JOHN ROWELL
C28507
12-31-2021
Renewal Date
STATE OF CALIFORNIA

REVISIONS TO THIS SHEET

REV.	DATE
PCC-1	2020.04.06

SHEET ISSUE DATE
2020-01-27 PERMIT SET

PROJECT TRACKING
RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE SANTA ROSA, CA

EXTERIOR DETAILS - ROOF

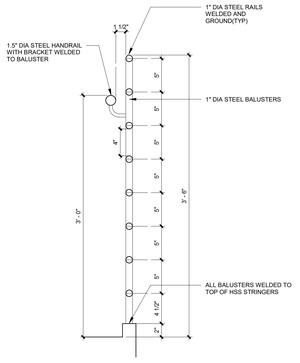
A-321

ROWELL BROKAW

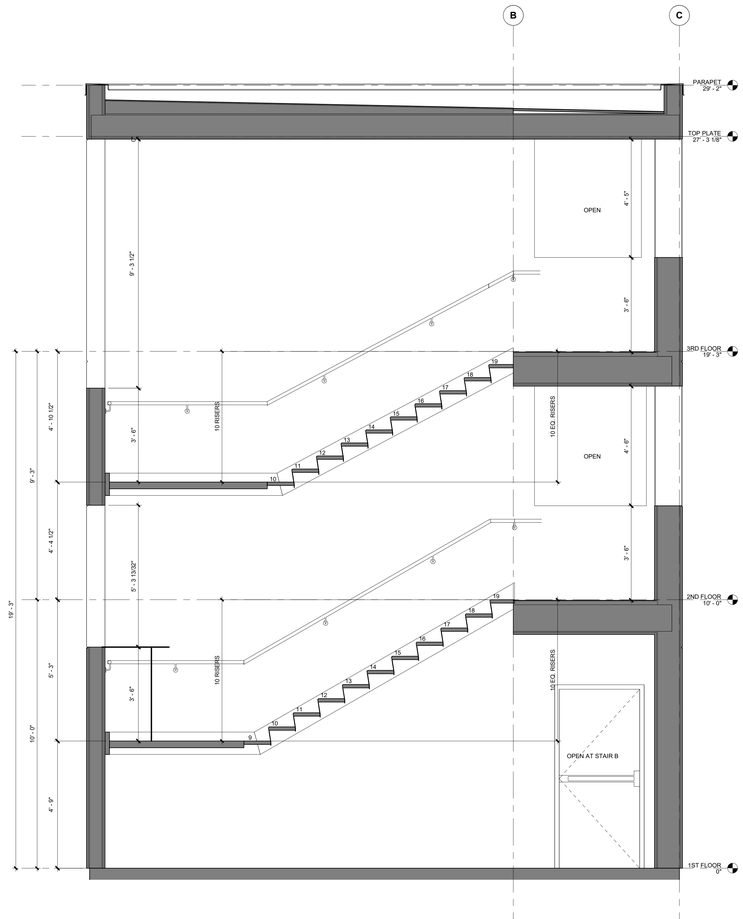
1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

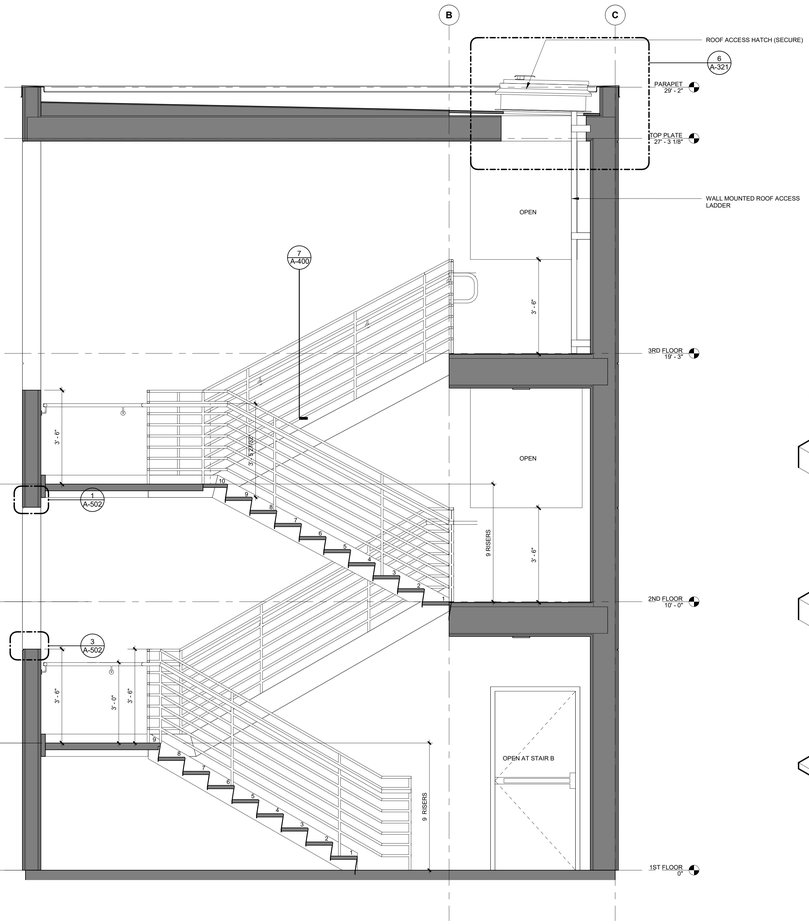
STAMP



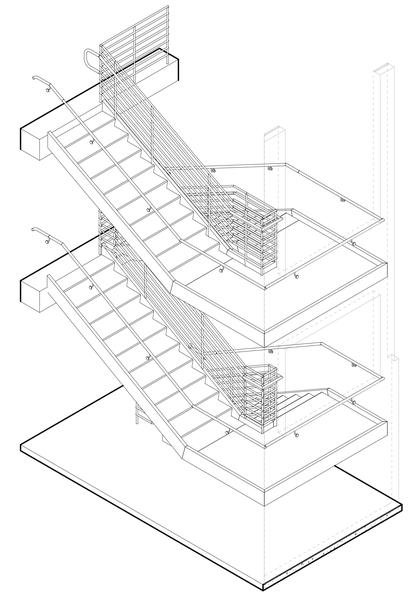
7 TYPICAL RAILING DETAIL
1 1/2" = 1'-0"



3 STAIR SECTION -STAIR A AND B
1/2" = 1'-0"

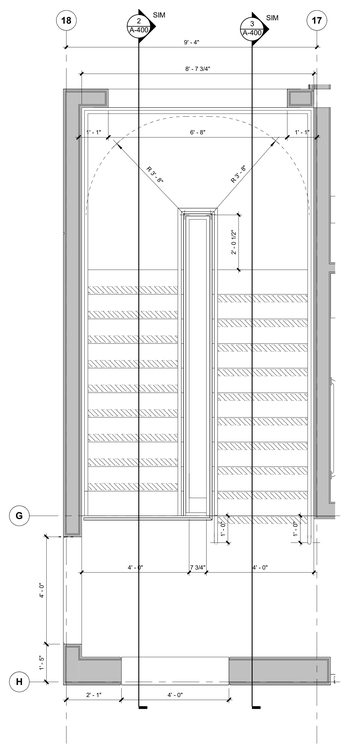


2 STAIR SECTION - STAIR A AND B
1/2" = 1'-0"

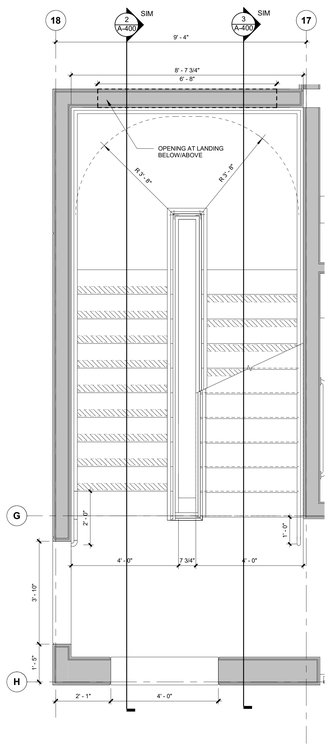


1 STAIR A AND B - ISOMETRIC
N.T.S.

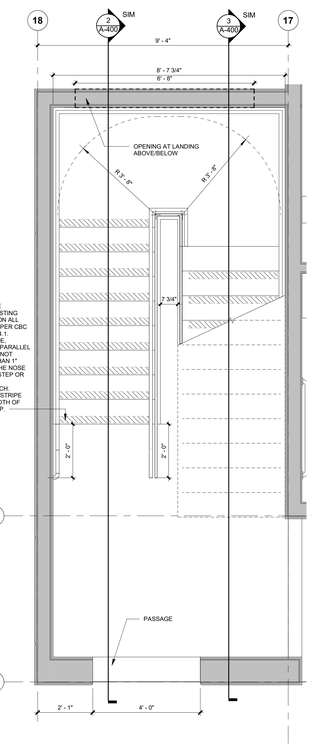
REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.



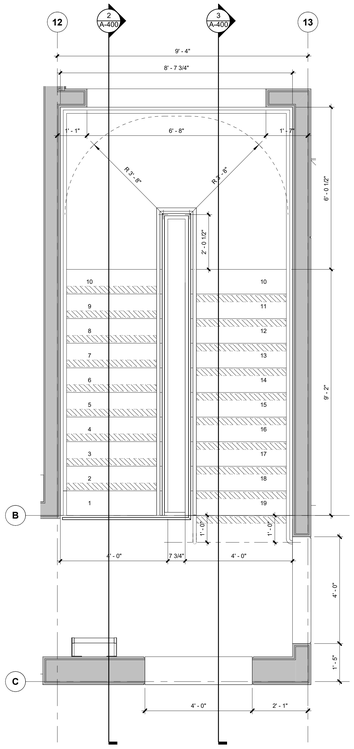
10 STAIR B PLAN - 3RD FLOOR
1/2" = 1'-0"



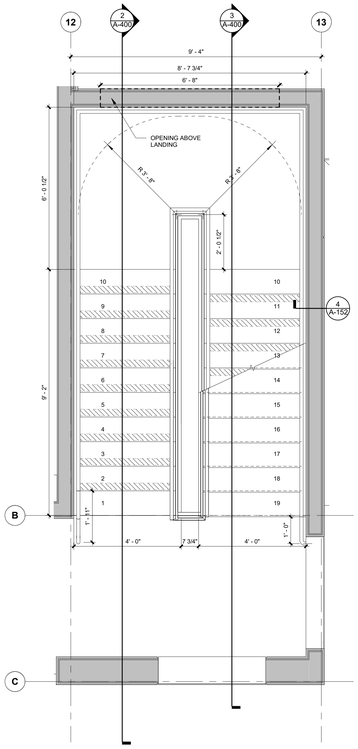
9 STAIR B PLAN - 2ND FLOOR
1/2" = 1'-0"



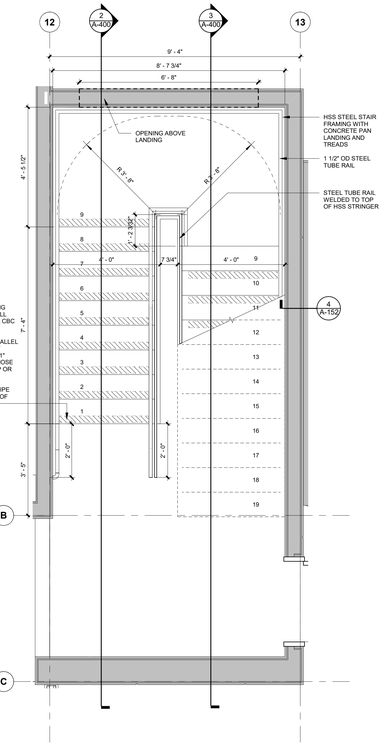
8 STAIR B PLAN - 1ST FLOOR
1/2" = 1'-0"



6 STAIR A PLAN - 3RD FLOOR
1/2" = 1'-0"



5 STAIR A PLAN - 2ND FLOOR
1/2" = 1'-0"



4 STAIR A PLAN - 1ST FLOOR
1/2" = 1'-0"

REVISIONS TO THIS SHEET

REV.	DATE
PCC-1	2020.04.06

SHEET ISSUE DATE
2020-01-27 PERMIT SET

PROJECT TRACKING
RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE SANTA ROSA, CA

STAIRS A AND B - PLANS AND SECTIONS

A-400

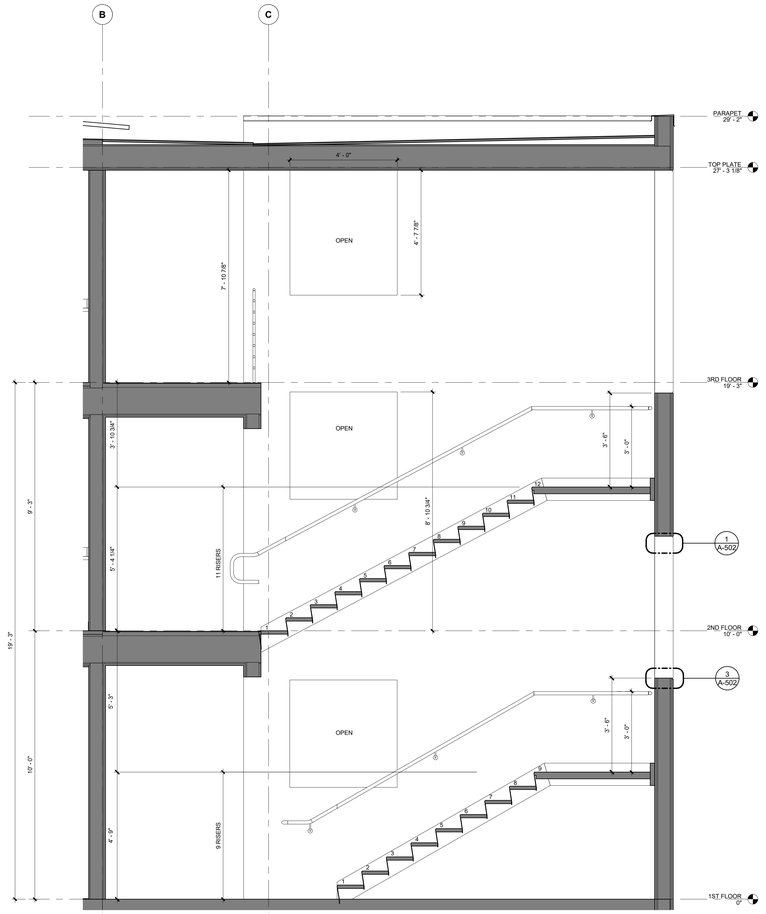
6/4/2020 4:47:01 PM

ROWELL BROKAW

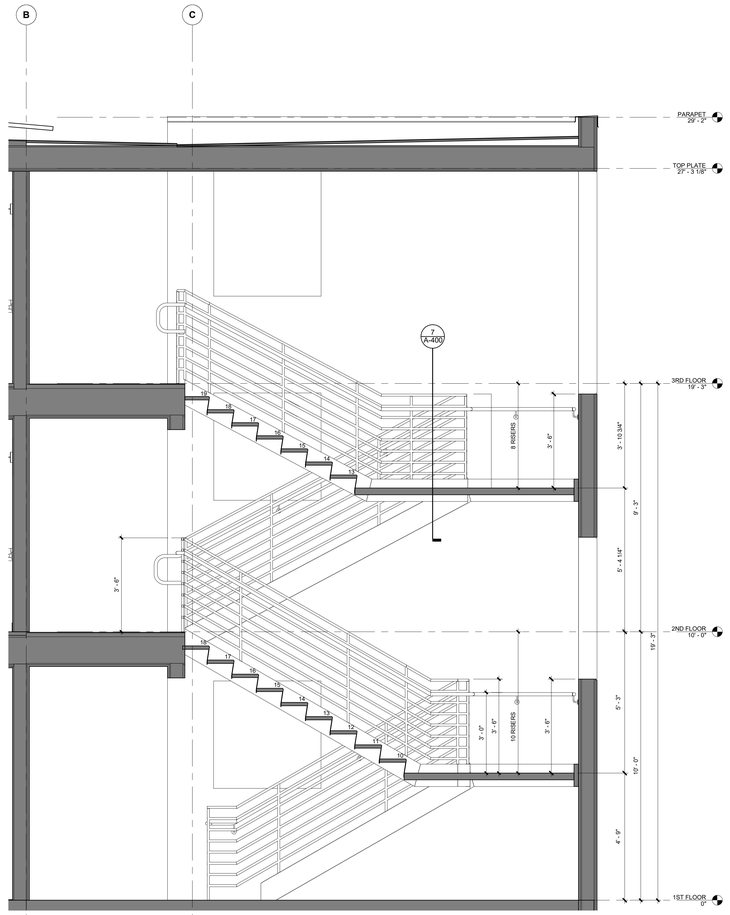
1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

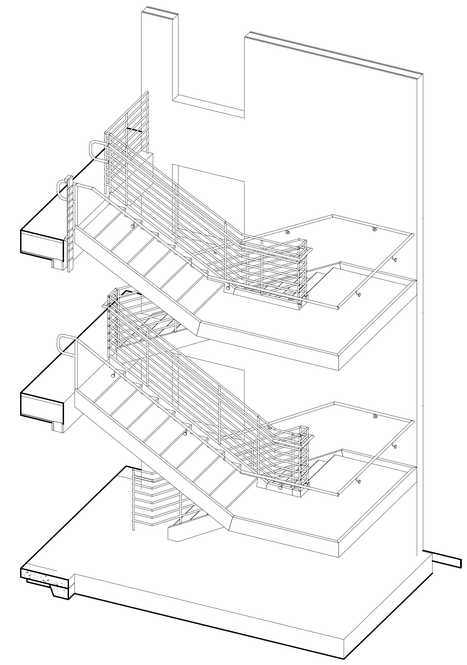
STAMP



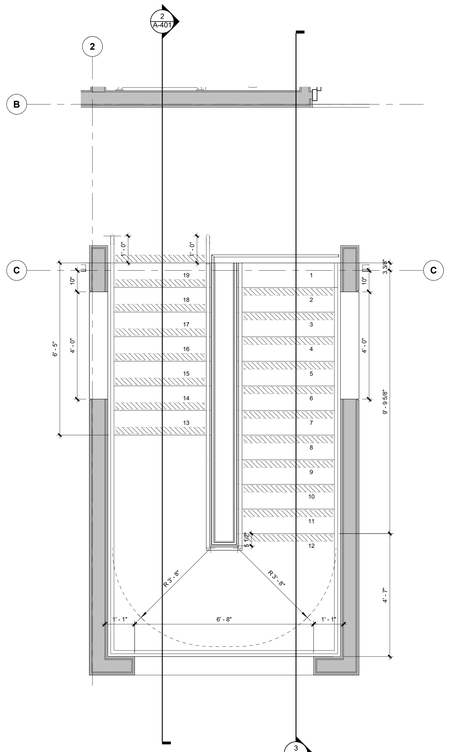
3 STAIR- C SECTION
1/2" = 1'-0"



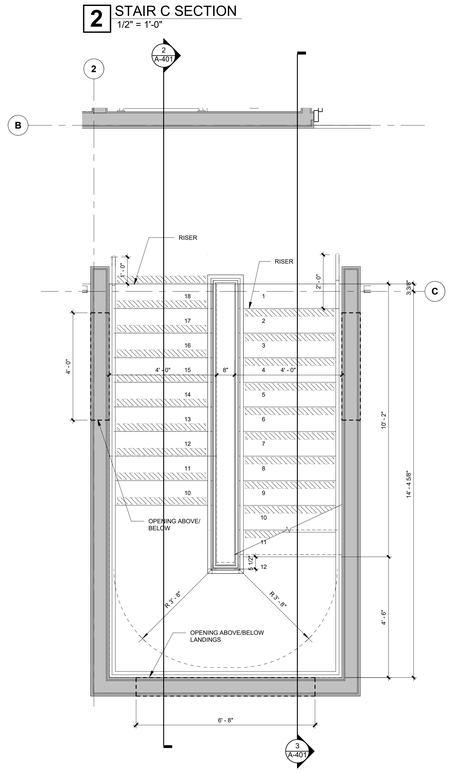
2 STAIR C SECTION
1/2" = 1'-0"



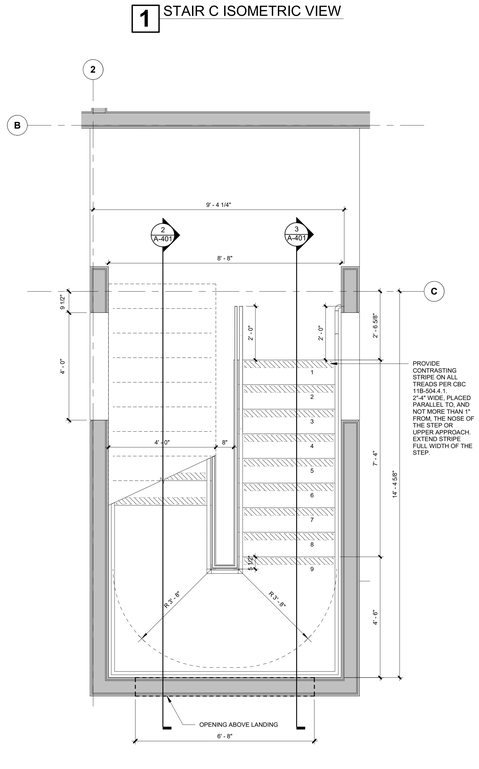
1 STAIR C ISOMETRIC VIEW



6 STAIR C PLAN-3RD FLOOR
1/2" = 1'-0"



5 STAIR C PLAN - 2ND FLOOR
1/2" = 1'-0"



4 STAIR C PLAN-1ST FLOOR
1/2" = 1'-0"

REVISIONS TO THIS SHEET

REV.	DATE
PCC-2	2020.05.15
PCC-1	2020.04.06

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.5 AS
AMENDED BY THE LOCAL AGENCY.

SHEET ISSUE DATE
2020-01-27 PERMIT SET

PROJECT TRACKING
RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

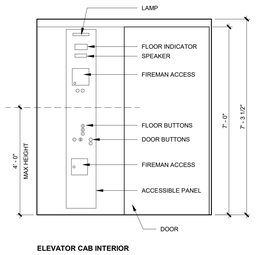
Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

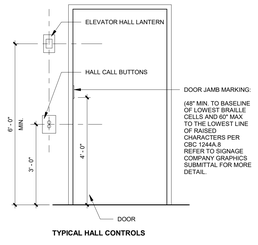
STAIR C - PLANS AND SECTIONS

A-401

6/4/2020 4:47:05 PM



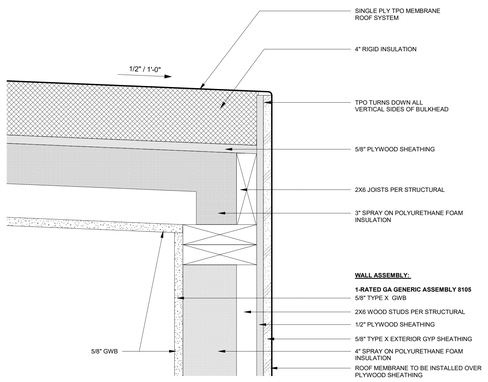
ELEVATOR CAB INTERIOR

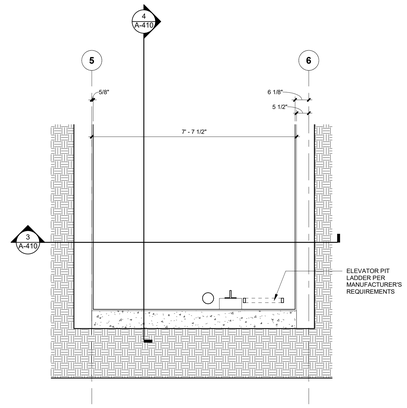


TYPICAL HALL CONTROLS

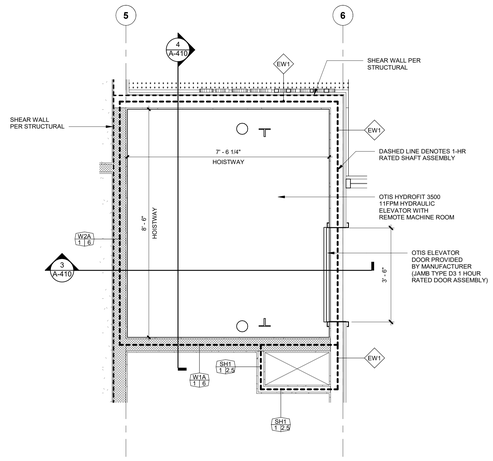
7 ELEVATOR CONTROLS
1/2" = 1'-0"

NOTE: ELEVATOR SELECTION IS FOR OTIS "HYDROFIT" UNIT AND DEVICES ARE BASED ON PROPRIETARY COMPONENTS WHICH WILL BE INCLUDED IN THE DEFERRED ELEVATOR SUBMITTAL. ALL DEVICE LOCATIONS TO COMPLY WITH CBC 1124A.

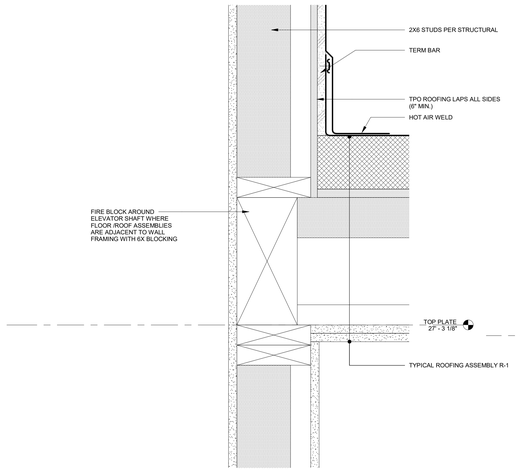




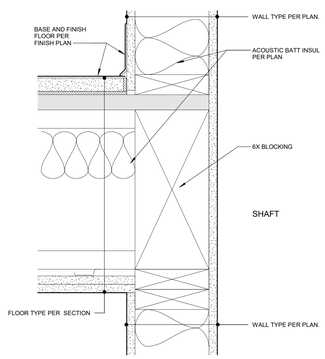
2 ELEVATOR PIT PLAN
1/2" = 1'-0"



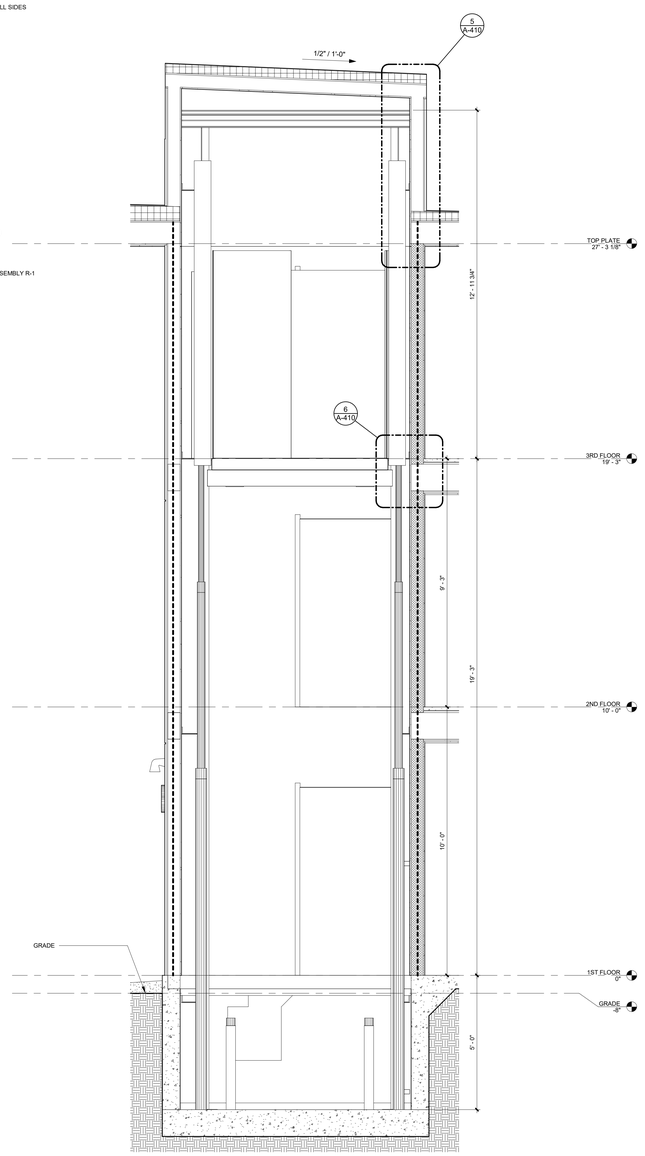
1 TYPICAL FLOOR ELEVATOR SHAFT PLAN
1/2" = 1'-0"



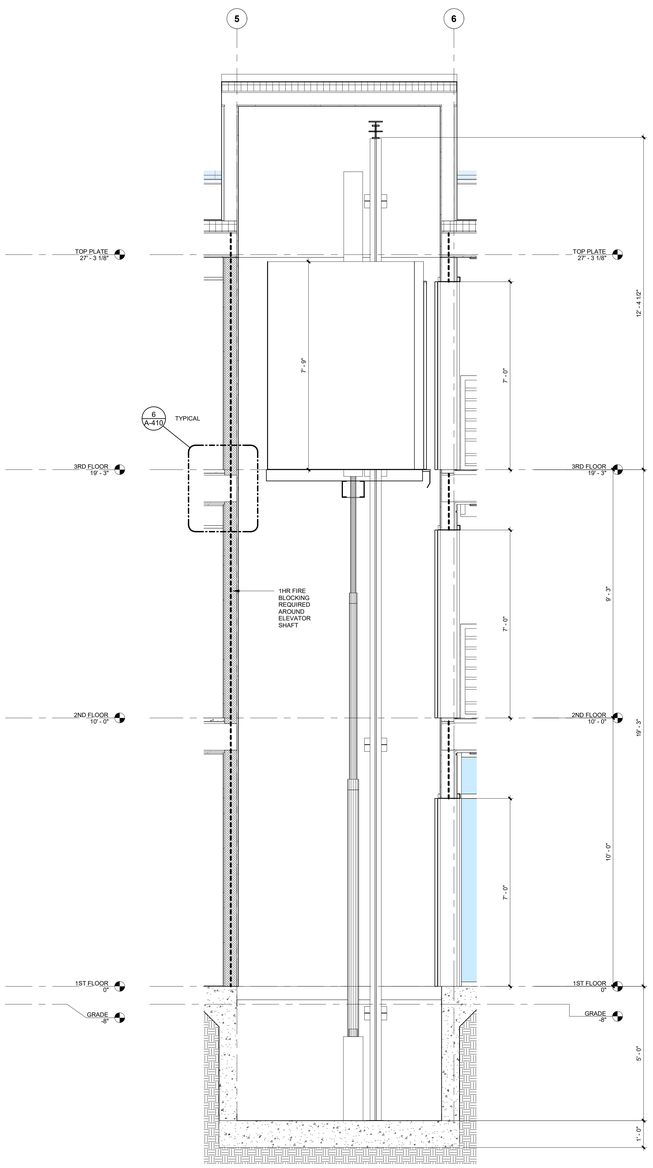
5 ELEVATOR ROOF BULKHEAD DETAILS
3" = 1'-0"



6 ELEVATOR SHAFT BLOCKING DETAIL
3" = 1'-0"



4 ELEVATOR SHAFT SECTION-N/S
1/2" = 1'-0"



3 ELEVATOR SHAFT SECTION-E/W
1/2" = 1'-0"

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

LICENSED ARCHITECT
JOHN ROWELL
C28587
12-31-2021
Renewal Date
STATE OF CALIFORNIA

REVISIONS TO THIS SHEET

REV.	DATE
PCC-2	2020.05.15
PCC-1	2020.04.06

SHEET ISSUE DATE
2020-01-27 PERMIT SET

PROJECT TRACKING
RBA #: 1843

P.I.C.: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

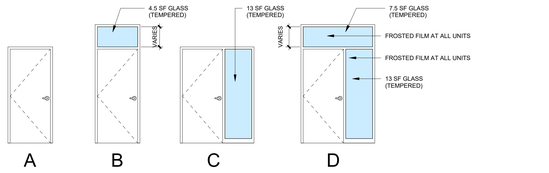
Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

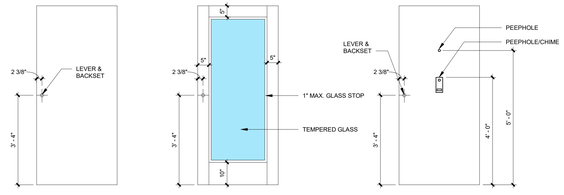
ELEVATOR PLANS AND SECTIONS

A-410

6/4/2020 4:47:08 PM



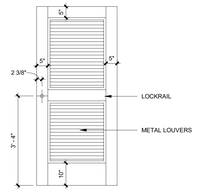
1 DOOR FRAME INDEX
1/4" = 1'-0"



TYPICAL FLUSH PANEL DOOR

TYPICAL SINGLE LITE GLASS DOOR
"HOLLOW METAL/GLASS"

TYPICAL FLUSH PANEL DOOR AT ALL UNITS ONLY
NOTE: UNITS A1, B9, C9 TO HAVE ELECTRIC VISUAL DOORBELLS, SEE ELECTRICAL DRAWINGS



TYPICAL HOLLOW METAL LOUVERED DOOR
"HOLLOW METAL/LOUVERS"

2 DOOR PANEL TYPES
1/2" = 1'-0"

GENERAL NOTES: DOORS

1. PROVIDE GLAZING IN ALL DOORS, FRAMES, AND STOREFRONT SYSTEMS PER SCHEDULE AND SPECIFICATIONS. PROVIDE TEMPERED GLASS IN ALL DOOR LITES, SIDELITES AND TRANSOMS PER CALIFORNIA BUILDING CODE.
2. COORDINATE LOW VOLTAGE SECURITY SYSTEMS WITH HARDWARE AND FRAMES.
3. REFER TO GLAZING TYPE / STC RATING AND ACOUSTICAL GASKET SYSTEM AND PANEL WEIGHT REQUIREMENTS FROM ACOUSTIC ENGINEERING REPORT.
4. WHERE A FLOOR MATERIAL CHANGES BETWEEN ROOMS, MAKE TRANSITION AT CENTER LINE OF DOOR.
5. VERIFY ALL FLOOR TRANSITIONS AND THRESHOLDS MEET ADA REQUIREMENTS.
6. ALL DOORS SHALL REQUIRE A MAXIMUM OF 5 LBS FORCE TO OPERATE. FIRE DOORS MAY HAVE 15 LBS.
7. REFER TO HARDWARE SET SCHEDULE IN PROJECT SPECIFICATIONS BOOK FOR ALL HARDWARE SELECTIONS.

DOOR SCHEDULE

ID	From Room: Name	To Room: Name	PANEL WIDTH	PANEL HEIGHT	PANEL MATERIAL	HOLLOW METAL FRAME HEIGHT	HOLLOW METAL FRAME WIDTH	HOLLOW METAL FRAME TYPE	HARDWARE	NOTES
GRADE										
EG-1	EXTERIOR GATE WEST		3' - 6"	6'-10"	WELDED HSS STEEL				DHW-Panic Bar	SEE 9/A152
1ST FLOOR										
101-1		TRASH	3' - 0"	6' - 8"	HOLLOW METAL	8' - 7 7/8"	3' - 4"	B	DHW-Lever	
102-1	SECURITY		3' - 0"	6' - 8"	HOLLOW METAL	8' - 7 7/8"	4' - 8"	D	DHW-Lever	
103-1	SECURITY	DIR	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
106-1	LAUNDRY	UTIL	3' - 0"	6' - 8"	HOLLOW METAL/LOUVERS	6' - 10"	3' - 4"	A	DHW-Lever	
107	MULTI PURP	EL MACH	3' - 0"	6' - 8"	HOLLOW METAL	6' - 10"	3' - 4"	A	DHW-Lever	
108	UTIL	MULTI PURP	3' - 0"	6' - 8"	HOLLOW METAL	6' - 10"	3' - 4"	A	DHW-Lever	
109-1		HWH ROOM	3' - 0"	6' - 8"	HOLLOW METAL	6' - 10"	3' - 4"	A	DHW-Lever	
110-1	MULTI PURP		3' - 0"	6' - 8"	HOLLOW METAL/GLASS	8' - 7 7/8"	3' - 4"	B	DHW-Panic Bar	
110-2		MULTI PURP	3' - 0"	6' - 8"	HOLLOW METAL/GLASS	8' - 7 7/8"	3' - 4"	B	DHW-Panic Bar	
111-1	OFFICE	WAITING	3' - 0"	6' - 8"	HOLLOW METAL	6' - 10"	5' - 6"	C	DHW-Lever	
112-1	HALL	OFFICE	3' - 0"	6' - 8"	HOLLOW METAL	6' - 10"	5' - 6"	C	DHW-Lever	
113-1	HALL	OFFICE	3' - 0"	6' - 8"	HOLLOW METAL	6' - 10"	5' - 6"	C	DHW-Lever	
114-1	HALL	OFFICE	3' - 0"	6' - 8"	HOLLOW METAL	6' - 10"	5' - 6"	C	DHW-Lever	
115-1	HALL	OFFICE	3' - 0"	6' - 8"	HOLLOW METAL	6' - 10"	5' - 6"	C	DHW-Lever	
116-1	HALL	UTIL	3' - 0"	6' - 8"	HOLLOW METAL	6' - 10"	3' - 4"	A	DHW-Lever	
117-1		MEETING ROOM	3' - 0"	6' - 8"	HOLLOW METAL	8' - 7 7/8"	3' - 4"	B	DHW-Lever	
118-1		ELEC RM	3' - 0"	6' - 8"	HOLLOW METAL	6' - 10"	3' - 4"	A	DHW-Panic Bar	
120-1	PANTRY	BATH	3' - 0"	6' - 8"		6' - 10"	3' - 4"	A	DHW-Lever	
121-1	DECON		3' - 0"	6' - 8"	HOLLOW METAL	8' - 7 7/8"	3' - 4"	B	DHW-Lever	
122-1	BATH	DECON	3' - 0"	6' - 8"		6' - 10"	3' - 4"	A	DHW-Lever	
125-1	PANTRY		3' - 0"	6' - 8"	HOLLOW METAL/GLASS	8' - 7 7/8"	4' - 6"	D	DHW-Lever	
126-1	MULTI PURP	STO	3' - 0"	6' - 8"	HOLLOW METAL	6' - 10"	3' - 4"	A	DHW-Lever	
A1-1		UNIT	3' - 0"	6' - 8"	HOLLOW METAL	8' - 7 7/8"	4' - 8"	D	DHW-Lever	
A1-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
A2-1	UNIT		3' - 0"	6' - 8"	HOLLOW METAL	8' - 7 7/8"	4' - 8"	D	DHW-Lever	
A2-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
A3-1		UNIT	3' - 0"	6' - 8"	HOLLOW METAL	8' - 7 7/8"	4' - 8"	D	DHW-Lever	
A3-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
A4-1	UNIT		3' - 0"	6' - 8"	HOLLOW METAL	8' - 7 7/8"	4' - 8"	D	DHW-Lever	
A4-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
A5-1	UNIT		3' - 0"	6' - 8"	HOLLOW METAL	8' - 7 7/8"	4' - 8"	D	DHW-Lever	
A5-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
A6-1		UNIT	3' - 0"	6' - 8"	HOLLOW METAL	8' - 7 7/8"	4' - 8"	D	DHW-Lever	
A6-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
A7-1	UNIT		3' - 0"	6' - 8"	HOLLOW METAL	8' - 8 1/2"	4' - 8"	D	DHW-Lever	
A7-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
A8-1	UNIT		3' - 0"	6' - 8"	HOLLOW METAL	8' - 7 7/8"	4' - 8"	D	DHW-Lever	
A8-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
A9-1		UNIT	3' - 0"	6' - 8"	HOLLOW METAL	8' - 7 7/8"	4' - 8"	D	DHW-Lever	
A9-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
A10-1	UNIT		3' - 0"	6' - 8"	HOLLOW METAL	8' - 7 7/8"	4' - 8"	D	DHW-Lever	
A10-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
A11-1		UNIT	3' - 0"	6' - 8"	HOLLOW METAL	8' - 7 7/8"	4' - 8"	D	DHW-Lever	
A11-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
A12-1	UNIT		3' - 0"	6' - 8"	HOLLOW METAL	8' - 7 7/8"	4' - 8"	D	DHW-Lever	
A12-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
A13-1		UNIT	3' - 0"	6' - 8"	HOLLOW METAL	8' - 7 7/8"	4' - 8"	D	DHW-Lever	
A13-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
EXT1-1			3' - 0"	6' - 8"	HOLLOW METAL	6' - 10"	3' - 4"	A	DHW-Panic Bar	
2ND FLOOR										
201-1	COVERED WALKWAY	TRASH	3' - 0"	6' - 8"	HOLLOW METAL	7' - 10 7/8"	3' - 4"	B	DHW-Lever	
204-1	UTIL	GYM	2' - 10"	6' - 8"	HOLLOW METAL/LOUVERS	6' - 10"	3' - 2"	A	DHW-Lever	
206-1	LAUNDRY	UTIL	3' - 0"	6' - 8"	HOLLOW METAL/LOUVERS	6' - 10"	3' - 4"	A	DHW-Lever	
207-1	COVERED WALKWAY	HWH ROOM	3' - 0"	6' - 8"	HOLLOW METAL	6' - 10"	3' - 4"	A	DHW-Lever	
B1-1	COVERED WALKWAY	UNIT	3' - 0"	6' - 8"	HOLLOW METAL	7' - 10 1/2"	4' - 8"	D	DHW-Lever	
B1-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
B2-1	COVERED WALKWAY	UNIT	3' - 0"	6' - 8"	HOLLOW METAL	7' - 10 7/8"	4' - 8"	D	DHW-Lever	
B2-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
B3-1	UNIT	COVERED WALKWAY	3' - 0"	6' - 8"	HOLLOW METAL	7' - 10 7/8"	4' - 8"	D	DHW-Lever	
B3-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
B4-1	COVERED WALKWAY	UNIT	3' - 0"	6' - 8"	HOLLOW METAL	7' - 10 7/8"	4' - 8"	D	DHW-Lever	
B4-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
B5-1	UNIT	COVERED WALKWAY	3' - 0"	6' - 8"	HOLLOW METAL	7' - 10 7/8"	4' - 8"	D	DHW-Lever	
B5-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
B6-1	UNIT	COVERED WALKWAY	3' - 0"	6' - 8"	HOLLOW METAL	7' - 10 7/8"	4' - 8"	D	DHW-Lever	
B6-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
B7-1	COVERED WALKWAY	UNIT	3' - 0"	6' - 8"	HOLLOW METAL	7' - 10 7/8"	4' - 8"	D	DHW-Lever	
B7-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
B8-1	UNIT	COVERED WALKWAY	3' - 0"	6' - 8"	HOLLOW METAL	7' - 10 7/8"	4' - 8"	D	DHW-Lever	
B8-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
B9-1	COVERED WALKWAY	UNIT	3' - 0"	6' - 8"	HOLLOW METAL	7' - 10 7/8"	4' - 8"	D	DHW-Lever	
B9-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
B10-1	UNIT	COVERED WALKWAY	3' - 0"	6' - 8"	HOLLOW METAL	7' - 10 7/8"	4' - 8"	D	DHW-Lever	
B10-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
B11-1	COVERED WALKWAY	UNIT	3' - 0"	6' - 8"	HOLLOW METAL	7' - 10 7/8"	4' - 8"	D	DHW-Lever	
B11-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
B12-1	UNIT	COVERED WALKWAY	3' - 0"	6' - 8"	HOLLOW METAL	7' - 10 7/8"	4' - 8"	D	DHW-Lever	
B12-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
B13-1	UNIT	COVERED WALKWAY	3' - 0"	6' - 8"	HOLLOW METAL	7' - 10 7/8"	4' - 8"	D	DHW-Lever	
B13-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
B14-1	COVERED WALKWAY	UNIT	3' - 0"	6' - 8"	HOLLOW METAL	7' - 10 7/8"	4' - 8"	D	DHW-Lever	
B14-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
B15-1	COVERED WALKWAY	UNIT	3' - 0"	6' - 8"	HOLLOW METAL	7' - 11 1/2"	4' - 8"	D	DHW-Lever	
B15-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
B16-1	UNIT	COVERED WALKWAY	3' - 0"	6' - 8"	HOLLOW METAL	7' - 10 7/8"	4' - 8"	D	DHW-Lever	
B16-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
B17-1	COVERED WALKWAY	UNIT	3' - 0"	6' - 8"	HOLLOW METAL	7' - 10 7/8"	4' - 8"	D	DHW-Lever	
B17-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
B18-1	UNIT	COVERED WALKWAY	3' - 0"	6' - 8"	HOLLOW METAL	7' - 10 7/8"	4' - 8"	D	DHW-Lever	
B18-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
B19-1	COVERED WALKWAY	UNIT	3' - 0"	6' - 8"	HOLLOW METAL	7' - 10 7/8"	4' - 8"	D	DHW-Lever	
B19-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
B20-1	UNIT	COVERED WALKWAY	3' - 0"	6' - 8"	HOLLOW METAL	7' - 10 7/8"	4' - 8"	D	DHW-Lever	
B20-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
B21-1	COVERED WALKWAY	UNIT	3' - 0"	6' - 8"	HOLLOW METAL	7' - 10 7/8"	4' - 8"	D	DHW-Lever	
B21-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
3RD FLOOR										
301-1	COVERED WALKWAY	TRASH	3' - 0"	6' - 8"	HOLLOW METAL	7' - 10 7/8"	3' - 4"	B	DHW-Lever	
304-1	UTIL	GYM	2' - 10"	6' - 8"	HOLLOW METAL/LOUVERS	6' - 10"	3' - 2"	A	DHW-Lever	
306-1	LAUNDRY	UTIL	3' - 0"	6' - 8"	HOLLOW METAL/LOUVERS	6' - 10"	3' - 4"	A	DHW-Lever	
307-1	COVERED WALKWAY	HWH ROOM	3' - 0"	6' - 8"	HOLLOW METAL	6' - 10"	3' - 4"	A	DHW-Lever	
C1-1	COVERED WALKWAY	UNIT	3' - 0"	6' - 8"	HOLLOW METAL	7' - 10 1/2"	4' - 8"	D	DHW-Lever	
C1-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
C2-1	COVERED WALKWAY	UNIT	3' - 0"	6' - 8"	HOLLOW METAL	7' - 10 7/8"	4' - 8"	D	DHW-Lever	
C2-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
C3-1	UNIT	COVERED WALKWAY	3' - 0"	6' - 8"	HOLLOW METAL	7' - 10 7/8"	4' - 8"	D	DHW-Lever	
C3-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
C4-1	COVERED WALKWAY	UNIT	3' - 0"	6' - 8"	HOLLOW METAL	7' - 10 7/8"	4' - 8"	D	DHW-Lever	
C4-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
C5-1	UNIT	COVERED WALKWAY	3' - 0"	6' - 8"	HOLLOW METAL	7' - 10 7/8"	4' - 8"	D	DHW-Lever	
C5-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
C6-1	UNIT	COVERED WALKWAY	3' - 0"	6' - 8"	HOLLOW METAL	7' - 10 7/8"	4' - 8"	D	DHW-Lever	
C6-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
C7-1	COVERED WALKWAY	UNIT	3' - 0"	6' - 8"	HOLLOW METAL	7' - 10 7/8"	4' - 8"	D	DHW-Lever	
C7-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
C8-1	UNIT	COVERED WALKWAY	3' - 0"	6' - 8"	HOLLOW METAL	7' - 10 7/8"	4' - 8"	D	DHW-Lever	
C8-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
C9-1	COVERED WALKWAY	UNIT	3' - 0"	6' - 8"	HOLLOW METAL	7' - 10 7/8"	4' - 8"	D	DHW-Lever	
C9-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
C10-1	UNIT	COVERED WALKWAY	3' - 0"	6' - 8"	HOLLOW METAL	7' - 10 7/8"	4' - 8"	D	DHW-Lever	
C10-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
C11-1	COVERED WALKWAY	UNIT	3' - 0"	6' - 8"	HOLLOW METAL	7' - 10 7/8"	4' - 8"	D	DHW-Lever	
C11-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
C12-1	UNIT	COVERED WALKWAY	3' - 0"	6' - 8"	HOLLOW METAL	7' - 10 7/8"	4' - 8"	D	DHW-Lever	
C12-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
C13-1	UNIT	COVERED WALKWAY	3' - 0"	6' - 8"	HOLLOW METAL	7' - 10 7/8"	4' - 8"	D	DHW-Lever	
C13-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
C14-1	COVERED WALKWAY	UNIT	3' - 0"	6' - 8"	HOLLOW METAL	7' - 10 7/8"	4' - 8"	D	DHW-Lever	
C14-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
C15-1	COVERED WALKWAY	UNIT	3' - 0"	6' - 8"	HOLLOW METAL	7' - 11 1/2"	4' - 8"	D	DHW-Lever	
C15-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
C16-1	UNIT	COVERED WALKWAY	3' - 0"	6' - 8"	HOLLOW METAL	7' - 11 1/2"	4' - 8"	D	DHW-Lever	
C16-2	UNIT	UNIT	4' - 0"	6' - 8"	VENEER	4' - 4"	6' - 10"	A	DHW-Bypass	
C16-4	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
C16-5	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
C16-6	UNIT	UNIT	6' - 0"	6' - 8"	VENEER	6' - 4"	6' - 10"	A	DHW-Bypass	
C17-1	UNIT	COVERED WALKWAY	3' - 0"	6' - 8"	HOLLOW METAL	7' - 10 7/8"	4' - 8"	D	DHW-Lever	
C17-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
C18-1	COVERED WALKWAY	UNIT	3' - 0"	6' - 8"	HOLLOW METAL	7' - 10 7/8"	4' - 8"	D	DHW-Lever	
C18-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
C19-1	UNIT	COVERED WALKWAY	3' - 0"	6' - 8"	HOLLOW METAL	7' - 10 7/8"	4' - 8"	D	DHW-Lever	
C19-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	
C20-1	COVERED WALKWAY	UNIT	3' - 0"	6' - 8"	HOLLOW METAL	7' - 10 7/8"	4' - 8"	D	DHW-Lever	
C20-2	UNIT	UNIT	3' - 0"	6' - 8"	VENEER	6' - 10"	3' - 4"	A	DHW-Lever	

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REVISIONS TO THIS SHEET

REV.	DATE
PCC-2	2020.05.15
ADD-1	2020.04.27
PCC-1	2020.04.06

SHEET ISSUE DATE
2020-01-27 PERMIT SET

PROJECT TRACKING
RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

Project Name
SAGE COMMONS

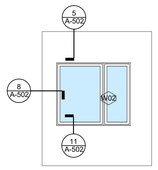
Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

DOOR SCHEDULE - DOOR TYPES

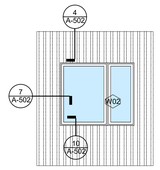
A-501

REVIEWED FOR CODE COMPLIANCE BY COASTLAND CIVIL ENGINEERING, INC. IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

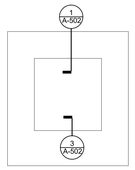
6/4/2020 4:47:11 PM



STUCCO

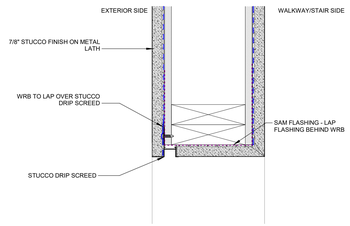


METAL PANEL

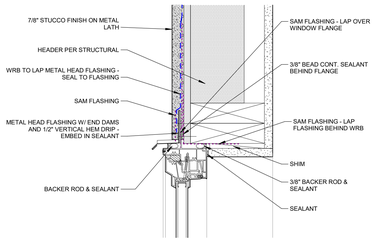


STUCCO EXT. OPENING AT STAIRS

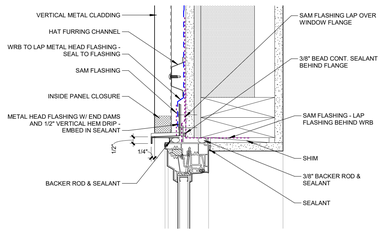
2 TYP. WDW & DOOR DETAILS PER CLADDING TYPE
1/4" = 1'-0"



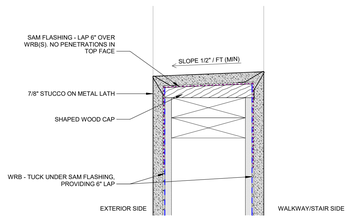
1 OPENING HEAD @ STUCCO EXT. WALL
3" = 1'-0"



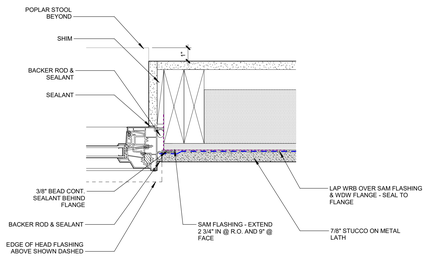
5 WDW HEAD @ STUCCO
3" = 1'-0"



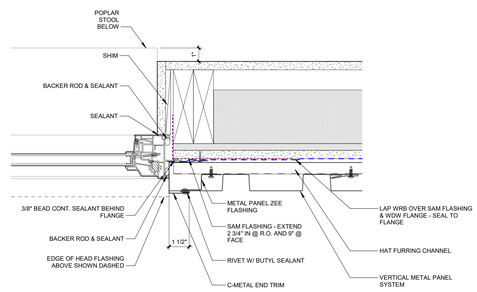
4 WDW HEAD @ METAL PANEL
3" = 1'-0"



3 OPENING SILL @ STUCCO EXT. WALL
3" = 1'-0"



8 WDW JAMB @ STUCCO
3" = 1'-0"



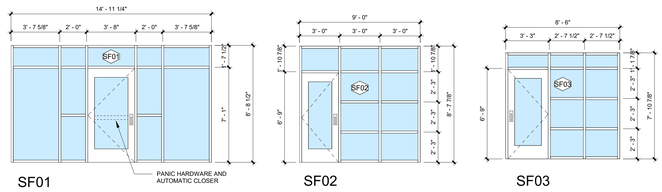
7 WDW JAMB @ METAL PANEL
3" = 1'-0"

WINDOW SCHEDULE					
TYPE / LOCATION	OPERATION	R.O. WIDTH	R.O. HEIGHT	SILL HEIGHT	NOTES
W01					
110a	FIXED/MULLED	5' - 0"	7' - 0"	8"	
110b	FIXED/MULLED	5' - 0"	7' - 0"	8"	
110c	FIXED/MULLED	5' - 0"	7' - 0"	8"	
111	FIXED/MULLED	5' - 0"	7' - 0"	8"	
112	FIXED/MULLED	5' - 0"	7' - 0"	8"	
113	FIXED/MULLED	5' - 0"	7' - 0"	8"	
114	FIXED/MULLED	5' - 0"	7' - 0"	8"	
115	FIXED/MULLED	5' - 0"	7' - 0"	8"	
117c	FIXED/MULLED	5' - 0"	7' - 0"	8"	
W01: 9					
W02					
A1	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
A2	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
A3	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
A4	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
A5	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
A6	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
A7b	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
A8	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
A9	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
A10	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
A11	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
A12	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
A13	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
B1c	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
B2	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
B3	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
B4	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
B5	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
B6	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
B7	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
B8	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
B9	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
B10	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
B11	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
B12	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
B13	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
B14	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
B15b	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
B16	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
B17	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
B18	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
B19	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
B20	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
B21	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
C1c	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
C2	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
C3	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
C4	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
C5	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
C6	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
C7	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
C8	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
C9	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
C10	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	

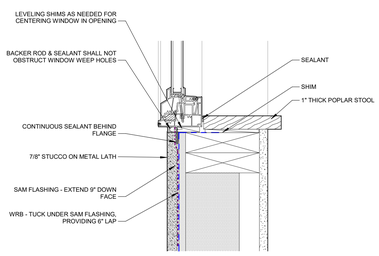
WINDOW SCHEDULE					
TYPE / LOCATION	OPERATION	R.O. WIDTH	R.O. HEIGHT	SILL HEIGHT	NOTES
C11	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
C12	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
C13	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
C14	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
C15b	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
C16a	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
C16b	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
C17	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
C18	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
C19	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
C20	FIXED/CASEMENT	5' - 6"	4' - 8"	3' - 0"	
W02: 55					
W03					
102a	FIXED/CASEMENT	6' - 0"	5' - 6"	2' - 2"	
103	FIXED/CASEMENT	6' - 0"	5' - 6"	2' - 2"	
105	FIXED/CASEMENT	6' - 0"	5' - 6"	2' - 2"	
202a	FIXED/CASEMENT	6' - 0"	5' - 6"	2' - 2"	
202b	FIXED/CASEMENT	6' - 0"	5' - 6"	2' - 2"	
203	FIXED/CASEMENT	6' - 0"	5' - 6"	2' - 2"	
205	FIXED/CASEMENT	6' - 0"	5' - 6"	2' - 2"	
302a	FIXED/CASEMENT	6' - 0"	5' - 6"	2' - 2"	
302b	FIXED/CASEMENT	6' - 0"	5' - 6"	2' - 2"	
303	FIXED/CASEMENT	6' - 0"	5' - 6"	2' - 2"	
305	FIXED/CASEMENT	6' - 0"	5' - 6"	2' - 2"	
W03: 11					
W04					
102c	CASEMENT	2' - 0"	4' - 0"	3' - 8"	
117b	CASEMENT	2' - 0"	4' - 0"	3' - 8"	
A7a	CASEMENT	2' - 0"	4' - 0"	3' - 8"	
B1b	CASEMENT	2' - 0"	4' - 0"	3' - 8"	
B15a	CASEMENT	2' - 0"	4' - 0"	3' - 8"	
C1b	CASEMENT	2' - 0"	4' - 0"	3' - 8"	
C15a	CASEMENT	2' - 0"	4' - 0"	3' - 8"	
W04: 7					
W05					
B1a	FIXED	2' - 6"	2' - 6"	5' - 2"	
C1a	FIXED	2' - 6"	2' - 6"	5' - 2"	
W05: 2					
W06					
202c	FIXED	4' - 0"	4' - 6"	2' - 6"	
202d	FIXED	4' - 0"	4' - 6"	2' - 6"	
302c	FIXED	4' - 0"	4' - 6"	2' - 6"	
302d	FIXED	4' - 0"	4' - 6"	2' - 6"	
W06: 4					
W07					
102e	FIXED/SLIDING/MULLED	4' - 6"	5' - 3"	2' - 5"	
W07: 1					
W08					
102d	FIXED	4' - 6"	4' - 0"	3' - 8"	
W08: 1					
W09					
102b	SLIDING	5' - 0"	4' - 0"	3' - 8"	
W09: 1					

GENERAL NOTES: WINDOWS

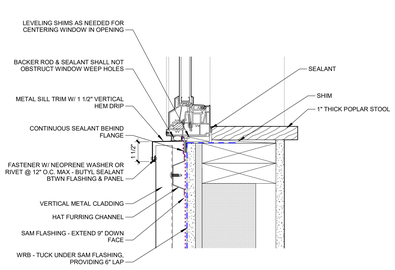
1. NOTED DIMENSIONS ARE WINDOW ROUGH OPENINGS.
2. REFER TO GLAZING TYPE / STC RATING REQUIREMENTS FROM ACOUSTIC ENGINEERING REPORT. PROVIDE TESTED STC DATA IN SUBMITTAL PRIOR TO FABRICATION.
3. SEE STOREFRONT ELEVATIONS SHEETS FOR ALL STOREFRONT TYPES.
4. PROVIDE SAFETY GLASS PER CBC REQUIREMENTS. TEMPERED SAFETY GLASS INDICATED WITH LETTER "T" ON VINYL WINDOW INDEX.
5. PROVIDE WINDOW COVERINGS AT WINDOWS AND EXTERIOR IN RESIDENTIAL UNITS PER GENERAL NOTE ON UNIT PLAN SHEETS.
6. WINDOW SILL HEIGHTS VARY, REFER TO ELEVATIONS



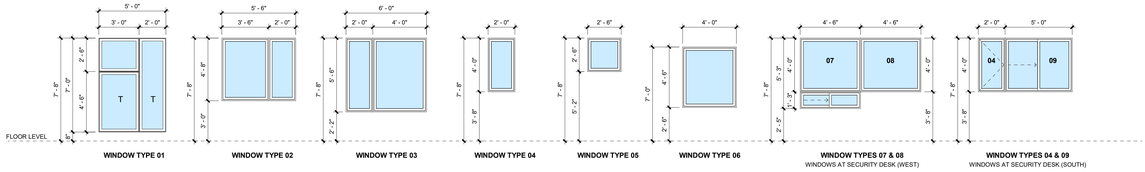
6 STOREFRONT INDEX
1/4" = 1'-0"



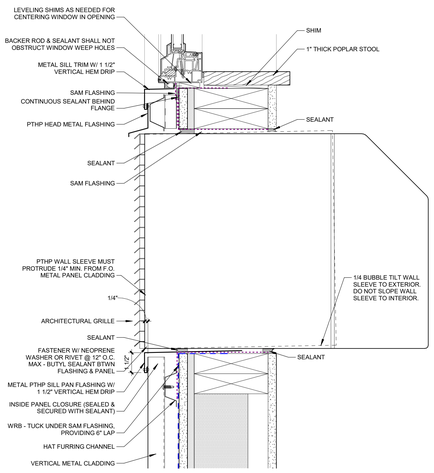
11 WDW SILL @ STUCCO
3" = 1'-0"



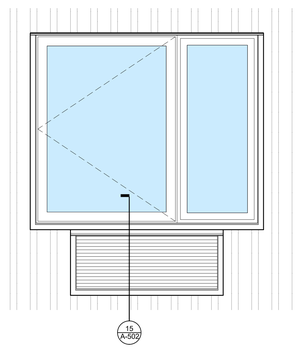
10 WDW SILL @ METAL PANEL
3" = 1'-0"



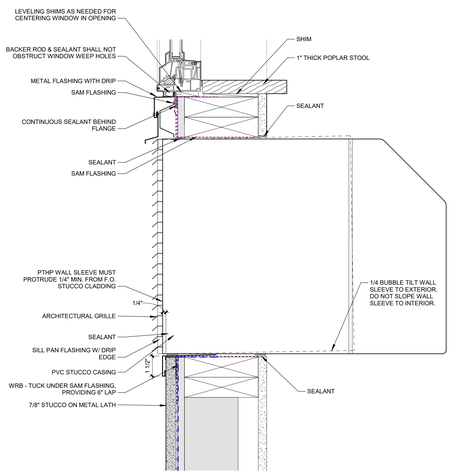
9 WINDOW INDEX
1/4" = 1'-0"



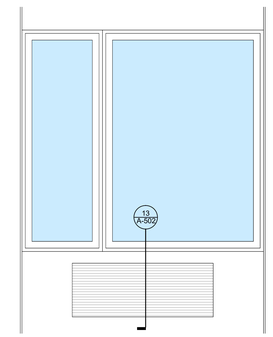
15 WDW SILL W/ PTHP @ METAL PANEL
3" = 1'-0"



14 WINDOW DETAIL ELEVATION W/ PTHP - METAL
3/4" = 1'-0"



13 WDW SILL W/ PTHP @ STUCCO
3" = 1'-0"



12 STANDARD PTHP ELEVATION
3/4" = 1'-0"

REVIEWED FOR CODE COMPLIANCE
BY CSA/STLAND CIVIL ENGINEERING, P.C.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

LICENSED ARCHITECT
JOHN ROWELL
C26507
12-31-2021
Renewal Date
STATE OF CALIFORNIA

REVISIONS TO THIS SHEET

REV.	DATE
ADD-1	2020.04.27

SHEET ISSUE DATE
2020-01-27 PERMIT SET

PROJECT TRACKING
RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

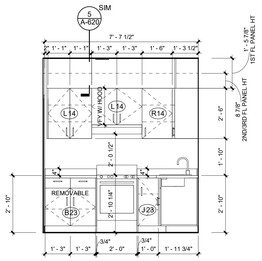
Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

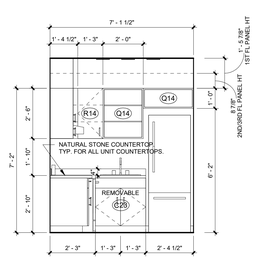
WINDOW AND STOREFRONT SCHEDULE AND TYP DETAILS

A-502

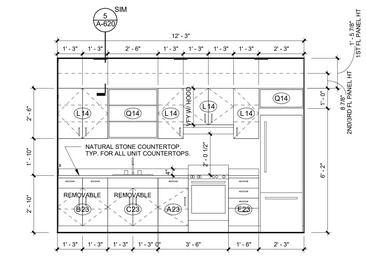
6/4/2020 4:47:15 PM



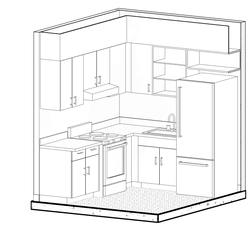
3 UNIT B - KITCHEN - REAR
3/8" = 1'-0"



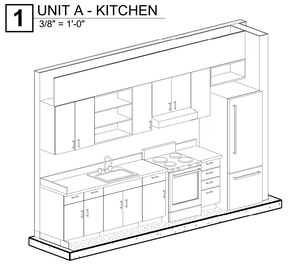
2 UNIT B - KITCHEN - LEFT
3/8" = 1'-0"



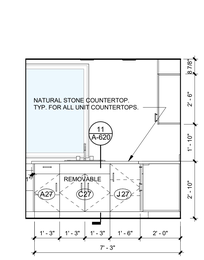
1 UNIT A - KITCHEN
3/8" = 1'-0"



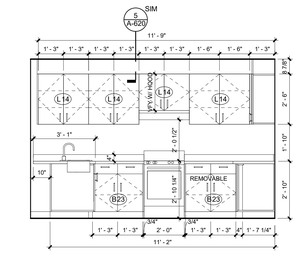
5 UNIT B - KITCHEN CASEWORK ISO



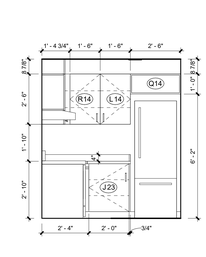
4 UNIT A - KITCHEN CASEWORK ISO



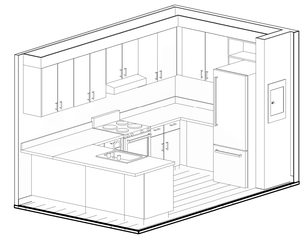
8 UNIT MGR - KITCHEN - FRONT (PENINSULA)
3/8" = 1'-0"



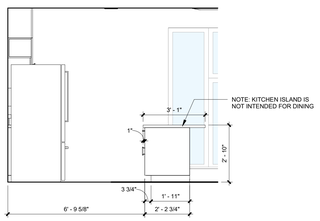
7 UNIT MGR - KITCHEN - RIGHT (RANGE)
3/8" = 1'-0"



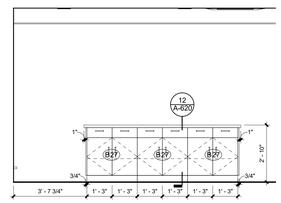
6 UNIT MGR - KITCHEN - REAR
3/8" = 1'-0"



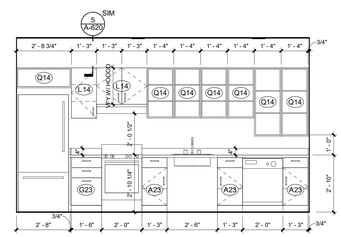
9 UNIT MGR - KITCHEN CASEWORK ISO



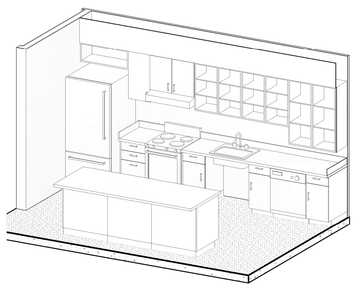
12 MULTIPURP RM - KITCHEN ISLAND - SIDE
3/8" = 1'-0"



11 MULTIPURP RM - KITCHEN - ISLAND - FRONT
3/8" = 1'-0"



10 MULTIPURP RM - KITCHEN
3/8" = 1'-0"



13 MULTIPURP RM - KITCHEN CASEWORK ISO

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

GENERAL NOTES: INTERIOR ELEVATIONS

1. SEE FLOOR PLANS AND ENLARGED PLANS FOR INTERIOR ELEVATION TAG LOCATIONS.

2. PROVIDE GWB AT ALL WALLS AND SOFFIT FACES. SEE WALL ASSEMBLY TYPES FOR LOCATIONS WITH MORE THAN (1) LAYER OF GWB. NOTE THAT GWB WILL BE SUBSTRATE FOR ALL OF THE FINISH MATERIALS.

3. ALL COUNTERS AND CABINETRY TO COMPLY WITH 2019 CBC CHAPTER 11B REQUIREMENTS

4. SEE FINISH SCHEDULES FOR ADDITIONAL INFORMATION ON FINISH MATERIAL LOCATIONS.

KEY

XX1 — PRODUCT CALLOUT. SEE PRODUCT KEY ON SHEET A10.01

? — KEYNOTE. SEE KEYNOTE LEGEND THIS SHEET

VT1 — INTERIOR STOREFRONT TAG (RM. # / I.D.)

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

LICENSED ARCHITECT
JOHN ROWELL
C28587
12-31-2021
Renewal Date
STATE OF CALIFORNIA

REVISIONS TO THIS SHEET

REV.	DATE
PCC-2	2020.05.15
PCC-1	2020.04.06

SHEET ISSUE DATE
2020-01-27 PERMIT SET

PROJECT TRACKING
RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

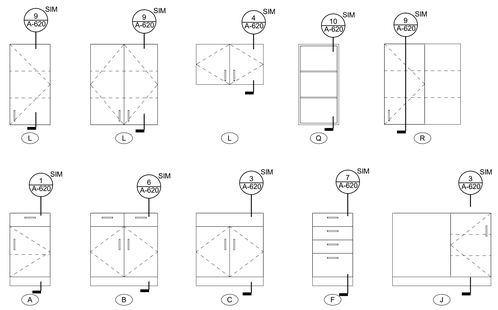
Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

INTERIOR ELEVATIONS - KITCHENS

A-601

6/4/2020 4:47:26 PM



CABINET TYPE INDEX

GENERAL NOTES: CASEWORK

1. SEE INTERIOR ELEVATIONS AND CABINET CONFIGURATION TYPE INDEX FOR TYPICAL CABINET TYPE INFORMATION.

2. NON-TYPICAL CUSTOM CASEWORK IS CALLED OUT IN PLANS AND INTERIOR ELEVATIONS.

3. COORDINATE CASEWORK CONFIGURATION TYPES AND OTHER CUSTOM CASEWORK WITH ROOM FINISH SCHEDULE FOR CASEWORK FINISHES AND MATERIALS.

4. PROVIDE BACKSPLASH AND BACKSPLASH RETURNS AT SIDEWALLS AS INDICATED IN INTERIOR ELEVATIONS.

5. WALL FINISH TO BE CONTINUOUS BEHIND ALL CABINETS, COUNTERS, BRACKETS, SHELVING, AND ALL WALL MOUNTED ITEMS.

6. SEE SEALANT SCHEDULE FOR TYPICAL REQUIRED SEALANT AT JOINTS BETWEEN CASEWORK, WALLS, AND FLOORS.

7. FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION

8. PROVIDE RUBBER BASE AT ALL CABINET BASES AND RETURNS, UNO.

9. PROVIDE MIN. 1" FILLERS AT PERPENDICULAR SIDEWALLS, 2" MIN. AT INTERIOR CORNERS, UNO.

10. COORDINATE LOCATION OF GROMMETS IN COUNTERTOPS WITH OWNER / ARCHITECT.

11. FLOORING AND BASE TO BE CONTINUOUS UNDER AND BEHIND CABINETS, COUNTERS, AND ALL FLOOR MOUNTED ITEMS.

12. PROVIDE NATURAL STONE COUNTERTOPS AT ALL UNIT KITCHENS.

CASEWORK CONFIGURATION TYPE INDEX USE:

CABINET CONFIGURATION TYPE TAG

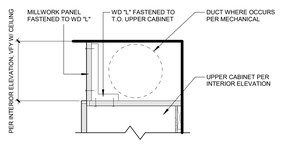
1. ALL CABINETS SHOWN IN INTERIOR ELEVATIONS ARE TAGGED WITH A CASEWORK CONFIGURATION TYPE TAG THAT CORRESPONDS TO THE TYPES INDICATED IN THE CONFIGURATION TYPE INDEX ON THIS SHEET.

2. SEE INTERIOR ELEVATIONS FOR WIDTH AND HEIGHT OF EACH TYPE SHOWN IN THE ELEVATION.

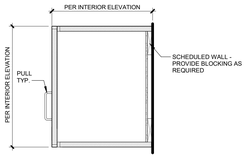
3. CABINET DEPTH IS NOTED IN THE TYPE TAG FOR EACH CABINET IN THE INTERIOR ELEVATIONS. SEE THE KEY ABOVE.

4. SEE SECTIONS CALLED OUT IN THE TYPE INDEX FOR DETAILED INFORMATION ABOUT THE NOTED CABINET TYPE.

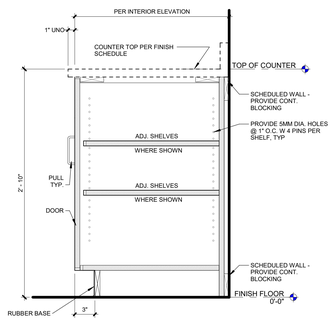
5. COORDINATE NOTED CABINET DEPTH WITH SECTION DETAIL TO DETERMINE COUNTER TOP DEPTH FOR EACH CASEWORK LOCATION WHERE COUNTER TOP IS CALLED OUT.



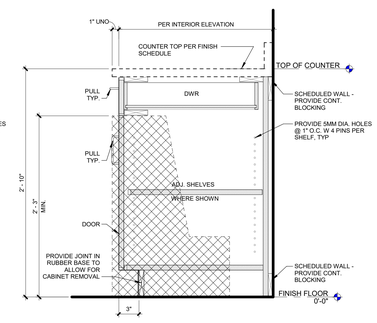
5 FIXED PANEL ABOVE UPPER CABINET
1 1/2" = 1'-0"



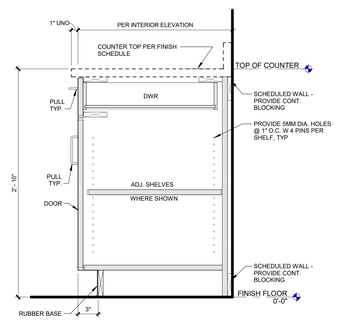
4 CABINET SECTION - UPPER W/ DOOR
1 1/2" = 1'-0"



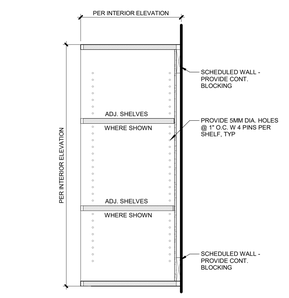
3 CABINET SECTION - BASE 1 DOOR
1 1/2" = 1'-0"



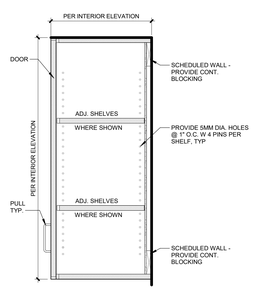
2 CABINET SECTION - BASE REMOVABLE
1 1/2" = 1'-0"



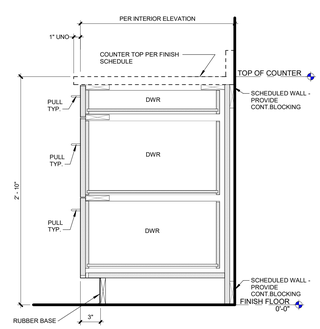
1 CABINET SECTION - BASE 1 DOOR 1 DRAWER
1 1/2" = 1'-0"



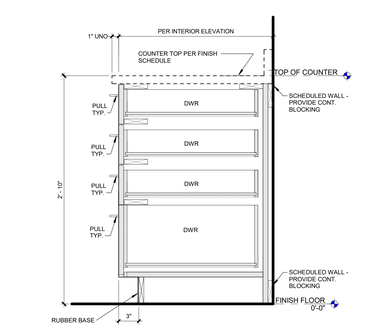
10 CABINET SECTION - UPPER OPEN
1 1/2" = 1'-0"



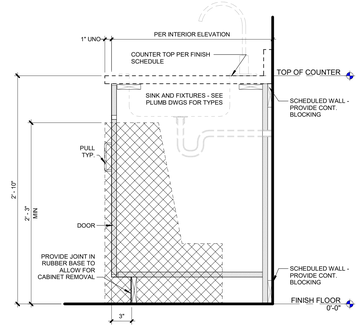
9 CABINET SECTION - UPPER 1 DOOR 2 SHELF
1 1/2" = 1'-0"



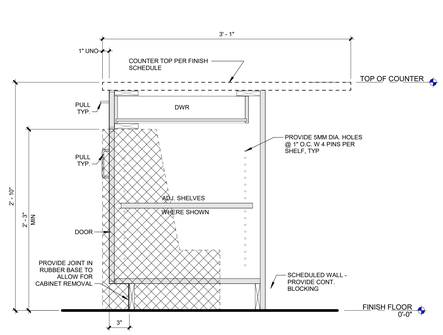
8 CABINET SECTION - BASE 3 DRAWER
1 1/2" = 1'-0"



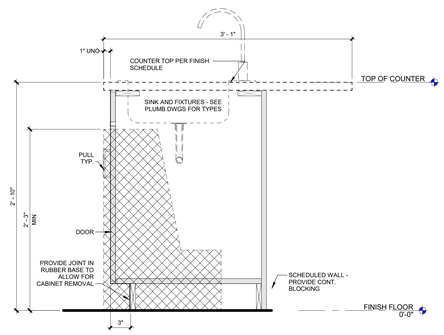
7 CABINET SECTION - BASE 4 DRAWER
1 1/2" = 1'-0"



6 CABINET SECTION - BASE SINK REMOVABLE
1 1/2" = 1'-0"



12 CABINET SECTION - MULTIPURP ISLAND
1 1/2" = 1'-0"



11 CABINET SECTION - MGR UNIT PENINSULA
1 1/2" = 1'-0"

REVIEWED FOR CODE COMPLIANCE
BY CGASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REVISIONS TO THIS SHEET

REV.	DATE
PCC-2	2020.05.15

SHEET ISSUE DATE
2020-01-27 PERMIT SET

PROJECT TRACKING
RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

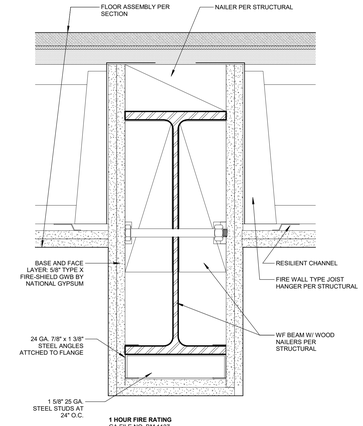
Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE SANTA ROSA, CA

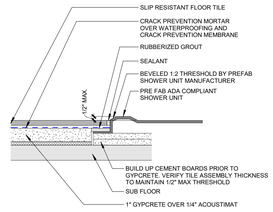
INTERIOR DETAILS - CASEWORK

A-620

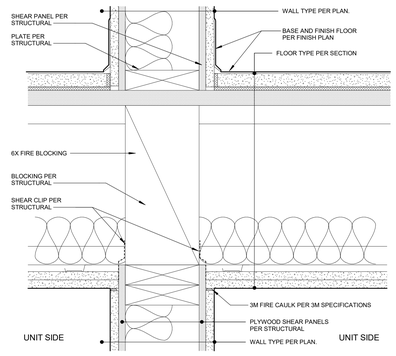
6/4/2020 4:47:28 PM



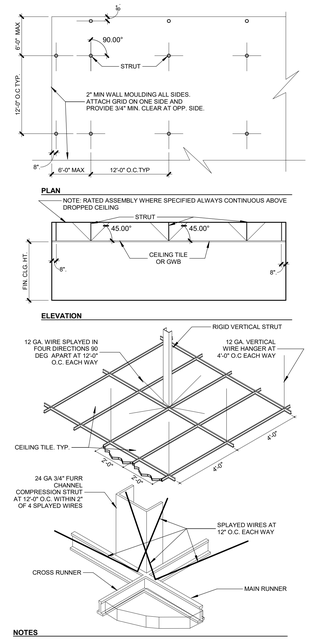
1 FIRE RATED STEEL BEAM DETAIL
3" = 1'-0"



5 SHOWER TO TILE FLOOR JOINT - UPPER FLOORS
3" = 1'-0"



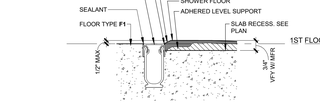
3 DEMISING WALL HEAD AND SILL DETAIL-TYP
3" = 1'-0"



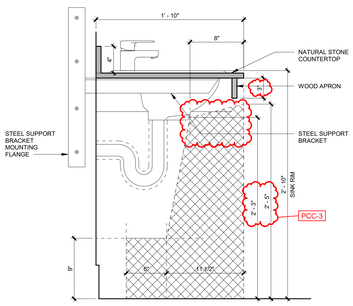
NOTES

1. SUSPENDED CEILINGS TO COMPLY WITH CALIFORNIA CODE REQUIREMENTS.
2. PROVIDE SPREADER BARS AT PERIMETER WALLS.
3. PROVIDE SEISMIC SEPARATION JOINT FOR ALL CEILING AREAS OVER 2500 SQFT.
4. SPRINKLER HEAD PENETRATIONS SHALL ALLOW 1" OF FREE MOVEMENT FOR THE SPRINKLER HEAD. THIS MAY BE PROVIDED BY FLEXIBLE HEAD DESIGN OR OVERSIZE RING OR SLEEVE.
5. VERTICAL STRUTS FASTENED TO THE MAIN RUNNER SHALL BE EXTENDED TO AND FASTENED TO THE STRUCTURE MEMBERS SUPPORTING THE ROOF / CEILING ABOVE. THE STRUTS SHALL BE ADEQUATE TO RESIST THE VERTICAL COMPONENT INDUCED BY THE BRACING WIRES.
6. THESE HORIZONTAL RESTRAINTS SHALL BE PLACED 12'-0" O.C. IN BOTH DIRECTIONS WITH THE FIRST POINT WITHIN 6'-0" FROM WALL.
7. RIGID VERTICAL STRUTS MAY BE STEEL, BLACK IRON, EMT OR OTHER APPROVED CONSTRUCTION
8. PROVIDE 12 GA. WIRE HANGERS AT ALL FOUR (4) CORNERS OF EACH LIGHT FRAME.

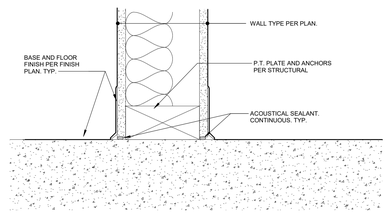
2 SUSPENDED CEILING ASSEMBLY
1" = 1'-0"



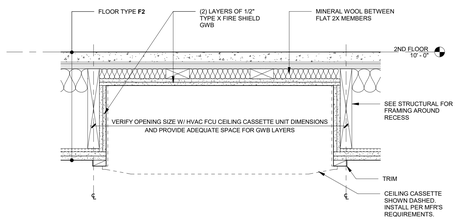
7 SHOWER TO CONCRETE FLOOR JOINT - 1ST FLOOR
3" = 1'-0"



8 TYPICAL LAV SECTION
1 1/2" = 1'-0"



4 DEMISING WALL SILL PLATE DETAIL - 1ST FL
3" = 1'-0"



6 CEILING CASSETTE DETAIL
1 1/2" = 1'-0"

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

6/4/2020 4:47:30 PM

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

LICENSED ARCHITECT
JOHN ROWELL
C28507
12-31-2021
Renewal Date
STATE OF CALIFORNIA

REVISIONS TO THIS SHEET

REV.	DATE
PCC-3	2020.06.05
PCC-2	2020.05.15
PCC-1	2020.04.06

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner

DANCO

Project Name

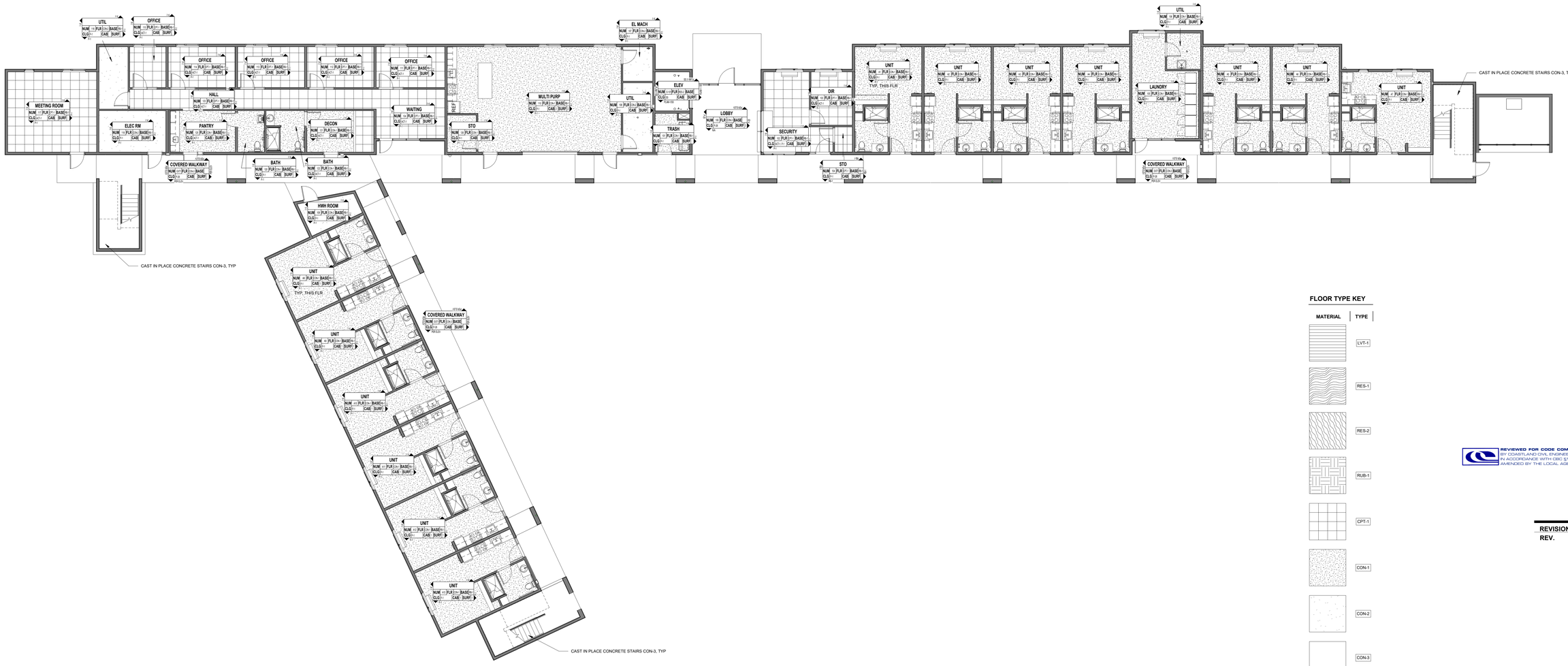
SAGE COMMONS

Project Address

80 COLLEGE AVENUE
SANTA ROSA, CA

INTERIOR DETAILS

A-622



3 1ST FLOOR-FINISH PLAN
1/8" = 1'-0"

FLOOR TYPE KEY

MATERIAL	TYPE
	LVT-1
	RES-1
	RES-2
	RUB-1
	CPT-1
	CON-1
	CON-2
	CON-3
	TILE-1

GENERAL NOTES: FINISH PLANS

1. COORDINATE FINISHES NOTED IN SCHEDULE WITH PROPOSED ALTERNATES. SCHEDULE REPRESENTS BASE BID.

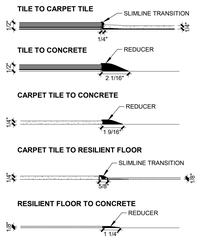
2. PATTERNS SHOWN IN FINISH PLANS AND FLOOR TYPE KEY ARE REPRESENTATIVE. SEE FINISH SCHEDULE FOR STYLE, TYPE, AND INSTALLATION.

3. SEE SPECIFICATIONS FOR PAINT SYSTEMS, INTERIOR ELEVATIONS FOR PAINT EXTENTS, AND FINISH SCHEDULE FOR PAINT COLORS.

4. PROVIDE ALL TRANSITIONS BETWEEN MATERIAL TYPES. WHERE FLOOR MATERIALS CHANGE BETWEEN ROOMS, MAKE TRANSITION AT CENTER LINE OF DOOR. VERIFY ALL FLOOR TRANSITIONS MEET ADA REQUIREMENTS.

8. CONCRETE UNDER FLOOR FINISHES TO RECEIVE TROWEL FINISH AND NO SEALERS. COORDINATE WITH FLOORING AND ADHESIVE MANUFACTURER'S RECOMMENDATIONS.

TYPICAL FLOORING TRANSITION DIAGRAM



ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

LICENSED ARCHITECT
JOHN ROWELL
C28587
12-31-2021
Renewal Date
STATE OF CALIFORNIA

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

REVISIONS TO THIS SHEET

REV.	DATE

SHEET ISSUE DATE
2020-01-27 PERMIT SET

PROJECT TRACKING
RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

INTERIOR FINISH PLAN 1ST FLOOR

A-701

6/4/2020 4:47:35 PM

1 2ND FLOOR-FINISH PLAN
1/8" = 1'-0"

FLOOR TYPE KEY

MATERIAL	TYPE
	LVT-1
	RES-1
	RES-2
	RUB-1
	CPT-1
	CON-1
	CON-2
	CON-3
	TILE-1

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

6/4/2020 4:47:41 PM

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

LICENSED ARCHITECT
JOHN ROWELL
C28027
12-31-2021
Renewal Date
STATE OF CALIFORNIA

REVISIONS TO THIS SHEET

REV.	DATE

SHEET ISSUE DATE
2020-01-27 PERMIT SET

PROJECT TRACKING
RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

INTERIOR FINISH PLAN 2ND FLOOR

A-702

1 3RD FLOOR-FINISH PLAN
1/8" = 1'-0"

FLOOR TYPE KEY

MATERIAL	TYPE
	LVT-1
	RES-1
	RES-2
	RUB-1
	CPT-1
	CON-1
	CON-2
	CON-3
	TILE-1

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

LICENSED ARCHITECT
JOHN ROWELL
C26927
12-31-2021
Renewal Date
STATE OF CALIFORNIA

REVISIONS TO THIS SHEET

REV.	DATE

SHEET ISSUE DATE
2020-01-27 PERMIT SET

PROJECT TRACKING
RBA #: 1843

P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

Project Name
SAGE COMMONS

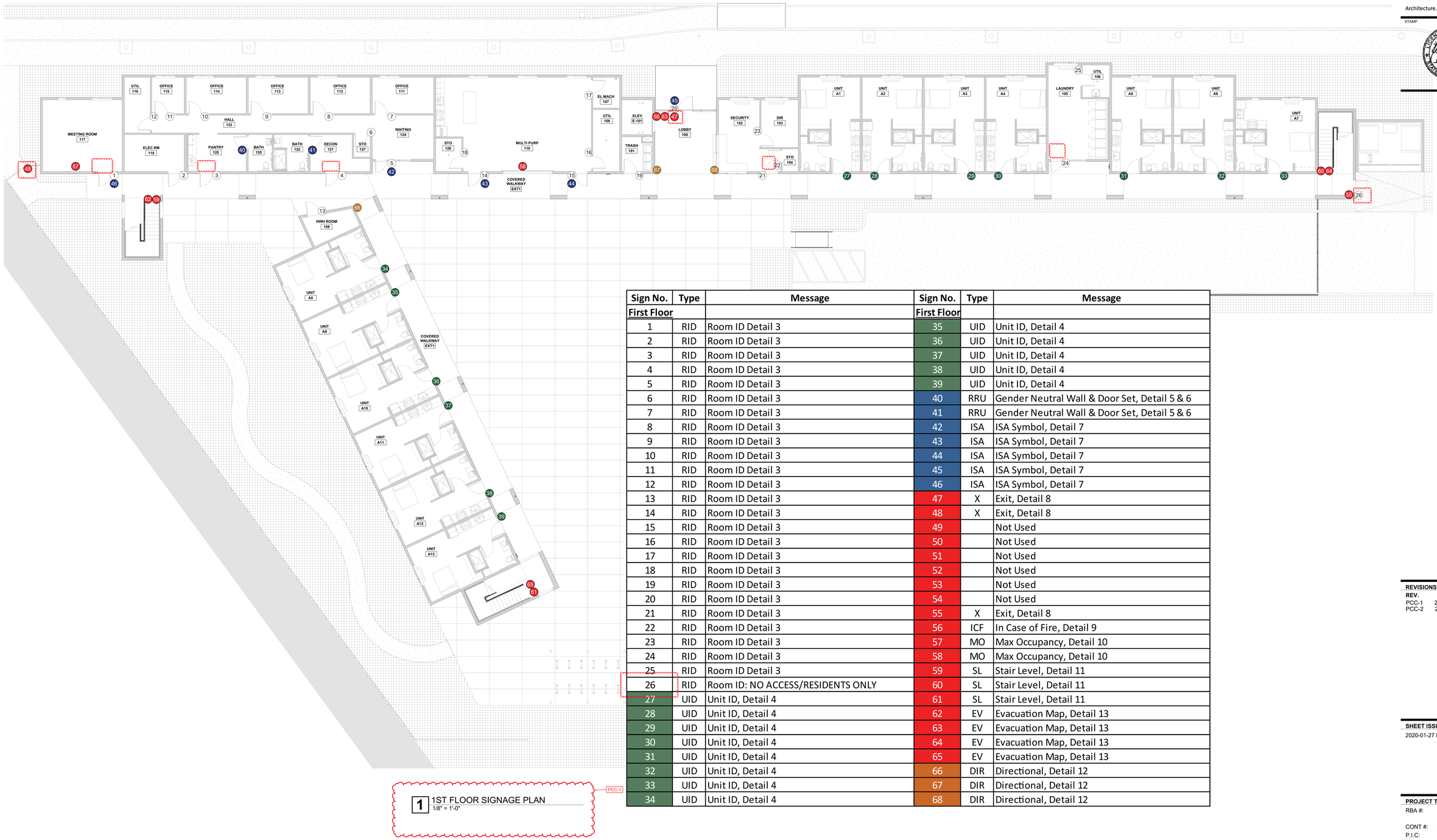
Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

INTERIOR FINISH PLAN 3RD FLOOR

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

A-703

6/4/2020 4:47:46 PM



Sign No.	Type	Message	Sign No.	Type	Message
First Floor			First Floor		
1	RID	Room ID Detail 3	35	UID	Unit ID, Detail 4
2	RID	Room ID Detail 3	36	UID	Unit ID, Detail 4
3	RID	Room ID Detail 3	37	UID	Unit ID, Detail 4
4	RID	Room ID Detail 3	38	UID	Unit ID, Detail 4
5	RID	Room ID Detail 3	39	UID	Unit ID, Detail 4
6	RID	Room ID Detail 3	40	RRU	Gender Neutral Wall & Door Set, Detail 5 & 6
7	RID	Room ID Detail 3	41	RRU	Gender Neutral Wall & Door Set, Detail 5 & 6
8	RID	Room ID Detail 3	42	ISA	ISA Symbol, Detail 7
9	RID	Room ID Detail 3	43	ISA	ISA Symbol, Detail 7
10	RID	Room ID Detail 3	44	ISA	ISA Symbol, Detail 7
11	RID	Room ID Detail 3	45	ISA	ISA Symbol, Detail 7
12	RID	Room ID Detail 3	46	ISA	ISA Symbol, Detail 7
13	RID	Room ID Detail 3	47	X	Exit, Detail 8
14	RID	Room ID Detail 3	48	X	Exit, Detail 8
15	RID	Room ID Detail 3	49		Not Used
16	RID	Room ID Detail 3	50		Not Used
17	RID	Room ID Detail 3	51		Not Used
18	RID	Room ID Detail 3	52		Not Used
19	RID	Room ID Detail 3	53		Not Used
20	RID	Room ID Detail 3	54		Not Used
21	RID	Room ID Detail 3	55	X	Exit, Detail 8
22	RID	Room ID Detail 3	56	ICF	In Case of Fire, Detail 9
23	RID	Room ID Detail 3	57	MO	Max Occupancy, Detail 10
24	RID	Room ID Detail 3	58	MO	Max Occupancy, Detail 10
25	RID	Room ID Detail 3	59	SL	Stair Level, Detail 11
26	RID	Room ID: NO ACCESS/RESIDENTS ONLY	60	SL	Stair Level, Detail 11
27	UID	Unit ID, Detail 4	61	SL	Stair Level, Detail 11
28	UID	Unit ID, Detail 4	62	EV	Evacuation Map, Detail 13
29	UID	Unit ID, Detail 4	63	EV	Evacuation Map, Detail 13
30	UID	Unit ID, Detail 4	64	EV	Evacuation Map, Detail 13
31	UID	Unit ID, Detail 4	65	EV	Evacuation Map, Detail 13
32	UID	Unit ID, Detail 4	66	DIR	Directional, Detail 12
33	UID	Unit ID, Detail 4	67	DIR	Directional, Detail 12
34	UID	Unit ID, Detail 4	68	DIR	Directional, Detail 12

PCC-1

1 1ST FLOOR SIGNAGE PLAN
1/8" = 1'-0"

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REGISTERED ARCHITECT JOHN ROWELL C28587 12-31-2021 Renewal Date STATE OF CALIFORNIA

REVISIONS TO THIS SHEET

REV.	DATE
PCC-1	2020.04.06
PCC-2	2020.05.15

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C.: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner

DANCO

Project Name

SAGE COMMONS

Project Address

80 COLLEGE AVENUE
SANTA ROSA, CA

1ST FLOOR SIGNAGE PLAN

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

A-801

3/27/2020 4:10:03 PM

Sign No.	Type	Message	Sign No.	Type	Message
Second Floor			**Second Floor**		
1	RID	Room ID Detail 3	23	UID	Unit ID, Detail 4
2	RID	Room ID Detail 3	24	UID	Unit ID, Detail 4
3	RID	Room ID Detail 3	25	UID	Unit ID, Detail 4
4	RID	Room ID Detail 3	26	UID	Unit ID, Detail 4
5	RID	Room ID Detail 3	27	UID	Unit ID, Detail 4
6	RID	Room ID Detail 3	28	UID	Unit ID, Detail 4
7	RID	Room ID Detail 3	29	XSD	Exit Stair Down, Detail 8
8	UID	Unit ID, Detail 4	30	XSD	Exit Stair Down, Detail 8
9	UID	Unit ID, Detail 4	31	XSD	Exit Stair Down, Detail 8
10	UID	Unit ID, Detail 4	32	ICF	In Case of Fire, Detail 9
11	UID	Unit ID, Detail 4	33	SL	Stair Level, Detail 11
12	UID	Unit ID, Detail 4	34	SL	Stair Level, Detail 11
13	UID	Unit ID, Detail 4	35	SL	Stair Level, Detail 11
14	UID	Unit ID, Detail 4	36	EV	Evacuation Map, Detail 13
15	UID	Unit ID, Detail 4	37	EV	Evacuation Map, Detail 13
16	UID	Unit ID, Detail 4	38	EV	Evacuation Map, Detail 13
17	UID	Unit ID, Detail 4	39	EV	Evacuation Map, Detail 13
18	UID	Unit ID, Detail 4	40	DIR	Directional, Detail 12
19	UID	Unit ID, Detail 4	41	DIR	Directional, Detail 12
20	UID	Unit ID, Detail 4	42	DIR	Directional, Detail 12
21	UID	Unit ID, Detail 4			
22	UID	Unit ID, Detail 4			

PCC-1

1 2ND FLOOR SIGNAGE PLAN
1/8" = 1'-0"

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

LICENSED ARCHITECT
JOHN ROWELL
C26507
12-31-2021
Renewal Date
STATE OF CALIFORNIA

REVISIONS TO THIS SHEET

REV.	DATE
PCC-1	2020.04.06
PCC-2	2020.05.15

SHEET ISSUE DATE
2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

2ND FLOOR SIGNAGE PLAN

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

A-802

3/27/2020 4:10:08 PM

Sign No.	Type	Message	Sign No.	Type	Message
Third Floor			Third Floor		
1	RID	Room ID Detail 3	22	UID	Unit ID, Detail 4
2	RID	Room ID Detail 3	23	UID	Unit ID, Detail 4
3	RID	Room ID Detail 3	24	UID	Unit ID, Detail 4
4	RID	Room ID Detail 3	25	UID	Unit ID, Detail 4
5	RID	Room ID Detail 3	26	UID	Unit ID, Detail 4
6	RID	Room ID Detail 3	27	UID	Unit ID, Detail 4
7	RID	Room ID Detail 3	28	XSD	Exit Stair Down, Detail 8
8	UID	Unit ID, Detail 4	29	XSD	Exit Stair Down, Detail 8
9	UID	Unit ID, Detail 4	30	XSD	Exit Stair Down, Detail 8
10	UID	Unit ID, Detail 4	31	ICF	In Case of Fire, Detail 9
11	UID	Unit ID, Detail 4	32	SL	Stair Level, Detail 11
12	UID	Unit ID, Detail 4	33	SL	Stair Level, Detail 11
13	UID	Unit ID, Detail 4	34	SL	Stair Level, Detail 11
14	UID	Unit ID, Detail 4	35	EV	Evacuation Map, Detail 13
15	UID	Unit ID, Detail 4	36	EV	Evacuation Map, Detail 13
16	UID	Unit ID, Detail 4	37	EV	Evacuation Map, Detail 13
17	UID	Unit ID, Detail 4	38	EV	Evacuation Map, Detail 13
18	UID	Unit ID, Detail 4	39	DIR	Directional, Detail 12
19	UID	Unit ID, Detail 4	40	DIR	Directional, Detail 12
20	UID	Unit ID, Detail 4	41	DIR	Directional, Detail 12
21	UID	Unit ID, Detail 4			

1 3RD FLOOR SIGNAGE PLAN
1/8" = 1'-0"

PCC-1

3/27/2020 4:10:15 PM

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

LICENSED ARCHITECT JOHN ROWELL C28507 12-31-2021 Renewal Date STATE OF CALIFORNIA

REVISIONS TO THIS SHEET

REV.	DATE
PCC-1	2020.04.06
PCC-2	2020.05.15

SHEET ISSUE DATE
2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

3RD FLOOR SIGNAGE PLAN

A-803

REVIEWED FOR CODE COMPLIANCE BY SCHIFFLAND CIVIL ENGINEERING, INC. IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

STRUCTURAL GENERAL NOTES

- GENERAL

A. THESE DRAWINGS ARE COPY RIGHTED INSTRUMENTS OF SERVICE OF HOHBACH-LEWIN, INC. FOR USE ONLY ON THIS PROJECT.

B. CONTRACTOR RESPONSIBILITY - CONSTRUCTION DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, SEQUENCES AND SAFETY PRECAUTIONS, INCLUDING BUT NOT LIMITED TO SHORING AND TEMPORARY BRACING.

C. DIMENSIONS - USE WRITTEN DIMENSIONS ONLY. VERIFY ALL DIMENSIONS AT JOB SITE BEFORE COMMENCING WORK AND REPORT ANY DISCREPANCIES. WHERE NO DIMENSIONS ARE PROVIDED, OBTAIN CLARIFICATION PRIOR TO PROCEEDING WITH WORK. DO NOT SCALE DRAWINGS.

D. COORDINATION - OPENINGS THROUGH WALLS AND FLOORS FOR MECHANICAL AND ELECTRICAL SYSTEMS SHALL BE COORDINATED BY CONTRACTOR AND CONSTRUCTED PER TYPICAL DETAILS SHOWN IN THESE DOCUMENTS. NO MECHANICAL OR ELECTRICAL SYSTEM COMPONENTS SHALL BE EMBEDDED IN SLABS OR WALLS UNLESS SPECIFICALLY DETAILED IN THESE DOCUMENTS.

E. OMISSIONS AND CONFLICTS - OMISSIONS OR CONFLICTS BETWEEN VARIOUS ELEMENTS OF THE CONSTRUCTION DOCUMENTS SHOULD BE BROUGHT TO THE ATTENTION OF THE DESIGN TEAM. IF CERTAIN FEATURES ARE NOT FULLY DELINEATED IN THE CONSTRUCTION DOCUMENTS, THEIR CONSTRUCTION SHALL BE OF THE SAME CHARACTER AS FOR SIMILAR CONDITIONS THAT ARE DELINEATED.

F. STRUCTURAL DRAWINGS ARE INTENDED TO BE USED WITH ARCHITECTURAL AND MECHANICAL DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING SUCH REQUIREMENTS INTO THEIR SHOP DRAWINGS AND WORK.

G. THERE SHALL BE NO CHANGE IN SIZE OR DIMENSION OF A STRUCTURAL MEMBER, NOR SHALL ANY OPENINGS BE MADE IN ANY STRUCTURAL MEMBER, WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER.

H. THE CONTRACTOR IS RESPONSIBLE FOR LIMITING THE AMOUNT OF CONSTRUCTION LOAD IMPOSED UPON THE STRUCTURE. CONSTRUCTION LOADS SHALL NOT EXCEED THE DESIGN CAPACITY OF THE STRUCTURE AT THE TIME THE LOADS ARE IMPOSED.

I. THE CONTRACTOR SHALL INFORM THE ENGINEER IN WRITING OF ANY DEVIATION FROM THE CONTRACT DOCUMENTS.

J. SEE DRAWINGS OTHER THAN STRUCTURAL FOR: TYPES OF FLOOR FINISH AND THEIR LOCATION, DEPRESSIONS IN FLOOR SLABS, OPENINGS IN WALLS AND FLOORS REQUIRED BY ARCHITECTURAL AND MECHANICAL FEATURES, AND ROADWAY PAVING, WALKS, RAMPS, STAIRS, CURBS, ETC.

K. TYPICAL DETAILS - DETAILS NOTED AS TYPICAL ARE APPLICABLE WHERE SPECIFIED ON THE STRUCTURAL DRAWINGS AND WHEREVER THE CONDITION OCCURS THROUGHOUT THE PROJECT, INCLUDING LOCATIONS WHERE THE DETAIL IS NOT EXPLICITLY SPECIFIED OR REFERENCED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY LOCATIONS WHERE TYPICAL DETAILS ARE APPLICABLE PRIOR TO CONSTRUCTION.

- DESIGN BASIS

A. APPLICABLE CODE: CALIFORNIA BUILDING CODE (CBC), 2019 EDITION.

B. VERTICAL LOAD - LIVE LOADS:
1. RESIDENTIAL FLOOR LOAD: 40 psf
2. RESIDENTIAL DECK/BALCONY: 60 psf
3. PUBLIC ROOM AND CORRIDORS SERVING THEM: 100 psf
4. STAIRS/EXITS: 100 psf
5. ROOF: 20 psf max.

C. LATERAL LOADS:
1. DESIGN WIND CRITERIA: PER ASCE 7-16
ULTIMATE DESIGN WIND SPEED: 92 mph
NOMINAL DESIGN WIND SPEED: 55 mph
WIND EXPOSURE: B
2. DESIGN SEISMIC CRITERIA:
SITE CLASS: E
S_{DS} = 1.242g
S_{D1} = 1.760g
IMPORTANCE FACTOR, I= 1.0
SEISMIC DESIGN CATEGORY= E
RISK CATEGORY = II
RESPONSE MODIFICATION COEFF., R= 6.5 (WOOD SHEAR WALLS)
DESIGN SEISMIC COEFF., V= 0.191W (STRENGTH)

E. GEOTECHNICAL CRITERIA: PCC-2
1. DESIGN OF FOUNDATION IS BASED ON THE CRITERIA PER GEOTECHNICAL REPORT PREPARED BY: RGH CONSULTANTS
REPORT NUMBER: 3452.02.04.1
DATED: 03/12/2018
UPDATE LETTER NUMBER: 2978.02.12.1
DATED: 10/22/2019
2. ALLOWABLE SOIL BEARING PRESSURE:
DEAD + LIVE: 3,000psf
DEAD + LIVE + WIND OR SEISMIC:
3. COEFFICIENT OF FRICTION: 0.35 4,000psf
4. PASSIVE PRESSURE: 350 pcf
5. MODULUS OF SUBGRADE REACTION: 80 pci
6. ALL ENGINEERED FILL SHALL HAVE A MINIMUM RELATIVE COMPACTION PER PROJECT GEOTECHNICAL REPORT.

- CONCRETE

A. CONCRETE SHALL BE SUPPLIED AND PLACED IN ACCORDANCE WITH ACI 318.

B. CONCRETE SHALL BE AS FOLLOWS:

CONCRETE USE	STRENGTH AT 28 DAYS U.O.N.	W/C RATIO	MAX. AGGREGATE SIZE	WEIGHT	SHRINKAGE
SLAB ON GRADE	3000 PSI	0.45 MAX.	3/4" TO 1" (LS)	145pcf	.045%
FOUNDATIONS	4000 psi	0.50 MAX.	3/4" TO 1"	145pcf	-

(LS) CRUSH LOW SHRINKAGE ROCK
* ADD FIBER MESH TO ALL EXPOSED TOPPING SLAB, TYP. U.O.N.

C. STRENGTH: COMPRESSIVE STRENGTH IN PSI WHEN TESTED IN ACCORDANCE WITH ASTM C39

D. PORTLAND CEMENT SHALL CONFORM TO ASTM C-150, TYPE II.

E. AGGREGATE FOR STONE CONCRETE SHALL CONFORM TO ASTM C-33. FOR LOW SHRINKAGE AGGREGATE; USE LIMESTONE OR GRANITE. AGGREGATE FOR LIGHTWEIGHT CONCRETE SHALL CONFORM TO ASTM C-330.

F. FLY ASH: ASTM C 618, CLASS F OR CLASS C. MINIMUM RECOMMENDED FLY ASH F. CONTENT BY MASS OF CEMENTITIOUS MATERIAL IS 20%. MAXIMUM RECOMMENDATION IS 25%. (DSA PROJECTS FLY ASH: ASTM C 618, ASTM C 311 CLASS N OR F AND DSA IR 19-3 CLASS F. RECOMMENDED FLY ASH CONTENT BY MASS OF CEMENTITIOUS MATERIAL IS 15%.)

G. ADMIXTURES: MIX SHALL CONTAIN POLYMER BASED, WATER REDUCING ADMIXTURE. THE FOLLOWING TYPES OF ADMIXTURES ARE ALLOWED AS PLASTICIZERS AND/ OR SET ACCELERATORS TO IMPROVE WORKABILITY. 1. ASTM C494, TYPES A, C, E, G. HIGH RANGE WATER REDUCERS SHALL ALSO MEET REQUIREMENTS OF ASTM C 1017. 2. THE INITIAL SLUMP OF THE CONCRETE BEFORE INTRODUCING ADMIXTURES SHOULD BE MINIMUM 2" INCHES

H. SHRINKAGE - CONTRACTOR TO PROVIDE CONCRETE MIX HISTORY DATA OR PROVIDE TESTING REPORT.

I. MINIMUM REINF. COVER FOR CAST-IN-PLACE CONCRETE:
1. CONC. CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH .... 3"
2. CONC. FORMED BELOW GRADE OR EXPOSED TO WEATHER:
NO. 6 AND GREATER .... 2"
NO. 5 AND SMALLER .... 1 1/2"
3. CONC. NOT EXPOSED TO WEATHER NOR IN CONTACT WITH GROUND:
SLABS, WALLS, AND JOISTS: NO. 11 AND SMALLER .... 1"
BEAMS AND COL: PRIMARY REINF., TIES, STIRRUPS, SPIRALS .... 1 1/2"

J. PLACEMENT
1. ALL REINFORCING BARS, ANCHOR BOLTS, AND ALL OTHER CONC. INSERTS SHALL BE WELL SECURED IN POSITION PRIOR TO PLACING CONCRETE.
2. CHAMFER ALL CORNERS OF CONCRETE TO PREVENT DAMAGE.
3. CONSTRUCTION TOLERANCE SHALL COMPLY TO ACI 117.
4. CONCRETE SHALL BE PLACED IN A CONTINUOUS OPERATION BETWEEN PREDETERMINED CONSTRUCTION JOINTS.
5. USE VIBRATORS TO CONSOLIDATE CONCRETE. DO NOT USE VIBRATORS TO MOVE CONCRETE.
6. CONCRETE SHALL BE CONTINUOUSLY CURED FOR 7 DAYS AFTER PLACEMENT IN ANY APPROVED MANNER. FOOTINGS ARE EXEMPTED FROM THIS REQUIREMENT.
7. PATCHING OF CONCRETE: ALL INSERT HOLES AND OTHER IMPERFECTIONS ON THE SURFACES OF THE CONCRETE SHALL BE FILLED WITH GROUT, BRUSHED AND SACKED TO A UNIFORM FINISH.

K. INSERTS - ALL INSERTS AND SLEEVES SHALL BE CAST IN PLACE WHENEVER POSSIBLE. DRILLED AND POWER-DRIVEN FASTENERS WILL BE PERMITTED ONLY WHEN IT CAN BE SHOWN THAT THE INSERTS WILL NOT SPALL THE CONCRETE AND ARE LOCATED TO AVOID THE TENDONS AND ANCHORAGES. THE CONTRACTOR MUST LOCATE TENDONS ON THE SURFACE SLAB.

L. CONSTRUCTION JOINTS:
1. CONSTRUCTION JOINTS SHOWN MAY BE PROVIDED AT CONTRACTORS OPTION. ANY PROPOSED CONSTRUCTION JOINTS NOT SHOWN MUST BE SUBMITTED TO THE DESIGN PROFESSIONAL OF RECORD FOR APPROVAL.
2. ROUGHENED CONSTRUCTION JOINTS (R.C.J.): WHERE NOTED ON DRAWINGS R.C.J. ROUGHEN JOINT TO MINIMUM 1/4 INCH AMPLITUDE.

M. INTERIOR SLAB ON GRADE:
1. DO NOT ALLOW WATER TO COLLECT ON OR AROUND BUILDING PAD.
2. INITIAL CURING: INITIAL CURING SHALL IMMEDIATELY FOLLOW THE FINISHING OPERATION. CONCRETE SHALL BE KEPT CONTINUOUSLY MOIST AT LEAST OVERNIGHT.
3. FINAL CURING: IMMEDIATELY FOLLOWING THE INITIAL CURING AND BEFORE THE CONCRETE HAS DRIED, SLABS TO BE CONTINUOUSLY CURED FOR 7 DAYS BY WET COVERING OR MOISTURE RETAINING COVERING TO REDUCE THE LIKELIHOOD OF SHRINKAGE OR CRACKING. LIQUID MEMBRANE CURING COMPOUNDS SHALL NOT BE PERMITTED (WITHOUT OWNER'S WRITTEN APPROVAL).
4. INTERIOR SLABS SHALL RECEIVE A LIGHT BROOM FINISH U.O.N. TOLERANCE SHALL BE 1/8" IN 10'-0". EDGES SHALL BE SMOOTH TROWELED.

N. ALL CONC. TO BE REINFORCED UNLESS SPECIFICALLY MARKED "NOT REINFORCED".

O. VAPOR BARRIER:
1. 15 MIL ASTM E-1745 CLASS A, TYP. U.O.N.

- REINFORCING STEEL

A. REINFORCING STEEL SHALL BE PLACED IN ACCORDANCE WITH ACI 315 AND ACI 318.

B. REINFORCING STEEL SHALL BE AS FOLLOWS:

REINF.	TYPE
BARS/TIES/SPIRALS	ASTM 615, GRADE 60, U.O.N.
WELDED REINF.	ASTM A706, GRADE 60 OR 80 AS NOTED
TIE AND SPIRAL WIRE REINF.	ASTM A1064, GRADE 60
WELDED WIRE REINF.	ASTM A1064, GRADE 60
REINF. USE	TYPE
FOUNDATIONS	ASTM A615, GRADE 60
CONVENTIONAL SLABS	ASTM A615, GRADE 60

C. DO NOT FIELD BEND OR STRAIGHTEN IN ANY MANNER THAT WILL DAMAGE REINFORCING.

D. PROVIDE SPLICES IN REINFORCING ONLY WHERE SHOWN ON DRAWINGS OR APPROVED IN WRITING BY ENGINEER OF RECORD.

E. WELDING TO CONFORM TO AWS D1.4

- WOOD

A. FRAMING LUMBER - DOUGLAS FIR U.O.N.;
1. JOISTS AND RAFTERS: NO. 2
2. POSTS, BEAMS, AND HEADERS: NO. 1
3. STUDS, PLATES: NO. 2
4. BLOCKS, LIGHT FRAMING AND MISC: STUD GRADE
5. ALL LUMBER IN CONTACT WITH CONCRETE OR MASONRY TO BE PRESERVATIVE TREATED.
6. ALL LUMBER SHALL HAVE A MAXIMUM MOISTURE CONTENT OF 19% AT TIME OF INSTALLATION.

PCC-2

B. SHEATHING:
1. TYP. ROOF SHEATHING AND CRICKETS SHEATHING: 5/8 INCH APA RATED 32/16 EXPOSURE 1. (4 PLY MIN.)
2. TYP. FLOOR SHEATHING: 3/4 INCH APA RATED 48/24 EXPOSURE 1. 5 PLY MIN. WITH TONGUE AND GROOVE EDGES GLUED TO SUPPORT, U.O.N. MINIMUM SHEET DIMENSION FOR PANEL SHALL BE 24". ALT OSB WITH EQUIVALENT THICKNESS AND SHEAR STRENGTH MAY BE USED IN LIEU OF PLYWOOD.
3. TYP. FLOOR DECK SHEATHING: P.T. 3/4 INCH APA RATED 48/24 EXPOSURE 1. 5 PLY MIN. WITH TONGUE AND GROOVE EDGES GLUED TO SUPPORT, U.O.N. MINIMUM SHEET DIMENSION FOR PANEL SHALL BE 24".
4. TYP. WALL SHEATHING: 15/32 INCH APA STRUCTURAL 1. INTERIOR WITH EXTERIOR GLUE. (4 PLY MIN.) ALT. OSB WITH EQUIVALENT THICKNESS AND SHEAR STRENGTH MAY BE USED IN LIEU OF PLYWOOD FOR INTERIOR WALLS ONLY.

C. FRAMING HARDWARE: AS MANUFACTURED BY SIMPSON CO. OR APPROVED EQUAL. SIMPSON DESIGNATIONS USED.

D. NAILS: COMMON WIRE GAGE U.O.N. NAILING TO CONFORM TO CBC TABLE 2304.10.1 U.O.N.

E. BOLTS: ASTM A307. PROVIDE WASHER UNDER HEADS AND NUTS.

F. PROVIDE LATERAL SUPPORT FOR BEAMS, JOISTS AND RAFTERS AT ENDS AND POINTS OF BEARING.

G. LAG SCREWS PER ANSI/ASME STANDARD B18.2.1 PROVIDE LEAD HOLE SAME DIAMETER AND DEPTH AS SHANK AND THEN DRILL HOLE 60% - 70% OF SHANK DIAMETER FOR THREADED PORTIONS.

H. GLUE-LAMINATED BEAMS:
1. 24FV4 FOR SIMPLE SPANS AND 24FV8 FOR CANTILEVERED AND CONTINUOUS BEAMS.
2. INDUSTRIAL GRADE TYP.
3. CAMBER TO RADIUS OF 3500' U.O.N.
4. FABRICATED WITH EXTERIOR GLUE.
5. MATERIAL SHALL BE IN ACCORDANCE WITH ANSI/AITC A190.1 AND ASTM D3737.
6. ALL GLUE-LAMINATED BEAMS. SHALL BE ROSBORO TREATED X-BEAM WITH HI-CLEAR II PRESERVATIVE.

I. MICRO-LAMS 2.0E (LVL); PARALLEL STRAND LUMBER 2.2E (PSL) 'PARALLAM'; TIMBER STRAND 1.55E (LSL) SHALL BE MANUFACTURED BY WEYERHAEUSER OR EQUIVALENT APPROVED ICC MANUFACTURED PRODUCT.

J. I-JOISTS SHALL BE MANUFACTURED BY WEYERHAEUSER OR EQUIVALENT APPROVED ICC MANUFACTURED PRODUCT.

K. HOLDOWNS: AS MANUFACTURED BY SIMPSON OR APPROVED EQUIVALENT.

L. PRESSURE TREATED LUMBER:
1. PRESSURE TREATED D.F. SHALL BE AWPB STAMPED. AMMONIACAL COPPER QUAT (ACQ), COPPER BORON AZOLE (CBA), OR BORATE TREATED AWPA STANDARD C2, MINIMUM 0.40 INCH. PENETRATION INCISED.
2. ALL PRESERVATIVE TREATED LUMBER SHALL BE FIELD-APPLIED WITH PRESERVATIVE WHERE CUT AND DRILLED ON SITE WITH COPPER NAPHATHENATE (2% COPPER AS METAL).
3. USE HOT DIPPED GALVANIZED HARDWARE, IE. BOLTS, NAILS, HANGERS, ETC. FOR ALL ATTACHMENT TO ACQ OR CBA TREATED MEMBERS.
4. PLAIN CARBON STEEL FASTENERS, INCLUDING NUTS AND WASHERS, IN SBX/ DOT AND ZINC BORATE PRESERVATIVE-TREATED WOOD IN AN INTERIOR, DRY ENVIRONMENT SHALL BE PERMITTED PER CBC SECTION 2304.10.5.1

M. THE ARCHITECTURAL, PLUMBING, ELECTRICAL, AND WATERPROOFING SYSTEMS SHALL BE DESIGN TO ACCOUNT FOR THE CUMULATIVE VERTICAL SHRINKAGE DUE TO LUMBER DRYING AND BUILDING WEIGHT. LUMBER DRYING SHRINKAGE IS BASED ON THE MOISTURE CONTENT AT THE TIME OF PLACEMENT EQUAL TO 19% AND FINAL MOISTURE CONTENT OF 9%.

WOOD VERTICAL SHRINKAGE PER FLOOR		
LEVEL	VERTICAL	
	PER FLOOR	CUMULATIVE
ROOF - FLOOR 3	.1 IN.	.60 IN.
FLOOR 3 - FLOOR 2	.25 IN.	.50 IN.
FLOOR 2 - FLOOR 1	.25 IN.	.25 IN.

- STEEL

A. STRUCTURAL STEEL TO BE SUPPLIED DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH A.I.S.C. SPECIFICATIONS.

B. U.O.N. STEEL SHALL BE AS FOLLOWS:
1. WIDE FLANGE SHAPES: ASTM A992
2. HOLLOW STRUCTURAL SECTIONS: ASTM A500B
3. PIPES: ASTM A53, GR. B
4. OTHER SHAPES AND PLATES: ASTM A36, ASTM A572 GR. 50 AS NOTED.
5. BOLTS: ASTM A307
6. HIGH STRENGTH BOLTS: ASTM A325, U.O.N.
7. THREADED RODS: ASTM A36, U.O.N.
8. ANCHOR RODS: F1554 GR. 36 TYP., U.O.N.
9. WELDING ELECTRODES: E-70xx U.O.N.
10. WELDED STUDS: FLUX FILLED HEADED STUDS CONFORMING TO ASTM A108 BY NELSON OR EQUAL.

C. WELDING TO CONFORM TO AWS AND TO BE PERFORMED BY CERTIFIED WELDERS.

D. BUTT WELDS ARE TO BE COMPLETE PENETRATION U.O.N. ALL FILLET WELDS SHOWN ARE MINIMUM REQUIRED BY STRESS. INCREASE WELDS TO A.I.S.C. MINIMUM SIZES BASED ON THICKNESS OF MATERIAL JOINED U.O.N.

E. STEEL BEAMS ARE EQUALLY SPACED BETWEEN DIMENSION POINTS OR GRID LINES, U.O.N.

F. STEEL NOT RECEIVING FIRE PROOFING SHALL BE SHOP PRIMED.

G. ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIP ZINC GALVANIZED U.O.N.

H. NON SHRINK GROUT: 7500 psi COMPRESSIVE STRENGTH, NON METALLIC CONFORMING TO ASTM C1107. MASTERFLOW 928 OR EQUAL.

I. INTUMESCENT PAINT TO MEET REQUIREMENTS OF ASTM E119.

- CONCRETE MASONRY

A. CONCRETE MASONRY TO BE SUPPLIED PER 2019 CBC SECTION 2105 AND PLACED PER SECTION 2104 PCC-2

B. ASSEMBLY STRENGTH f'm = 2000 psi AT 28 DAYS.

C. UNITS: MEDIUM WEIGHT 2 CELL BLOCKS CONFORMING TO ASTM C90. SHRINKAGE OF BLOCKS SHALL NOT EXCEED .065% WHEN TESTED PER ASTM C426.

D. MORTAR: ASTM C270, TYPE M.

E. GROUT: ASTM C476. COMPRESSIVE STRENGTH AS REQUIRED TO ATTAIN SPECIFIED ASSEMBLY STRENGTH. ALL CELLS SHALL BE FULLY GROUTED.

F. USE LOW LIFT CONSTRUCTION WITH MAXIMUM GROUT POUR HEIGHT OF 4'. HIGH LIFT GROUTING IS ACCEPTABLE IF APPROVED IN WRITING BY THE ENGINEER.

G. ALL MASONRY TO BE REINFORCED UNLESS SPECIFICALLY MARKED 'NOT REINFORCED'.

H. ALL CELLS, SHALL BE GROUTED SOLID. REINFORCING STEEL SHALL BE SECURED IN PLACE BEFORE GROUTING STARTS.

- EPOXY ANCHORS (CONCRETE INSTALLATION ONLY)

A. EPOXY ADHESIVE SHALL BE SIMPSON "SET-XP" ADHESIVE ANCHOR (ESR-2508) OR EQUAL PRODUCT. ALTERNATE PRODUCTS MUST BE SUBMITTED TO E.O.R. FOR SUBSTITUTION PRIOR TO INSTALLATION PER SPECIFICATIONS.

B. INSTALLATION: INSTALL THE EPOXY ANCHORS IN ACCORDANCE WITH THE REQUIREMENTS GIVEN IN MANUFACTURER'S RECOMMENDATIONS FOR THE SPECIFIC ANCHOR.

C. SPECIAL INSPECTION SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 1704 OF THE CBC. (1704A OF THE CBC FOR DSA PROJECTS)

D. NOTIFY ARCHITECT IMMEDIATELY IF ELEMENTS WITH EXISTING STRUCTURE PREVENT DRILLING IN THE LOCATIONS SHOWN ON THE DRAWINGS.

E. EPOXIED DOWELS DO NOT SUBSTITUTE FOR HOOKED BARS. CONTRACTOR TO NOTIFY ENGINEER OF EPOXIED DOWEL LOCATIONS.

F. WHEN EPOXY ANCHORS ARE USED FOR SILL PLATE BOLTING, 10% OF THE ANCHORS SHALL BE TENSION TESTED. FOR ALL OTHER STRUCTURAL APPLICATIONS, ALL SUCH EPOXY ANCHOR SHALL BE TENSION TESTED. WHEN EPOXY ANCHORS ARE USED FOR NON-STRUCTURAL APPLICATIONS, 50% OF ANCHORS SHALL BE TENSION TESTED. IF ANY ANCHOR FAILS TESTING, TEST ALL ANCHORS OF THE SAME TYPE NOT PREVIOUSLY TESTED UNTIL 20 CONSECUTIVE ANCHORS PASS. (PER IR-19.1 FOR DSA PROJECTS ONLY)

G. CONCRETE AT TIME OF INSTALLATION SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2,000 PSI AND SHALL HAVE A MINIMUM AGE OF 21 DAYS

MIN. WITH f'c= 3000 PSI CONCRETE (NORMAL WEIGHT CONCRETE) VERIFY MINIMUM EXISTING CONCRETE STRENGTH IN FIELD. **						
REINF. DOWEL	THREADED ANCHOR ROD	HOLE DIAMETER	MIN. EMBED.	MIN. EDGE DISTANCE *	MIN. SPACING	TENSION TEST VALUE ***
#3	1/2" DIA.	5/8" DIA.	2 3/4"	1 3/4"	8"	1,840#
#4	1/2" DIA.	5/8" DIA.	4"	4 1/2"	12"	3,890#
#5	5/8" DIA.	3/4 DIA.	5"	4 3/4"	15"	3,750#
#6	3/4" DIA.	7/8" DIA.	6"	5 1/2"	18"	7,100#
#7	7/8" DIA.	1" DIA.	8"	7"	24"	6,400#
#8	1" DIA.	1 1/8" DIA.	8 1/2"	7"	26"	11,240#

* MINIMUM EDGE DISTANCE LIMITATION ASSUMED FROM ONE EDGE ONLY.

** FOR SINGLE ANCHORS WITH NO ADDITIONAL EDGE DISTANCE OR SPACING REDUCTIONS. FOR OTHER CASES, REDUCTION OF VALUES CALCULATED PER ACI 318 IS REQUIRED.

*** TENSION TEST VALUES CORRESPOND WITH 1.5x CRACKED CONCRETE SEISMIC TENSION LOADS (STRENGTH).

- EXPANSION ANCHORS (SIMPSON)

A. EXPANSION BOLTS SHALL BE SIMPSON STRONG BOLT 2 CARBON STEEL ANCHOR (ESR-3037) OR EQUAL PRODUCTS. ALTERNATE PRODUCTS MUST BE SUBMITTED TO E.O.R. FOR SUBSTITUTION PRIOR TO INSTALLATION PER SPECIFICATIONS,

B. INSTALLATION: INSTALL THE EXPANSION ANCHORS IN ACCORDANCE WITH THE REQUIREMENTS GIVEN MANUFACTURER'S RECOMMENDATIONS FOR THE SPECIFIC ANCHOR.

C. SPECIAL INSPECTION SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 1704 OF THE CBC. (1704A OF THE CBC FOR DSA PROJECTS)

D. WHEN EXPANSION ANCHORS ARE USED FOR SILL PLATE BOLTING, 10% OF THE ANCHORS SHALL BE TENSION TESTED. FOR ALL OTHER STRUCTURAL APPLICATIONS, ALL SUCH EXPANSION ANCHOR SHALL BE TENSION TESTED. WHEN EXPANSION ANCHORS ARE USED FOR NON-STRUCTURAL APPLICATIONS, 50% OF ANCHORS SHALL BE TENSION TESTED. IF ANY ANCHOR FAILS TESTING, TEST ALL ANCHORS OF THE SAME TYPE NOT PREVIOUSLY TESTED UNTIL 20 CONSECUTIVE ANCHORS PASS. (PER IR-19.1 FOR DSA PROJECTS ONLY)

E. CONCRETE AT TIME OF INSTALLATION SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2,000 PSI AND SHALL HAVE A MINIMUM AGE OF 21 DAYS

MIN. f'c = 2500 PSI (NORMAL WEIGHT CONCRETE) VERIFY MINIMUM EXISTING CONCRETE STRENGTH IN FIELD. *				
DIA.	MIN. EMBED = MIN. HOLE DEPTH	MIN. EDGE DISTANCE	MIN. SPACING	TENSION TEST VALUE **
1/2"	3 7/8"	7 7/8"	11 5/8"	2,200#
5/8"	5 1/8"	9 5/8"	15 3/8"	3,800#
3/4"	5 3/4"	11 3/4"	17 1/4"	5,800#
1"	9 3/4"	13 1/2"	29 1/4"	6,900#

* FOR SINGLE ANCHORS WITH NO EDGE DISTANCE OR SPACING REDUCTIONS. FOR OTHER CASES, REDUCTION OF VALUES CALCULATED PER ACI 318 IS REQUIRED

** TENSION TEST VALUES ONLY AND CORRESPOND WITH 1.5x CRACKED CONCRETE SEISMIC TENSION LOADS.

- LVF-(Low Velocity Fasteners). HILTI, ICC ESR-2269

A. IN NORMAL WEIGHT CONCRETE: 0.157"Φ X-U FASTENER, 1" MIN. EMBEDMENT 3" EDGE DISTANCE, MIN. 4" O.C. SPACING.

B. IN LIGHT WEIGHT CONCRETE: 0.157"Φ X-U FASTENER, 1 1/2" MIN. EMBEDMENT 3" EDGE DISTANCE, MIN. 4" O.C. SPACING.

C. IN STRUCTURAL STEEL: 0.157"Φ X-U FASTENER, 1/2" MIN. EDGE DISTANCE, 1" MIN. SPACING. THE ENTIRE POINTED PORTION OF L.V.F. MUST COMPLETELY PENETRATE THE STEEL.

D. IN CMU: 0.157"Φ X-U FASTENER, 1" MIN. EMBEDMENT.

- TESTING

REQUIRED STRUCTURAL TESTS ARE LISTED ON THE ATTACHED SCHEDULE OF STRUCTURAL TESTS. SEE THE STATEMENT OF SPECIAL INSPECTION FOR ADDITIONAL REQUIREMENTS.

- STRUCTURAL OBSERVATION (BY HOHBACH-LEWIN, INC.)

OBSERVATION BY HOHBACH-LEWIN OR THEIR DESIGNATED REPRESENTATIVE IS REQUIRED AT THE PROJECT MILESTONES GIVEN BELOW. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY HOHBACH-LEWIN AT LEAST 24 HOURS IN ADVANCE OF COMPLETING MILESTONES THAT REQUIRE OBSERVATION AND ALLOW SUITABLE TIME TO MAKE ANY REQUIRED CORRECTIONS TO THE WORK PRIOR TO ENGAGING IN THE NEXT PHASE OF THE PROJECT. STRUCTURAL OBSERVATIONS WILL BE PERFORMED PER CBC 1704.6.1.

- PRIOR TO CONCEALMENT BY FINISHES:
HOHBACH-LEWIN SHALL OBSERVE
1. WOOD SHEAR WALL NAILING AND FRAMING HARDWARE.
2. HOLDOWNS AND TIEDOWN SYSTEMS.

- DEFERRED SUBMITTALS

DEFERRED SUBMITTALS SHALL FIRST BE SUBMITTED TO THE PROJECT ARCHITECT AND/OR ENGINEER FOR REVIEW AND COORDINATION. A SUBMITTAL TO THE CITY OF SANTA ROSA SHALL BE MADE FOR ITS APPROVAL. THIS SUBMITTAL SHALL INCLUDE A LETTER STATING THAT THE PROJECT ARCHITECT/ ENGINEER REVIEW AND COORDINATION HAS BEEN COMPLETED AND THAT THE PLANS AND CALCULATIONS FOR THE DEFERRED ITEMS COMPLY WITH THE CALIFORNIA BUILDING CODE.

- CONTRACTOR SUBMITTALS

THE FOLLOWING IS A LISTING OF REQUIRED ITEMS TO BE SUBMITTED TO STRUCTURAL ENGINEER OF RECORD (TO BE PROVIDED IF MARKED):

SUBMITTAL	CERTIFICATE	SHOP DRAWINGS (2)	CALCS W/ ENG. STAMP	DEFERRED SUBMITTAL (1)
CONCRETE REINF. STEEL	X	X		
CONCRETE MIX DESIGN		X		
STRUCTURAL STEEL	X	X		
GLUE LAMINATED BEAMS	X	X		
PRE-FABRICATED WOOD I-JOISTS		X	X	
ELEVATORS		X		X

(1) THIS SUBMITTAL SHALL INCLUDE HOHBACH-LEWIN'S SHOP DRAWING STAMP INDICATING THE STRUCTURAL REVIEW HAS BEEN COMPLETED AND THAT THE PLANS AND CALCULATIONS FOR THE DEFERRED APPROVAL ITEMS ARE IN GENERAL COMPLIANCE WITH THE INFORMATION PROVIDED WITHIN THE CONTRACT DOCUMENTS.

(2) ELECTRONIC SHOP DRAWINGS ARE TO BE SUBMITTED TO HOHBACH-LEWIN FOR REVIEW. AT HOHBACH-LEWIN'S REQUEST, THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING HARD COPIES OF SHOP DRAWINGS FOR REVIEW.

SYMBOLS

- X / SX.X — DETAIL NUMBER / SHEET NUMBER
- DROP IN FLOOR ELEVATION, S.A.D.
- SLOPE — SLOPED FINISH SEE ARCHITECTURAL DRAWING
- DEPRESSED FLOOR
- NEW CONTINUOUS FOUNDATION UNDER STRUCTURAL WALL
- CONCRETE CURB OR HIGH STEM
- BUILT-UP FLOOR AT FLOOR FRAMING PLAN AND CALIFORNIA FRAMING AT ROOF FRAMING PLAN
- HD — HOLDOWN, SEE DET. 9/S-502 FOR HOLDOWN AT FOUNDATION
- TDX — CONTINUOUS ROD TIE-DOWN SYSTEM, SEE SHEET S-805 AND S806. FOR ANCHORAGE AND SHEAR WALL A.B. LAYOUT, SEE DET. 10/S-502 AND 4/S-801
- CONTINUOUS WOOD MEMBER IN SECTION
- WOOD BLOCKING MEMBER IN SECTION
- POST BELOW FRAMING
- POST ABOVE — POST ABOVE FRAMING
- WALLS ABOVE, FOR ANCHOR BOLT REQUIREMENTS SEE 8/S-801
- WALLS BELOW FLOOR / ROOF FRAMING
- # / L=X-X" — SHEAR WALL ABOVE SEE DET. 1/S-801, 4/S-801 AND 5/S-801 FOR SCHEDULE AND OTHER REQUIREMENTS " # " DENOTES EDGE NAILING. IN ADDITION TO THE SPECIFIC LOCATIONS SHOWN ON THE PLANS, ALL THE EXTERIOR WALLS SHALL BE SHEATHED WITH PLYWOOD INCLUDING ABOVE AND BELOW ALL WALL OPENINGS, AND INCLUDING GABLE WALLS. NAIL PER MARK " 6 " ON DET. 4/S-801. X= MIN. CALCULATED SHEAR WALL LENGTH
- # / L=X-X" — STRAPPED SHEAR WALL ABOVE SEE DET. 1/S-801, 2/S-801, 4/S-801 AND 5/S-801 FOR NAILING SCHEDULE AND OTHER REQUIREMENTS. X= MIN. CALCULATED SHEAR WALL LENGTH
- SHEARWALL BELOW, SEE FLOOR PLAN BELOW FOR NAILING INFORMATION
- FRAMING MEMBER / DIAGRAMMATIC EXTENT OF FRAMING
- DBL. — DOUBLE JOISTS OR RAFTER
- HANGER SEE SCHEDULE 14/S-802
- HDR — HEADER BELOW FRAMING USE TYP. HEADER PER SCHEDULE 2/S-802 U.O.N. SIZE ON PLAN SUPERSEDES SCHEDULE
- X — VERTICAL TIE DOWN STRAP, SEE DET. 9/S-801 OR 10/S-801
- CMSTXX (X,Y) — X=LENGTH TO LEFT, Y=LENGTH TO RIGHT, BOTH IN FEET, HORIZONTAL COLLECTOR STRAP, SEE 11/S-801 AND 12/S-801. CENTER OF STRAP. NOTE: FOR CLARITY STRAP ARE SHOWN OFFSET FROM WALL, SEE SPECIFIED DETAILS FOR ACTUAL STRAP LOCATION.
- BEARING WALL BELOW, U.O.N. ON PLAN
- BEAM PER PLAN AND POST SUPPORT PER DET. 9/S-802, U.O.N. ON PLAN
- PARAPET WALL ABOVE

STRUCTURAL SHEET INDEX

NAILING SCHEDULE (CBC TABLE 2304.10.1)

CONNECTION [1]	NAILING [2]	NAILING [2]
1. Blocking between ceiling joists, rafters or trusses to top plate or other framing below (Roof)	(3) 8d	Ea. end, toenail
2. Ceiling joist to top plate	(3) 8d	Toenail
3. Ceiling joist not attached to parallel rafter, laps over partitions	(3) 16d	Face nail
4. Collar tie to rafter	(3) 10d	Face nail
5. Rafter or roof truss to top plate	(3) 10d	Toenail
6. Roof rafters to ridge valley or hip rafters; or roof rafter to 2 inch ridge beam.	(2) 16d	End nail
	(3) 10d	Toenail
7. Stud to stud (not a braced wall panels)	16d	24" o.c face nail
8. Stud to stud and abutting studs at intersecting wall corners (at braced wall panels)	16d	16" o.c face nail
9. Built-up header (2" to 2" header)	16d	16" o.c each edge, face nail
10. Continuous header to stud	(4) 8d	Toenail
11. Top plate to top plate	16d	16" o.c face nail
12. Top plate to top plate, at end joints	(8) 16d	Each side of end joint
13. Bottom plate to joist, rim joist, band joist or blocking (not at braced wall panels)	16d	12" o.c face nail
14. Bottom plate to joist, rim joist, band joist or blocking at braced wall panels	(2) 16d	16" o.c face nail
15. Stud to bottom plate	(4) 8d	Toenail
16. Top plate to stud	(2) 16d	End nail
17. Top plates, laps at corners and intersections	(2) 16d	Face nail
18. Joist to sill, top plate, or girder	(3) 8d	Toenail
19. Rim joist, band joist, or blocking to top plate, sill or other framing below	8d	6" o.c toenail
20. 2" planks (plank & beam - floor & roof)	(2) 16d	Each bearing
21. Built-up girders and beams, 2" lumber layers	20d	32" o.c face nail at top and bottom staggered on sides.
	(2) 20d	Ends and at each splice, face nail
22. Ledger strip supporting joists or rafters	(3) 16d	Each joist or rafter, face nail
23. Joists to band joist or rim joist	(3) 16d	End nail
24. Bridging or blocking to joist, rafter or truss (floor)	(2) 8d	Each end toe nail

NOTES:
1. NAILING PER SCHEDULE ABOVE IS TO BE USED WHERE NAILING IS NOT SPECIFIED ON PLANS OR DETAILS. NAILING PER PLANS AND DETAILS SUPERCEDE NAILING SCHEDULE UNLESS APPROVED BY ENGINEER.
2. NAIL SPECIFIED ARE COMMON: 8d= 2 1/2"x0.131" 10d= 3"x0.148" 16d= 3 1/2"x0.162"

FOR ALTERNATE NAILING AND INFORMATION NOT SHOWN, SEE COMPLETE TABLE CBC 2304.10.1

NAIL DESIGNATION AND SIZES		
NAIL	DIAMETER (in)	LENGTH (in)
16d COMMON	0.162	3.5
16d SINKER	0.148	3.25
10d COMMON	0.148	3
10d SHORT	0.148	2.5
8d COMMON	0.131	2.5

ABBREVIATIONS

&	AND	LONG.	LONGITUDINAL
@	AT	L.V.F.	LOW-VELOCITY FASTENER
A.B.	ANCHOR BOLT	L.S.H.	LONG SLOTTED HOLE
ADD'L.	ADDITIONAL	MAX.	MAXIMUM
ARCH.	ARCHITECTURAL	M.B.	MACHINE BOLTS (UNFINISHED)
AYC	ALASKAN YELLOW CEDAR	MIN.	MINIMUM
BLDG.	BUILDING	(N)	NEW
BLKG.	BLOCKING	N.S.	NEAR SIDE
BM.	BEAM	N.T.S.	NOT TO SCALE
B.N.	BOUNDARY NAIL	O.C.	ON CENTER
B.O.C.	BOTTOM OF CONCRETE	OPP.	OPPOSITE
BOT.	BOTTOM	PL	PLATE
℄	CENTER LINE	PLY.	PLYWOOD
C.G.S.	CENTER OF GRAVITY OF POST-TENSIONING STRAND	P.T.	PRESERVATIVE TREATED
C.J.	CONTROL JOINT	P/T	POST-TENSION
CLR.	CLEAR COVER	R.C.J.	ROUGHENED CONSTRUCTION JOINT
COL.	COLUMN	REINF.	REINFORCEMENT
COMP.	COMPRESSION	REQD.	REQUIRED
CONC.	CONCRETE	S.A.D.	SEE ARCHITECTURAL DRAWINGS
CONT.	CONTINUOUS	S.C.D.	SEE CIVIL DRAWINGS
DBL.	DOUBLE	SCHED.	SCHEDULE
DBO.	DRAWING BY OTHER	S.D.B.O.	SEE DRAWINGS BY OTHERS
DET.	DETAIL	SIM.	SIMILAR
D.C.	DEMAND CRITICAL	S.J.	SEISMIC JOINT
D.F.	DOUGLAS FIR	S.L.R.S.	SEISMIC LOAD RESISTING SYSTEM
DWG.	DRAWING	S.M.D.	SEE MECHANICAL DRAWINGS
(E)	EXISTING	SPEC.	SPECIFICATION
EA.	EACH	STD.	STANDARD
E.B.M.	EXTERIOR BUILDING MAINTENANCE	SQ.	SQUARE
ELEV.	ELEVATION	SYM.	SYMMETRICAL
E.N.	EDGE NAIL	T&B	TOP AND BOTTOM
E.W.	EACH WAY	T&G	TONGUE AND GROOVE
EXT.	EXTERIOR	T.D.	TIE DOWN
FDN.	FOUNDATION	T.O.C.	TOP OF CONCRETE
F.F.	FINISH FLOOR	T.O.F.	TOP OF FOOTING
FLR.	FLOOR	T.O.S.	TOP OF STEEL FRAMING
F.N.	FIELD NAIL	T.O.P.	TOP OF PLATE
F.O.C.	FACE OF CONCRETE	TRANS.	TRANSVERSE
F.O.S.	FACE OF STUD	TYP.	TYPICAL
F.R.T.	FIRE RETARDANT TREATED	U.O.N.	UNLESS OTHERWISE NOTED
F.S.	FAR SIDE	VERT.	VERTICAL
FTG.	FOOTING	V.I.F.	VERIFY IN FIELD
G.C.	GENERAL CONTRACTOR	W/	WITH
H.D.	HOLDOWN	W/O	WITHOUT
HDR.	HEADER	W.J.	WALL JOINT
HGR.	HANGER		
HORIZ.	HORIZONTAL		
HSS	HOLLOW STEEL SECTION		
J.H.	JOIST HANGER		

REVIEWED FOR CODE COMPLIANCE BY COASTLAND CIVIL ENGINEERING, INC. IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

ROWELL BROKAW
1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com
Architecture. Design. Strategy.

STAMP
REGISTERED PROFESSIONAL ENGINEER SAMUEL J. SOTANI 5032 STRUCTURAL STATE OF CALIFORNIA

HOHBACH-LEWIN, INC.
STRUCTURAL ENGINEERS
296 East 5th Ave Suite 302
Eugene, OR 97405
(541) 349-1701

REVISIONS TO THIS SHEET

REV.	DATE
PCC-3	2020-06-05
PCC-2	2020-05-15
PCC-1	2020-04-08

SHEET ISSUE DATE

2019-11-15	100% DD SET
2019-12-04	30% CD SET
2020-01-09	60% CD SET
2020-01-20	90% CD SET
2020-01-27	PERMIT SET

PROJECT TRACKING
RBA #: 1843
CONT #:
P.I.C:
PM / PA:

Owner
DANCO

Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

STRUCTURAL GENERAL NOTES

S-001

11/11/2019 5:37:33 PM

HOHBACH-LEWIN # 14200

STRUCTURAL GENERAL NOTES

- SPECIAL INSPECTIONS

SPECIAL INSPECTIONS AND TESTING WILL BE PERFORMED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS, THE ATTACHED "STATEMENT OF SPECIAL INSPECTION" AND CBC SECTIONS 1704, 1705.

EACH CONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION OF A SEISMIC FORCE RESISTING SYSTEM, DESIGNATED SEISMIC SYSTEM OR A SEISMIC RESISTING COMPONENT LISTED IN THE STATEMENT OF SPECIAL INSPECTIONS SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE BUILDING OFFICIAL AND THE OWNER PRIOR TO THE COMMENCEMENT OF THE WORK ON THE SYSTEM OR COMPONENT. THE CONTRACTOR'S STATEMENT OF RESPONSIBILITY SHALL CONTAIN THE FOLLOWING:

1. ACKNOWLEDGEMENT OF AWARENESS OF THE SPECIAL REQUIREMENTS CONTAINED IN THE STATEMENT OF SPECIAL INSPECTIONS.
2. ACKNOWLEDGEMENT THAT CONTROL WILL BE EXERCISED TO OBTAIN CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS APPROVED BY THE BUILDING OFFICIAL.
3. PROCEDURES FOR EXERCISING CONTROL WITHIN THE CONTRACTOR'S ORGANIZATION, THE METHOD AND FREQUENCY OF REPORTING AND THE DISTRIBUTION OF THE REPORTS.
4. IDENTIFICATION AND QUALIFICATION OF THE PERSON(S) EXERCISING SUCH CONTROL AND THEIR POSITION(S) IN THE ORGANIZATION.

STATEMENT OF SPECIAL INSPECTIONS

THIS STATEMENT OF SPECIAL INSPECTION IS SUBMITTED IN FULFILLMENT OF THE REQUIREMENTS OF CBC SECTIONS 1704.3. THE FOLLOWING ATTACHMENTS SUMMARIZE THE SPECIAL INSPECTIONS AND STRUCTURAL TESTS REQUIRED FOR THIS PROJECT.

THESE REQUIREMENTS HAVE ALSO BEEN MADE PART OF THE APPROVED PLANS.

THE OWNER RECOGNIZES HIS OR HER OBLIGATION TO ENSURE THAT THE CONSTRUCTION COMPLIES WITH THE APPROVED PERMIT DOCUMENTS AND TO IMPLEMENT THIS PROGRAM OF SPECIAL INSPECTIONS. IN PARTIAL FULFILLMENT OF THESE OBLIGATIONS, THE OWNER WILL RETAIN AND DIRECTLY PAY FOR THE SPECIAL INSPECTIONS AS REQUIRED IN CBC SECTION 1704.2

SPECIAL INSPECTORS WILL REFER TO THE APPROVED PLANS AND SPECIFICATIONS, THE ABOVE REFERENCED SCHEDULES, AND THE RELEVANT CBC SECTIONS FOR DETAILED SPECIAL INSPECTION REQUIREMENTS. ANY ADDITIONAL TESTS AND INSPECTIONS REQUIRED BY THE APPROVED PLANS AND SPECIFICATIONS WILL ALSO BE PERFORMED.

INTERIM INSPECTION REPORTS SHALL BE SUBMITTED TO THE BUILDING DEPARTMENT AND TO HOHBACH-LEWIN, INC. IN ACCORDANCE WITH CBC SECTION 1704.2.4. A FINAL REPORT OF SPECIAL INSPECTIONS DOCUMENTING REQUIRED SPECIAL INSPECTIONS, TESTING, AND CORRECTION OF ANY DEFICIENCIES NOTED IN THE INSPECTIONS SHALL BE SUBMITTED PRIOR TO ISSUANCE OF A CERTIFICATE OF USE AND OCCUPANCY.

THIS PLAN HAS BEEN DEVELOPED WITH THE UNDERSTANDING THAT THE BUILDING OFFICIAL WILL:

- REVIEW AND APPROVE THE QUALIFICATIONS OF THE SPECIAL INSPECTORS PERFORMING THE INSPECTIONS
- MONITOR SPECIAL INSPECTION ACTIVITIES TO ASSURE COMPLIANCE WITH PROJECT REQUIREMENTS
- REVIEW SUBMITTED INSPECTION REPORTS
- PERFORM INSPECTION

WIND + SEISMIC REQUIREMENTS (CBC SECTION 1704.3.2 & 1704.3.3)
THE STATEMENT OF SPECIAL INSPECTIONS SHALL IDENTIFY THE SEISMIC AND WIND FORCE LATERAL RESISTING SYSTEMS THAT ARE SUBJECT TO SPECIAL INSPECTIONS PER CBC SECTIONS 1705.12 OR 1705.13 AND 1705.11

THE EXTENT OF THE SEISMIC LOAD RESISTING SYSTEM IS DEFINED IN MORE DETAIL IN THE CONSTRUCTION DOCUMENTS.

SCHEDULE OF SPECIAL INSPECTIONS

INSPECTION FREQUENCY

C - CONTINUOUS INSPECTION
P - PERIODIC INSPECTION
X - DENOTES INSPECTION THAT IS EITHER ONE-TIME OR AT A FREQUENCY DEFINED IN SOME OTHER MANNER
N - INSPECTION IS NOT REQUIRED

- STEEL CONSTRUCTION PER CBC SECTION 1705.2.

ITEM	FREQ.	NOTES
1. SPECIAL INSPECTION FOR STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH THE QUALITY ASSURANCE INSPECTION REQUIREMENTS OF AISC 360		SEE CBC SECTION 1705.2.1
2. MATERIAL VERIFICATION OF HIGH- STRENGTH BOLTS, NUTS, AND WASHERS:		
A. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS	P	SEE APPLICABLE ASTM MATERIAL SPECIFICATIONS AND AISC 360 SECTION A3.3
B. MANUFACTURER'S CERTIFICATE OF COMPLIANCE	P	
3. MATERIAL VERIFICATION OF STRUCT. STEEL		SEE AISC 360 SECTION A3 FOR ASTM DESIGNATIONS
A. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS	X	
B. MANUFACTURER'S MILL TEST REPORTS	X	SEE ASTM A6 OR ASTM A 568
4. INSPECTION OF HIGH-STRENGTH BOLTING		AISC 360 SECTION N5.6 AND TABLES N5.6-1, N5.6-2 & N5.6-3
5. INSPECTION OF WELDING		AISC 360 SECTION N5.4, N5.5 AND TABLES N5.4-1, N5.4-2 & N5.4-3
A. STRUCTURAL STEEL		
1. COMPLETE AND PARTIAL PENETRATION GROOVE WELDS	C	SEE AWS D1.1.
2. MULTI-PASS FILLET WELDS	C	SEE AWS D1.1.
3. SINGLE-PASS FILLET WELDS > 5/16"		SEE AWS D1.1.
4. SINGLE-PASS FILLET WELDS ≤ 5/16"	P	SEE AWS D1.1.
5. FLOOR AND ROOF DECK WELDS	P	SEE AWS D1.1.
6. STUDS USED FOR STRUCTURAL DIAPHRAGMS	P	SEE AWS D1.1.
7. WELDED SHEET STEEL FOR STUDS AND JOISTS	P	
8. STAIR AND RAILING SYSTEMS	P	

- CONCRETE CONSTRUCTION PER CBC 1705.3

TABLE 1705.3 CONCRETE

ITEM	FREQ.	NOTES
1. INSPECTION OF REINFORCING STEEL, INCLUDING PRESTRESSING TENDONS AND PLACEMENT.	P	SEE ACI 318: 20, 25.2, 25.3, 26.1-26.5.3
2. INSPECTION OF REINFORCING STEEL WELDING		SEE AWS D.1.4; ACI 318: 26.5.4
A. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706:	P	
B. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16"	P	
C. INSPECT ALL OTHER WELDS.	C	
3. INSPECT ANCHORS TO BE CAST IN CONCRETE	P	ACI 318: 17.8.2
4. INSPECTION OF ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS:		
A. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS.	C	ACI 318: 17.8.2.4
B. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.A	P	ACI 318: 17.8.2
5. VERIFY USE OF REQUIRED MIX DESIGN	P	SEE ACI 318: CH.19, 26.4.3, 26.4.4
6. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	C	SEE ASTM C 172, C 31; ACI 318: 5.6, 26.4.5, 26.12
7. INSPECTION OF CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES, INCLUDING TEST PANELS.	C	SEE ACI 318: 26.4.5
8. INSPECTION FOR MAINTENANCE OF PROPER SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	P	SEE ACI 318: 26.4.1 - 26.4.4
12. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF CONCRETE MEMBERS BEING FORMED.	P	SEE ACI 318: 26.10.1 (b)
13. POST-INSTALLED ANCHORS:		
A. VERIFY DIAMETER AND DEPTH OF HOLE TO CONFORM TO MANUFACTURER'S GUIDELINES AND VALUES SHOWN ON THE STRUCTURAL DRAWINGS.	C	
B. VERIFY EPOXY OR EXPANSION ANCHOR IS OF TYPE INDICATED ON THE STRUCTURAL DRAWINGS.	X	SUBSTITUTIONS MUST BE SUBMITTED TO THE E.O.R. FOR ACCEPTANCE PRIOR TO USE.
C. OBSERVE MIXING OF EPOXY AND INSTALLATION OF ANCHORS. VERIFY TORQUE OF EXPANSION ANCHORS.	C	SEE DRAWINGS FOR LOCATIONS WHERE INSPECTION IS NOT REQUIRED.

- SOILS PER CBC SECTION 1705.6

TABLE 1705.6 SOILS

ITEM	FREQ.	NOTES
1. VERIFY MATERIALS BELOW FOOTINGS ARE ADEQUATE TO ACHIEVE THE DESIRED BEARING CAPACITY.	P	INSPECTIONS REQUIRED IN THIS TABLE SHALL BE PERFORMED BY THE PROJECT GEOTECHNICAL ENGINEER.
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIALS.	P	
3. PERFORM CLASSIFICATION AND TESTING OF CONTROLLED FILL MATERIALS.	P	
4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF CONTROLLED FILL.	C	
5. PRIOR TO PLACEMENT OF CONTROLLED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.	P	

- WOOD CONSTRUCTION PER CBC SECTION 1705.5

ITEM	FREQ.	NOTES
1. INSPECT SITE-BUILT ASSEMBLIES:		SEE CBC SECTION 1705.12.2
A. NAILING, BOLTING, ANCHORING, AND OTHER FASTENING OF COMPONENTS WITHIN THE SLRS, INCLUDING SHEAR WALLS, DIAPHRAGMS, DRAG STRUTS, BRACES, SHEAR PANELS, AND HOLD-DOWNS.	P	SPECIAL INSPECTION IS NOT REQUIRED FOR SHEAR WALLS, DIAPHRAGMS, AND SHEAR PANELS INCLUDING ATTACHMENT TO OTHER COMPONENTS OF THE SLRS WHERE THE NOMINAL PANEL EDGE NAILING IS MORE THAN 4 INCHES ON CENTER.

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REGISTERED PROFESSIONAL ENGINEER
Samuel Slutes
No. 28032
STRUCTURAL ENGINEER
STATE OF CALIFORNIA

HOHBACH-LEWIN, INC.
STRUCTURAL ENGINEERS
298 East 5th Ave Suite 302
Eugene, OR 97405
(541) 349-1701

REVISIONS TO THIS SHEET

REV.	DATE
PCC-3	2020-06-05
PCC-2	2020-05-15
PCC-1	2020-04-08

SHEET ISSUE DATE

2019-11-15	100% DD SET
2019-12-04	30% CD SET
2020-01-09	60% CD SET
2020-01-20	90% CD SET
2020-01-27	PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #:
P.I.C:
PM / PA:

Owner
DANCO

Project Name
SAGE COMMONS

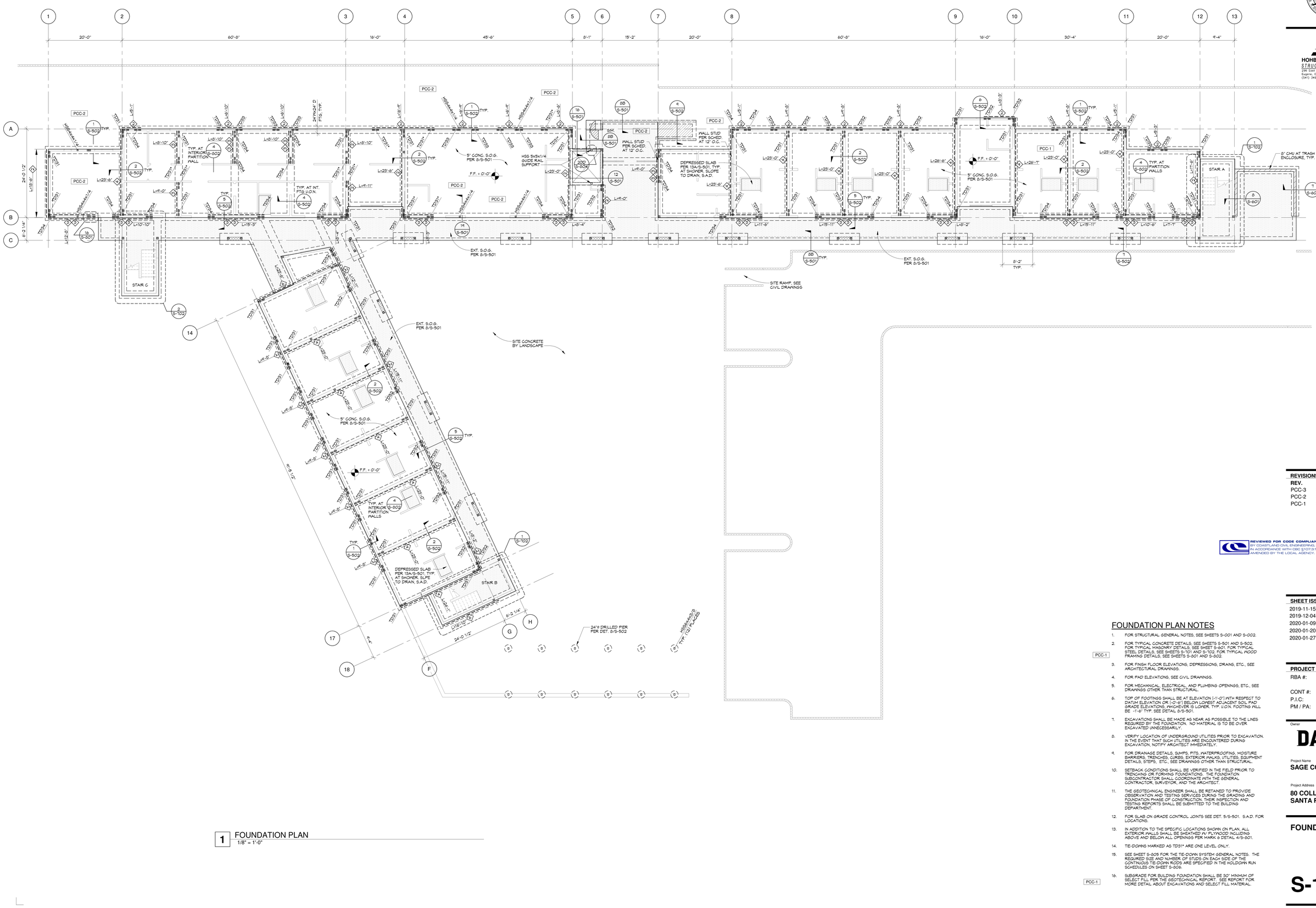
Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

SPECIAL INSPECTIONS AND TESTING NOTES

S-002

11/1/2019 5:37:33 PM

HOHBACH-LEWIN # 1420



1 FOUNDATION PLAN
1/8" = 1'-0"

FOUNDATION PLAN NOTES

1. FOR STRUCTURAL GENERAL NOTES, SEE SHEETS S-001 AND S-002.
2. FOR TYPICAL CONCRETE DETAILS, SEE SHEETS S-501 AND S-502. FOR TYPICAL MASONRY DETAILS, SEE SHEET S-501. FOR TYPICAL STEEL DETAILS, SEE SHEETS S-101 AND S-102. FOR TYPICAL WOOD FRAMING DETAILS, SEE SHEETS S-501 AND S-502. PCC-1
3. FOR FINISH FLOOR ELEVATIONS, DEPRESSIONS, DRAINS, ETC., SEE ARCHITECTURAL DRAWINGS.
4. FOR PAD ELEVATIONS, SEE CIVIL DRAWINGS.
5. FOR MECHANICAL, ELECTRICAL, AND PLUMBING OPENINGS, ETC., SEE DRAWINGS OTHER THAN STRUCTURAL.
6. TOP OF FOOTINGS SHALL BE AT ELEVATION (-1'-0") WITH RESPECT TO DATUM ELEVATION OR (-0'-6") BELOW LOWEST ADJACENT SOIL PAD GRADE ELEVATIONS, WHICHEVER IS LOWER, TYP. U.O.N. FOOTING WILL BE -1'-6" TYP. SEE DETAIL 8/S-501.
7. EXCAVATIONS SHALL BE MADE AS NEAR AS POSSIBLE TO THE LINES REQUIRED BY THE FOUNDATION. NO MATERIAL IS TO BE OVER EXCAVATED UNNECESSARILY.
8. VERIFY LOCATION OF UNDERGROUND UTILITIES PRIOR TO EXCAVATION. IN THE EVENT THAT SUCH UTILITIES ARE ENCOUNTERED DURING EXCAVATION, NOTIFY ARCHITECT IMMEDIATELY.
9. FOR DRAINAGE DETAILS, SUMPS, PITS, WATERPROOFING, MOISTURE BARRIERS, TRENCHES, CURBS, EXTERIOR WALKS, UTILITIES, EQUIPMENT DETAILS, STEPS, ETC., SEE DRAWINGS OTHER THAN STRUCTURAL.
10. SETBACK CONDITIONS SHALL BE VERIFIED IN THE FIELD PRIOR TO TRENCHING OR FORMING FOUNDATIONS. THE FOUNDATION SUBCONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR, SURVEYOR, AND THE ARCHITECT.
11. THE GEOTECHNICAL ENGINEER SHALL BE RETAINED TO PROVIDE OBSERVATION AND TESTING SERVICES DURING THE GRADING AND FOUNDATION PHASE OF CONSTRUCTION. THEIR INSPECTION AND TESTING REPORTS SHALL BE SUBMITTED TO THE BUILDING DEPARTMENT.
12. FOR SLAB ON GRADE CONTROL JOINTS SEE DET. 5/S-501. S.A.D. FOR LOCATIONS.
13. IN ADDITION TO THE SPECIFIC LOCATIONS SHOWN ON PLAN, ALL EXTERIOR WALLS SHALL BE SHEATHED W/ PLYWOOD INCLUDING ABOVE AND BELOW ALL OPENINGS PER MARK 6 DETAIL 4/S-501.
14. TIE-DOWNS MARKED AS TD31* ARE ONE LEVEL ONLY.
15. SEE SHEET S-505 FOR THE TIE-DOWN SYSTEM GENERAL NOTES. THE REQUIRED SIZE AND NUMBER OF STUDS ON EACH SIDE OF THE CONTINUOUS TIE-DOWN RODS ARE SPECIFIED IN THE HOLDOWN RUN SCHEDULES ON SHEET S-505.
16. SUBGRADE FOR BUILDING FOUNDATION SHALL BE 30" MINIMUM OF SELECT FILL PER THE GEOTECHNICAL REPORT. SEE REPORT FOR MORE DETAIL ABOUT EXCAVATIONS AND SELECT FILL MATERIAL. PCC-1

ROWELL BROKAW
1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com
Architecture. Design. Strategy.

STAMP

HOHBACH-LEWIN, INC.
STRUCTURAL ENGINEERS
295 East 5th Ave. Suite 302
Eugene, OR 97401
(541) 345-1701

REVISIONS TO THIS SHEET

REV.	DATE
PCC-3	2020-06-05
PCC-2	2020-05-15
PCC-1	2020-04-08

REVIEWED FOR CODE COMPLIANCE BY COASTLAND CIVIL ENGINEERING, INC. IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

SHEET ISSUE DATE

2019-11-15	100% DD SET
2019-12-04	30% CD SET
2020-01-09	60% CD SET
2020-01-20	90% CD SET
2020-01-27	PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #:
P.I.C:
PM / PA:

Owner
DANCO

Project Name
SAGE COMMONS

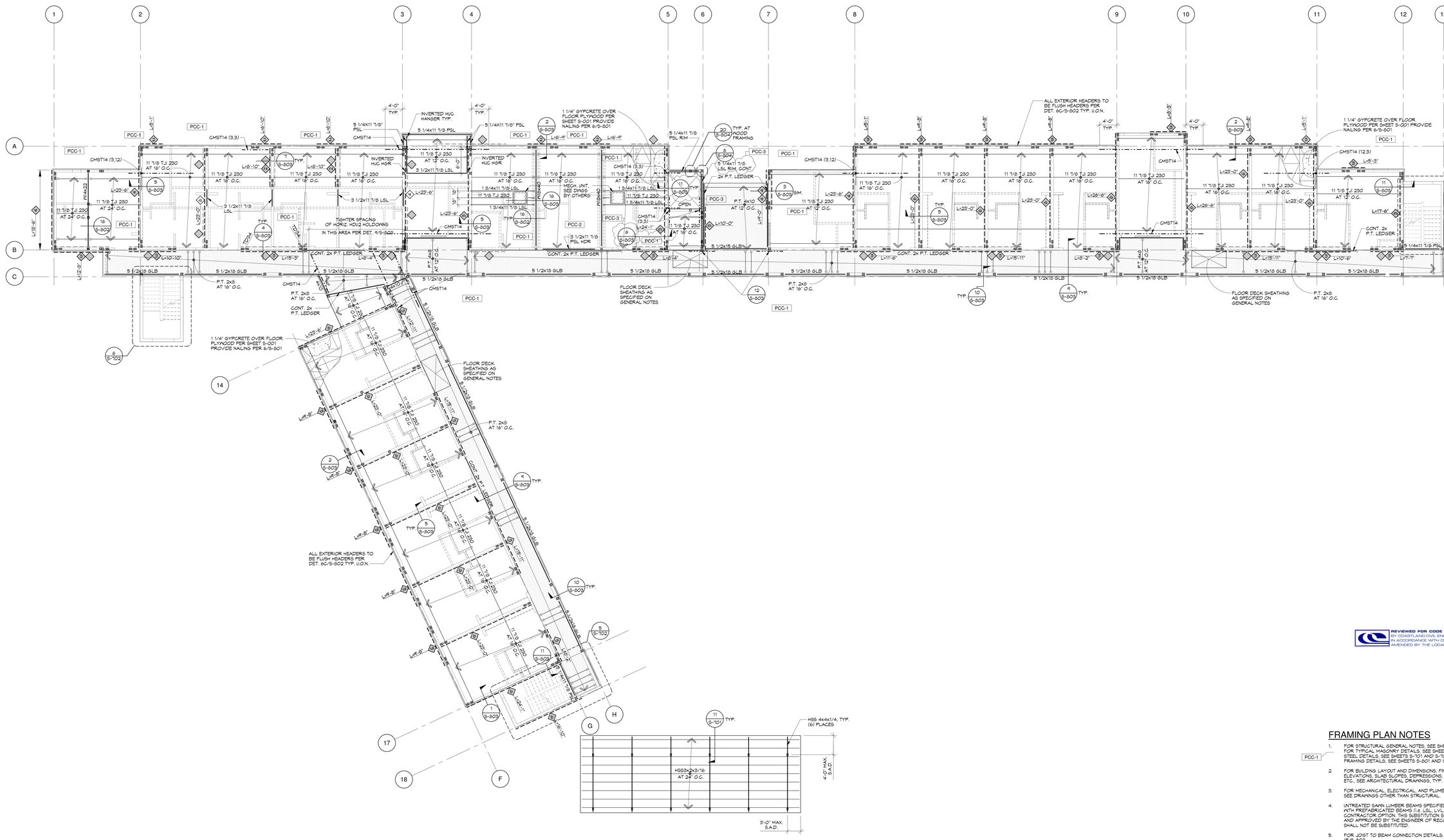
Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

FOUNDATION PLAN

S-111

6/5/2020 9:48:15 PM

HOHBACH-LEWIN # 1420



1 LEVEL 2 FRAMING PLAN
1/8" = 1'-0"

FRAMING PLAN NOTES

PCC-1
1. FOR STRUCTURAL GENERAL NOTES, SEE SHEETS S-001 AND S-002. FOR TYPICAL MASONRY DETAILS, SEE SHEET S-601. FOR TYPICAL STEEL DETAILS, SEE SHEETS S-701 AND S-702. FOR TYPICAL WOOD FRAMING DETAILS, SEE SHEETS S-801 AND S-802.
2. FOR BUILDING LAYOUT AND DIMENSIONS, FINISH FLOOR ELEVATIONS, SLAB SLOPES, DEPRESSIONS, DRAINS, FINISHES, ETC., SEE ARCHITECTURAL DRAWINGS, TYP. U.O.N.
3. FOR MECHANICAL, ELECTRICAL, AND PLUMBING OPENINGS, ETC., SEE DRAWINGS OTHER THAN STRUCTURAL.
4. UNTREATED SAWN LUMBER BEAMS SPECIFIED MAY BE SUBSTITUTED WITH PREFABRICATED BEAMS (I.E. LSL, LVL, ETC.) AS A CONTRACTOR OPTION. THIS SUBSTITUTION SHALL BE SUBMITTED TO AND APPROVED BY THE ENGINEER OF RECORD. P.T. OR F.R.T. SHALL NOT BE SUBSTITUTED.
5. FOR JOIST TO BEAM CONNECTION DETAILS, SEE DETAIL 15/S-802.
6. ALL WOOD BEAMS SHOWN ON PLANS SHALL BE SUPPORTED ON WOOD POSTS PER SCHEDULE, SEE DETAIL 4/S-802, TYP. U.O.N.
7. FOR TYP. STUD WALL SIZE AND SPACING, SEE DETAIL 1/S-802, TYP. U.O.N.
8. FOR ROOF AND FLOOR PLYWOOD NAILING SEE SHEET S-001, WOOD NOTES AND DETAILS 6/S-801 AND 7/S-801.
9. FOR ALLOWABLE HOLES AND NOTCHES AT FRAMING MEMBERS, SEE DETAIL 5/S-802. FOR TOP PLATE PENETRATIONS, SEE DETAILS 3/S-802 AND 12/S-804.
10. FOR SHEAR WALL FRAMING AND HARDWARE REQUIREMENTS, SEE SHEET S-801.
11. FOR VERTICAL TIEDOWN STRAP AT FLOOR, SEE DETAIL 10/S-801.
12. FOR TYPICAL FRAMING AT OPENINGS IN STUD WALLS, SEE DETAILS 2 & 6/S-802.
13. ALL LUMBER AND SHEATHING EXPOSED TO WEATHER SHALL BE PRESSURE TREATED.
14. PROVIDE PRESERVATIVE TREATED FRAMING AND PLYWOOD AT EXTERIOR BALCONIES, DECKS, AND WALKWAYS.
15. FOR ALL HSS COLUMNS INSIDE WOOD SHEAR WALLS, PROVIDE 3x NAILER PER DETAIL 9/S-702.
16. FOR INTERIOR NON-SHEAR, NON-BEARING WALLS, SEE DET. 13/S-803. USE DET. 13A/S-803 AT PLUMBING WALLS.
PCC-1
17. SEE SHEET S-803 FOR TIE-DOWN SYSTEM GENERAL NOTES. THE REQUIRED SIZE AND NUMBER OF STUDS ON EACH SIDE OF THE CONTINUOUS TIE-DOWN RODS ARE SPECIFIED IN THE HOLDOWN RUN SCHEDULES ON SHEET S-806.

REVIEWED FOR CODE COMPLIANCE
BY CGASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

ROWELL BROKAW
1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com
Architecture. Design. Strategy.

STAMP
REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 1, 1982
DAVID W. HOHBACH
STRUCTURAL
STATE OF CALIFORNIA

HOHBACH-LEWIN, INC.
STRUCTURAL ENGINEERS
290 East 5th Ave Suite 302
Eugene, OR 97401
(541) 349-1701

REVISIONS TO THIS SHEET

REV.	DATE
PCC-3	2020-06-05
PCC-2	2020-05-15
PCC-1	2020-04-08

SHEET ISSUE DATE

2019-11-15	100% DD SET
2019-12-04	30% CD SET
2020-01-09	60% CD SET
2020-01-20	90% CD SET
2020-01-27	PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #:
P.I.C:
PM / PA:

Owner
DANCO

Project Name
SAGE COMMONS

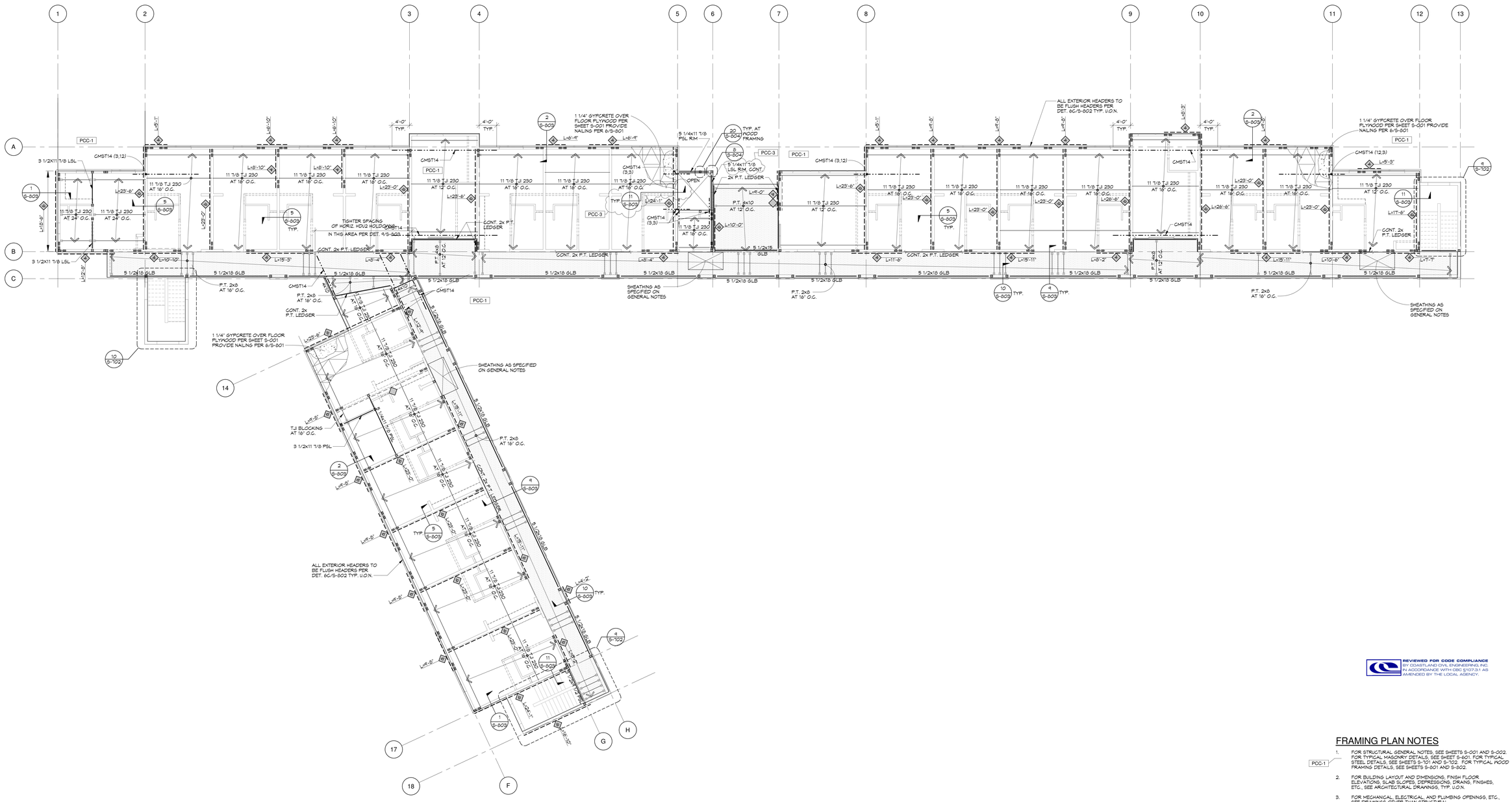
Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

LEVEL 2 FRAMING PLAN

S-112

6/23/2020 9:42:44 AM

HOHBACH-LEWIN # 14200



1 LEVEL 3 FRAMING PLAN
1/8" = 1'-0"

FRAMING PLAN NOTES

1. FOR STRUCTURAL GENERAL NOTES, SEE SHEETS S-001 AND S-002. FOR TYPICAL MASONRY DETAILS, SEE SHEET S-501. FOR TYPICAL STEEL DETAILS, SEE SHEETS S-701 AND S-702. FOR TYPICAL WOOD FRAMING DETAILS, SEE SHEETS S-801 AND S-802.
2. FOR BUILDING LAYOUT AND DIMENSIONS, FINISH FLOOR ELEVATIONS, SLAB SLOPES, DEPRESSIONS, DRAINS, FINISHES, ETC., SEE ARCHITECTURAL DRAWINGS, TYP. U.O.N.
3. FOR MECHANICAL, ELECTRICAL, AND PLUMBING OPENINGS, ETC., SEE DRAWINGS OTHER THAN STRUCTURAL.
4. UNTREATED SAWN LUMBER BEAMS SPECIFIED MAY BE SUBSTITUTED WITH PREFABRICATED BEAMS (I.E. LSL, LVL, ETC.) AS A CONTRACTOR OPTION. THIS SUBSTITUTION SHALL BE SUBMITTED TO AND APPROVED BY THE ENGINEER OF RECORD. P.T. OR F.R.T. SHALL NOT BE SUBSTITUTED.
5. FOR JOIST TO BEAM CONNECTION DETAILS, SEE DETAIL 15/S-802.
6. ALL WOOD BEAMS SHOWN ON PLANS SHALL BE SUPPORTED ON WOOD POSTS PER SCHEDULE. SEE DETAIL 9/S-802, TYP. U.O.N.
7. FOR TYP. STUD WALL SIZE AND SPACING, SEE DETAIL 1/S-802, TYP. U.O.N.
8. FOR ROOF AND FLOOR PLYWOOD NAILING SEE SHEET S-001, WOOD NOTES AND DETAILS 6/S-801 AND 7/S-801.
9. FOR ALLOWABLE HOLES AND NOTCHES AT FRAMING MEMBERS, SEE DETAIL 5/S-802. FOR TOP PLATE PENETRATIONS, SEE DETAILS 3/S-802 AND 12/S-804.
10. FOR SHEAR WALL FRAMING AND HARDWARE REQUIREMENTS, SEE SHEET S-801.
11. FOR VERTICAL TIEDOWN STRAP AT FLOOR, SEE DETAIL 10/S-801.
12. FOR TYPICAL FRAMING AT OPENINGS IN STUD WALLS, SEE DETAILS 2 & 6/S-802.
13. ALL LUMBER AND SHEATHING EXPOSED TO WEATHER SHALL BE PRESSURE TREATED.
14. PROVIDE PRESERVATIVE TREATED FRAMING AND PLYWOOD AT EXTERIOR BALCONIES, DECKS, AND WALKWAYS.
15. FOR ALL HSS COLUMNS INSIDE WOOD SHEAR WALLS, PROVIDE 3x NAILER PER DETAIL 4/S-702.
16. FOR INTERIOR NON-SHEAR, NON-BEARING WALLS, SEE DET. 13/S-503. USE DET. 13A/S-503 AT PLUMBING WALLS.
17. SEE SHEET S-805 FOR TIE-DOWN SYSTEM GENERAL NOTES. THE REQUIRED SIZE AND NUMBER OF STUDS ON EACH SIDE OF THE CONTINUOUS TIE-DOWN RODS ARE SPECIFIED IN THE HOLDOWN RUN SCHEDULES ON SHEET S-806.

REVIEWED FOR CODE COMPLIANCE
BY CODESTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

ROWELL BROKAW
1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com
Architecture. Design. Strategy.

STAMP

HOHBACH-LEWIN, INC.
STRUCTURAL ENGINEERS
290 East 5th Ave Suite 302
Eugene, OR 97401
(541) 349-1701

REVISIONS TO THIS SHEET

REV.	DATE
PCC-3	2020-06-05
PCC-2	2020-05-15
PCC-1	2020-04-08

SHEET ISSUE DATE

2019-11-15	100% DD SET
2019-12-04	30% CD SET
2020-01-09	60% CD SET
2020-01-20	90% CD SET
2020-01-27	PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #:
P.I.C:
PM / PA:

Owner
DANCO

Project Name
SAGE COMMONS

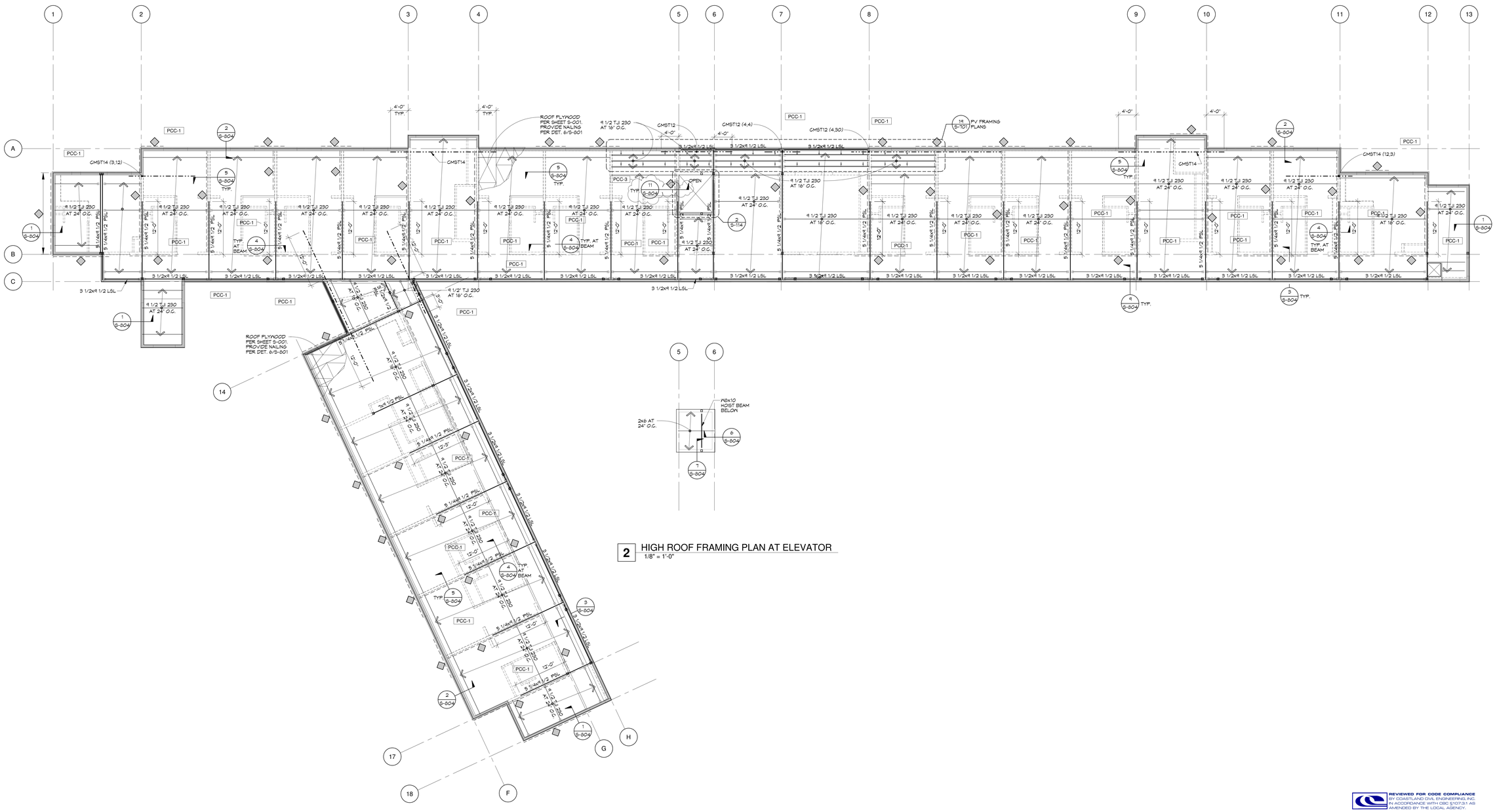
Project Address
80 COLLEGE AVENUE SANTA ROSA, CA

LEVEL 3 FRAMING PLAN

S-113

6/23/2020 9:42:46 AM

HOHBACH-LEWIN # 14200



1 ROOF FRAMING PLAN
1/8" = 1'-0"

2 HIGH ROOF FRAMING PLAN AT ELEVATOR
1/8" = 1'-0"

ROOF FRAMING PLAN SYMBOLS

PCC-1

1. FOR STRUCTURAL GENERAL NOTES, SEE SHEETS S-001, AND S-002. FOR TYPICAL WOOD FRAMING DETAILS, SEE SHEETS S-801 AND S-802.
2. SEE ARCHITECTURAL/ MECHANICAL DRAWINGS FOR ROOF SUPPORTED EQUIPMENT.
3. SEE SHEET S-805 FOR THE TIE-DOWN SYSTEM GENERAL NOTES. THE REQUIRED SIZE AND NUMBER OF STUDS ON EACH SIDE OF THE CONTINUOUS TIE-DOWN RODS ARE SPECIFIED IN THE HOLDOWN RUN SCHEDULES ON SHEET S-806.
4. SEE DETAIL 10/S-804 FOR RATED SHAFT TO ROOF FRAMING CONNECTION. SEE DRAWINGS BY OTHERS FOR SHAFT RATINGS AND LOCATIONS.

PCC-1

PCC-3

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

HOHBACH-LEWIN, INC.
STRUCTURAL ENGINEERS
295 East 5th Ave Suite 302
Eugene, OR 97401
(541) 349-1701

REVISIONS TO THIS SHEET

REV.	DATE
PCC-3	2020-06-05
PCC-2	2020-05-15
PCC-1	2020-04-08

SHEET ISSUE DATE

2019-11-15	100% DD SET
2019-12-04	30% CD SET
2020-01-09	60% CD SET
2020-01-20	90% CD SET
2020-01-27	PERMIT SET

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

PROJECT TRACKING

RBA #: 1843

CONT #:
P.I.C:
PM / PA:

Owner
DANCO

Project Name
SAGE COMMONS

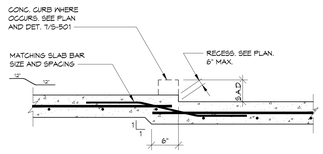
Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

ROOF FRAMING PLAN

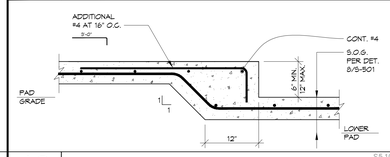
S-114

6/23/2020 9:42:48 AM

HOHBACH-LEWIN # 14200

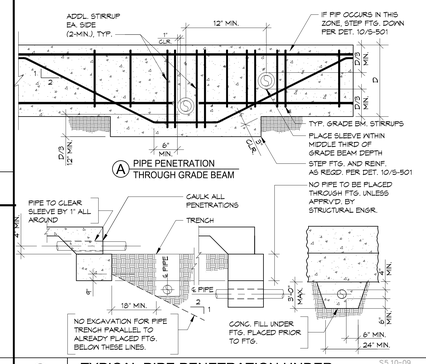


13A

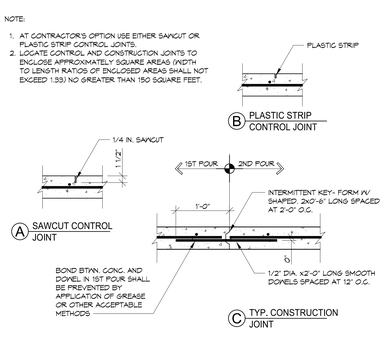


17

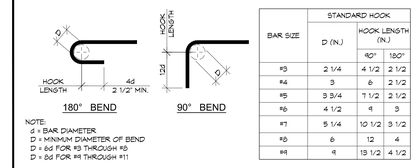
13 TYPICAL SLAB-ON-GRADE STEP S5.10-13 1"x1'-0"



9 TYPICAL PIPE PENETRATION UNDER FOOTING AND TRENCH LIMITATIONS S5.10-09 N.T.S.



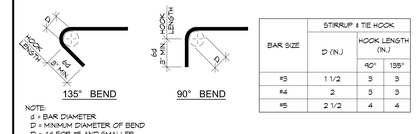
5 TYPICAL CONSTRUCTION AND CONTROL JOINTS AT SLAB-ON-GRADE S5.10-05 1"x1'-0"



NOTE:
d = BAR DIAMETER
D = MINIMUM DIAMETER OF BEND
D = 6d FOR #3 THROUGH #8
D = 8d FOR #9 THROUGH #11

BAR SIZE	STANDARD HOOK		
	D (IN.)	HOOK LENGTH (IN.) 90°	180°
#3	2 1/4	4 1/2	2 1/2
#4	3	6	2 1/2
#5	3 3/4	7 1/2	2 1/2
#6	4 1/2	9	3
#7	5 1/4	10 1/2	3 1/2
#8	6	12	4
#9	9	13 1/2	4 1/2

1A STANDARD REINFORCING STEEL HOOKS N.T.S.



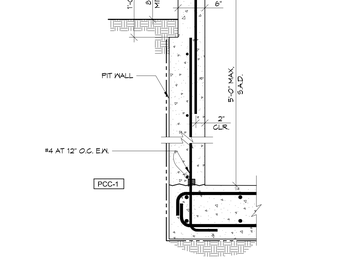
NOTE:
d = BAR DIAMETER
D = MINIMUM DIAMETER OF BEND
D = 4d FOR #5 AND SMALLER

BAR SIZE	STIRRUP & TIE HOOK	
	D (IN.)	HOOK LENGTH (IN.) 90°	135°
#3	1 1/2	3	3
#4	2	3	3
#5	2 1/2	4	4

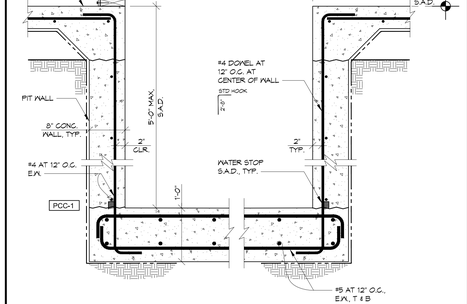
1 TYPICAL STIRRUP AND TIE HOOKS S5.10-01 N.T.S.

18

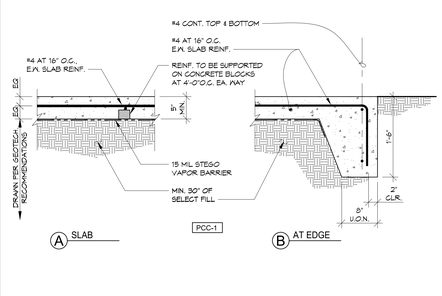
NOTE:
1. SC TO COORDINATE BLOCKOUT W/ ARCH FINISH



14 TYPICAL COLUMN BLOCKOUT S5.10-14A 1"x1'-0"



10 TYPICAL STEP IN CONTINUOUS FOOTING S5.10-10 N.T.S.



6 TYPICAL CONSTRUCTION JOINT AT FOUNDATION S5.10-06A 1"x1'-0"

TOP BARS - 90° HOOK EMBEDMENT AND CLASS B TENSION LAP SPLICE FOR GRADE 60 REINF.

f'c	3,000 PSI		4,000 PSI	
BAR SIZE	EMBED. (IN)	CLASS B (IN)	EMBED. (IN)	CLASS B (IN)
#3	9	28	8	25
#4	11	36	10	33
#5	14	47	12	41
#6	17	56	15	48
#7	20	81	17	71
#8	22	93	19	81
#9	25	105	22	91

OTHER BARS - 90 ° HOOK EMBEDMENT AND CLASS B TENSION LAP SPLICE FOR GRADE 60 REINF.

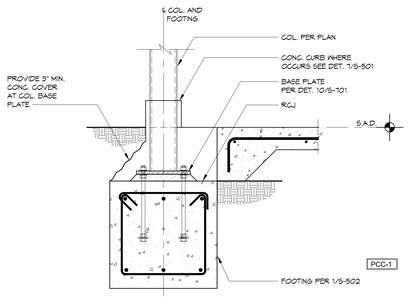
f'c	3,000 PSI		4,000 PSI	
BAR SIZE	EMBED. (IN)	CLASS B (IN)	EMBED. (IN)	CLASS B (IN)
#3	9	22	8	19
#4	11	29	10	25
#5	14	36	12	31
#6	17	43	15	37
#7	20	63	17	54
#8	22	72	19	62
#9	25	81	22	70

NOTE:
1. TOP BARS = HORIZONTAL BARS (OTHER THAN IN WALLS) PLACED WITH MORE THAN 12" OF FRESH CONCRETE IS CAST BELOW THEM. SEE DET. 3/S-501.
2. ABOVE TABLES ARE BASED UPON MINIMUM CLEAR COVER GREATER THAN 1.0db AND MINIMUM CLEAR SPACING GREATER THAN 2db. WHERE EITHER OF THESE REQUIREMENTS IS NOT MET, INCREASE THE EMBEDMENT OR LAP LENGTH BY 50%.
3. USE CLASS B LAP SPLICE FOR ALL BAR SPLICES TYP.
4. FOR ADDITIONAL INFORMATION SEE DET. 3/S-501.

2 TYPICAL REINFORCEMENT EMBED AND LAP SPLICE S5.10-02A N.T.S.

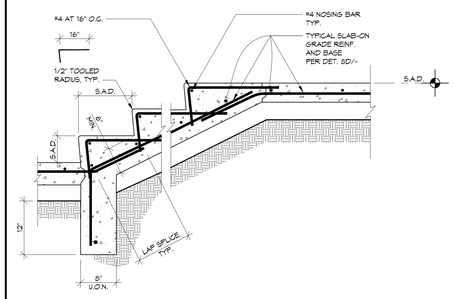
20

NOTE:
1. FOR INFO. NOT SHOWN, SEE DET. 14/S-501.

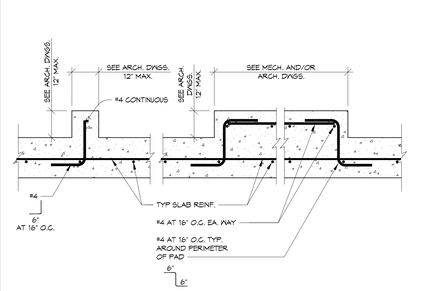


19 EXTERIOR COLUMN FOOTING 1"x1'-0"

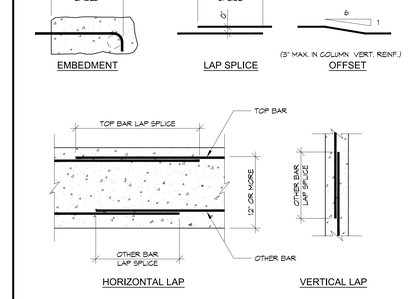
15 S5.10-15



11 CONCRETE STEPS S5.10-11 1"x1'-0"



7 TYPICAL CURB AND RAISED PAD DETAILS S5.10-07 N.T.S.



3 TYPICAL REINFORCEMENT EMBED, LAP SPLICE AND OFFSET S5.10-03 1"x1'-0"

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

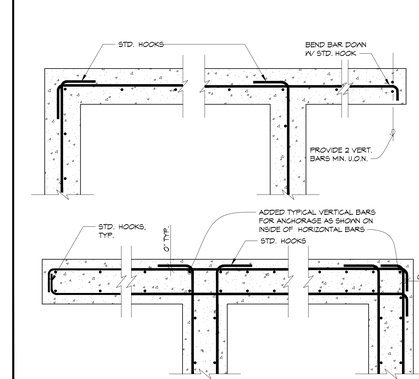
16

NOTE:
NOTED SEE 12/S-501.

16 FOOTING AT ELEVATOR PIT 1"x1'-0"

12 FOOTING AT ELEVATOR PIT S5.10-12A 1"x1'-0"

8 SLAB-ON-GRADE S5.10-08A 1"x1'-0"



4 TYPICAL CONCRETE MEMBER INTERSECTIONS S5.10-04 1"x1'-0"

ROWELL BROKAW
1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com
Architecture. Design. Strategy.

STAMP

HOHBACH-LEWIN, INC.
STRUCTURAL ENGINEERS
296 East 5th Ave Suite 302
Eugene, OR 97405
(541) 349-1701

REVISIONS TO THIS SHEET

REV.	DATE
PCC-3	2020-06-05
PCC-2	2020-05-15
PCC-1	2020-04-08

SHEET ISSUE DATE

2019-11-15	100% DD SET
2019-12-04	30% CD SET
2020-01-09	60% CD SET
2020-01-20	90% CD SET
2020-01-27	PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #:
P.I.C:
PM / PA:

Owner
DANCO

Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE SANTA ROSA, CA

TYPICAL FOUNDATION DETAILS

S-501

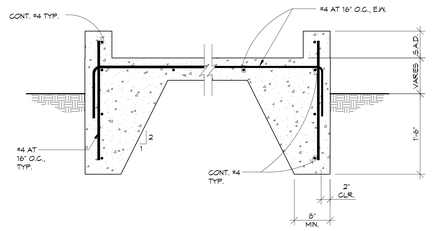
11/11/2019 5:37:33 PM

HOHBACH-LEWIN # 14200

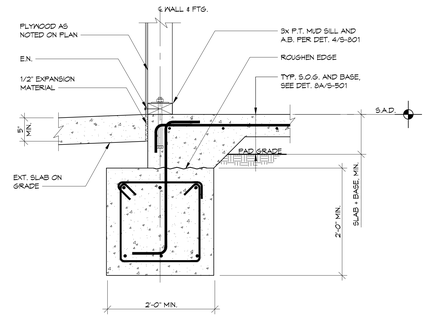
17

13

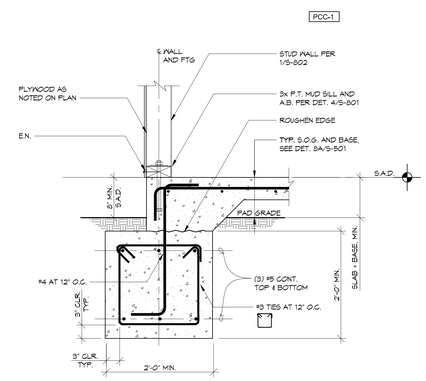
9 PEDESTRIAN RAMP DETAIL 1"x1'-0"



5 EXTERIOR WALL AT SLAB ON GRADE 1"x1'-0"



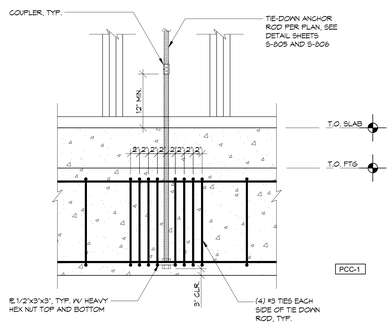
1 TYPICAL EXTERIOR CONTINUOUS FOOTING 1"x1'-0"



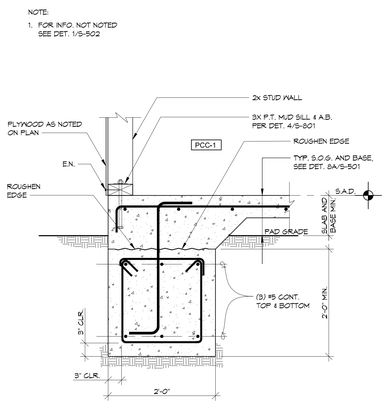
18

14

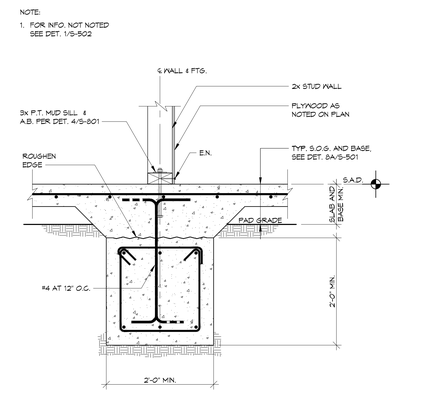
10 TYPICAL TIE-DOWN AT FOUNDATION 1"x1'-0"



6 EXTERIOR FOOTING 1"x1'-0"



2 TYPICAL INTERIOR CONTINUOUS FOOTING 1"x1'-0"



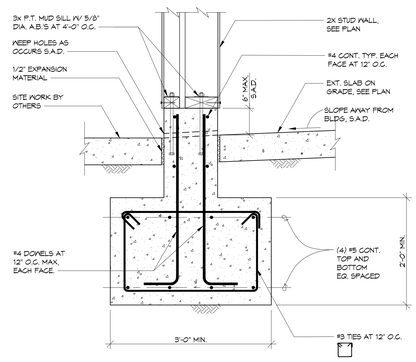
W-MU-S0-S5.2-02

19

15

11

7 FOOTING AT EXTERIOR PIERS 1"x1'-0"



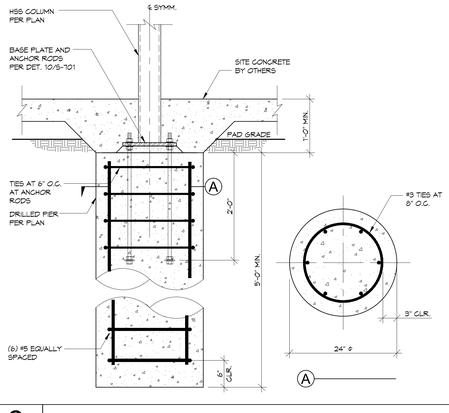
3

20

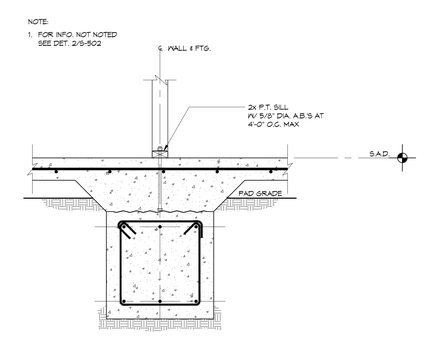
16

12

8 DRILLED PIER 1"x1'-0"



4 TYPICAL INTERIOR CONTINUOUS FOOTING AT BEARING NON-SHEAR WALL 1"x1'-0"



W-MU-S0-S5.2-04

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REGISTERED PROFESSIONAL ENGINEER 24020 Samuel Shotton STRUCTURAL STATE OF CALIFORNIA

HOHBACH-LEWIN, INC.
STRUCTURAL ENGINEERS
296 East 5th Ave Suite 302
Eugene, OR 97405
(541) 349-1701

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

REVISIONS TO THIS SHEET

REV.	DATE
PCC-3	2020-06-05
PCC-2	2020-05-15
PCC-1	2020-04-08

SHEET ISSUE DATE

2019-11-15	100% DD SET
2019-12-04	30% CD SET
2020-01-09	60% CD SET
2020-01-20	90% CD SET
2020-01-27	PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #:
P.I.C:
PM / PA:

Owner
DANCO

Project Name
SAGE COMMONS

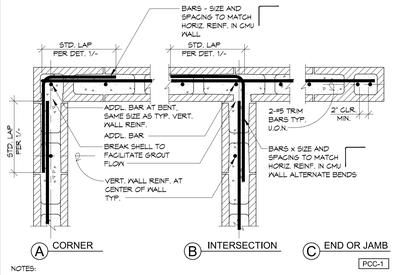
Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

TYPICAL FOUNDATION DETAILS

S-502

11/11/2019 5:37:33 PM

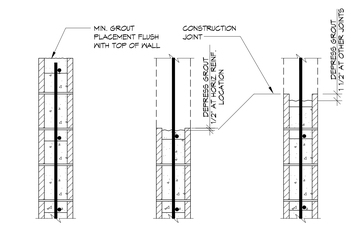
HOHBACH-LEWIN # 14200



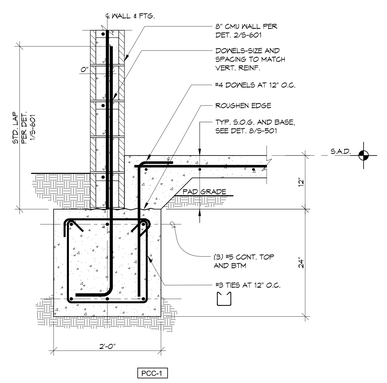
NOTES:

1. USE DOUBLE OPEN END BLOCKS TYP. USE SINGLE OPEN END BLOCKS AT CORNERS, WALL ENDS, JAMBS OR AT SPLIT FACE CMU.
2. PROVIDE VERTICAL DOWELS INTO CONCRETE STEM WALLS OR FOOTINGS. DOWELS SIZE AND SPACING TO MATCH VERTICAL REINF. IN CMU WALL.
3. HORIZ. REINF. AT WALL ENDS OR WHICH DO NOT CONTINUE INTO INTERSECTING WALLS SHALL TERMINATE WITH STD. 90° HOOK TURNED DOWN.

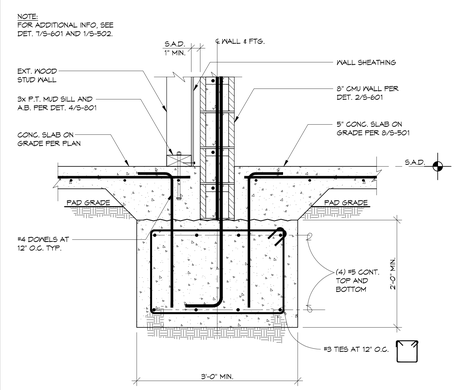
5 PLAN - TYPICAL CMU WALL WITH SINGLE CURTAIN REINFORCING — CMU-S6.1-05 — 1"=1'-0"



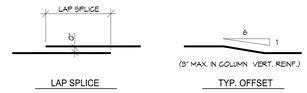
6 TYPICAL CMU GROUT CONSTRUCTION JOINTS — CMU-S6.1-10 — 1"=1'-0"



7 TYPICAL FOOTING AT TRASH ENCLOSURE — 1"=1'-0"



8 TRASH ENCLOSURE FTG AT BUILDING — 1"=1'-0"

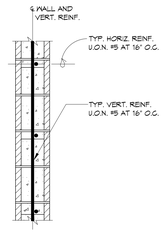


BAR SIZE	MINIMUM LAP SPLICE	
	MIN. 2" COVER AND CLEAR SPACING	MIN. 3 1/2" COVER AND CLEAR SPACING
#3	15"	15"
#4	25"	20"
#5	34"	25"
#6	54"	42"
#7	63"	51"
#8	72"	72"
#9	81"	81"

NOTE: SPLICE LENGTHS BASED ON:

1. f'm=1500 psi OR GREATER
2. GRADE 60 REINFORCING
3. STRENGTH DESIGN REQUIREMENTS

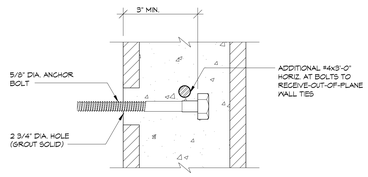
1 TYPICAL CMU STANDARD REINFORCING STEEL LAP SPLICES — CMU-S6.1-01 — N.T.S.



2 SECTION - TYPICAL CMU WALL REINFORCING — 1"=1'-0"

NOTES:

1. MINIMUM BOLT SPACING SHALL BE (12) BOLT DIAMETERS; PROVIDE EDGE DISTANCE OF (6) BOLT DIAMETERS AND/OR 6" MINIMUM TO END OF WALLS.
2. BOLTS SHALL BE ASTM A307, HEADED.



3 TYPICAL ANCHOR BOLTS CMU WALL — N.T.S.

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REGISTERED PROFESSIONAL ENGINEER — STRUCTURAL — STATE OF CALIFORNIA

HOHBACH-LEWIN, INC.
STRUCTURAL ENGINEERS
296 East 5th Ave Suite 302
Eugene, OR 97405
(541) 349-1701

REVISIONS TO THIS SHEET

REV.	DATE
PCC-3	2020-06-05
PCC-2	2020-05-15
PCC-1	2020-04-08

SHEET ISSUE DATE

2019-11-15	100% DD SET
2019-12-04	30% CD SET
2020-01-09	60% CD SET
2020-01-20	90% CD SET
2020-01-27	PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #:
P.I.C:
PM / PA:

Owner
DANCO

Project Name
SAGE COMMONS

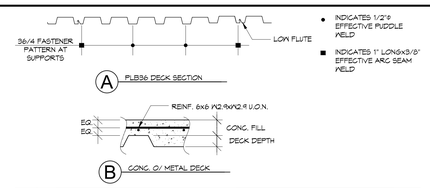
Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

TYPICAL CMU DETAILS

S-601

11/11/2019 5:37:33 PM

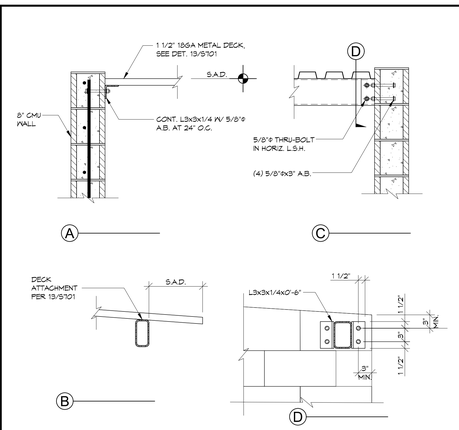
HOHBACH-LEWIN # 14200



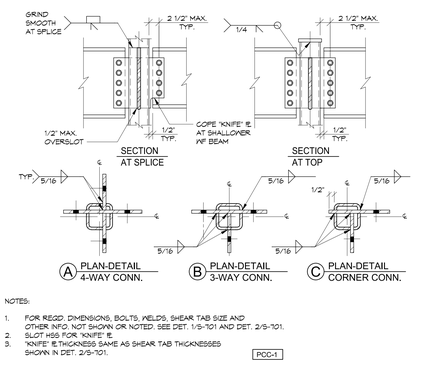
MARK	DECK TYPE & GAUGE	DECK DEPTH	STEEL DECK			DECK ATTACHMENT (2)		
			$I(in^4)$	$+S(in^3)$	$-S(in^3)$	AT SUPPORT MEMBERS	AT PARALLEL MEMBERS	AT SIDELAPS
D1	18GA VERCO PLB	1 1/2"	0.302	0.314	0.331	WELD EVERY OTHER FLUTE SEE (A)	1/2"ø EFFECTIVE PUDDLE WELD AT 12" O.C.	PUNCHLOK AT 24" O.C.
D2	18GA VERCO PLB FORMLOCK W/ 2" NRW CONC. FILL	1 1/2"	0.302	0.314	0.331	WELD EVERY OTHER FLUTE SEE (A)	1/2"ø EFFECTIVE PUDDLE WELD AT 12" O.C.	PUNCHLOK AT 24" O.C.

1. STRUCTURAL PROPERTIES OF STEEL DECK SYSTEM SHALL EQUAL OR EXCEED THE PROPERTIES LISTED ABOVE.
2. SEE MANUFACTURER'S SPECIFICATIONS FOR ADDITIONAL INFO.
3. DECK SHALL HAVE A MINIMUM OF 2" BEARING AT ALL SUPPORTING MEMBERS PERPENDICULAR TO DECK SPAN, AND 1" AT ALL PARALLEL MEMBERS.
4. DECK WELDING SHALL BE AS NOTED ABOVE.
5. CONTRACTORS OPTION TO SUBSTITUTE HILTI L.V.F. FOR WELDS ON A 1:1 BASIS. L.V.F. SHALL BE SELECTED BASED ON THE THICKNESS OF THE SUBSTRATE MATERIAL AS FOLLOWS:
   X-EDN22: 1/8" ≤ t ≤ 1/4"
   X-HSN24: 1/8" ≤ t ≤ 3/8"
   X-ENP1R: t ≥ 1/4"

13 STEEL DECK PROPERTIES N.T.S.



9 TRASH ENCLOSURE DETAILS 1"=1'-0"

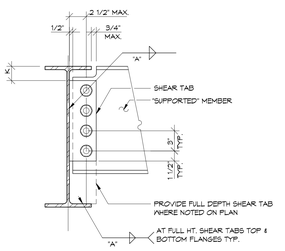


NOTES:
1. FOR REQD. DIMENSIONS, BOLTS, WELDS, SHEAR TAB SIZE AND OTHER INFO. NOT SHOWN OR NOTED, SEE DET. 1/S-101 AND DET. 2/S-101.
2. SLOT HSS FOR "KNIFE" ℄.
3. "KNIFE" ℄ THICKNESS SAME AS SHEAR TAB THICKNESSES SHOWN IN DET. 2/S-101.

PCC-1

5 TYPICAL WF BEAM TO HSS COLUMN CONNECTION ST-S7.10-05 N.T.S.

NOTES:
1. FOR NUMBER OF BOLTS, AND WELD AND SHEAR TAB SIZE, SEE DET. 2/-.
2. USE SIM. CONN AT SKEWED FRAMING CONDITION. SKEW SHEAR TAB TO MATCH SUPPORTED BEAM ALIGNMENT. TRIM FLANGE OF SUPPORTED MEMBER AT SKEW ANGLE.



1 TYPICAL ONE-SIDED SHEAR CONNECTION ST-S7.10-01 N.T.S.

BASE PLATE SCHEDULE	
COLUMN	BASE PLATE (THICKNESS)
HSS 6X4	5/8"
HSS 5X5	3/4"

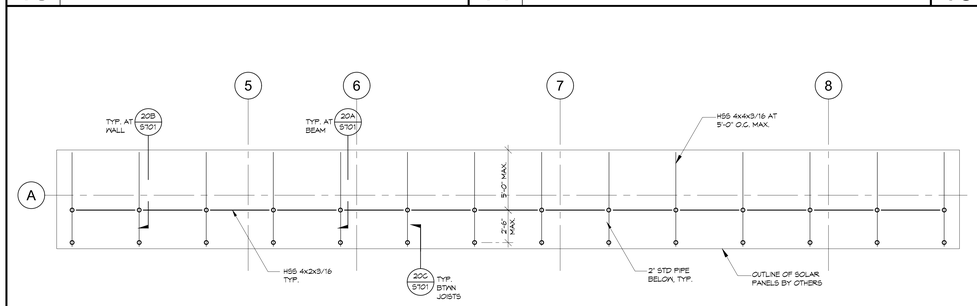
NOTES:
1. ALTERNATE: PROVIDE 1 5/16" DIA. HOLES AND ℄ 1/4"x2" SQ. WASHERS.
2. A 3" PROJECTION BEYOND WHAT IS REQD. FOR CONNECTION IS RECOMMENDED.

10 TYPICAL HSS COLUMN BASE PLATES 1"=1'-0"

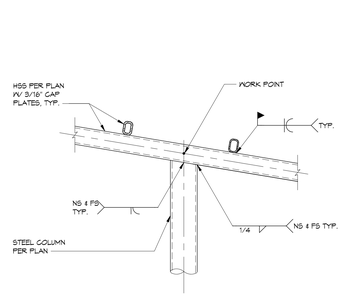
NOTES:
1. FOR BOLTS, WELDS, SHEAR TAB SIZE AND SUPPORTING MEMBER WHERE REQUIRED ANGLE IS OUTSIDE OF AWS PRE-QUALIFIED FILLET WELD LIMITATIONS.

NOMINAL SIZE OF SUPPORTED MEMBER	NO. OF 7/8" DIA. A325N BOLTS (U.O.N.)	FILLET WELD SIZE "A"	SHEAR TAB THICKNESS (IN.)
W8	2	5/16	3/8
W14	3	5/16	3/8
W18	4	5/16	3/8

2 TYPICAL BOLTED CONNECTION SCHEDULE

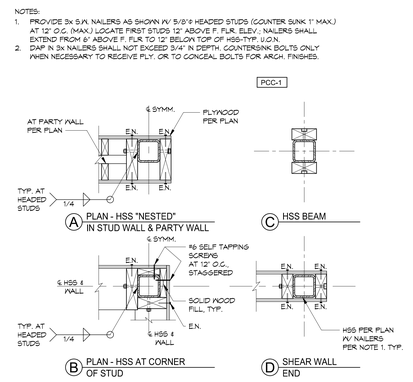


19 PV STEEL CANOPY PLAN 1/4"=1'-0"

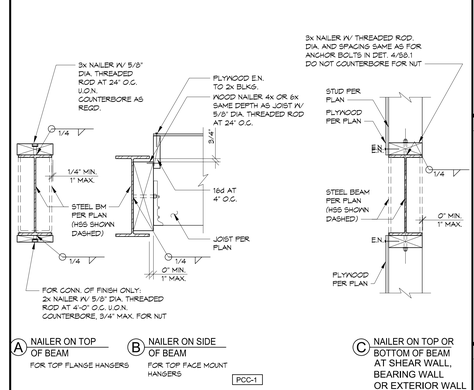


11 TYPICAL BIKE CANOPY COLUMN N.T.S.

NOTES:
1. PROVIDE 3x S.N. NAILERS AS SHOWN W/ 5/8"ø HEADED STUDS (COUNTER SUNK 1" MAX.) AT 12" O.C. (MAX.) LOCATE FIRST STUDS 12" ABOVE F. FLR. ELEV.. NAILERS SHALL EXTEND FROM 6" ABOVE F. FLR. TO 12" BELOW TOP OF HSS-TYP. U.O.N.
2. DAP IN 3x NAILERS SHALL NOT EXCEED 3/4" IN DEPTH. COUNTERSINK BOLTS ONLY WHEN NECESSARY TO RECEIVE PLY. OR TO CONCEAL BOLTS FOR ARCH. FINISHES.



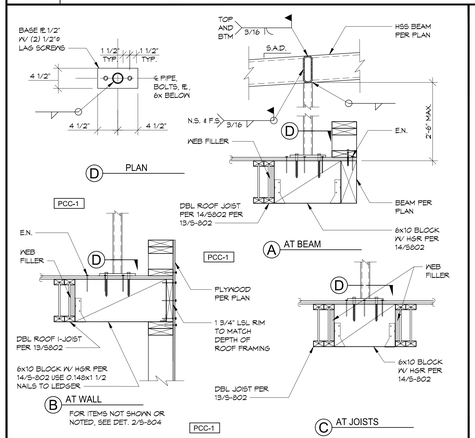
7 TYPICAL NAILER AND JAMB DETAIL AT HSS 1"=1'-0"



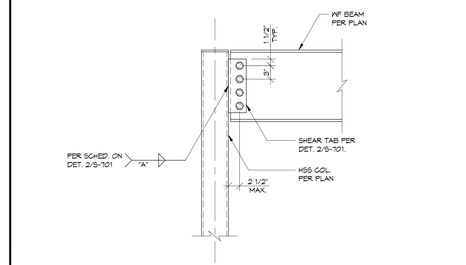
PCC-1

ST-S7.50-03

3 TYPICAL WOOD NAILERS AT WF MEMBERS N.T.S.



20 PV SUPPORT 1"=1'-0"



REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

4 WF BEAM TO COLUMN CONNECTION N.T.S.

ROWELL BROKAW
1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com
Architecture. Design. Strategy.

STAMP

HOHBACH-LEWIN, INC.
STRUCTURAL ENGINEERS
256 East 5th Ave Suite 302
Eugene, OR 97405
(541) 349-1701

REVISIONS TO THIS SHEET

REV.	DATE
PCC-3	2020-06-05
PCC-2	2020-05-15
PCC-1	2020-04-08

SHEET ISSUE DATE

2019-11-15	100% DD SET
2019-12-04	30% CD SET
2020-01-09	60% CD SET
2020-01-20	90% CD SET
2020-01-27	PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #:
P.I.C:
PM / PA:

Owner
DANCO

Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE SANTA ROSA, CA

TYPICAL STEEL DETAILS

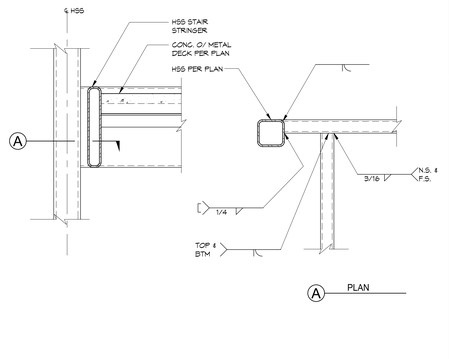
S-701

11/11/2019 5:37:33 PM

HOHBACH-LEWIN # 14200

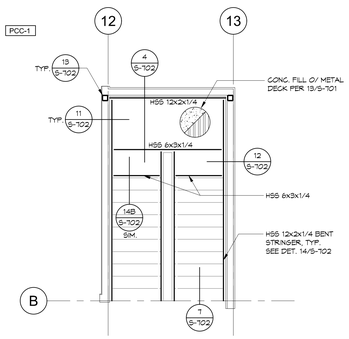
17

13 STAIR LANDING TO COL. CONNECTION 1 1/2"=1'-0"

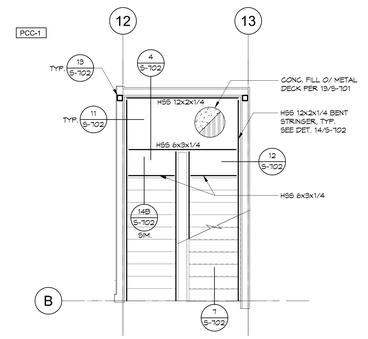


PCC-1

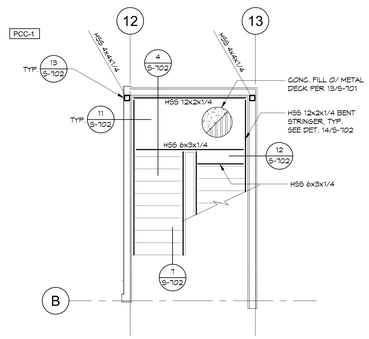
9 STAIR A & B - LEVEL 3 1/4"=1'-0"



5 STAIR A & B - LEVEL 2 1/4"=1'-0"

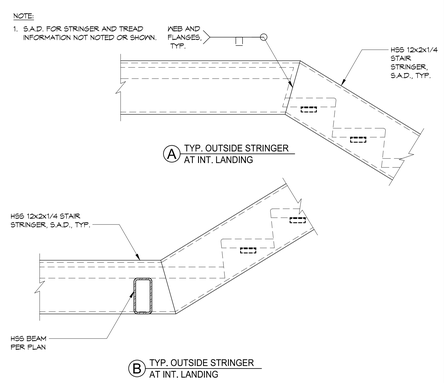


1 STAIR A & B - LEVEL 1 1/4"=1'-0"

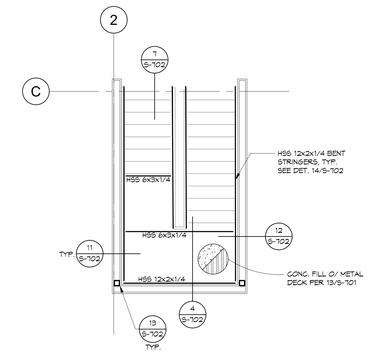


18

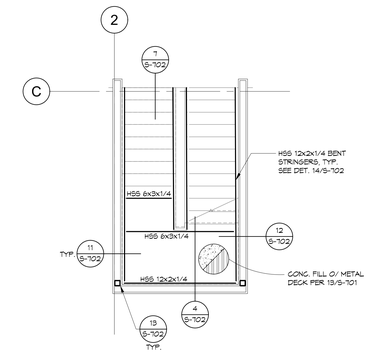
14 TYPICAL STAIR STRINGER 1"=1'-0"



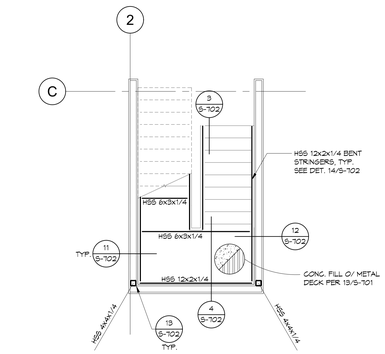
10 STAIR C - LEVEL 3 1/4"=1'-0"



6 STAIR C - LEVEL 2 1/4"=1'-0"



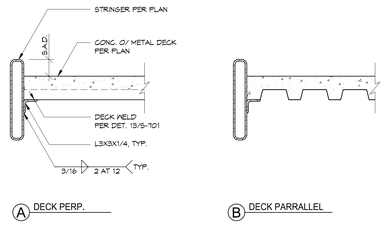
2 STAIR C - LEVEL 1 1/4"=1'-0"



19

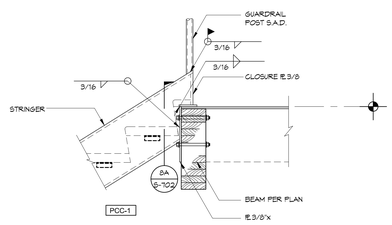
15

11 STAIR LANDING DETAIL 1 1/2"=1'-0"

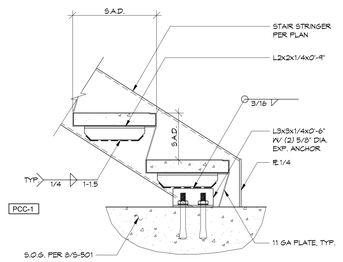


7 STAIR STRINGER DOWN AT WOOD FRAMED LANDING 1"=1'-0"

S1-S7.51-09



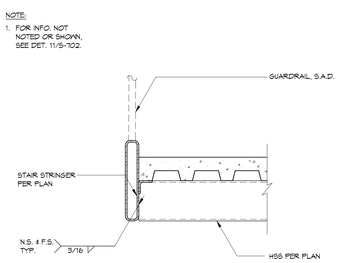
3 TYP. STAIR AT BASE 1 1/2"=1'-0"



20

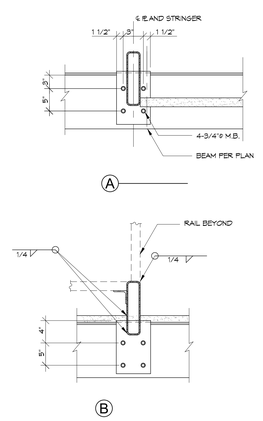
16

12 STAIR LANDING BEAM TO STRINGER 1 1/2"=1'-0"

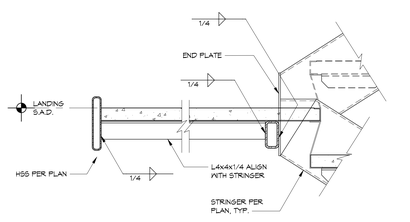


8 STAIR STRINGER SECTION AT WOOD FRAMED LANDING 1"=1'-0"

W-MU-S8.7-09



4 TYP. STAIR LANDING 1 1/2"=1'-0"



REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

11/11/2019 5:37:33 PM

ROWELL BROKAW
1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com
Architecture. Design. Strategy.

STAMP

HOHBACH-LEWIN, INC.
STRUCTURAL ENGINEERS
296 East 5th Ave Suite 302
Eugene, OR 97405
(541) 349-1701

REVISIONS TO THIS SHEET

REV.	DATE
PCC-3	2020-06-05
PCC-2	2020-05-15
PCC-1	2020-04-08

SHEET ISSUE DATE

2019-11-15	100% DD SET
2019-12-04	30% CD SET
2020-01-09	60% CD SET
2020-01-20	90% CD SET
2020-01-27	PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #:
P.I.C:
PM / PA:

Owner
DANCO

Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

TYPICAL STEEL DETAILS

S-702

HOHBACH-LEWIN # 14200

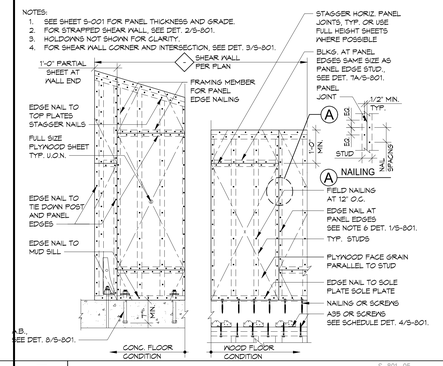
17

13

9

PCC-1

NOTES:
1. SEE SHEET S-001 FOR PANEL THICKNESS AND GRADE.
2. FOR STRAPPED SHEAR WALL, SEE DET. 2/S-801.
3. HOLDOWNS NOT SHOWN FOR CLARITY.
4. FOR SHEAR WALL CORNER AND INTERSECTION, SEE DET. 3/S-801.



5 SHEAR WALL ELEVATION S-801-05 N.T.S.

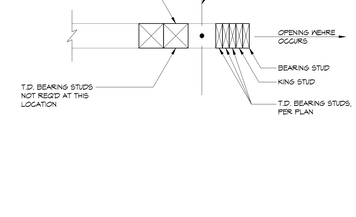
1. USE 0.148"x2 1/4" (10d SHORTS) COMMON WIRE NAILS U.O.N.
2. NUMBER SHOWN IN SYMBOL REPRESENTS PLYWOOD PANEL EDGE NAILING IN INCHES.
   DENOTES DOUBLE SHEAR WALL WITH PLYWOOD ON BOTH SIDES. NUMBER SHOWN IN SYMBOL REPRESENTS PLYWOOD PANEL EDGE NAILING IN INCHES.
3. SEE DET. 4/- FOR SHEAR WALL SCHEDULE.
4. SEE DET. 5/S-801 FOR SHEAR WALL ELEVATION AND FRAMING INFORMATION.
5. SEE DET. 2/S-801 FOR STRAPPED SHEAR WALL ELEVATION AND FRAMING INFORMATION.
6. ALL FRAMING MEMBERS RECEIVING EDGE NAILING FROM ABUTTING PLYWOOD PANELS SHALL BE 3X OR GREATER, SEE DET. 4/S-801 FOR NAILING PATTERN. ALTERNATIVELY, USE DOUBLE 2X STUDS NAILED TOGETHER WITH 16d NAILS SPACED TO MATCH SHEAR WALL E.N. SPACING, SEE NOTE 2.
7. FOLLOW MANUFACTURER'S INSTALLATION REQUIREMENTS.
8. A35, LTP4, OR RBC MAY BE USED FOR SHEAR CLIPS AS APPLICABLE PER DET. 4/S-801 SCHEDULE. INSTALL LTP4 IN HORIZONTAL ORIENTATION, AND WITH 0.131"x2 1/2" (8d COMMON) NAILS. 0.148"x2 1/2" (10d) NAILS SHALL BE USED WITH RBC SHEAR CLIPS.
9. SOLE PLATE NAILING AND SCREWS AT FLOOR SHALL BE SPACED PER SCHEDULE FOR SHEAR WALL BELOW AS SHOWN ON DET. 4A/S-801.
10. FOR ANCHOR BOLT AND MUD SILL DETAIL, SEE DET. 8/S-801.
11. 2x MUD SILL MAY BE USED AT 6" NAILED SHEAR WALLS WITH 5/8" DIA. ANCHOR BOLTS AT 3'-4" O.C. MINIMUM.

1 SHEAR WALL SCHEDULE NOTES S-801-01 N.T.S.

18

14

STRAP	MIN. FASTENERS PER SPLICE LENGTH	MIN. SPLICE LENGTH (Lsp)
CMST12	(25) 16d	22"
	(30) 10d	27"
CMST14	(18) 16d	16"
	(20) 10d	18"
CMSTC16	(13) 16d	12"
	(15) 10d	12"

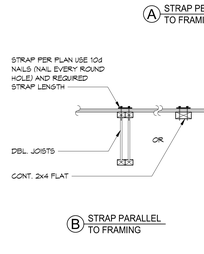


14 OVERLAP SPLICE DETAIL S-801-14 N.T.S.

10

TIEDOWN STRAP SCHEDULE

MARK	STRAP TYPE	MINIMUM END LENGTH	NAILING REQD. AT EACH END LENGTH	NAILING SPACING	ALLOW. UPLIFT	ALTERNATE STRAP	
						STRAP WITH 0.162"x2 1/2" NAILS	MAX. CLEAR SPAN
C	CMST14	15"	(16) 0.162"x2 1/2"	1 3/4"	3700#	MST48	16'
D	CMST14	20"	(22) 0.162"x2 1/2"	1 3/4"	5038#	MST60	24'
E	CMST14	23"	(26) 0.162"x2 1/2"	1 3/4"	6013#	MST60	18'
F	CMST14	26"	(28) 0.162"x2 1/2"	1 3/4"	6475#	N/A	N/A



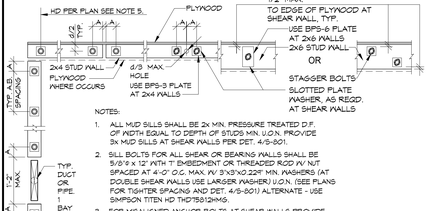
NOTES:
1. STRAP MAY BE INSTALLED OVER PLYWOOD.
2. EDGE NAIL PLYWOOD TO STRAPPED POST.

PCC-1

3. NAIL SPACING REFERS TO SPACING IN EACH OF (2) ROWS.
4. IF WOOD TENDS TO SPLIT, THEN DOUBLE THE MIN. END LENGTH & USE EVERY OTHER ROUND HOLE.

10 VERTICAL TIE DOWN STRAP AT FLOOR LINE S-801-10 N.T.S.

6



NOTES:
1. SEE GENERAL NOTES, SHEET S1.0 FOR PANEL THICKNESS AND GRADE.
2. SEE FRAMING PLANS FOR SPECIAL NAILING AND BLOCKING REQUIREMENTS.
3. INDIVIDUAL PANEL SHEETS SHALL BE 4 FT x 8 FT TYPICALLY. EDGE PIECE SHALL NOT BE LESS THAN 2 FT WIDE.
4. UNLESS OTHERWISE NOTED, NAILING SHALL BE

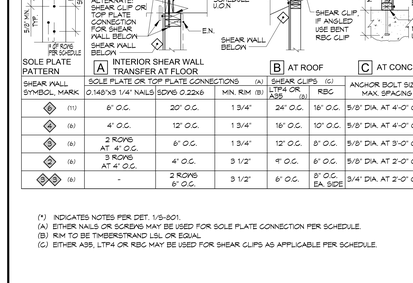
	NAIL SIZE	E.N.	B.N.	BLOCKING (5)
FLOORS	10d	6" O.C.	6" O.C.	NO
ROOFS	8d	6" O.C.	6" O.C.	NO

5. ALTERNATE - USE EQUAL STRENGTH CAPACITY RING SHANK OR SCREW TYPE NAILS (3x0.135) AT FLOORS.

6 HORIZONTAL WOOD STRUCTURAL PANEL SHEATHING LAYOUT S8.1-06A N.T.S.

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

NOTES:
1. HOLDOWNS LOCATIONS NOT COMPLETE FOR CLARITY.
2. FOR INFORMATION NOT NOTED, SEE DET. 5/S-801.



PCC-1

2 STRAPPED SHEAR WALL ELEVATION S-801-02 N.T.S.

20

16

16 TIE-DOWN BEARING POST DETAIL 1"x1'-0"

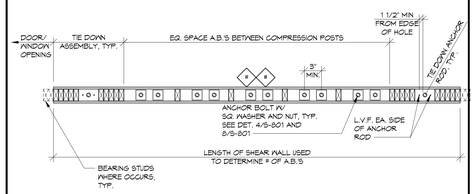
12

12 HORIZONTAL STRAP DETAIL 1"x1'-0"

19

15

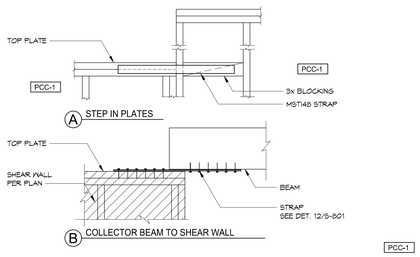
NOTES:
1. FOR INFO. NOT SHOWN OR NOTED, SEE DET. 8/S-801
2. PLYWOOD NAILING NOT SHOWN.



PLAN

15 SHEAR WALL A.B. LAYOUT S-801-15 3/4"x1'-0"

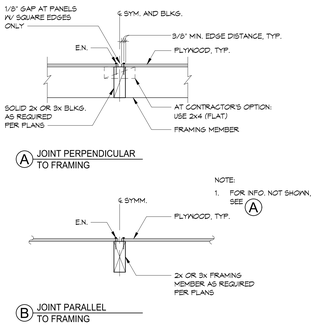
11



PCC-1

11 HORIZONTAL STRAP DETAIL S-801-11 1"x1'-0"

7

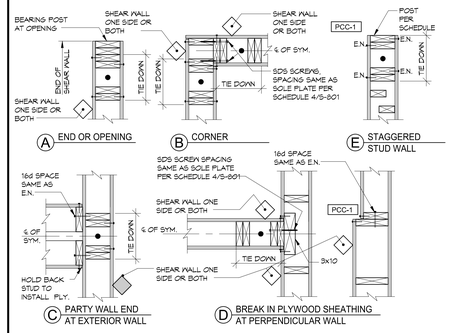


NOTES:
1. ALL SHEATHING NAILING SHOWN IS PANEL E.N. U.O.N.
2. FOR HOLDOWN INFO. SEE SHEET S-805 AND S-806.

PCC-1

7 PLYWOOD NAILING S-801-07 N.T.S.

3



PCC-1

3 SHEAR TRANSFER AND/ OR TIE DOWN LOCATION N.T.S.

8

NOTES:
1. ALL MUD SILLS SHALL BE 2x MIN. PRESSURE TREATED D.F. OF WIDTH EQUAL TO DEPTH OF STUDS MIN. U.O.N. PROVIDE 3x MUD SILLS AT SHEAR WALLS PER DET. 4/S-801.
2. SILL BOLTS FOR ALL SHEAR OR BEARING WALLS SHALL BE 5/8"ø x 12" WITH 7" EMBEDMENT OR THREADED ROD W/ NUT SPACED AT 4'-0" O.C. MAX. W/ 3"x3"x0.229" MIN. WASHERS (AT DOUBLE SHEAR WALLS USE LARGER WASHER) U.O.N. (SEE PLANS FOR TIGHTER SPACING AND DET. 4/S-801) ALTERNATE - USE SIMPSON TITEN HD THT75812HMG.
3. FOR MISALIGNED ANCHOR BOLTS AT SHEAR WALLS PROVIDE SLOTTED PLATE WASHERS. PROVIDE STANDARD CUT WASHER AND NUT OVER SLOTTED PLATE WASHER.
4. EACH SILL PIECE SHALL HAVE 2 BOLTS MINIMUM. LOCATE BOLTS CLEAR OF STUDS AND POSTS.
5. "A" DIMENSION SHALL BE 5 1/4" MINIMUM AND 1'-0" MAXIMUM A HD TIE-DOWN BOLT CAN SUBSTITUTE FOR AN ANCHOR BOLT IF IT IS INSTALLED WITH AN ADDITIONAL NUT AND WASHER SNUG TIGHT TO THE MUD SILL.
6. IF ANCHOR BOLT IS NOT PROTECTED BY HOT-DIP GALVANIZING, APPLY A PROTECTIVE COAT AROUND THE PORTION OF ANCHOR NEAR THE PRESERVATIVE TREATED WOOD MEMBER WITH CONSTRUCTION ADHESIVE OR CAULKING.
7. ALL NAILS INTO P.T. MUD SILL SHALL BE HOT-DIP GALVANIZED.

8 MUD SILL AND ANCHOR BOLTS REQUIREMENTS S-801-08A N.T.S.

4

SHEAR WALL SYMBOL, MARK	SOLE PLATE OR TOP PLATE CONNECTIONS		(A)	SHEAR CLIPS (C)		ANCHOR BOLT SIZE & MAX. SPACING
	0.148"x3 1/4" NAILS	SDWS 0.22x6	MIN. RIM (B)	LTP4 OR A35 (A)	RBC	
(11)	6" O.C.	20" O.C.	1 3/4"	24" O.C.	16" O.C.	5/8" DIA. AT 4'-0" O.C.
(6)	4" O.C.	12" O.C.	1 3/4"	16" O.C.	10" O.C.	5/8" DIA. AT 4'-0" O.C.
(6)	2 ROWS AT 4" O.C.	6" O.C.	1 3/4"	12" O.C.	8" O.C.	5/8" DIA. AT 3'-0" O.C.
(6)	3 ROWS AT 4" O.C.	4" O.C.	3 1/2"	4" O.C.	6" O.C.	5/8" DIA. AT 2'-0" O.C.
(6)	-	2 ROWS 6" O.C.	3 1/2"	6" O.C.	8" O.C. EA. SIDE	3/4" DIA. AT 2'-0" O.C.

(*) INDICATES NOTES PER DET. 1/S-801.
(A) EITHER NAILS OR SCREWS MAY BE USED FOR SOLE PLATE CONNECTION PER SCHEDULE.
(B) RIM TO BE TIMBERSTRAND LSL OR EQUAL
(C) EITHER A35, LTP4 OR RBC MAY BE USED FOR SHEAR CLIPS AS APPLICABLE PER SCHEDULE.

4 SHEAR WALL SCHEDULE - 15/32" CD PLYWOOD N.T.S.

ROWELL BROKAW
1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com
Architecture. Design. Strategy.

STAMP

HOHBACH-LEWIN, INC.
STRUCTURAL ENGINEERS
296 East 5th Ave Suite 302
Eugene, OR 97405
(541) 349-1701

REVISIONS TO THIS SHEET

REV.	DATE
PCC-3	2020-06-05
PCC-2	2020-05-15
PCC-1	2020-04-08

SHEET ISSUE DATE

2019-11-15	100% DD SET
2019-12-04	30% CD SET
2020-01-09	60% CD SET
2020-01-20	90% CD SET
2020-01-27	PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #:
P.I.C:
PM / PA:

Owner
DANCO

Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

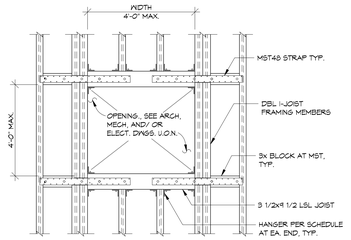
TYPICAL WOOD FRAMING DETAILS

S-801

11/11/2019 5:37:33 PM

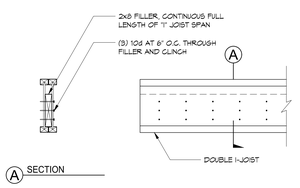
HOHBACH-LEWIN # 14200

NOTES:
1. PLYWOOD SHEATHING NOT SHOWN FOR CLARITY.
2. PROVIDE PLYWOOD EDGE NAILING AT EACH EDGE OF OPENING AND 20" PAST EDGE OF OPENING.



PLAN

17 TYPICAL LARGE ROOF OPENING — S8.21-11B — 1"x1'-0"



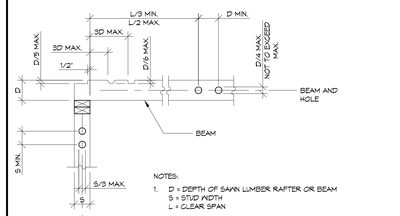
A SECTION

13 TYPICAL DOUBLE I-JOIST — W-SF-4J-S8.3-11 — 1"x1'-0"

BEAM SIZE	AT 2x4 WALL	AT 2x6 WALL
4x10	(2) 2x4	(2) 2x6
4x12	(2) 2x4	(2) 2x6
4x14	(2) 2x4	(2) 2x6
6x10	(3) 2x4	4x6
6x12	(3) 2x4	4x6
GLB 3 1/2 OR PSL 3 1/2	4x4	4x6
GLB 5 1/2 OR PSL 5 1/4	4x6	6x6
GLB 6 3/4	4x6	6x6
GLB 8 3/4 OR PSL 7	4x6	6x8

NOTES:
1. POST CAPS SHALL MATCH SIZE OF CONNECTING BEAM AND SHALL BE SELECTED FROM THE MOST CURRENT SIMPSON (STRONG-TIE CONNECTOR) CATALOG BASED ON THE MAXIMUM MANUFACTURER RECOMMENDATIONS CAPACITIES U.O.N.
2. FOR POST BASE CONNECTIONS, SEE DET. 11/S-802.
3. POSTS SPECIFIED ARE FOR SUPPORTING ONE END OF THE BEAM ONLY WHERE TWO BEAMS FRAME INTO THE SAME LOCATION, PROVIDE A POST UNDER EACH, U.O.N.
4. PROVIDE A SAME SIZE POST PER SCHEDULE AT EACH LEVEL BELOW FOR SUPPORT UNLESS BEAM OCCURS AT THE LEVEL BELOW.
5. FOR FLUSH BEAM TO POST CONNECTION AT WALL, USE DET. 8/S-802.
6. FOR FLUSH BEAM DEEPER THAN JOIST AT WALL, USE POST CONNECTION DET. 12/S-802.
7. FOR DROP BEAM TO POST CONNECTION USE DET. 10/S-802.

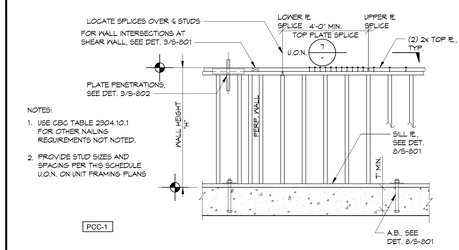
9 TYPICAL BEAM TO POST CONNECTION SCHEDULE — S-802-09A — N.T.S.



NOTES:
1. D = DEPTH OF SAWN LUMBER RAFTER OR BEAM
   9 = STUD WIDTH
   L = CLEAR SPAN
2. PREDRILL CORNERS OF NOTCHES.
3. NOTCH MAY OCCUR TOP OR BOTTOM, NOT BOTH.
4. NO HOLES WITHIN 2 INCHES OF MEMBER TOP OR BOTTOM.
5. FOR ALLOWABLE HOLES FOR TJI JOIST, SEE MANUFACTURE APPROVED RECOMMENDATIONS.

5 ALLOWABLE HOLES FOR STRUCTURAL SAWN LUMBER MEMBERS — S-802-05 — 1"x1'-0"

STUD WALL SCHEDULE			
3 STORIES	3RD	2ND	1ST
EXTERIOR **	2x6 AT 16" O.C.	2x6 AT 16" O.C.	2x6 AT 16" O.C.
INTERIOR	2x6 AT 16" O.C.	2x6 AT 16" O.C.	2x6 AT 16" O.C.
INTERIOR NON-BEARING	2x4 AT 16" O.C.	2x4 AT 16" O.C.	2x4 AT 16" O.C.
INTERIOR PARTY WALL	2x6 AT 16" O.C.	2x6 AT 16" O.C.	2x6 AT 16" O.C.



NOTES:
1. USE CBC TABLE 2304.10.1 FOR OTHER NAILING REQUIREMENTS NOT NOTED.
2. PROVIDE STUD SIZES AND SPACING PER THIS SCHEDULE U.O.N. ON UNIT FRAMING PLANS.

PCC-1

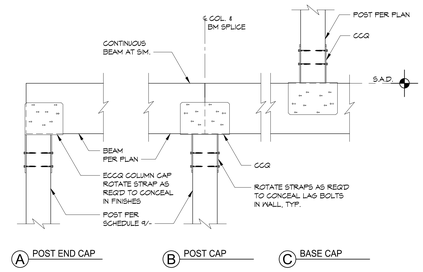
1 BEARING OR SHEAR WALL FRAMING — 1"x1'-0"

18

NOTES:
1. INSTALL PER MANUFACTURER'S INSTRUCTIONS. FILL ALL HOLES WITH FASTENERS SPECIFIED.
2. USE SKEWED AND/OR SLOPED HANGERS AS REQD.
3. HANGERS ARE TYP. U.O.N. IN DRAWINGS.
4. DO NOT INSTALL TOP FLANGE HANGERS AT ROOF.

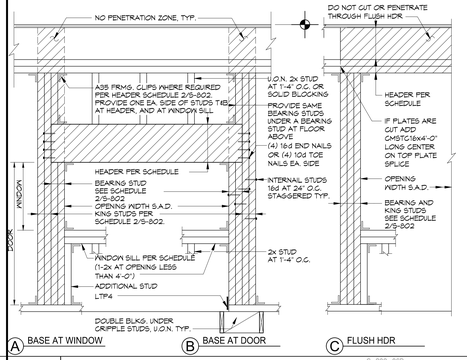
SIMPSON DESIGNATION			
	FACE MOUNT		TOP FLANGE
MEMBER	FLOOR	ROOF	FLOOR
2x6	LUS26	LUS26	JB26
3x6	U36	U36	V36
2x8	LUS28	LUS28	JB28
2x10	U210	U210	JB210A
(2) 2x10	U210-2	U210-2	HUS210-2TF
2x12	U210	U210	JB212A
2x14	U214	U214	JB214A
4x8	HU48 MAX	HU48 MAX	IV48
4x8	HU48 MAX	HU48 MAX	B48
4x10	HU410 MAX	HU410 MAX	B410
4x12	HU412	HU412	HUS412TF
6x8	HU68 MAX	HU68 MAX	HU68TF
6x10	HU610 MAX	HU610 MAX	H6LT6
6x12	HU612 MAX	HU612 MAX	GHLT6
11 7/8 TJI	U5	HU	IT5
14 TJI	U5	HU	IT5
1 3/4 LSL	HU	HU	IT5
GLB 5 1/2 / PSL 5 1/4	HGU5	HGU5	EGS/GLTV
3 1/2 PSL	HGU5	HGU5	LEG3/GLTV

14 HANGER SCHEDULE — S-802-14 — N.T.S.



A POST END CAP B POST CAP C BASE CAP

10 TYPICAL BEAM TO POST CONNECTION — SB.2-10A — 1"x1'-0"



A BASE AT WINDOW B BASE AT DOOR C FLUSH HDR

6 TYPICAL FRAMING OPENINGS IN WALL — S-802-06B — 1"x1'-0"

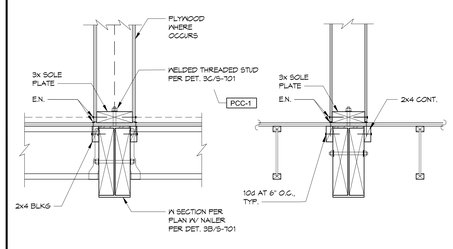
NOTES:
1. UNLESS OTHERWISE NOTED ON PLANS.
2. USE CBC TABLE 2304.10.1 FOR OTHER NAILING REQUIREMENTS NOT NOTED.
3. FOR ADDITIONAL FRAMING INFO, SEE DET. 6/S-802.
4. FLUSH HDR IN ROOF FRAMING SHALL MATCH ROOF JOIST DEPTH.

OPENING WIDTH "W"	EXTERIOR WALL (1), (2) PCC-1							
	BEARING STUD LEVEL			KING STUD	HDR SIZE (MIN)	WINDOW SILL	FRAMING CLIPS
	3RD	2ND	1ST				
4'-6"	2x6	2x6	2x6	2x6	4x10 OR 1 3/4x11 7/8 LSL	2x6	NONE
6'-0"	2x6	2x6	2x6	(2) 2x6	4x10 OR 1 3/4x11 7/8 LSL	2x6	NONE
8'-0"	2x6	(2) 2x6	(2) 2x6	(2) 2x6	9 1/2x11 7/8 LSL	(2) 2x6	A35'S WHERE SHOWN.
10'-0"	(2) 2x6	(2) 2x6	(2) 2x6	(2) 2x6	9 1/2x11 7/8 LSL	(2) 2x6	A35'S WHERE SHOWN.

2 WINDOW/ DOOR FRAMING SCHEDULE — N.T.S.

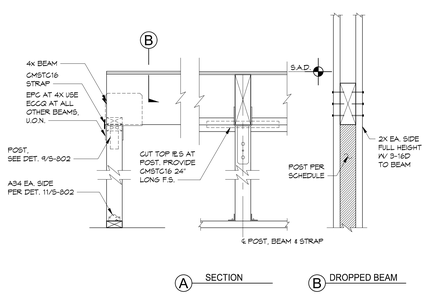
19

NOTES:
1. FOR INFO. NOT SHOWN OR NOTED, SEE DETAIL 15/S-802.



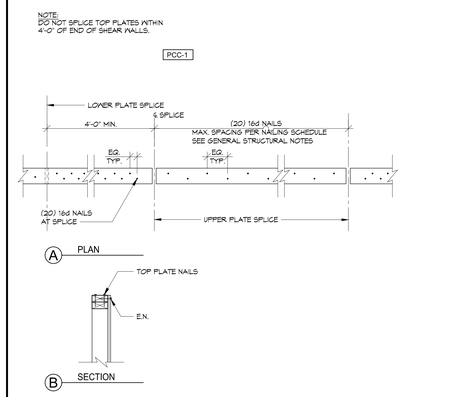
A BEARING WALL B JOIST PARALLEL

15 TYPICAL FLUSH BEAMS AT FLOOR — S-802-15 — 1"x1'-0"



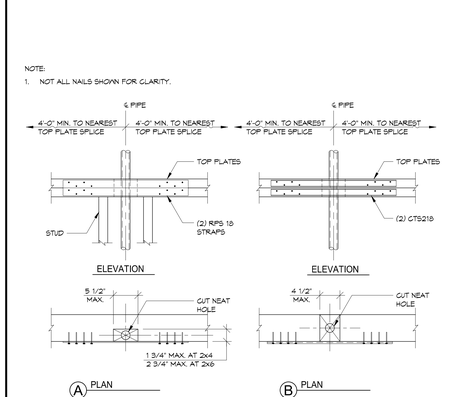
A SECTION B DROPPED BEAM

11 POST BASES — S-802-11 — 1"x1'-0"



A PLAN B SECTION

7 TOP PLATE SPLICE AT BEARING OR SHEAR WALLS — S-802-07A — 1"x1'-0"



A PLAN B PLAN

3 STRENGTHENING PENETRATION THROUGH BEARING OR SHEAR WALL — S-802-03 — 1"x1'-0"

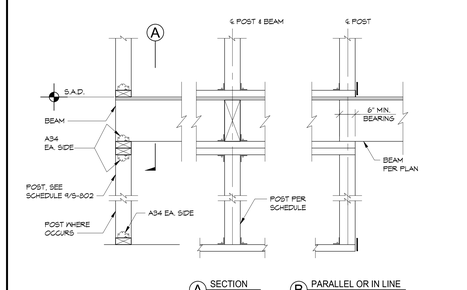
20

A BEARING WALL B JOIST PARALLEL

16 WALL ABOVE WF BEAM — S-802-16 — 1"x1'-0"

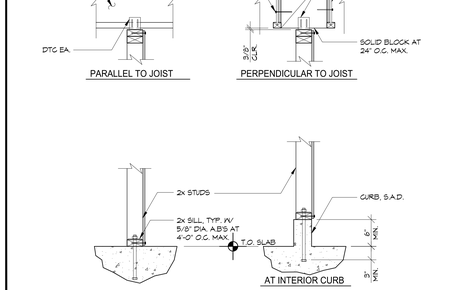
A SECTION B DROPPED BEAM

12 TYPICAL FLUSH BEAM DEEPER THAN JOIST TO POST CONNECTION AT WALL — S-802-12 — 1"x1'-0"



A SECTION B PARALLEL OR IN LINE WITH WALL (CORNER)

8 FLUSH BEAM TO POST CONNECTION AT WALL — S-802-08 — 1"x1'-0"



4 NON-STRUCTURAL PARTITION DETAILS — 1"x1'-0"

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

ROWELL BROKAW
1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com
Architecture. Design. Strategy.

STAMP

REGISTERED PROFESSIONAL ENGINEER — Samuel Hohbach — STRUCTURAL ENGINEER — STATE OF CALIFORNIA

HOHBACH-LEWIN, INC.
STRUCTURAL ENGINEERS
296 East 5th Ave Suite 302
Eugene, OR 97405
(541) 349-1701

REVISIONS TO THIS SHEET

REV.	DATE
PCC-3	2020-06-05
PCC-2	2020-05-15
PCC-1	2020-04-08

SHEET ISSUE DATE

2019-11-15	100% DD SET
2019-12-04	30% CD SET
2020-01-09	60% CD SET
2020-01-20	90% CD SET
2020-01-27	PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #:
P.I.C:
PM / PA:

Owner
DANCO

Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

TYPICAL WOOD FRAMING DETAILS

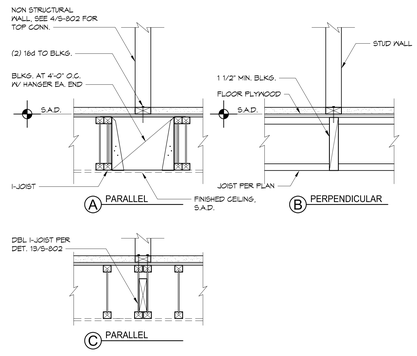
S-802

11/11/2019 5:37:33 PM

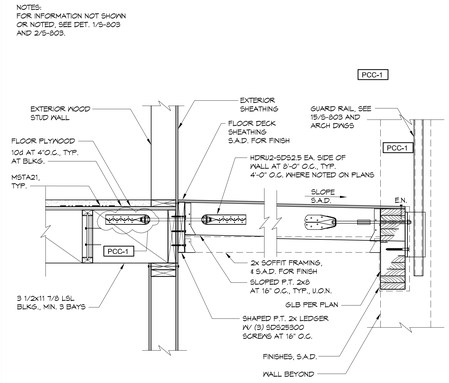
HOHBACH-LEWIN # 14200

17

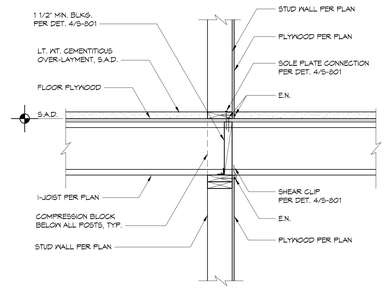
13 INTERIOR NON-SHEAR NON-BEARING WALL 1"=1'-0"



9 DETAIL AT DECK 1"=1'-0"

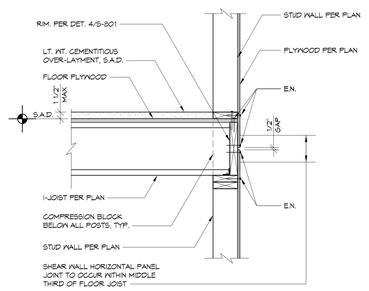


5 INTERIOR SINGLE SHEAR WALL PERPENDICULAR TO JOIST 1"=1'-0"

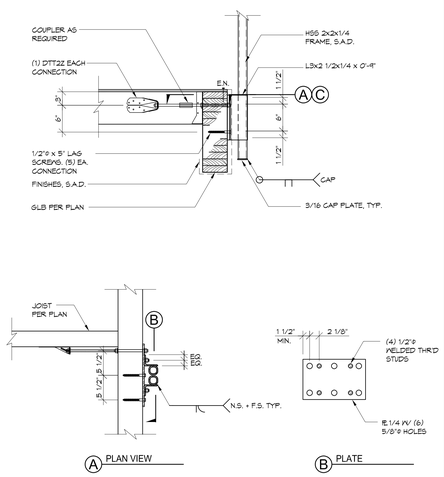


1 EXTERIOR SINGLE SHEAR WALL PERPENDICULAR TO JOIST 1"=1'-0"

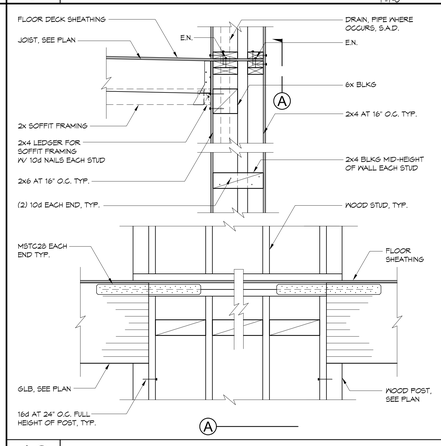
W-MU-IJ-SB.3-01A



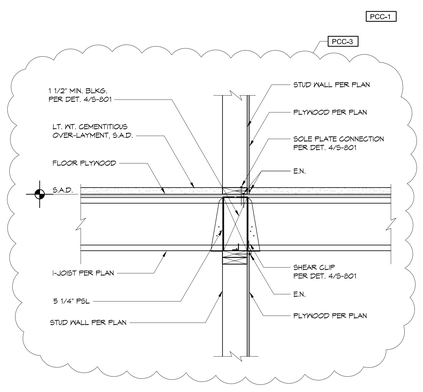
18



10 DETAIL AT EXTERIOR WALL PIER 1"=1'-0"

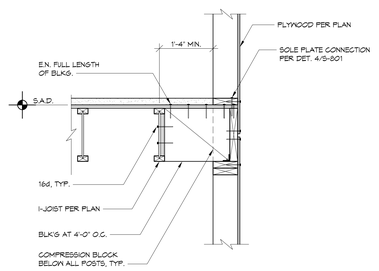


6 INTERIOR SHEAR WALL PERPENDICULAR TO JOISTS AT 1 HR RATED WALL 1"=1'-0"

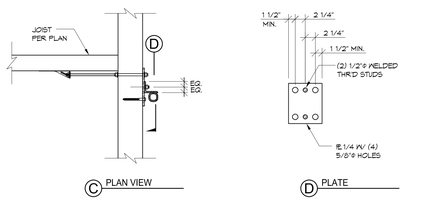


2 EXTERIOR SINGLE SHEAR WALL PARALLEL TO JOIST 1"=1'-0"

NOTES:
1. FOR INFO. NOT NOTED, SEE DET. 1/S-803.

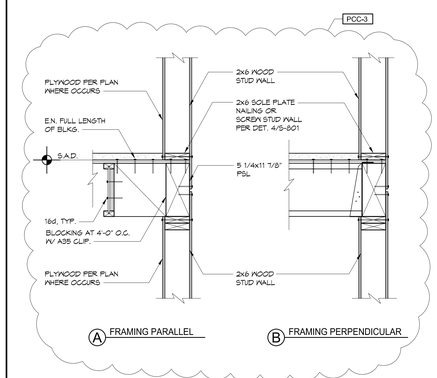


19



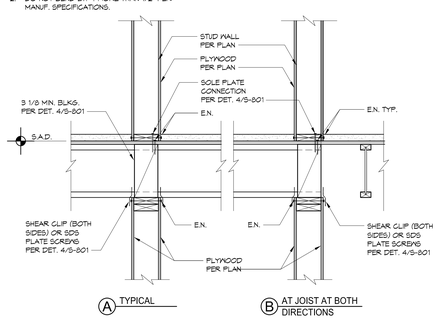
15 CONNECTION AT DECK RAIL 1"=1'-0"

11 INTERIOR WALL AT STAIRS/ ELEVATOR 1"=1'-0"



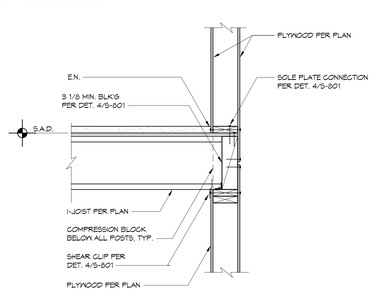
7 INTERIOR DOUBLE SHEAR WALL PERPENDICULAR TO JOIST 1"=1'-0"

NOTES:
1. FOR INFO, NOT NOTED SEE DET. 5/S-803 AND 8/S-803.
2. DO NOT BEND LTP4 MORE THAN 1/2" PER MANUF. SPECIFICATIONS.

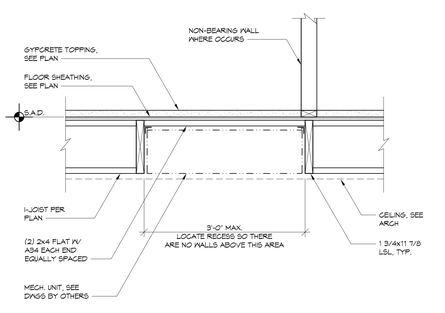


3 EXTERIOR DOUBLE SHEAR WALL PERPENDICULAR TO JOIST 1"=1'-0"

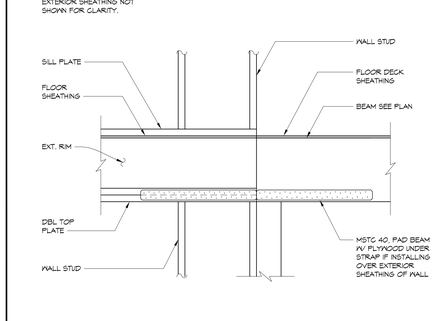
NOTES:
1. FOR INFO, NOT NOTED SEE DET. 1/S-803.
2. DO NOT BEND LTP4 MORE THAN 1/2" PER MANUF. SPECIFICATIONS.



20



16 FLOOR FRAMING AT MECH. UNIT 1"=1'-0"



12 INTERIOR WALL AT STAIRS 1"=1'-0"

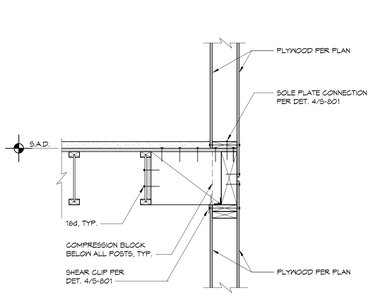
8

PCC-1

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

4 EXTERIOR DOUBLE SHEAR WALL PARALLEL TO JOIST 1"=1'-0"

NOTES:
1. FOR INFO, NOT NOTED SEE DET. 1/S-803 AND 3/S-803.
2. DO NOT BEND LTP4 MORE THAN 1/2" PER



ROWELL BROKAW
1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com
Architecture. Design. Strategy.

STAMP

HOHBACH-LEWIN, INC.
STRUCTURAL ENGINEERS
296 East 5th Ave. Suite 302
Eugene, OR 97405
(541) 349-1701

REVISIONS TO THIS SHEET

REV.	DATE
PCC-3	2020-06-05
PCC-2	2020-05-15
PCC-1	2020-04-08

SHEET ISSUE DATE

2019-11-15	100% DD SET
2019-12-04	30% CD SET
2020-01-09	60% CD SET
2020-01-20	90% CD SET
2020-01-27	PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #:
P.I.C:
PM / PA:

Owner
DANCO

Project Name
SAGE COMMONS

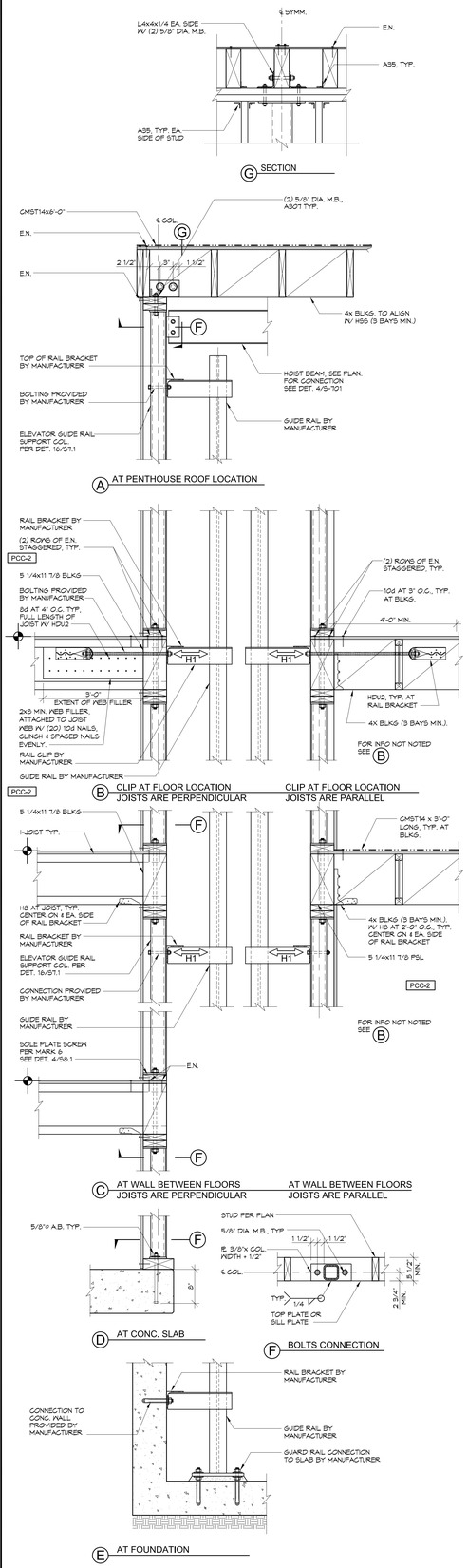
Project Address
80 COLLEGE AVENUE SANTA ROSA, CA

WOOD FRAMING DETAILS

S-803

11/11/2019 5:37:33 PM

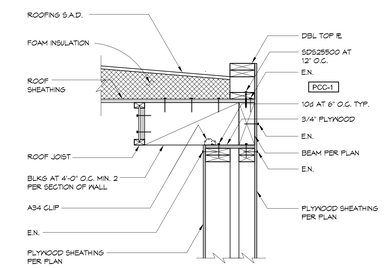
HOHBACH-LEWIN # 1420



20 ELEVATOR ATTACHMENT DETAIL 1"=1'-0"

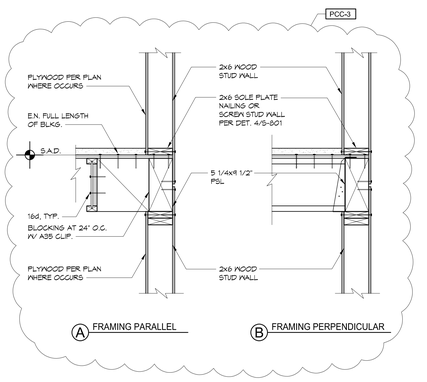
13

NOTES:
1. FOR ADDITIONAL INFO SEE DET. 3/S-804.



9 ROOF AT EXTERIOR WALL PER PIER 1"=1'-0"

14



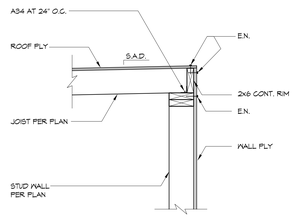
10 RATED SHAFT WALL AT ROOF FRAMING 1"=1'-0"

15

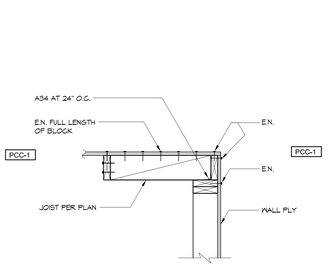
11 WALL AT ELEVATOR SHAFT 1"=1'-0"

16

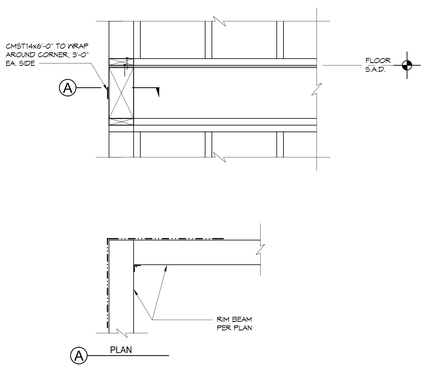
12



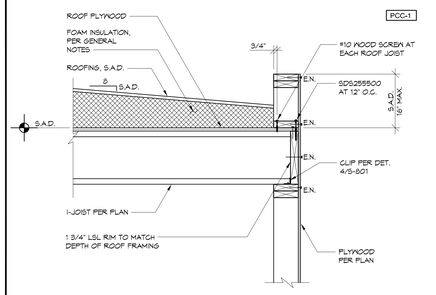
6 JOIST PERPENDICULAR AT ELEVATOR ROOF 1"=1'-0"



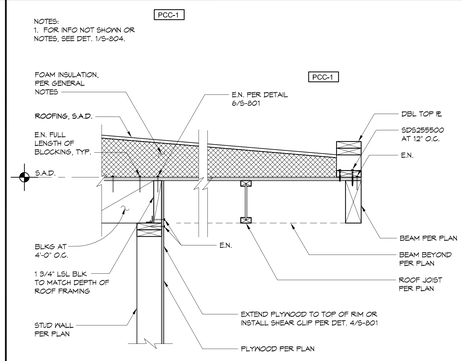
7 JOIST PARALLEL AT ELEVATOR ROOF 1"=1'-0"



8 ELEVATOR EXTERIOR WALL 1"=1'-0"

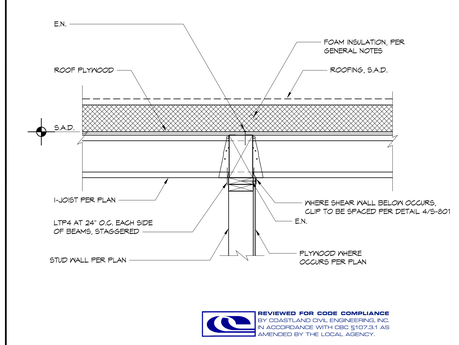


1 EXTERIOR WALL PERPENDICULAR TO RAFTERS 1"=1'-0"



2 EXTERIOR WALL PARALLEL TO RAFTERS 1"=1'-0"

3 EXTERIOR WALL AT OVERHANG 1"=1'-0"

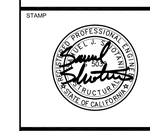


REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH OBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

4 INTERIOR WALL AT BEAM PERPENDICULAR TO JOISTS 1"=1'-0"

ROWELL BROKAW
1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com
Architecture. Design. Strategy.

STAMP



HOHBACH-LEWIN, INC.
STRUCTURAL ENGINEERS
296 East 5th Ave. Suite 302
Eugene, OR 97405
(541) 349-1701

REVISIONS TO THIS SHEET

REV.	DATE
PCC-3	2020-06-05
PCC-2	2020-05-15
PCC-1	2020-04-08

SHEET ISSUE DATE

2019-11-15	100% DD SET
2019-12-04	30% CD SET
2020-01-09	60% CD SET
2020-01-20	90% CD SET
2020-01-27	PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #:
P.I.C:
PM / PA:

Owner
DANCO

Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

WOOD FRAMING DETAILS

S-804

11/11/2019 5:37:33 PM

HOHBACH-LEWIN # 14200

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

GENERAL NOTES

1. THE SLACKJACK™ DEVICE COMPONENTS INCLUDE:
   A. SJA INNER AND OUTER SLEEVE CYLINDERS
   B. PRE-COMPRESSED COMPRESSION SPRING
   C. NUT: ALL NUTS TO CONFORM TO ASTM A563 GRADE "A" FOR 60 ksi AND GRADE "C" FOR 120 ksi TENSILE STRENGTH THREADED RODS.
   D. SWIVEL WASHER
2. ALL THREADED RODS SHALL CONFORM TO THE FOLLOWING SHOP DRAWING MARKS:
   1. Rx = ASTM A36 OR A307, fu = 60 ksi.
   2. RxM = ASTM F1554 GRADE 55, fu = 75 ksi.
   3. RxHS = ASTM A449 (fu = 120 ksi UP 1". fu = 105 ksi 1-1/8" THRU 2-1/2") or ASTM A193B7 (fu = 125 ksi).

   NOTES:
   a. x = ROD DIAMETER IN EIGHTS OF AN INCH. (ie. R7M = 7/8" ASTM F1554 GRADE 55)
   b. A36/A307 IS ZINC PLATED FINISH ONLY IF "M" AND "HS" ROD ARE USED ON SAME PROJECT, OTHERWISE PLAIN FINISH.
   c. "M" AND "HS" ROD ARE ALWAYS PLAIN FINISH.
3. **STANDARD AND HIGH STRENGTH (HS) RODS ARE BLACK STEEL, HS WILL BE MARKED WITH AN ORANGE TAPE.**
4. ALL BEARING PLATES ARE FABRICATED FROM ASTM A36 STEEL.
5. ALL STEEL BEARING PLATES SHALL HAVE FULL BEARING CONTACT AREA ON WOOD MEMBERS.
6. COUPLING NUT CONNECTION: CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THAT AT CONNECTIONS WITH THE SAME SIZE ROD THAT EACH ROD IS THREADED HALF WAY INTO COUPLER FROM EACH SIDE. HIGH STRENGTH (HS) COUPLERS SHALL BE USED WITH HIGH STRENGTH (HS) RODS UNLESS NOTED OTHERWISE. STANDARD STRENGTH COUPLERS ARE ZINC PLATED. HIGH STRENGTH (HS) ARE NOT PLATED. WHERE REDUCING COUPLERS ARE USED, COUPLER SHALL BE FULLY SEATED ON THE LARGER DIAMETER ROD BEFORE ENGAGING THE SMALLER DIAMETER ROD.
   SIGHT HOLES ARE PROVIDED ON STRAIGHT COUPLERS ONLY, SIGHT HOLES ARE NOT REQUIRED ON REDUCING COUPLERS.
7. COLORS REFERENCED ON THIS DRAWING ARE PROVIDED FOR CONVENIENCE TO THE INSTALLER AND FOR INSPECTION PURPOSES.
8. SILICONE OR CAULKING SHALL NOT BE PLACED INTO THE SLACKJACK DEVICE OR ANY DRILLED HOLE FOR RODS AT ANY TIME. CONTRACTOR SHALL USE FIRE RATED ROCKWOOL OR NON-HARDENING FIRESTOP. (PROVIDED BY OTHERS).
9. ANCHOR BOLT ASSEMBLIES AND EMBEDMENTS DEPTHS ARE PROVIDED BY OTHERS. ANCHOR BOLTS ARE SHOWN FOR CONVENIENCE TO THE INSTALLER.
10. HOLDOWN RUN ELEVATION VIEWS ARE DIAGRAMS AND MAY NOT DEPICT THE CORRECT NUMBER OF COLLECTOR STUDS REQUIRED. REFER TO COLLECTOR STUD PLAN DIAGRAMS FOR REQUIRED AMOUNT OF ADDITIONAL STUDS DEPENDING ON SHEAR WALL FRAMING TYPE. ADDITIONAL COMPRESSION STUDS OR POSTS MAY BE REQUIRED BY THE STRUCTURAL PLANS FOR DEAD AND LIVE LOADS.
11. THIS DRAWING WILL BE REVIEWED BY THE ENGINEER OF RECORD. UPON APPROVAL, U.N.O. THIS DRAWING REPLACES THE HOLDOWN SYSTEM PER THE STRUCTURAL PLANS.
12. ENGINEER OF RECORD SHALL VERIFY COMPLETE LOAD TRANSFER TO FOUNDATION LEVEL INCLUDING ALL CODE REQUIRED LOAD FACTORS.
13. WOOD FLOOR LEVELS SHOWN ARE RELATIVE TO THE CONCRETE FOUNDATION AND MAY NOT REFLECT THOSE SHOWN IN THE PLANS.
14. CONTRACTOR MAY SUBSTITUTE POSTS WITH 2x MEMBERS OR VICE VERSA ONLY IF TOTAL BEARING PLATE AREA ON BOTTOM PLATE IS EQUAL.
15. REFER TO THE COLLECTOR STUD SCHEDULE FOR WOOD STUD AND FLOOR PLATE MATERIALS USED IN LOAD CALCULATION ASSUMPTIONS. THE MATERIALS SHALL MATCH STRUCTURAL DRAWING REQUIREMENTS UNLESS NOTED OTHERWISE.
16. FULL HEIGHT COLLECTOR STUD REQUIREMENTS (NOT AT BRIDGE LEVEL – SEE 17A):
   A. FULL HEIGHT BUNDLED 2x, 3x COLLECTOR/COMPRESSION STUDS, THE OUTERMOST STUD FROM EACH SIDE OF THE THREADED ROD SHALL RECEIVE EDGE NAILING PER THE SHEAR WALL SCHEDULE OF THE STRUCTURAL PLANS. EDGE NAILING MAY BE STAGGERED/DISPERSED ON (2) MEMBERS MAX. ANY REMAINING INTERIOR STUDS SHALL RECEIVE FIELD NAILING PER THE SHEAR WALL SCHEDULE OF THE STRUCTURAL PLANS.
   B. FULL HEIGHT 4x COLLECTOR/COMPRESSION AT OUTERMOST POST FROM EACH SIDE OF THE THREADED ROD SHALL RECEIVE ONE (1) ROW OF EDGE NAILING PER THE SHEAR WALL SCHEDULE OF THE STRUCTURAL PLANS. ANY REMAINING 2x, 3x, 4x INTERIOR MEMBERS SHALL RECEIVE FIELD NAILING PER THE SHEAR WALL SCHEDULE OF THE STRUCTURAL PLANS.
   C. FULL HEIGHT 6x AND LARGER COLLECTOR/COMPRESSION AT OUTERMOST POST FROM EACH SIDE OF THE THREADED ROD SHALL RECEIVE TWO (2) ROWS OF EDGE NAILING PER THE SHEAR WALL SCHEDULE OF THE STRUCTURAL PLANS. ANY REMAINING INTERIOR POSTS CAN BE FIELD NAILED PER THE SHEAR WALL SCHEDULE OF THE STRUCTURAL PLANS.
   D. WINDOW AND DOOR TRIMMERS MAY BE USED AS HOLDOWN COLLECTOR STUDS IF THE FOLLOWING CONDITIONS ARE MET:
      – A CONTINUOUS VERTICAL LOAD PATH SHALL EXIST FROM WALL TOP PLTS. TO WALL BOTTOM PLTS.
      – ALL WOOD MEMBERS IN THE CONTINUOUS VERTICAL LOAD PATH SHALL BE NAILED ACCORDING TO THE EARTHBOUND SYSTEM REQUIREMENTS.
      – THE SHEAR PANEL MUST EXTEND TO INCLUDE THE TRIMMERS USED.
   E. COMPRESSION STUDS/POSTS SHALL BE INSTALLED SYMMETRICALLY ABOUT ROD. WHERE QUANTITY OF STUDS IS GREATER THAN THE SPACE BETWEEN ROD OR BEARING PLATE AND THE END OF SHEAR WALL THE ADDITIONAL REQUIRED STUDS SHALL BE ADDED TO THE OPPOSITE SIDE OF ROD (ASYMMETRICALLY).
   F. COLLECTOR STUDS DO NOT NEED TO BE STITCH NAILED.
17. COMPRESSION BRIDGE REQUIREMENTS:
   A. ALL FULL HEIGHT 2x AND 3x MEMBERS ON EITHER END OF THE BRIDGE SHALL RECEIVE EDGE NAILING PER THE SHEAR WALL SCHEDULE OF THE STRUCTURAL PLANS.
   B. ALL FULL HEIGHT 4x COLLECTOR/COMPRESSION POSTS ON EITHER SIDE OF THE BRIDGE SHALL RECEIVE ONE (1) ROW OF EDGE NAILING PER THE SHEAR WALL SCHEDULE OF THE STRUCTURAL PLANS.
   C. ALL FULL HEIGHT 6x AND LARGER COLLECTOR/COMPRESSION POSTS ON EITHER SIDE OF THE BRIDGE SHALL RECEIVE TWO (2) ROWS OF EDGE NAILING PER THE SHEAR WALL SCHEDULE OF THE STRUCTURAL PLANS.
   D. ALL BRIDGE TRIMMERS SHALL BE 2x MEMBERS ONLY (U.N.O.) AND SHALL BE INSTALLED SYMMETRICALLY AS SHOWN (U.N.O.).
   E. ALL BRIDGE TRIMMERS SHALL RECEIVE EDGE NAILING PER THE SHEAR WALL SCHEDULE OF THE STRUCTURAL PLANS (U.N.O.).
   F. THE BRIDGE TRIMMERS ADJACENT TO THE FULL HEIGHT STUDS (ONE EACH SIDE) SHALL RECEIVE FACE (STITCH) NAILING TWO (2) ROWS AT 4" O.C. TRIMMERS IN ADDITION TO ONE EACH SIDE DO NOT REQUIRE FACE (STITCH) NAILING. FACE NAILS MAY BE NAILED FROM THE OPPOSITE DIRECTION THAN THAT SHOWN IN THE DETAIL.
   G. FACE NAILS SHALL BE 10d MINIMUM. USE 16d NAILS MINIMUM WHEN NAILING THROUGH 3x STUDS INTO 2x BRIDGE TRIMMERS.
   H. IF MULTIPLE BRIDGE TRIMMERS ON EACH SIDE ARE REQUIRED, DO NOT INSTALL THE TRIMMERS IN ADDITION TO ONE EACH SIDE UNTIL THE FACE NAILING HAS BEEN INSPECTED AND APPROVED.
   I. BRIDGE BLOCK SHALL BE 4x6 DF IN 4x WALLS, 6x6 DF IN 6x WALLS (U.N.O.). BRIDGE BLOCK SHALL ALWAYS BE 5-1/2" TALL MINIMUM. NAILING OF BRIDGE BLOCK IS PROHIBITED.
   J. BRIDGE BLOCK SHALL BE DOUGLAS FIR CONSTRUCTION GRADE WITH MINIMUM 800 PSI ALLOWABLE BENDING STRESS. TIMBERSTRAND LSL BEAM MATERIAL OF EQUAL OR GREATER DIMENSION IS AN ACCEPTABLE ALTERNATE (U.N.O.).
   K. BRIDGE HEIGHTS SHOWN ARE THE MINIMUM HEIGHT FROM SUBFLOOR TO BOTTOM OF BRIDGE MEMBER.
   L. ONLY COMMON NAILS SHALL BE USED.
18. DRILLED OR BORED HOLES: DRILLED HOLES THROUGH VERTICAL COMPRESSION MEMBERS SHALL NOT EXCEED 25% OF THE STUD OR POST WIDTH, FOR EXAMPLE: 7/8" DIA. HOLE IS MAXIMUM ALLOWED IN 3 1/2" WIDE STUD OR POST UNLESS APPROVED BY EOR. THE BORED HOLE SHALL BE AT LEAST 5/8" AWAY FROM EDGE OF STUD.
19. CUTTING AND NOTCHING: WOOD VERTICAL COMPRESSION MEMBERS ARE PERMITTED TO BE CUT OR NOTCHED TO A DEPTH NOT EXCEEDING 25% OF IT'S WIDTH PER 2308.9.10 PER IBC 2015.
20. STUD/POST/TRIMMER NOTCHING AT CONFLICTING BEARING PLATES INTERFERENCE.
   A. THE MEMBER SHALL BE NOTCHED TO THE EXACT THICKNESS AND AREA OF THE STEEL PLATE TO MAINTAIN THE FULL BEARING AREA OF THE NOTCHED COMPRESSION MEMBER.
   B. IF THE REQUIREMENTS OF ITEM "A" ABOVE ARE NOT MET, THEN ADDITIONAL COMPRESSION MEMBERS SHALL BE ADDED TO ACHIEVE THE REQUIRED TOTAL BEARING AREA. ADDITIONAL COMPRESSION MEMBERS SHALL RECEIVE SHEAR PANEL NAILING PER THE REQUIREMENTS OF THE EARTHBOUND SHOP DRAWINGS.
   C. STEEL SHIMS OR FULL WIDTH PLATE MAY BE USED IN LIEU OF NOTCHING.
21. MINIMUM REQUIREMENTS FOR BLOCKING IN THE JOIST SPACE AT HOLDOWN LOCATIONS ARE:
   A. BLOCKING SHALL SPAN THE FULL WIDTH OF THE SHEAR WALL TOP PLATE OF THE FLOOR LEVEL BELOW THE JOIST SPACE.
   B. BLOCKING SHALL EQUAL THE OUTERMOST DIMENSIONS OF THE "FOOTPRINT" OF THE TOTAL HOLDOWN WOOD COMPRESSION MEMBERS OF THE FLOOR LEVELS BELOW AND ABOVE THE JOIST SPACE.
   C. THE SPACE BETWEEN BLOCKING WHERE THE ROD IS LOCATED SHALL NOT EXCEED 3".
   D. COMPRESSION CAPACITIES OF BLOCKING MATERIALS SHALL BE EQUAL TO OR GREATER THAN THE RELATED JOISTS. THE VERTICAL DIMENSIONS SHALL BE EQUAL. SEE NOTE "E" FOR EXCEPTION.
   E. VERTICAL GRAIN BLOCKING SHALL BE TRIMMED TO ACCOUNT FOR POSSIBLE SHRINKAGE OF THE JOISTS. CONTACT JOIST MANUFACTURER FOR SHRINKAGE INFORMATION.
   F. FLOOR JOISTS SHALL NOT BE REMOVED TO ALLOW FOR THE INSTALLATION OF BLOCKING. BLOCKING IS IN ADDITION TO THE EXISTING JOISTS.
   G. WEB STIFFENERS SHALL BE ADDED TO ENGINEERED LUMBER "I" JOISTS AND "I" JOIST MATERIAL USED AS BLOCKING. SEE NOTE "B" ABOVE.

JOB SPECIFIC NOTES:

1. CONSIDER ROD LENGTH REQUIREMENTS OF UPPER LEVELS BEFORE CUTTING LOWER LEVEL RODS.

X
Y | Z

X = DETAIL NUMBER
Y = ELEVATION SHEET
Z = DETAIL DRAWN ON

EARTHBOUND DETAIL BUBBLE LEGEND

ABBREVIATIONS

AB	ANCHOR BOLT PER ROD COMPONENT SCHEDULE
BLKG	BLOCKING
C	COUPLER
FND	FOUNDATION
G	HOT DIPPED GALVANIZED ROD OR GALV. TAPPED COMPONENT
GG	COUPLER GALV. TAPPED ON BOTH ENDS
GS	COUPLER GALV. TAPPED ON SMALLER END
CB	CORROSION BARRIER
HS	HIGH STRENGTH
SJA 4XY	SLACKJACK™ COMPONENT (X) = SLACKJACK DEVICE SERIES TRAVEL 1=1 INCH (RED), 2=2 INCHES (GREEN) (Y) = ROD SIZE
JST	JOIST
MIN.	MINIMUM
O.C.	ON CENTER
P	PLATE
PG	PERPENDICULAR TO GRAIN
R	ROD
U.N.O.	UNLESS NOTED OTHERWISE

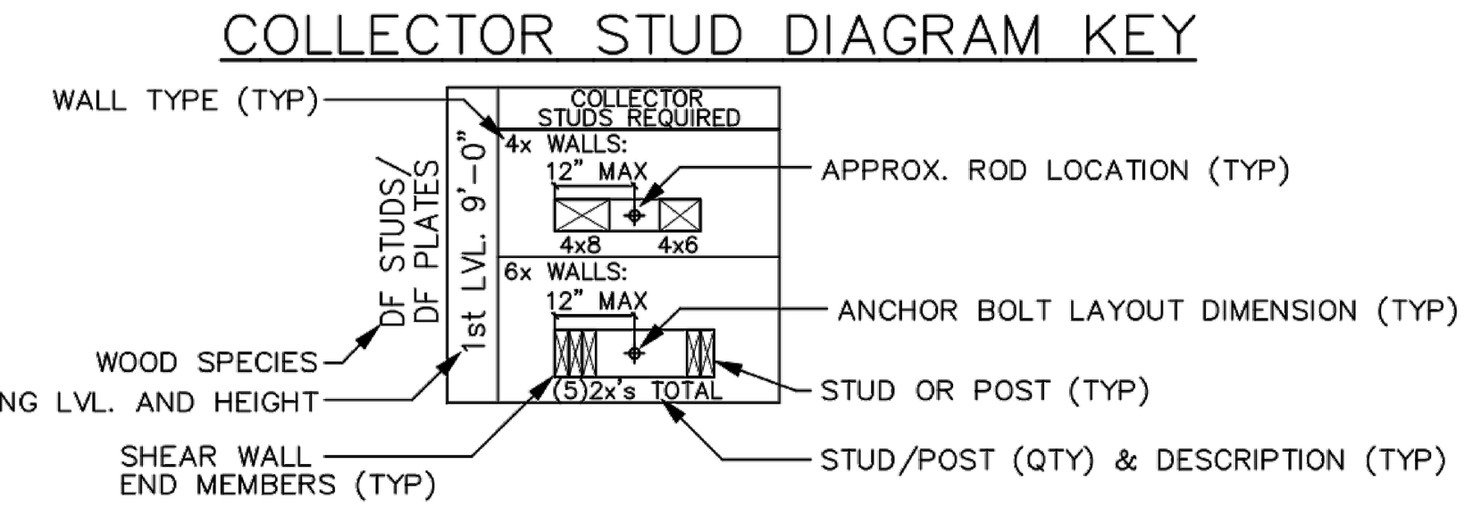
SHOP DRAWING DISCLAIMER

THESE SHOP DRAWINGS ILLUSTRATE THE DETAILS OF THE EARTHBOUND SEISMIC HOLDOWN SYSTEM. THEY WERE PREPARED IN CONFORMANCE WITH THE STRUCTURAL DESIGN PROVIDED TO EARTHBOUND CORPORATION ("EB CORP.") BY THE PROJECT OWNER OR ITS REPRESENTATIVE.

EB CORP. TOOK NO PART IN THE PREPARATION OR REVIEW OF SAID STRUCTURAL DESIGN AND EB CORP DISCLAIMS ANY LIABILITY FOR IT. THE STAMP OR SEAL OF AN EB CORPORATION EMPLOYEE OR AGENT ON THESE SHOP DRAWINGS PERTAIN ONLY TO THE TRANSFER OF THE FORCES REQUIRED BY THE ENGINEER OF RECORD ON THE STRUCTURAL DRAWINGS AND NOT TO THE REVIEW AND ADEQUACY OF THE STRUCTURAL DESIGN.

NO WARRANTY, EXPRESSED OR IMPLIED, AS TO THE ADEQUACY OF THE STRUCTURAL DESIGN IS MADE BY ANY SUCH STAMP OR SEAL.

COLLECTOR STUD DIAGRAM KEY



1. * (ASTERISK) INDICATES 1/2 HEIGHT TRIMMER (UNLESS NOTED OTHERWISE) FOR COMPRESSION BRIDGE.
2. COLLECTOR STUDS SHOWN ARE THE MINIMUM REQUIREMENT TO EQUAL THE UPLIFT TENSION FORCES CALLED OUT BY THE STRUCTURAL DWGS. ADDITIONAL COMPRESSION STUDS OR POSTS MAY BE REQUIRED BY STRUCTURAL ENGINEER OF RECORD. APPLIES TO ALL HOLDOWN RUNS.

COMPONENT SELECTION SCHEDULES

PCC-1

EARTHBOUND THREADED ROD CAPACITIES (IBC 2015/CBC 2016)

ROD SIZE	ROD SIZE (INCHES)	ALLOWABLE TENSION LOAD IBC 2015/CBC 2016	ROD REMARKS	SLACKJACK SIZE
R4	1/2" DIA.	4,470 LBS	ASTM A 307 (UNC)	MJ100, MJ200
R5	5/8" DIA.	7,120 LBS	ASTM A 307 (UNC)	SJA 215, 225, 415, 425
R6	3/4" DIA.	10,540 LBS	ASTM A 307 (UNC)	SJA 216, 226, 416, 426, HJA 716, 726
R7	7/8" DIA.	14,540 LBS	ASTM A 307 (UNC)	SJA 217, 227, 417, 427, HJA 717, 727
R8	1" DIA.	19,080 LBS	ASTM A 307 (UNC)	SJA 218, 228, 418, 428, HJA 718, 728
R9	1 1/8" DIA.	24,040 LBS	ASTM A 307 (UNC)	SJA 219, 229, 419, 429, HJA 719, 729
R10	1 1/4" DIA.	30,530 LBS	ASTM A 307 (UNC)	SJA 4110, 4210, HJA 7110, 7210, HJS 4110, 4210
R12	1 1/2" DIA.	44,270 LBS	ASTM A 307 (UNC)	SJST 4112, 4212, HJA 7112, 7212, HJS 4112, 4212
R14	1 3/4" DIA.	59,830 LBS	ASTM A 307 (UNC)	-----
R16	2" DIA.	78,690 LBS	ASTM A 307 (UNC)	-----
R6M	3/4" DIA.	13,170 LBS	ASTM F1554 GR55 (UNC)	SJA 216, 226, 416, 426, HJA 716, 726
R7M	7/8" DIA.	18,180 LBS	ASTM F1554 GR55 (UNC)	SJA 217, 227, 417, 427, HJA 717, 727
R8M	1" DIA.	23,850 LBS	ASTM F1554 GR55 (UNC)	SJA 218, 228, 418, 428, HJA 718, 728
R9M	1 1/8" DIA.	30,050 LBS	ASTM F1554 GR55 (UNC)	SJA 219, 229, 419, 429, HJA 719, 729
R10M	1 1/4" DIA.	38,160 LBS	ASTM F1554 GR55 (UNC)	SJA 4110, 4210, HJA 7110, 7210, HJS 4110, 4210
R12M	1 1/2" DIA.	55,330 LBS	ASTM F1554 GR55 (UNC)	SJST 4112, 4212, HJA 7112, 7212, HJS 4112, 4212
R14M	1 3/4" DIA.	74,790 LBS	ASTM F1554 GR55 (UNC)	-----
R6HS	3/4" DIA.	21,950 LBS	ASTM A193 B7 (UNC)	SJA 216, 226, 416, 426, HJA 716, 726
R7HS	7/8" DIA.	30,300 LBS	ASTM A193 B7 (UNC)	SJA 217, 227, 417, 427, HJA 717, 727
R8HS	1" DIA.	39,750 LBS	ASTM A193 B7 (UNC)	SJA 218, 228, 418, 428, HJA 718, 728
R9HS	1 1/8" DIA.	50,090 LBS	ASTM A193 B7 (UNC)	SJA 219, 229, 419, 429, HJA 719, 729
R10HS	1 1/4" DIA.	63,600 LBS	ASTM A193 B7 (UNC)	SJA 4110, 4210, HJA 7110, 7210, HJS 4110, 4210
R12HS	1 1/2" DIA.	92,220 LBS	ASTM A193 B7 (UNC)	SJST 4112, 4212, HJA 7112, 7212, HJS 4112, 4212
R14HS	1 3/4" DIA.	124,650 LBS	ASTM A193 B7 (UNC)	-----

NOT USED

EARTHBOUND BEARING PLATE CAPACITIES (DF)

PLATE SIZE	DIFFERENTIAL LOAD	COLOR CODE	PLATE DIMENSIONS (INCHES) WIDTH	LENGTH	THICK.
P6	6,650 LBS	GREEN	3"	3.5"	1/4"
P8	8,470 LBS	BLACK	3-1/4"	4.25"	1/4"
P10	10,510 LBS	BLUE	3-1/4"	5"	3/8"
P12	12,270 LBS	GRAY	3-1/4"	6"	5/8"
P14	14,460 LBS	RED	3-1/4"	7"	3/4"
P16	16,650 LBS	TAN	3-1/4"	8"	3/4"
P18	18,840 LBS	YELLOW	3-1/2"	9"	1"
P20	21,020 LBS	BROWN	3-1/2"	10"	1"
P22	23,210 LBS	WHITE	3-1/2"	11"	1 1/4"
P24	24,310 LBS	GOLD	3-1/2"	11.5"	1 1/4"
P26	26,490 LBS	ORANGE	3-1/2"	12.5"	1 1/2"

SJA ROD SIZE CODES

PART NO.	ROD DIAMETER	ROD SIZE	WASHER COLOR
MJ100 or MJ200	1/2"	R4	PURPLE
SJA 2x5 or 4x5	5/8"	R5	BLACK
SJA 2x6 or 4x6, HJA 7x6	3/4"	R6 or R6HS	GRAY
SJA 2x7 or 4x7, HJA 7x7	7/8"	R7 or R7HS	BLUE
SJA 2x8 or 4x8, HJA 7x8	1"	R8 or R8HS	YELLOW
SJA 2x9 or 4x9, HJA 7x9	1 1/8"	R9 or R9HS	WHITE
SJA 4x10, HJA 7x10, HJS 4x10	1 1/4"	R10 or R10HS	GREEN
SJST 4x12, HJA 7x12, HJS 4x12	1 1/2"	R12 or R12HS	RED

"x" = SLACKJACK TRAVEL IN "INCHES"

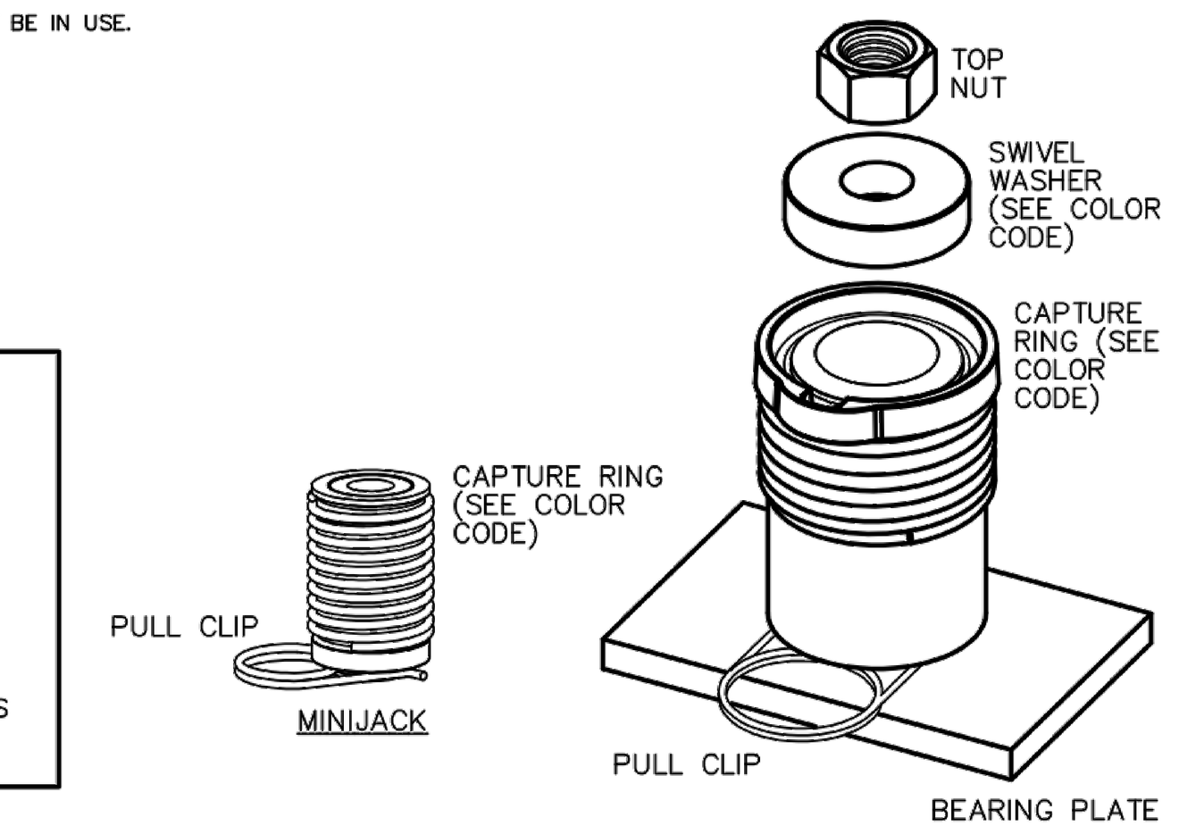
NOTES:

1. TENSION LOAD WAS CALCULATED FROM THE FOLLOWING EQUATION:
   A. ASTM A 307 Threaded Rod Capacities are F'u = 60,000 psi. UNC thread pitch
   M Rods are based on ASTM F1554 GR55, F'u = 75 ksi.
   HS Rods are based on ASTM A193 B7, F'u = 125 ksi
   B. The IBC 2015 column is calculated in accordance to Section 1905 and ASCE 7-10.
2. PLATE STEEL SHALL BE ASTM A36: F'u = 60,000 PSI.
3. SUBSTITUTIONS OF DESIGNATED BEARING PLATE SHALL NOT BE PERMITTED, OBTAIN WRITTEN APPROVAL FROM THE ENGINEER.
4. SLACKJACK SELECTION NOTES:
   THE SIZES SHOWN ABOVE ARE FOR BOTH ONE AND TWO INCH TRAVEL ("SJA 4xy")
   (x = TRAVEL HEIGHT IN INCHES, y = ROD SIZE). TWO INCH TRAVEL SLACKJACKS ARE REQUIRED ON FOURTH WOOD FRAME LEVELS AND HIGHER.
5. THIS TABLE IS FOR REFERENCE OF FULL PRODUCT LINE, SOME ROD AND PLATE SIZES MAY NOT BE IN USE. THE ENGINEER OF RECORD SHALL REVIEW AND APPROVE CAPACITIES.

TYPICAL SLACKJACK™ COLOR KEY

PART NO.
SJA 418
RED | YELLOW
**CAPTURE RING COLOR
WASHER COLOR

** SECONDARY COLOR APPLIES TO HJS DEVICES OUTER CYLINDER ONLY.



SLACKJACK – IAPMO ER-0429 & LA RR 25404 LISTED CAPACITIES
COLOR CODE AND MODEL/SERIES TO PART NUMBER CROSS REFERENCE

IAPMO ER-0429/ LA RR 25404 MODEL/SERIES	SLACKJACK PART NO. ON DWGS	THREADED ROD DIAMETER	COMPRESSION CAPACITY	TRAVEL COMPENSATION AMOUNT	CAPTURE RING COLOR	SWIVEL WASHER COLOR
M 100	MJ 100	1/2"	5,000 LBS	1-INCH	RED	N/A
A 210	SJA 215	5/8"	7,360 LBS	1-INCH	BLUE	BLACK
A 210	SJA 216	3/4"	7,360 LBS	1-INCH	BLUE	GRAY
A 210	SJA 217	7/8"	7,360 LBS	1-INCH	BLUE	BLUE
A 210	SJA 218	1"	7,360 LBS	1-INCH	BLUE	YELLOW
A 210	SJA 219	1 1/8"	7,360 LBS	1-INCH	BLUE	WHITE
A 410	SJA 415	5/8"	14,000 LBS	1-INCH	RED	BLACK
A 410	SJA 416	3/4"	14,000 LBS	1-INCH	RED	GRAY
A 410	SJA 417	7/8"	14,000 LBS	1-INCH	RED	BLUE
A 410	SJA 418	1"	14,000 LBS	1-INCH	RED	YELLOW
A 410	SJA 419	1 1/8"	14,000 LBS	1-INCH	RED	WHITE
A 410	SJA 4110	1 1/4"	14,000 LBS	1-INCH	RED	GREEN
T 410	SJT 415	5/8"	9,000 LBS	1-INCH	ORANGE	BLACK
T 410	SJT 416	3/4"	9,000 LBS	1-INCH	ORANGE	GRAY
T 410	SJT 417	7/8"	9,000 LBS	1-INCH	ORANGE	BLUE
T 410	SJT 418	1"	9,000 LBS	1-INCH	ORANGE	YELLOW
T 410	SJT 419	1 1/8"	9,000 LBS	1-INCH	ORANGE	WHITE
T 410	SJT 4110	1 1/4"	9,000 LBS	1-INCH	ORANGE	GREEN
HA 710	HJA 717	7/8"	15,650 LBS	1-INCH	PURPLE	BLUE
HA 710	HJA 718	1"	15,650 LBS	1-INCH	PURPLE	YELLOW
HA 710	HJA 719	1 1/8"	15,650 LBS	1-INCH	PURPLE	WHITE
HA 710	HJA 7110	1 1/4"	15,650 LBS	1-INCH	PURPLE	GREEN
HA 710	HJA 7112	1 1/2"	15,650 LBS	1-INCH	PURPLE	RED
HA 720	HJA 727	7/8"	15,590 LBS	2-INCH	GRAY	BLUE
HA 720	HJA 728	1"	15,590 LBS	2-INCH	GRAY	YELLOW
HA 720	HJA 729	1 1/8"	15,590 LBS	2-INCH	GRAY	WHITE
HA 720	HJA 7210	1 1/4"	15,590 LBS	2-INCH	GRAY	GREEN
HA 720	HJA 7212	1 1/2"	15,590 LBS	2-INCH	GRAY	RED
HS 410	HJS 419	1 1/8"	22,000 LBS	1-INCH	BLACK**	WHITE
HS 410	HJS 4110	1 1/4"	22,000 LBS	1-INCH	BLACK**	GREEN
HS 410	HJS 4112	1 1/2"	22,000 LBS	1-INCH	BLACK**	RED
	*SJST4210	1 1/4"	22,000 LBS	1 1/2-INCH	BLACK	GREEN
	*SJST4110	1 1/4"	22,000 LBS	1-INCH	RED	GREEN
	*SJST4112	1 1/2"	22,000 LBS	1-INCH	RED	RED

IAPMO ER-0429/ LA RR 25404 MODEL/SERIES	SLACKJACK PART NO. ON DWGS	THREADED ROD DIAMETER	COMPRESSION CAPACITY	TRAVEL COMPENSATION AMOUNT	CAPTURE RING COLOR	SWIVEL WASHER COLOR
M 200	MJ 200	1/2"	4,900 LBS	2-INCH	ORANGE	N/A
A 220	SJA 225	5/8"	7,730 LBS	2-INCH	YELLOW	BLACK
A 220	SJA 226	3/4"	7,730 LBS	2-INCH	YELLOW	GRAY
A 220	SJA 227	7/8"	7,730 LBS	2-INCH	YELLOW	BLUE
A 220	SJA 228	1"	7,730 LBS	2-INCH	YELLOW	YELLOW
A 220	SJA 229	1 1/8"	7,730 LBS	2-INCH	YELLOW	WHITE
A 420	SJA 425	5/8"	14,000 LBS	2-INCH	GREEN	BLACK
A 420	SJA 426	3/4"	14,000 LBS	2-INCH	GREEN	GRAY
A 420	SJA 427	7/8"	14,000 LBS	2-INCH	GREEN	BLUE
A 420	SJA 428	1"	14,000 LBS	2-INCH	GREEN	YELLOW
A 420	SJA 429	1 1/8"	14,000 LBS	2-INCH	GREEN	WHITE
A 420	SJA 4210	1 1/4"	14,000 LBS	2-INCH	GREEN	GREEN
A 610	SJA 616	3/4"	20,340 LBS	1-INCH	TAN	GRAY
A 610	SJA 617	7/8"	20,340 LBS	1-INCH	TAN	BLUE
A 610	SJA 618	1"	20,340 LBS	1-INCH	TAN	YELLOW
A 610	SJA 619	1 1/8"	20,340 LBS	1-INCH	TAN	WHITE
A 610	SJA 6110	1 1/4"	20,340 LBS	1-INCH	TAN	GREEN
A 620	SJA 627	7/8"	20,100 LBS	2-INCH	WHITE	BLUE
A 620	SJA 628	1"	20,100 LBS	2-INCH	WHITE	YELLOW
A 620	SJA 629	1 1/8"	20,100 LBS	2-INCH	WHITE	WHITE
A 620	SJA 6210	1 1/4"	20,100 LBS	2-INCH	WHITE	GREEN
HS 420	HJS 429	1 1/8"	22,000 LBS	2-INCH	BLACK**	WHITE
HS 420	HJS 4210	1 1/4"	22,000 LBS	2-INCH	BLACK**	GREEN
HS 420	HJS 4212	1 1/2"	22,000 LBS	2-INCH	BLACK**	RED
HS 710	HJS 719	1 1/8"	39,190 LBS	1-INCH	BLACK**	WHITE
HS 710	HJS 7110	1 1/4"	39,190 LBS	1-INCH	BLACK**	GREEN
HS 710	HJS 7112	1 1/2"	39,190 LBS	1-INCH	BLACK**	RED
HS 720	HJS 729	1 1/8"	37,770 LBS	2-INCH	BLACK**	WHITE
HS 720	HJS 7210	1 1/4"	37,770 LBS	2-INCH	BLACK**	GREEN
HS 720	HJS 7212	1 1/2"	37,770 LBS	2-INCH	BLACK**	RED

* SLACKJACK TAKE UP DEVICE WITH ΔR = 0.003 IN. NOT SHOWN IN ER-0429.
** OUTSIDE CYLINDER COLOR AS FOLLOW:
HJS41=BLUE, HJS42=YELLOW, HJS71=GREEN, HJS72=ORANGE

SLACKJACK COLOR CODE TABLE

TRAVEL HEIGHT AND ROD SIZE COORDINATION

SJA 428

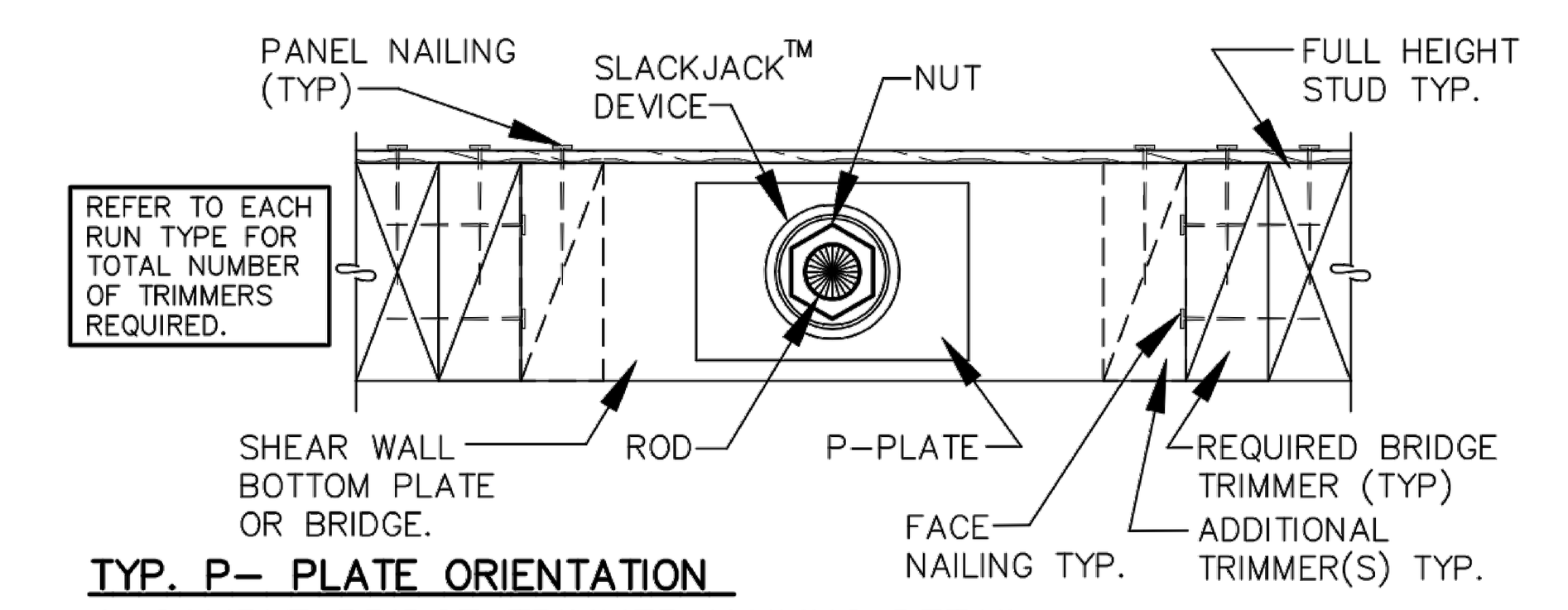
MODEL: SLACKJACK
MODEL TYPE: A=ALUM, S=STEEL
ROD DIA IN EIGHTH INCH
TRAVEL IN INCHES
SERIES TYPE (# RINGS)

COLLECTOR STUD CAPACITY SCHEDULES

COLLECTOR STUD CAPACITIES FOR DOUG FIR STUDS ON DOUG FIR PLATES

TOTAL STUDS REQUIRED QTY.	PLAN VIEW	9'-0" CAPACITY ** 2x4 STUDS	2x6 STUDS	3x4 STUDS	4x4 POSTS	4x6 POSTS	4x8 POSTS	4'-6"/6'-0" CAPACITY BRIDGE TRIMMERS ONLY: NO. OF BRIDGE TRIMMERS	2x4s	2x6s
SINGLE CAPACITY:									3,281#	5,156#
2								2*	6,563#	10,313#
3										
4								4*	13,125#	20,625#
5										
6								6*	19,688#	30,938#
7										
8								8*	26,250#	41,250#
9										
10										

NOTES:
1) STUDS SHOWN ARE THE MINIMUM COMPRESSION MEMBERS REQUIRED FOR THE EARTHBOUND SYSTEM. PCC-1
2) DOUG FIR CALCULATION NOTES: (BASED ON 2018 NDS)
   2x4s, 2x6s, 3x4s (NO. 2 GRADE): F'c PARALLEL = 1350 PSI
   4x4s AND LARGER (NO. 1 GRADE): F'c PARALLEL = 1500 PSI
   F'c PERPENDICULAR = 625 PSI FOR DOUG FIR PLATES.
3) * DENOTES NO. OF BRIDGE TRIMMERS UNDER COMPRESSION BRIDGE.
4) ** DENOTES THAT FINAL POST HEIGHT SUBTRACTS 4 1/2" FOR 2x TOP PLATES AND 2x BOTTOM PLATE.
5) COMPRESSION POSTING BY STRUCTURAL ENGINEER.



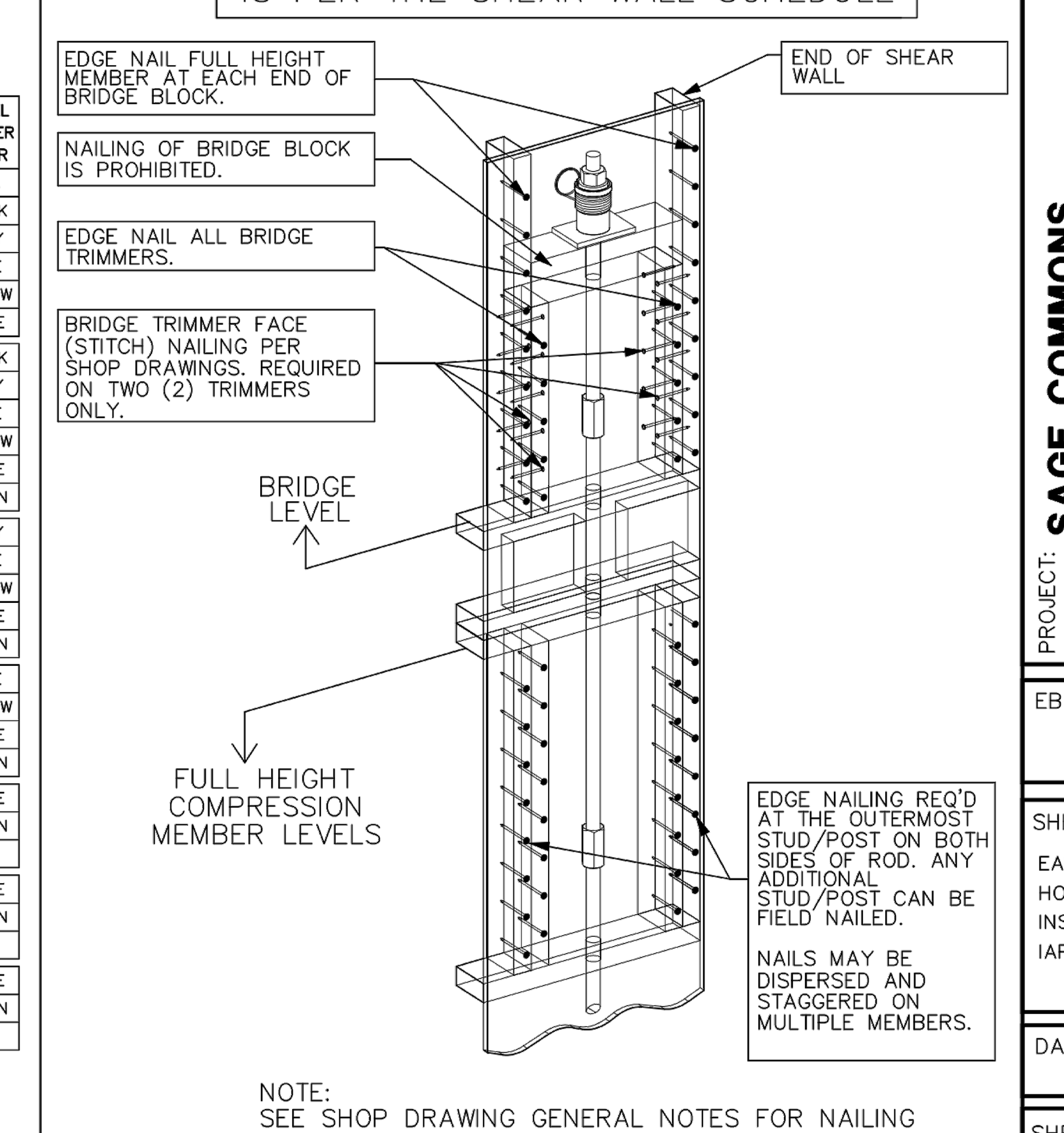
TYP. P- PLATE ORIENTATION & SAMPLE BRIDGE TRIMMER NAILING DETAIL
SCALE: NONE

ROD HOLE SCHEDULE THROUGH TOP/BOTTOM PLATES AND BRIDGES

ROD SIZE		MIN HOLE SIZE	MAX HOLE SIZE
R4	1/2"ø	1"ø	1-1/8"ø
R5	5/8"ø	1"ø	1-1/8"ø
R6	3/4"ø	1"ø	1-1/8"ø
R7	7/8"ø	1-1/8"ø	1-1/4"ø
R8	1"ø	1-1/4"ø	1-3/8"ø
R9	1-1/8"ø	1-3/8"ø	* 1-1/2"ø
R10	1-1/4"ø	* 1-1/2"ø	* 1-5/8"ø
R12	1-1/2"ø	* 1-3/4"ø	* 1-7/8"ø

* HOLE SIZES INTENDED FOR 6" WALL TYPES ONLY. ENGINEER OF RECORD SHALL APPROVE THE USE OF THESE HOLE SIZES FOR 4" WALL TYPES.

ALL SHEAR PANEL NAIL SPACING IS PER THE SHEAR WALL SCHEDULE



NOTE:
SEE SHOP DRAWING GENERAL NOTES FOR NAILING REQUIREMENTS WHEN POSTS ARE USED.

NAILING SAMPLE

NO.	DATE	DESCRIPTION

REVISIONS

DRAWN: ST
DESIGNED: KT
CHECKED: KT
APPROVED: WMN

PROJECT: SAGE COMMONS
80 COLLEGE AVE., SANTA ROSA, CA

EARTHBOUND "Holdowns That Work"
EARTHBOUND CORPORATION
17361 Tye Street SE
Monroe, WA 98272
http://www.holdown.com
(800) 944-5669
Fax (360) 863-0722

CONTACT: EARTHBOUND 800-944-5669

EB CORP JOB NO:
20153

SHEET TITLE:
EARTHBOUND SEISMIC HOLDOWN SYSTEM INSTALLATION DRAWINGS IAPMO ER-0429

DATE: 01/14/2020

SHEET NO.
SH-1

HOHBACH-LEWIN, INC.
STRUCTURAL ENGINEERS
296 East 5th Ave Suite 302
Eugene, OR 97405
(541) 349-1701

REVISIONS TO THIS SHEET

REV.	DATE
PCC-3	2020-06-05
PCC-2	2020-05-15
PCC-1	2020-04-08

SHEET ISSUE DATE

2019-11-15	100% DD SET
2019-12-04	30% CD SET
2020-01-09	60% CD SET
2020-01-20	90% CD SET
2020-01-27	PERMIT SET

PROJECT TRACKING

RBA #: 1843
CONT #:
P.I.C:
PM / PA:

Owner
DANCO

Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE SANTA ROSA, CA

EARTHBOUND SEISMIC HOLDOWN SYSTEM

S-805

REVIEWED FOR CODE COMPLIANCE BY COASTLAND CIVIL ENGINEERING, INC. IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

SAGE COMMONS_1.dwg
January 14, 2020 at 9:17 AM

11/11/2019 5:37:33 PM

HOHBACH-LEWIN # 14200

HOLDOWN RUN DETAILS

RUN TYPE TD31 (INTERIOR)				
WOOD FLOOR LEVEL	UPLIFT TENSION LOADS	CALCULATED DIFFERENTIAL LOADS	COLLECTED DIFFERENTIAL LOADS	COMPRESSION POST CAPACITY
5th	------	------	------	------
4th	------	------	------	------
3rd	4,000 LBS	4,000 LBS	4,000 LBS	6,563 LBS
2nd	6,000 LBS	2,000 LBS	2,000 LBS	13,125 LBS
1st	14,000 LBS	8,000 LBS	8,000 LBS	19,688 LBS

RUN TYPE TD32 (INTERIOR)				
WOOD FLOOR LEVEL	UPLIFT TENSION LOADS	CALCULATED DIFFERENTIAL LOADS	COLLECTED DIFFERENTIAL LOADS	COMPRESSION POST CAPACITY
5th	------	------	------	------
4th	------	------	------	------
3rd	4,000 LBS	4,000 LBS	4,000 LBS	6,563 LBS
2nd	8,000 LBS	4,000 LBS	4,000 LBS	13,125 LBS
1st	18,000 LBS	10,000 LBS	10,000 LBS	24,063 LBS

RUN TYPE TD33 (INTERIOR)				
WOOD FLOOR LEVEL	UPLIFT TENSION LOADS	CALCULATED DIFFERENTIAL LOADS	COLLECTED DIFFERENTIAL LOADS	COMPRESSION POST CAPACITY
5th	------	------	------	------
4th	------	------	------	------
3rd	4,000 LBS	4,000 LBS	4,000 LBS	13,125 LBS
2nd	10,000 LBS	6,000 LBS	6,000 LBS	15,313 LBS
1st	20,000 LBS	10,000 LBS	10,000 LBS	26,250 LBS

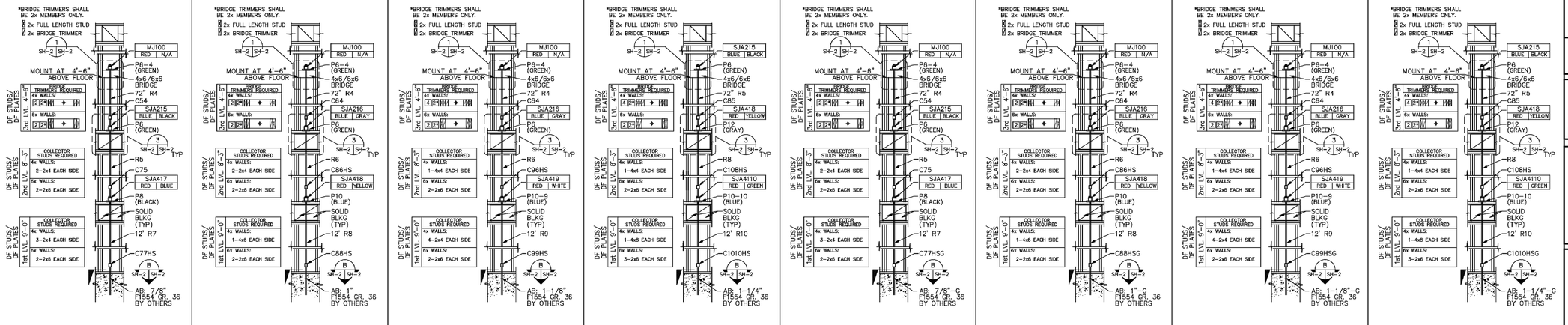
RUN TYPE TD34 (INTERIOR)				
WOOD FLOOR LEVEL	UPLIFT TENSION LOADS	CALCULATED DIFFERENTIAL LOADS	COLLECTED DIFFERENTIAL LOADS	COMPRESSION POST CAPACITY
5th	------	------	------	------
4th	------	------	------	------
3rd	5,000 LBS	5,000 LBS	5,000 LBS	13,125 LBS
2nd	16,000 LBS	11,000 LBS	11,000 LBS	15,313 LBS
1st	26,000 LBS	10,000 LBS	10,000 LBS	31,719 LBS

RUN TYPE TD31 (EXTERIOR)				
WOOD FLOOR LEVEL	UPLIFT TENSION LOADS	CALCULATED DIFFERENTIAL LOADS	COLLECTED DIFFERENTIAL LOADS	COMPRESSION POST CAPACITY
5th	------	------	------	------
4th	------	------	------	------
3rd	4,000 LBS	4,000 LBS	4,000 LBS	6,563 LBS
2nd	6,000 LBS	2,000 LBS	2,000 LBS	13,125 LBS
1st	14,000 LBS	8,000 LBS	8,000 LBS	19,688 LBS

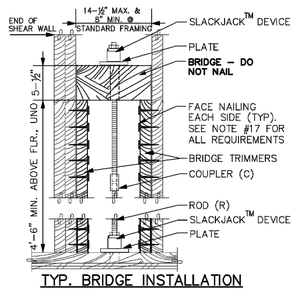
RUN TYPE TD32 (EXTERIOR)				
WOOD FLOOR LEVEL	UPLIFT TENSION LOADS	CALCULATED DIFFERENTIAL LOADS	COLLECTED DIFFERENTIAL LOADS	COMPRESSION POST CAPACITY
5th	------	------	------	------
4th	------	------	------	------
3rd	4,000 LBS	4,000 LBS	4,000 LBS	6,563 LBS
2nd	8,000 LBS	4,000 LBS	4,000 LBS	13,125 LBS
1st	18,000 LBS	10,000 LBS	10,000 LBS	24,063 LBS

RUN TYPE TD33 (EXTERIOR)				
WOOD FLOOR LEVEL	UPLIFT TENSION LOADS	CALCULATED DIFFERENTIAL LOADS	COLLECTED DIFFERENTIAL LOADS	COMPRESSION POST CAPACITY
5th	------	------	------	------
4th	------	------	------	------
3rd	4,000 LBS	4,000 LBS	4,000 LBS	13,125 LBS
2nd	10,000 LBS	6,000 LBS	6,000 LBS	15,313 LBS
1st	20,000 LBS	10,000 LBS	10,000 LBS	26,250 LBS

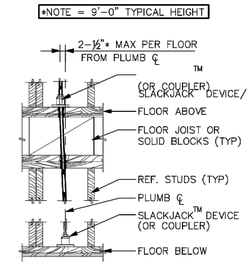
RUN TYPE TD34 (EXTERIOR)				
WOOD FLOOR LEVEL	UPLIFT TENSION LOADS	CALCULATED DIFFERENTIAL LOADS	COLLECTED DIFFERENTIAL LOADS	COMPRESSION POST CAPACITY
5th	------	------	------	------
4th	------	------	------	------
3rd	5,000 LBS	5,000 LBS	5,000 LBS	13,125 LBS
2nd	16,000 LBS	11,000 LBS	11,000 LBS	15,313 LBS
1st	26,000 LBS	10,000 LBS	10,000 LBS	31,719 LBS



TD31 (INTERIOR) | TD32 (INTERIOR) | TD33 (INTERIOR) | TD34 (INTERIOR) | TD31 (EXTERIOR) | TD32 (EXTERIOR) | TD33 (EXTERIOR) | TD34 (EXTERIOR)

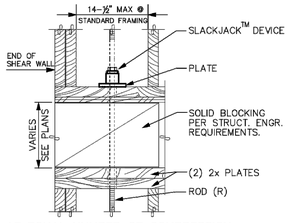


TYP. BRIDGE INSTALLATION DETAIL 1 SH-2 SH-2
SCALE: NONE

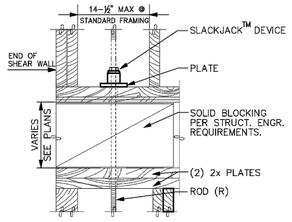


ALLOWABLE ROD OFFSET DETAIL 2 SH-2 SH-2
SCALE: NONE

NOTE: SOLID BLOCKING, PROVIDE ENOUGH SOLID BLOCKING IN JOIST SPACE TO MATCH WIDTH OF ALL COMPRESSION STUDS OR POSTS OF THE WALL BELOW.



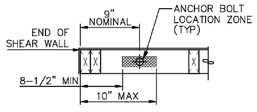
AT EQUAL NUMBER OF COMPRESSION STUDS FROM LEVEL BELOW & ABOVE



AT GREATER NUMBER OF COMPRESSION STUDS FROM LEVEL BELOW

TYP. SLACKJACK™ INSTALLATION DETAIL 3 SH-2 SH-2
SCALE: NONE

ANCHOR BOLT NOTES:
1. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF WALL TYPE AND FRAMING LAYOUT BEFORE LOCATING ANCHOR BOLTS IN CONCRETE.
2. ALL DIMENSIONS ARE TYPICAL U.N.O.



TYP. ANCHOR BOLT PLAN DETAIL B SH-2 SH-2
SCALE: NONE

SAGE COMMONS_2.DWG
April 7, 2020 at 3:10 PM

11/11/2019 5:37:33 PM

NO.	DATE	DESCRIPTION
		REVISIONS

DRAWN: ST
DESIGNED: KT
CHECKED: KT
APPROVED: WMN

REGISTERED PROFESSIONAL ENGINEER WILLIAM M. NELSON No. 3417 Exp. 31-12 STRUCTURAL STATE OF CALIFORNIA

PROJECT: SAGE COMMONS
80 COLLEGE AVE., SANTA ROSA, CA

EB CORP JOB NO: 20153

SHEET TITLE: EARTHBOUND SEISMIC HOLDOWN SYSTEM INSTALLATION DRAWINGS IAPMO ER-0429

DATE: 04/07/2020

SHEET NO. SH-2

CONTACT: EARTHBOUND 800-944-5669

EARTHBOUND "Holdowns That Work"
EARTHBOUND CORPORATION
17251 1st Street SE
Monroe, WA 98272
http://www.holdown.com
(800) 944-5669
Fax (360) 863-0722

REVIEWED FOR CODE COMPLIANCE BY COASTLAND CIVIL ENGINEERING, INC. IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

ROWELL BROKAW
1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com
Architecture. Design. Strategy.

STAMP
REGISTERED PROFESSIONAL ENGINEER PAUL J. ZIMMERMAN No. 3417 STRUCTURAL STATE OF CALIFORNIA

HOHBACH-LEWIN, INC.
STRUCTURAL ENGINEERS
296 East 5th Ave. Suite 302
Eugene, OR 97401
(541) 349-1701

REVISIONS TO THIS SHEET

REV.	DATE
PCC-3	2020-06-05
PCC-2	2020-05-15
PCC-1	2020-04-08

SHEET ISSUE DATE

2019-11-15	100% DD SET
2019-12-04	30% CD SET
2020-01-09	60% CD SET
2020-01-20	90% CD SET
2020-01-27	PERMIT SET

PROJECT TRACKING
RBA #: 1843
CONT #:
P.I.C:
PM / PA:

Owner: DANCO
Project Name: SAGE COMMONS
Project Address: 80 COLLEGE AVENUE SANTA ROSA, CA

EARTHBOUND SEISMIC HOLDOWN SYSTEM

S-806

HOHBACH-LEWIN # 1420

MECHANICAL DRAWING LIST	
SHEET #	SHEET NAME
M-001	LEGENDS, SYMBOLS AND ABBREVIATIONS - MECHANICAL
M-002	EQUIPMENT SCHEDULES - MECHANICAL
M-003	EQUIPMENT SCHEDULES - MECHANICAL
M-111	MECHANICAL 1ST FLOOR PLAN AND TYPICAL UNITS A & B
M-112	MECHANICAL 2ND FLOOR PLAN
M-113	MECHANICAL 3RD FLOOR PLAN AND UNIT MGR APT.
M-114	MECHANICAL ROOF PLAN
M-140	MECHANICAL ENLARGED PLANS
M-501	DETAILS - MECHANICAL

STANDARD MECHANICAL ABBREVIATIONS

AF	AIRFOIL	INSUL	INSULATION
AFF	ABOVE FINISHED FLOOR	ISOL	ISOLATOR(ION)
AHP	APPARATUS HOUSING PLENUM	KW	KILOWATT
ALT	ALTERNATIVE	KWH	KILOWATT HOUR
AL	ALUMINUM	L	LENGTH
APD	AIR PRESSURE DROP	LAT	LEAVING AIR TEMP
APPROX	APPROXIMATELY	LB	POUND
ARCH	ARCHITECT(URAL)	LDB	LEAVING DRY BULB
AUTO	AUTOMATIC	LF	LINEAR FEET
BDD	BACKDRAFT DAMPER	LFT	LEAVING FLUID TEMPERATURE
BHP	BREAK HORSEPOWER	LVG	LEAVING
BI	BACKWARD INCLINED	LWB	LEAVING WET BULB
BLDG	BUILDING	LWT	LEAVING WATER TEMPERATURE
BSMT	BASEMENT	MAX	MAXIMUM
BTU	BRITISH THERMAL UNIT	MBH	THOUSAND BTU PER HOUR
BTUH	BRITISH THERMAL UNITS PER HOUR	MCA	MINIMUM CIRCUIT AMPACITY
CFH	CUBIC FEET PER HOUR	MECH	MECHANICAL
CFM	CUBIC FEET PER MINUTE	MERV	MINIMUM EFFICIENCY REPORTING VALUE
CFS	CUBIC FEET PER SECOND	MFR	MANUFACTURER
CLG	CEILING OR COOLING	MIN	MINIMUM
CONC	CONCRETE	MISC	MISCELLANEOUS
CONN	CONNECT(ION)	MOP	MAXIMUM OVERCURRENT PROTECTION
CONT	CONTINUE(ED)(UATION)	MTD	MOUNTED
CL	CENTERLINE	NC	NORMALLY CLOSED
DB	DRY BULB	NIC	NOT IN CONTRACT
DDC	DIRECT DIGITAL CONTROL	NO	NORMALLY OPEN
DEFL	DEFLECTION	OAD	OUTSIDE AIR DAMPER
DN	DOWN	OAT	OUTSIDE AIR TEMPERATURE
DP	DEW POINT	OBD	OPPOSED BLADE DAMPER PCC-1
DWDI	DOUBLE WIDTH DOUBLE INLET	OC	ON CENTER DISTANCE
DWG	DRAWING	OSA	OUTSIDE AIR
EA	EXHAUST AIR	PH	PHASE
EAD	EXHAUST AIR DAMPER	PP	POLYPROPYLENE
EAT	ENTERING AIR TEMPERATURE	PSI	POUNDS PER SQUARE INCH
ECM	ELECTRONICALLY COMMUTATED MOTOR	PVC	POLYVINYL CHLORIDE
EDB	ENTERING DRY BULB	PVS	PVC COATED STEEL
EFF	EFFICIENCY	R (RAD)	RADIUS
EFT	ENTERING FLUID TEMPERATURE	RA	RETURN AIR
ELEC	ELECTRIC(AL)	RAD	RETURN AIR DAMPER
ELEV	ELEVATION	REV	REVISION
ENGR	ENGINEER	RH	RELATIVE HUMIDITY
EQ	EQUAL	RPM	REVOLUTIONS PER MINUTE
EQUIP	EQUIPMENT	SA	SUPPLY AIR
ESP	EXTERNAL STATIC PRESSURE	SCFM	STANDARD CUBIC FEET PER MINUTE
EWB	ENTERING WET BULB	SD	SMOKE DAMPER
EWT	ENTERING WATER TEMPERATURE	SECT	SECTION
EX	EXTRACTOR	SENS	SENSIBLE
EXH	EXHAUST	SIM	SIMILAR
EXIST	EXISTING	SP	STATIC PRESSURE
EXP	EXPANSION	SPEC	SPECIFICATION
F	DEGREES FAHRENHEIT	SQ	SQUARE
FC	FORWARD CURVED	SF	SQUARE FOOT(FEET)
FIG	FIGURE	SQ IN	SQUARE INCH(ES)
FILT	FILTER	SS	STAINLESS STEEL
FLA	FULL LOAD AMPACITY	STL	STEEL
FLEX	FLEXIBLE	STRUCT	STRUCTUR(E)(AL)
FPD	FLUID PRESSURE DROP	SWP	SINGLE WALL PLENUM
FPM	FEET PER MINUTE	SWSI	SINGLE WIDTH SINGLE INLET
FPS	FEET PER SECOND	TEMP	TEMPERATURE
FT	FEET/FOOT	TSP	TOTAL STATIC PRESSURE
FTR	FINNED TUBE RADIATOR	TYP	TYPICAL
FU	FIXTURE UNIT	V	VOLTS
FUT	FUTURE	VD	VOLUME DAMPER
FV	FACE VELOCITY	VEL	VELOCITY
GA	GAGE/GAUGE	VERT	VERTICAL
GAL	GALLON	VFD	VARIABLE FREQUENCY DRIVE
GALV	GALVANIZED	VTR	VENT THROUGH ROOF
GLY	GLYCOL	W	WIDTH
GPH	GALLONS PER HOUR	WB	WET BULB
GPM	GALLONS PER MINUTE	WG	WATER GAUGE
H	HEIGHT	WPD	WATER PRESSURE DROP
HORIZ	HORIZONTAL	WTD	WATER TEMPERATURE DROP
HP	HORSEPOWER	WTR	WATER TEMPERATURE RISE
HTG	HEATING	W/	WITH
ID	INSIDE(DIAMETER/DIMENSION)	W/0	WITHOUT
IE	INVERT ELEVATION		

HVAC PIPING

D	DRAIN (CONDENSATE/INDIRECT)
RS	REFRIGERANT SUCTION
RL	REFRIGERANT LIQUID

CONTROL SYMBOLS

- DAMPER WITH OPERATOR
- 2-WAY CONTROL VALVE
- 3-WAY CONTROL VALVE
- DO — DIGITAL OUTPUT FROM DDC PANEL
- DI — DIGITAL INPUT TO DDC PANEL
- AO — ANALOG OUTPUT FROM DDC PANEL
- AI — ANALOG INPUT TO DDC PANEL
- DP — DIFFERENTIAL PRESSURE SWITCH
- EP — EP VALVE
- SP — STATIC PRESSURE CONTROLLER
- VP — VELOCITY PRESSURE TRANSMITTER
- R — PNEUMATIC RELAY
- ES — DAMPER END SWITCH
- CO — CARBON MONOXIDE SENSOR
- CO_2 — CARBON DIOXIDE SENSOR
- AMS — AIR MONITORING STATION
- VPP — VELOCITY PRESSURE PROBE
- PE — PE SWITCH
- SMK — DUCT SMOKE DETECTOR
- WFM — WATER FLOW METER WITH ELECTRONIC TRANSMITTER
- PB — PUSH BUTTON SWITCH
- SM — SWITCHED MAIN AIR
- PT — PRESSURE TRANSMITTER
- M — MAIN AIR
- H — ELECTRONIC HUMIDITY TRANSMITTER
- H HL — DUCT MOUNTED HIGH LIMIT HUMIDISTAT
- T — ELECTRONIC TEMPERATURE SENSOR
- FS — FLOW SWITCH
- T — ELECTRONIC SENSOR WITH AVERAGING

SYMBOLS

A — ACCESS PANEL	K — CAP EXISTING / CAP FOR FUTURE
B — BELOW GRADE / FLOOR	R — RELOCATE EXISTING
C — CONNECT TO EXISTING	X — REMOVE EXISTING
E — EXISTING TO REMAIN	1 — NOTE

CALL OUT SYMBOLS

WALL MOUNTED
PENDANT MOUNTED
T — TEMPERATURE
H — HUMIDITY
CO CO_2 — CARBON DIOXIDE

ROOM SENSORS

DUCT LEGEND

CFM / TYPE — FLOW DIRECTION (NONE SHOWN IF 4-WAY)
RETURN EXHAUST SUPPLY
SEE SPEC FOR TYPE
SEE SCHEDULE FOR SIZE
CEILING DIFFUSERS & GRILLES

CFM / SIZE TYPE — NECK SIZE (SIDEWALL & FLOOR GRILLE)
PLENUM INLET SIZE (SLOT DIFFUSER)
SIDEWALL SLOT & FLOOR GRILLES

TYPE REFERENCE
H = 6" BELOW CEILING
L = 6" ABOVE FLOOR
F = FLOOR
S = SLOT DIFFUSER
C = CEILING
T = DOOR TRANSFER

TU-X-XXX
TERMINAL UNIT NUMBER
FLOOR UNIT IS LOCATED ON
AIR HANDLER NUMBER
TERMINAL UNIT
TERMINAL UNITS

EF-XXX
UNIT NUMBER
FLOOR UNIT IS LOCATED ON
EQUIPMENT TYPE
EQUIPMENT

SUPPLY AIR | RETURN AIR | EXHAUST AIR | OUTSIDE AIR
DUCT SECTIONS

FSD | FD | SD
COMBINATION FIRE/SMOKE | SMOKE | FIRE | AUTOMATIC VOLUME
DAMPERS

RETURN OR EXHAUST AIR FLOW
SUPPLY OR OUTSIDE AIR FLOW
UC 1/2" UNDERCUT DOOR

LOW PRESSURE DUCTWORK

R=2D FOR FLEX — SECTION — PLAN
FLEX DUCT

R=1-1/2D FOR ROUND — SECTION — PLAN
ROUND DUCT

RETURN OR EXHAUST GRILLE CONNECTION

R=2D FOR FLEX — SECTION — PLAN
FLEX DUCT

R=1-1/2D FOR ROUND — SECTION — PLAN
ROUND DUCT

SUPPLY DIFFUSER CONNECTION

SECTION — PLAN
RECTANGULAR DUCT
RETURN OR EXHAUST GRILLE

LINED PLENUM — FLEX DUCT — SECTION — PLAN — SPIN-IN FITTING
SQUARE NECK
SUPPLY DIFFUSER SIDE FLEX CONNECTION

SECTION — PLAN
SUPPLY DIFFUSER HARD CONNECTION

SECTION — PLAN
SIDEWALL SUPPLY GRILLE CONNECTION

MEDIUM PRESSURE DUCTWORK

CONICAL TEE | LOW LOSS | LATERAL TEE | CONICAL LATERAL
BRANCH FITTINGS

R=1-1/2D — ELBOW
Y-BRANCH
R= 2D — BELL MOUTH
L=D1-D2 — REDUCER

DUCT DETAILS (LOW VELOCITY)

R=1-1/2W — RADIUS ELBOW
TURNING VANES IN ALL ELBOWS AND TEES — MITER ELBOWS & TEES
FLEX CONNECTION
24x16 — SIZE SHOWN IS CLEAR AIR PASSAGE — ACOUSTICAL LINER

LESS THAN 15° | 15° TO 30° | GREATER THAN 30° (R=1-1/2W)
DUCT OFFSETS

30° MAX
30° MAX — RECTANGULAR TO ROUND
TRANSITIONS

45° — 4" MIN OR 1/4W OR 12" MAX — W
RECTANGULAR DUCT FITTING

SPIN-IN FITTING
CONICAL SPIN-IN FITTING
RECTANGULAR TO ROUND FITTING

GENERAL NOTES PCC-1

THIS IS A STANDARD LEGEND SHEET, THEREFORE, SOME SYMBOLS MAY APPEAR ON THIS SHEET THAT DO NOT APPEAR ON THE DRAWINGS.
ALL DUCTWORK CONSTRUCTION SHALL BE FABRICATED PER SMACNA STANDARDS. REFER SO SPECIFICATION SECTION 23 31 01 FOR FURTHER REQUIREMENTS.

MISC. VALVES & COCKS

- SHUT-OFF VALVE
- GLOBE VALVE
- S — SHUT-OFF VALVE W/ TAMPER SWITCH
- TRIPLE DUTY VALVE
- CHECK VALVE
- 2-WAY CONTROL VALVE
- 3-WAY CONTROL VALVE
- BALANCING VALVE
- FC — FLOW CONTROL VALVE
- S — SOLENOID VALVE
- P — PRESSURE REDUCING VALVE
- MAV / AAV — AIR VENT (MANUAL/AUTOMATIC)
- RELIEF VALVE
- STRAINER
- STRAINER W/ BLOWDOWN
- DV — DRAIN VALVE
- HB — HOSE BIBB
- WH — WALL HYDRANT
- G GH — GROUND HYDRANT
- F&T/IB — STEAM TRAP
- PRESSURE GAUGE
- PRESSURE/TEMPERATURE TEST PLUG
- THERMOMETER
- F — FLOW SWITCH
- T — TEMPERATURE TRANSMITTER
- S (SIZE) — SHOCK ARRESTOR
- V — VACUUM BREAKER
- WFM — WATER FLOW METER
- RPBA — REDUCED PRESSURE BACKFLOW ASSEMBLY
- DCVA — DOUBLE CHECK VALVE ASSEMBLY
- DCDA — DOUBLE CHECK DETECTOR ASSEMBLY
- BWV — BACKWATER VALVE
- UG — UNDERGROUND GATE VALVE W/BOX
- PIV — UNDERGROUND GATE W/POST INDICATOR
- OUTSIDE SCREW & YOKE
- Y PATTERN BOILER BLOWDOWN VALVE
- NON-RETURN STOP VALVE
- QUICK OPENING BOILER BLOWDOWN VALVE

MISC. FITTINGS & SYMBOLS

- DIRECTION OF FLOW
- DIRECTION OF SLOPE
- PIPE SLEEVE
- REDUCER
- ANCHOR
- ELBOW (90°)
- ELBOW (45°)
- TEE
- CROSS
- PIPING CONNECTIONS
- JOINT OR COUPLING POINT
- UNION
- FLANGED CONNECTION
- CAP
- PLUG OR BLIND FLANGE
- RISER
- ELBOW UP
- ELBOW DOWN
- TEE UP
- TEE DOWN
- HORIZONTAL TEE
- FLEXIBLE CONNECTION
- BALL JOINT
- MC — MECHANICAL COUPLING
- HEAT TRACE

ROWELL BROKAW
1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com
Architecture. Design. Strategy.

STAMP
REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER J. PAE
No. M35043
EXP 6/30/2022
MECHANICAL
STATE OF CALIFORNIA
3.2020

PAE
pae-engineers.com

REVISIONS TO THIS SHEET

REV.	DATE
PCC-1	4/6/2020

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C.: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

LEGENDS, SYMBOLS AND ABBREVIATIONS - MECHANICAL

M-001

REVIEWED FOR CODE COMPLIANCE
BY CSABTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

6/5/2020 10:02:32 AM

DESIGN CONDITIONS - SANTA ROSA, CA

SPACE	WINTER		SUMMER	
	TEMPERATURE	HUMIDITY	TEMPERATURE	HUMIDITY
OUTDOOR	27.4° F DB	19.3° F DP / 56.0 ° F MCDB	94.7° F DB / 69.5° F MCWB	61.0° F DP / 75.7° F MCDB
INDOOR	70° F ± 2° F DB	50% RH MAX, NO MINIMUM	75° F ± 2° F DB	50% RH MAX, NO MINIMUM

GENERAL NOTES:
A. OUTDOOR CONDITIONS BASED ON ASHRAE FUNDAMENTALS 2013 99.6% AND 0.4% DATA.

DIFFUSERS AND GRILLES

TAG NUMBER	TYPE	CFM RANGE MIN	CFM RANGE MAX	INLET SIZE (IN)	FACE SIZE T-BAR (IN)	FACE SIZE HARD LID (IN)	MAX NC	THROW (FT)	MANUFACTURER & MODEL	NOTES
C-1	CEILING SUPPLY DIFFUSER	0	125	6x6	24x24	13x13	12	2-2-5	TITUS MCD	
		126	220	8x8	24x24	15x15	17	2-3-6		
		221	345	10x10	24x24	17x17	21	3-4-8		
		346	500	12x12	24x24	19x19	24	3-5-9		
		501	780	16x16	24x24	23x23	28	4-6-11		
H-1	SIDEWALL SUPPLY 0 DEGREE DEFLECTION	0	150	8x6	-	-	15	12-17-24	TITUS 271RL	
		250	300	12x6	-	-	20	17-22-31		
		301	550	18x8	-	-	19	21-30-42		
H-2	SIDEWALL RETURN/EXHAUST GRILLE 0 DEGREE...	101	150	8x6	-	-	15	-	TITUS 55FL	
		451	1000	24x12	-	-	22	-		
H-3	EXHAUST VENT CAP	-	-	SEE PLANS	-	-	-	-	SEIHO SFX	
H-4	OUTSIDE AIR INTAKE VENT CAP	-	-	SEE PLANS	-	-	-	-	SEIHO SFX	
C-2	CEILING RETURN/ EXHAUST GRILLE	0	340	10x10	24x24	12x12	17	-	TITUS 50F	
		341	780	15x15	24x24	17x17	22	-		
		781	1125	18x18	24x24	20x20	24	-		
		1129	1670	22x22	24x24	24x24	26	-		
		1671	3500	22x46	24x48	24x48	25	-		

GENERAL NOTES:
A. NOISE CRITERIA (NC) BASED ON ROOM ABSORPTION OF 10 dB, MEASURED PER ANSI/ASHRAE STANDARD 70.
B. THROW VALUES GIVEN FOR TERMINAL VELOCITIES 150, 100, AND 50 FPM FOR ISOTHERMAL CONDITIONS.

FAN SCHEDULE

TAG NUMBER	LOCATION	SERVICE	TYPE	AIRFLOW HIGH CFM	AIRFLOW LOW CFM	AIRFLOW TSP (IN WG)	AIRFLOW FAN RPM	MOTOR POWER (WATTS)	MOTOR POWER (HP)	MOTOR VOLT/ PHASE	NOISE (SONES)	APPROX. WEIGHT (LBS)	MANUFACTURER & MODEL	NOTES
EF-X	APT BATHROOM	TYPICAL BATH EXHAUST	CEILING	150	110	0.25	1080	13	-	120/1	0.7	10.1	PANASONIC WHISPERGREEN SELECT	1,2,3
EF-101	BATH 120	BATH 120	CEILING	150	110	0.25	1080	13	-	120/2	0.7	10.1	PANASONIC WHISPERGREEN SELECT	2
EF-102	BATH 122	BATH 122	CEILING	150	110	0.25	1080	13	-	120/3	0.7	10.1	PANASONIC WHISPERGREEN SELECT	2
EF-401	ROOF MOUNTED	TRASH, JANITOR	CENTRIFUGAL DOWNBLAST	1100	1100	0.60	1140	-	3/4	120/1	13	100	GREENHECK GB	

NOTES:
1. TYPICAL OF BATHROOM EXHAUST FANS. SEE PLANS FOR LOCATION.
2. FURNISH WITH CONDENSATE SENSOR TO DETECT RELATIVE HUMIDITY AND AUTOMATICALLY ADJUST THE FAN SPEED TO CONTROL HUMIDITY. CONFORM TO CALGREEN REQUIREMENTS FOR HUMIDITY CONTROL. PCC-1
3. PROVIDE AND ASSEMBLE WITH WITH PANASONIC CEILING DAMPER PC-RD05C5 TO MAINTAIN FIRE RATING OF STRUCTURE. PCC-2

ENERGY RECOVERY VENTILATOR

TAG NUMBER	LOCATION	SERVICE	SUPPLY FAN AIRFLOW CFM	RETURN FAN AIRFLOW CFM	HEAT RECOVERY SECTION OUTSIDE AIRFLOW CFM	HEAT RECOVERY SECTION EXHAUST AIRFLOW CFM	HEAT RECOVERY SECTION WINTER EFF %	HEAT RECOVERY SECTION SUMMER EFF %	ELECT VOLTS/PH	POWER (WATTS)	APPROX. WEIGHT (LBS)	MANUFACTURER & MODEL	NOTES
ERV-201/301	LOUNGE	LOUNGE OSA	100	100	100	100	-	-	120	80W	58	PANASONIC FV-10VE1	1, 5
ERV-203/303	GYMS	GYM OSA/EXH	600	600	600	600	64	50	208V-1PH	637W	132	MITSUBISHI TLGHF0600RX501A	2, 3
HRV-102/ 202/302	LAUNDRY	LAUNDRY OSA/EXH	550	550	550	550	48	48	120VAC	660W	131	ALDES H650-FI-P	2, 4
ERV-101	MULTI PURP	MULTI PURP OSA/EXH	950	950	950	950	60	70	120VAC	1260W	204	ALDES E1100L-FI	2, 5
ERV-102	STORAGE 116	MEETING 117 OSA	350	350	350	350	-	-	208V-1PH	637W	132	MITSUBISHI TLGHF0600RX501A	2, 3

NOTES:
1. UNIT FLUSH MOUNTED IN CEILING CHASE, SEE PLANS.
2. HANG UNIT FROM CEILING STRUCTURE. PROVIDE SEISMIC RESTRAINTS AS REQUIRED PER SPECIFICATIONS.
3. UNIT SHALL RUN WHEN SPACE IS IN OCCUPIED MODE.
4. UNIT SHALL OPERATE WHEN HIMIDITY LEVEL IN ROOM REACHES HIGH SETPOINT OR WHEN CO2 LEVEL IS LOW. UNIT RUNS FOR FOUR HOURS FOLLOWING HIGH HUMIDITY SIGNAL.
5. UNIT SHALL RUN WHEN CO2 LEVEL IN SPACE REACHES LOW SETPOINT.

SPLIT SYSTEM AIR CONDITIONER & HEAT PUMP SCHEDULE

TAG NUMBER	INDOOR UNIT LOCATION	OUTDOOR UNIT LOCATION	SERVICE	TYPE	SUPPLY AIRFLOW CFM	SUPPLY ESP (IN. W.G.)	MIN OSA CFM	FILTER MERV RATING	DX COOLING TOTAL CAPACITY (MBH)	DX COOLING SENSIBLE CAPACITY (MBH)	DX HEATING TOTAL CAPACITY (MBH)	MANUFACTURER & MODEL (INDOOR)	MANUFACTURER & MODEL (OUTDOOR)	NOTES
ECU-101 / HP-401	STORAGE 116	ROOF	OFFICES	AIRFLOW AIR HANDLER	1200	0.90	300	8	42	31	48	DAIKIN FXTQ36TAVJUA	DAIKIN RXTQ36TAVJU	1
ACU-102 / HP-402	MEETING ROOM	ROOF	MEETING ROOM	WALL MOUNT	N/A	N/A	N/A	N/A	33	24	24	MITSUBISHI PKA-A36KA6	MITSUBISHI PUZ-HA36NHA5	5
ACU-103A,B / HP-403	UTILITY 107	ROOF	MULTIPURPOSE	CEILING CASSETTE	N/A	N/A	N/A	N/A	96	67	84	MITSUBISHI TPLFYP096M140A	MITSUBISHI TUMYP096M040A	2, 3
ACCU-401 / ACU- 201,301	LOUNGES	ROOF	2ND & 3RD FLR LOUNGES	WALL-HUNG	N/A	N/A	N/A	N/A	33	24	24	MITSUBISHI PKA-A36KA6	MITSUBISHI TUMYP048IAK42	3 PCC-3
ADD-1 ACCU-402 / ACU-101A,B	ELEC	ROOF	ELEC	WALL-HUNG	N/A	N/A	N/A	N/A	43	40	54	MITSUBISHI TPKFYP024KM142A	MITSUBISHI TUMYP048IAK42	3
ACU-104 / HP-404	EL MACH 107	ROOF	EL MACH 107	WALL-HUNG	N/A	N/A	N/A	N/A	12	12	14	MITSUBISHI PKA-A12HA7	MITSUBISHI PUZ-A12NKA7	4

GENERAL NOTES:
A. MINIMUM EFFICIENCY IS AT ARI STANDARD CONDITIONS.
B. PROVIDE CONDENSATE DRIP PAN WHERE APPLICABLE. GRAVITY DRAIN CONDENSATE TO NEAREST FLOOR DRAIN OR SINK.
C. PROVIDE WALL MOUNTED PROGRAMMABLE THERMOSTATS TO CONTROL TEMPERATURES OF INDOOR SPACES.
D. REFER TO M&E SCHEDULE (SHEET E-002) FOR POWER SUPPLY INFORMATION ADD-1

NOTES:
1. INDOOR UNIT IS A VERTICAL, FLOOR MOUNTED, CABINET STYLE UPDRAFT UNIT. PROVIDE RETURN AIR AND OSA BALANCE DAMPERS TO MAINTAIN MINIMUM 30% OSA WHEN UNIT IS RUNNING. AUTOMATIC OSA DAMPER CLOSES WHEN UNIT IS NOT RUNNING. FAN COIL UNIT STARTS WHEN A MEETING ROOM IS IN OCCUPIED MODE OR WHEN TEMPERATURE IN HALLWAY DROPS BELOW HEATING LOW SETPOINT.
2. CEILING CASSETTES TO BE LOCATED BETWEEN HEADED OUT WOOD JOIST STRUCTURE. COORDINATE CASSETTE LOCATIONS AND MOUNTING WITH STRUCTURAL.
3. UNITS SHALL BE MOUNTED HIGH ON WALL SUCH THAT BOTTOM OF UNIT IS NOT LESS THAN 7' AFF TO ALLOW ADEQUATE CLEARANCE FOR ELECTRICAL EQUIPMENT.
4. MOUNT INDOOR UNIT HIGH ON WALL, MINIMUM 4" BELOW CEILING. COORDINATE FINAL INSTALLED LOCATION WITH ELEVATOR EQUIPMENT SUPPLIER CLEARANCE REQUIREMENTS. ADD-1
5. MOUNT INDOOR UNIT HIGH ON WALL, MINIMUM 6' AFF AND IN ACORDANCE WITH MANUFACTURER'S CLEARANCE REQUIREMENTS. PCC-3

PACKAGED TERMINAL AIR CONDITIONERS (PTAC)

TAG NUMBER	UNIT LOCATION	SERVICE	TYPE	MIN OSA CFM	DX COOLING TOTAL CAPACITY (MBH)	DX HEATING TOTAL CAPACITY (MBH)	ELECTRICAL VOLT/ PHASE	ELECTRICAL EER	ELECTRICAL WATTS	APPROX. WEIGHT (LBS)	MANUFACTURER & MODEL	NOTES
PTAC-A	UNIT A	UNIT A	THRU-WALL HEAT PUMP	N/A	9.0	8.1	208/1	11.3	795.0	132	AMANA PMH093G00D	
PTAC-B	UNIT B	UNIT B	THRU-WALL HEAT PUMP	N/A	9.0	8.1	208/1	11.3	795.0	132	AMANA PMH093G00D	
PTAC-102	102 SECURITY	102 SECURITY	THRU-WALL ELEC COIL	65	16.2	9.9	208/1	9.5	4640.0	113	AMANA PTC173G35D	
PTAC-103	103 DIR	103 DIR	THRU-WALL HEAT PUMP	65	7.6	6.8	208/1	11.8	640.0	128	AMANA PMH073G00D	
PTAC-C1	UNIT C	UNIT C	THRU-WALL HEAT PUMP	N/A	9.0	8.1	208/1	11.3	795.0	132	AMANA PMH093G00D	
PTAC-C2	UNIT C	UNIT C	THRU-WALL HEAT PUMP	N/A	7.6	6.8	208/1	11.8	640.0	128	AMANA PMH073G00D	
PTAC-L	LAUNDRY	LAUNDRY	THRU-WALL HEAT PUMP	65	12.0	11.3	208/1	10.4	1150.0	135	AMANA PMH123G00D	
PTAC-G	GYM	GYM	THRU-WALL HEAT PUMP	65	12.0	11.3	208/1	10.4	1150.0	135	AMANA PMH123G00D	

GENERAL NOTES:
A. PROVIDE INTEGRAL THERMOSTAT AND PACKAGED CONTROLS SYSTEM AS SPECIFIED.

ELECTRIC HEATER SCHEDULE

TAG NUMBER	LOCATION	SERVICE	TYPE	ELECTRIC HEATING COIL OUTPUT (kW)	ELECTRIC HEATING COIL VOLT/ PHASE	APPROX. WEIGHT (LBS)	MANUFACTURER & MODEL	NOTES
EH-X01	TRASH ROOMS	TRASH	WALL HEATER	0.5	120/1	5	CADET REGISTER RM151	1,2
EH-X02	WATER HEATER ROOMS	EWH	WALL HEATER	0.5	120/1	5	CADET APEX72 HW051	1,3
EH-103A,B	DECON 121 AND BATH 122	SPACE HEATING	WALL HEATER	0.5	120/1	5	CADET APEX72 HW051	3, 5

NOTES:
1. TYPICAL OF 3. SEE PLANS FOR LOCATION.
2. HEATER PROVIDED FOR FREEZE PROTECTION. LOCATE HIGH ON WALL, MINIMUM OF 72" AFF AND IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.
3. MOUNT HIGH ON WALL, 12-INCHES MINIMUM BELOW CEILING
4. PROVIDE LOCAL THERMOSTAT IN EACH WATER HEATER ROOM. HEATER SHALL OPERATE TO MAINTAIN AMBIENT TEMPERATURES ABOVE 40 F FOR OPTIMAL WATER HEATER PERFORMANCE.
5. HEATER IS FOR OCCUPANT COMFORT. PROVIDE LOCAL THERMOSTAT TO MAINTAIN ADJUSTABLE SETPOINT IN SPACE.

REVIEWED FOR CODE COMPLIANCE BY SOMTLAND CIVIL ENGINEERING, INC. IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

6/5/2020 10:37:53 AM

ROWELL BROKAW
1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com
Architecture. Design. Strategy.

STAMP

REGISTERED PROFESSIONAL ENGINEER CHRISTOPHER J. PAPE No. M35043 EXP 6/30/2022 MECHANICAL STATE OF CALIFORNIA
6.3.2020

PAE
pae-engineers.com

REVISIONS TO THIS SHEET

REV.	DATE
PCC-3	6/3/2020
PCC-2	5/15/2020
ADD-1	04/27/2020
PCC-1	4/6/2020

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

EQUIPMENT SCHEDULES - MECHANICAL

M-002

VENTILATION SCHEDULE - MULTIPLE SPACES - CALIFORNIA

FCU-101

LOCATION	FLOOR AREA (SF)	PRIMARY AIRFLOW RATE (CFM)	OCCUPANCY CLASSIFICATION	PEOPLE OUTDOOR AIRFLOW RATE Rp (CFM/PERSON)	AREA OUTDOOR AIRFLOW RATE Ra (CFM/SF)	DEFAULT OCCUPANT DENSITY (PEOPLE/1000SF)	CODE POPULATION	DESIGN POPULATION	OUTDOOR AIR INTAKE (CFM)	NOTES
111 OFFICE	133	130	Office (250 square feet in floor area or less)	15	0.15	10	1.3	1.3	20	
112 OFFICE	130	130	Office (250 square feet in floor area or less)	15	0.15	10	1.3	1.3	20	
113 OFFICE	131	130	Office (250 square feet in floor area or less)	15	0.15	10	1.3	1.3	20	
114 OFFICE	131	130	Office (250 square feet in floor area or less)	15	0.15	10	1.3	1.3	20	
115 OFFICE	70	90	Office (250 square feet in floor area or less)	15	0.15	10	0.7	1.0	15	
121 DECON	92	85	Office (250 square feet in floor area or less)	15	0.15	10	0.9	1.0	15	
122 BATH	76	85	Corridors, Restrooms, Stairs and Support Areas	15	0.15	10	0.8	1.0	15	
123 HALL	343	100	Corridors, Restrooms, Stairs and Support Areas	15	0.15	10	3.4	3.4	52	
124 WAITING	164	100	Waiting Area	15	0.15	10	1.6	1.6	25	
125 PANTRY	125	130	Office (250 square feet in floor area or less)	15	0.15	10	1.3	1.3	19	
TOTALS:	1395	1110					14	15	221	

TOTAL AIRFLOW: 1,110
SYSTEM POPULATION: 16
CODE REQUIRED OUTDOOR AIR INTAKE FLOWRATE -... 221

GENERAL NOTES:
A. SYSTEM OUTDOOR AIR CALCULATION IS BASED ON THE 2019 BUILDING ENERGY EFFICIENCY STANDARD.

VENTILATION SCHEDULE - MULTIPLE SPACES - CALIFORNIA

ERV-101

LOCATION	FLOOR AREA (SF)	PRIMARY AIRFLOW RATE (CFM)	OCCUPANCY CLASSIFICATION	PEOPLE OUTDOOR AIRFLOW RATE Rp (CFM/PERSON)	AREA OUTDOOR AIRFLOW RATE Ra (CFM/SF)	DEFAULT OCCUPANT DENSITY (PEOPLE/1000SF)	CODE POPULATION	DESIGN POPULATION	OUTDOOR AIR INTAKE (CFM)	NOTES
110 MULTI PURP	853	950	Convention, Conference, Multi-purpose and Meeting Centers...	15	0.50	67	57.2	57.2	858	
TOTALS:	853	950					57	57	858	

TOTAL AIRFLOW: 950
SYSTEM POPULATION: 57
CODE REQUIRED OUTDOOR AIR INTAKE FLOWRATE -... 858

GENERAL NOTES:
A. SYSTEM OUTDOOR AIR CALCULATION IS BASED ON THE 2019 BUILDING ENERGY EFFICIENCY STANDARD.

VENTILATION SCHEDULE - MULTIPLE SPACES - CALIFORNIA

ERV-102

LOCATION	FLOOR AREA (SF)	PRIMARY AIRFLOW RATE (CFM)	OCCUPANCY CLASSIFICATION	PEOPLE OUTDOOR AIRFLOW RATE Rp (CFM/PERSON)	AREA OUTDOOR AIRFLOW RATE Ra (CFM/SF)	DEFAULT OCCUPANT DENSITY (PEOPLE/1000SF)	CODE POPULATION	DESIGN POPULATION	OUTDOOR AIR INTAKE (CFM)	NOTES
117 MEETING ROOM	341	350	Convention, Conference, Multi-purpose and Meeting Centers...	15	0.50	67	22.8	22.8	343	
118 ELEC RM	133	20	Electrical, Mechanical Room	15	0.15	3	0.4	1.0	20	
TOTALS:	474	370					23	24	363	

TOTAL AIRFLOW: 370
SYSTEM POPULATION: 23
CODE REQUIRED OUTDOOR AIR INTAKE FLOWRATE -... 363

GENERAL NOTES:
A. SYSTEM OUTDOOR AIR CALCULATION IS BASED ON THE 2019 BUILDING ENERGY EFFICIENCY STANDARD.

VENTILATION SCHEDULE - MULTIPLE SPACES - CALIFORNIA

ERV-201

LOCATION	FLOOR AREA (SF)	PRIMARY AIRFLOW RATE (CFM)	OCCUPANCY CLASSIFICATION	PEOPLE OUTDOOR AIRFLOW RATE Rp (CFM/PERSON)	AREA OUTDOOR AIRFLOW RATE Ra (CFM/SF)	DEFAULT OCCUPANT DENSITY (PEOPLE/1000SF)	CODE POPULATION	DESIGN POPULATION	OUTDOOR AIR INTAKE (CFM)	NOTES
202 LOUNGE	341	100	Housing, Public and Common Areas: Multi-family, Dormitory	15	0.15	10	3.4	3.4	52	
TOTALS:	341	100					3	3	52	

TOTAL AIRFLOW: 100
SYSTEM POPULATION: 3
CODE REQUIRED OUTDOOR AIR INTAKE FLOWRATE -... 52

GENERAL NOTES:
A. SYSTEM OUTDOOR AIR CALCULATION IS BASED ON THE 2019 BUILDING ENERGY EFFICIENCY STANDARD.

VENTILATION SCHEDULE - MULTIPLE SPACES - CALIFORNIA

ERV-203

LOCATION	FLOOR AREA (SF)	PRIMARY AIRFLOW RATE (CFM)	OCCUPANCY CLASSIFICATION	PEOPLE OUTDOOR AIRFLOW RATE Rp (CFM/PERSON)	AREA OUTDOOR AIRFLOW RATE Ra (CFM/SF)	DEFAULT OCCUPANT DENSITY (PEOPLE/1000SF)	CODE POPULATION	DESIGN POPULATION	OUTDOOR AIR INTAKE (CFM)	NOTES
203 GYM	266	550	Exercise, Center, Gymnasium	15	0.15	20	5.3	5.3	80	
TOTALS:	266	550					5	5	80	

TOTAL AIRFLOW: 550
SYSTEM POPULATION: 5
CODE REQUIRED OUTDOOR AIR INTAKE FLOWRATE -... 80

GENERAL NOTES:
A. SYSTEM OUTDOOR AIR CALCULATION IS BASED ON THE 2019 BUILDING ENERGY EFFICIENCY STANDARD.

VENTILATION SCHEDULE - MULTIPLE SPACES - CALIFORNIA

ERV-301

LOCATION	FLOOR AREA (SF)	PRIMARY AIRFLOW RATE (CFM)	OCCUPANCY CLASSIFICATION	PEOPLE OUTDOOR AIRFLOW RATE Rp (CFM/PERSON)	AREA OUTDOOR AIRFLOW RATE Ra (CFM/SF)	DEFAULT OCCUPANT DENSITY (PEOPLE/1000SF)	CODE POPULATION	DESIGN POPULATION	OUTDOOR AIR INTAKE (CFM)	NOTES
302 LOUNGE	341	100	Housing, Public and Common Areas: Multi-family, Dormitory	15	0.15	10	3.4	3.4	52	
TOTALS:	341	100					3	3	52	

TOTAL AIRFLOW: 10
SYSTEM POPULATION: 3
CODE REQUIRED OUTDOOR AIR INTAKE FLOWRATE -... 52

GENERAL NOTES:
A. SYSTEM OUTDOOR AIR CALCULATION IS BASED ON THE 2019 BUILDING ENERGY EFFICIENCY STANDARD.

VENTILATION SCHEDULE - MULTIPLE SPACES - CALIFORNIA

ERV-303

LOCATION	FLOOR AREA (SF)	PRIMARY AIRFLOW RATE (CFM)	OCCUPANCY CLASSIFICATION	PEOPLE OUTDOOR AIRFLOW RATE Rp (CFM/PERSON)	AREA OUTDOOR AIRFLOW RATE Ra (CFM/SF)	DEFAULT OCCUPANT DENSITY (PEOPLE/1000SF)	CODE POPULATION	DESIGN POPULATION	OUTDOOR AIR INTAKE (CFM)	NOTES
303 GYM	266	550	Exercise, Center, Gymnasium	15	0.15	20	5.3	5.3	80	
TOTALS:	266	550					5	5	80	

TOTAL AIRFLOW: 550
SYSTEM POPULATION: 5
CODE REQUIRED OUTDOOR AIR INTAKE FLOWRATE -... 80

GENERAL NOTES:
A. SYSTEM OUTDOOR AIR CALCULATION IS BASED ON THE 2019 BUILDING ENERGY EFFICIENCY STANDARD.

VENTILATION SCHEDULE - MULTIPLE SPACES - CALIFORNIA

HRV-102

LOCATION	FLOOR AREA (SF)	PRIMARY AIRFLOW RATE (CFM)	OCCUPANCY CLASSIFICATION	PEOPLE OUTDOOR AIRFLOW RATE Rp (CFM/PERSON)	AREA OUTDOOR AIRFLOW RATE Ra (CFM/SF)	DEFAULT OCCUPANT DENSITY (PEOPLE/1000SF)	CODE POPULATION	DESIGN POPULATION	OUTDOOR AIR INTAKE (CFM)	NOTES
105 LAUNDRY	282	450	Laundry	15	0.15	10	2.8	2.8	43	
TOTALS:	282	450					3	3	43	

TOTAL AIRFLOW: 450
SYSTEM POPULATION: 3
CODE REQUIRED OUTDOOR AIR INTAKE FLOWRATE -... 43

GENERAL NOTES:
A. SYSTEM OUTDOOR AIR CALCULATION IS BASED ON THE 2019 BUILDING ENERGY EFFICIENCY STANDARD.

VENTILATION SCHEDULE - MULTIPLE SPACES - CALIFORNIA

HRV-202

LOCATION	FLOOR AREA (SF)	PRIMARY AIRFLOW RATE (CFM)	OCCUPANCY CLASSIFICATION	PEOPLE OUTDOOR AIRFLOW RATE Rp (CFM/PERSON)	AREA OUTDOOR AIRFLOW RATE Ra (CFM/SF)	DEFAULT OCCUPANT DENSITY (PEOPLE/1000SF)	CODE POPULATION	DESIGN POPULATION	OUTDOOR AIR INTAKE (CFM)	NOTES
205 LAUNDRY	271	450	Laundry	15	0.15	10	2.7	2.7	41	
TOTALS:	271	450					3	3	41	

TOTAL AIRFLOW: 450
SYSTEM POPULATION: 3
CODE REQUIRED OUTDOOR AIR INTAKE FLOWRATE -... 41

GENERAL NOTES:
A. SYSTEM OUTDOOR AIR CALCULATION IS BASED ON THE 2019 BUILDING ENERGY EFFICIENCY STANDARD.

VENTILATION SCHEDULE - MULTIPLE SPACES - CALIFORNIA

HRV-302

LOCATION	FLOOR AREA (SF)	PRIMARY AIRFLOW RATE (CFM)	OCCUPANCY CLASSIFICATION	PEOPLE OUTDOOR AIRFLOW RATE Rp (CFM/PERSON)	AREA OUTDOOR AIRFLOW RATE Ra (CFM/SF)	DEFAULT OCCUPANT DENSITY (PEOPLE/1000SF)	CODE POPULATION	DESIGN POPULATION	OUTDOOR AIR INTAKE (CFM)	NOTES
305 LAUNDRY	271	450	Laundry	15	0.15	10	2.7	2.7	41	
TOTALS:	271	450					3	3	41	

TOTAL AIRFLOW: 450
SYSTEM POPULATION: 3
CODE REQUIRED OUTDOOR AIR INTAKE FLOWRATE -... 41

GENERAL NOTES:
A. SYSTEM OUTDOOR AIR CALCULATION IS BASED ON THE 2019 BUILDING ENERGY EFFICIENCY STANDARD.

VENTILATION SCHEDULE - MULTIPLE SPACES - CALIFORNIA

PTAC 102/103

LOCATION	FLOOR AREA (SF)	PRIMARY AIRFLOW RATE (CFM)	OCCUPANCY CLASSIFICATION	PEOPLE OUTDOOR AIRFLOW RATE Rp (CFM/PERSON)	AREA OUTDOOR AIRFLOW RATE Ra (CFM/SF)	DEFAULT OCCUPANT DENSITY (PEOPLE/1000SF)	CODE POPULATION	DESIGN POPULATION	OUTDOOR AIR INTAKE (CFM)	NOTES
102 SECURITY	204	65	Office (250 square feet in floor area or less)	15	0.15	10	2.0	2.0	31	
103 DIR	105	65	Office (250 square feet in floor area or less)	15	0.15	10	1.1	1.1	16	
TOTALS:	309	130					3	3	47	

TOTAL AIRFLOW: 130
SYSTEM POPULATION: 3
CODE REQUIRED OUTDOOR AIR INTAKE FLOWRATE -... 47

GENERAL NOTES:
A. SYSTEM OUTDOOR AIR CALCULATION IS BASED ON THE 2019 BUILDING ENERGY EFFICIENCY STANDARD.

VENTILATION SCHEDULE - MULTIPLE SPACES - CALIFORNIA

PTAC-A

LOCATION	FLOOR AREA (SF)	PRIMARY AIRFLOW RATE (CFM)	OCCUPANCY CLASSIFICATION	PEOPLE OUTDOOR AIRFLOW RATE Rp (CFM/PERSON)	AREA OUTDOOR AIRFLOW RATE Ra (CFM/SF)	DEFAULT OCCUPANT DENSITY (PEOPLE/1000SF)	CODE POPULATION	DESIGN POPULATION	OUTDOOR AIR INTAKE (CFM)	NOTES
Unit A	340	65	Tenant Lease Space	15	0.15	10	3.4	1.0	51	
TOTALS:	340	65					3	1	51	

TOTAL AIRFLOW: 65
SYSTEM POPULATION: 1
CODE REQUIRED OUTDOOR AIR INTAKE FLOWRATE -... 51

GENERAL NOTES:
A. SYSTEM OUTDOOR AIR CALCULATION IS BASED ON THE 2019 BUILDING ENERGY EFFICIENCY STANDARD.

VENTILATION SCHEDULE - MULTIPLE SPACES - CALIFORNIA

PTAC-B

LOCATION	FLOOR AREA (SF)	PRIMARY AIRFLOW RATE (CFM)	OCCUPANCY CLASSIFICATION	PEOPLE OUTDOOR AIRFLOW RATE Rp (CFM/PERSON)	AREA OUTDOOR AIRFLOW RATE Ra (CFM/SF)	DEFAULT OCCUPANT DENSITY (PEOPLE/1000SF)	CODE POPULATION	DESIGN POPULATION	OUTDOOR AIR INTAKE (CFM)	NOTES
Unit B	343	65	Tenant Lease Space	15	0.15	10	3.4	1.0	52	
TOTALS:	343	65					3	1	52	

TOTAL AIRFLOW: 65
SYSTEM POPULATION: 1
CODE REQUIRED OUTDOOR AIR INTAKE FLOWRATE -... 52

GENERAL NOTES:
A. SYSTEM OUTDOOR AIR CALCULATION IS BASED ON THE 2019 BUILDING ENERGY EFFICIENCY STANDARD.

VENTILATION SCHEDULE - MULTIPLE SPACES - CALIFORNIA

PTAC-C1/C2

LOCATION	FLOOR AREA (SF)	PRIMARY AIRFLOW RATE (CFM)	OCCUPANCY CLASSIFICATION	PEOPLE OUTDOOR AIRFLOW RATE Rp (CFM/PERSON)	AREA OUTDOOR AIRFLOW RATE Ra (CFM/SF)	DEFAULT OCCUPANT DENSITY (PEOPLE/1000SF)	CODE POPULATION	DESIGN POPULATION	OUTDOOR AIR INTAKE (CFM)	NOTES
Unit C	690	130	Tenant Lease Space	15	0.15	10	6.9	2.0	104	1
TOTALS:	690	130					7	2	104	

TOTAL AIRFLOW: 130
SYSTEM POPULATION: 2
CODE REQUIRED OUTDOOR AIR INTAKE FLOWRATE -... 104

GENERAL NOTES:
A. SYSTEM OUTDOOR AIR CALCULATION IS BASED ON THE 2019 BUILDING ENERGY EFFICIENCY STANDARD.

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER J. PFEIFFER
No. M35043
EXP 6/30/2022
MECHANICAL
STATE OF CALIFORNIA
6.3.2020

PAE

pae-engineers.com

REVISIONS TO THIS SHEET

REV.	DATE

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C.: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner

DANCO

Project Name

SAGE COMMONS

Project Address

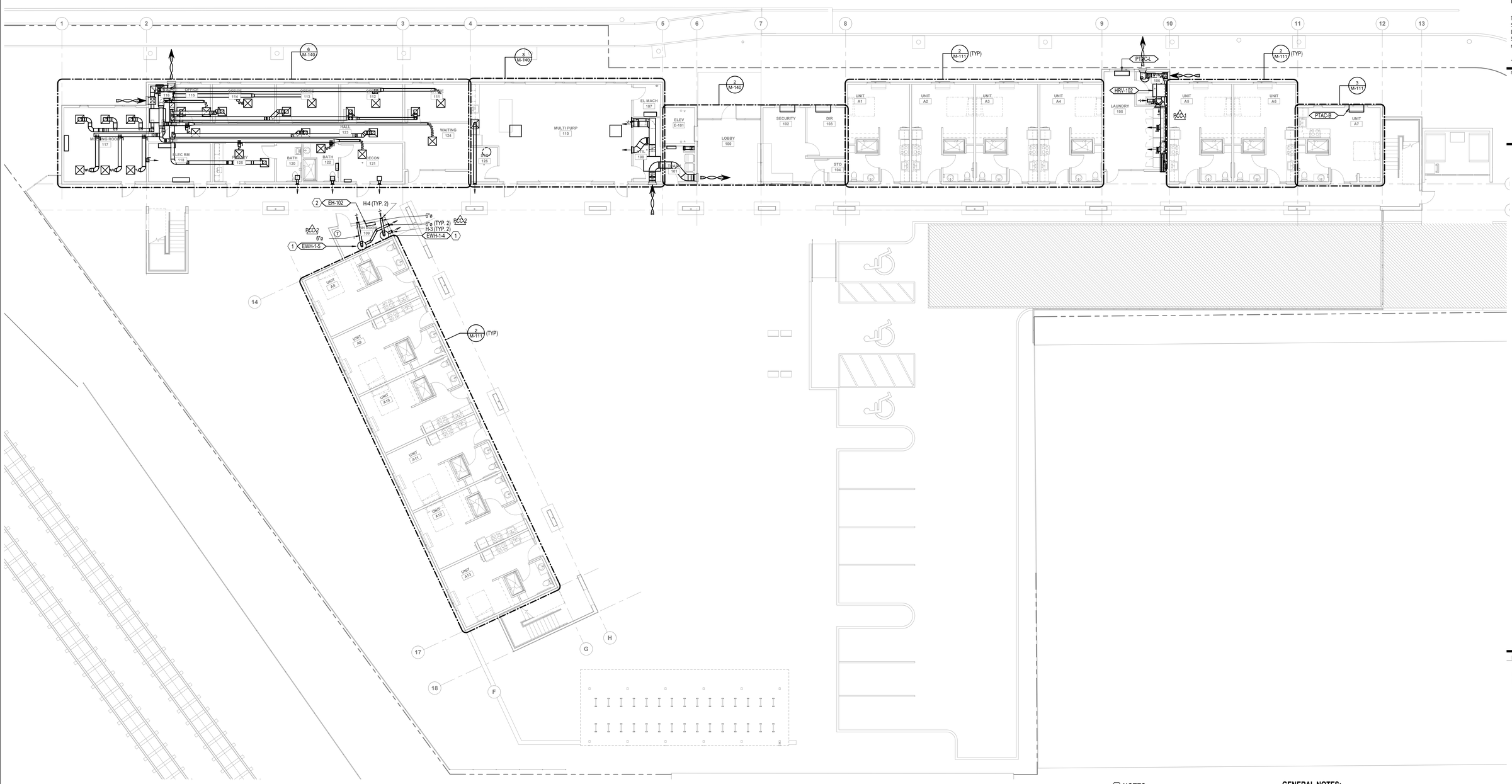
80 COLLEGE AVENUE
SANTA ROSA, CA

EQUIPMENT SCHEDULES - MECHANICAL

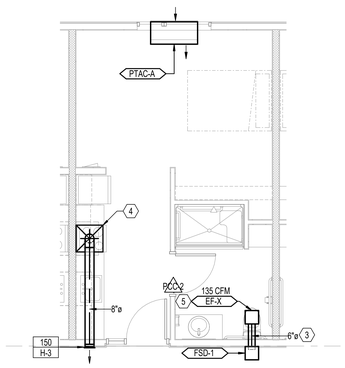
M-003

REVIEWED FOR CODE COMPLIANCE
BY CASTLELAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

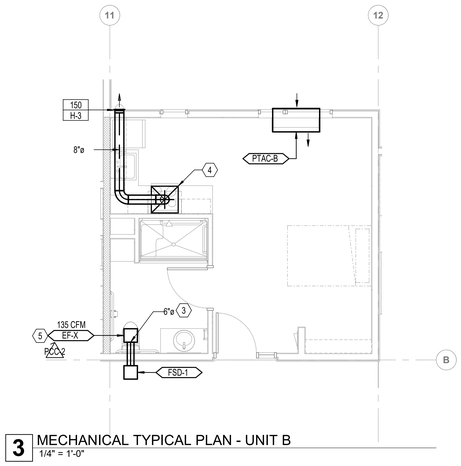
6/5/2020 10:02:41 AM



1 MECHANICAL FIRST FLOOR PLAN
1/8" = 1'-0"



2 MECHANICAL TYPICAL PLAN - UNIT A
1/4" = 1'-0"



3 MECHANICAL TYPICAL PLAN - UNIT B
1/4" = 1'-0"

NOTES:

1. PROVIDE HYBRID ELECTRIC WATER HEATER DUCTWORK AND RELATED GRILLES IN ACCORDANCE MANUFACTURER'S REQUIREMENTS FOR VENTILATION. APPROPRIATE VENTILATION METHODS REQUIRED FOR ALL WATER HEATERS INSTALLED. REFER TO M-140 FOR OTHER EWH LOCATIONS.
2. MOUNT WALL HEATER MIN 1'-0" BELOW CEILING.
3. ROUTE RESTROOM EXHAUST DUCTWORK THROUGH WOOD STRUCTURE AND TERMINATE AT BOTTOM OF WOOD FRAME WITHIN FIRST JOIST SPACE. PROVIDE CEILING FIRE DAMPER (RUSKIN CFD7T OR EQUAL) AT TERMINATION WITH INTEGRAL OBD AND GRILLE. INSTALL IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS AND PER ARCHITECTURAL SPECIFICATIONS FOR MAINTAINING ASSEMBLY FIRE RATING. (TYPICAL ALL APARTMENT UNIT RESTROOM EXHAUSTS)
4. RANGE HOOD PROVIDED BY ARCHITECTURAL.
5. FURNISH APARTMENT RESTROOM EXHAUST FANS WITH WITH PANASONIC CEILING DAMPER PC-RD05C5 TO MAINTAIN FIRE RATING OF STRUCTURE.

GENERAL NOTES:

A. PROVIDE VOLUME DAMPER AT EACH BRANCH OUTLET/INLET.

B. PROVIDE CABLE OPERATED VOLUME DAMPERS AT ALL INACCESSIBLE VOLUME DAMPERS.

C. RUN DUCTS AND PIPING CONCEALED, UNLESS SPECIFIED OTHERWISE, AND CLEAR OF CEILING INSERTS. ALL DUCTWORK SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO WALL AND UNDERSIDE OF BEAMS AND JOISTS.

D. ALL WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN PIPING AND DUCTS (INCLUDING DIVIDED DUCTS) AND TRANSITIONS AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.

E. VERIFY ALL EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. VERIFY AND PROVIDE DUCT TRANSITIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DIMENSIONS BEFORE FABRICATION.

F. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF AIR DEVICES.

G. ALL DETAILS APPLY TO THIS SHEET WHETHER TAGGED OR NOT.

H. BRANCH DUCTWORK SIZE TO MATCH EQUIPMENT CONNECTION, UNLESS OTHERWISE NOTED.

I. BRANCH DUCTWORK TO DIFFUSERS AND GRILLES TO MATCH DIFFUSER CONNECTION, UNLESS OTHERWISE NOTED.

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER J. PAE
No. M35043
EXP 6/30/2022
MECHANICAL
STATE OF CALIFORNIA
6.3.2020

PAE

pae-engineers.com

REVISIONS TO THIS SHEET

REV.	DATE
PCC-2	5/15/2020
PCC-1	4/6/2020

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

Project Name
SAGE COMMONS

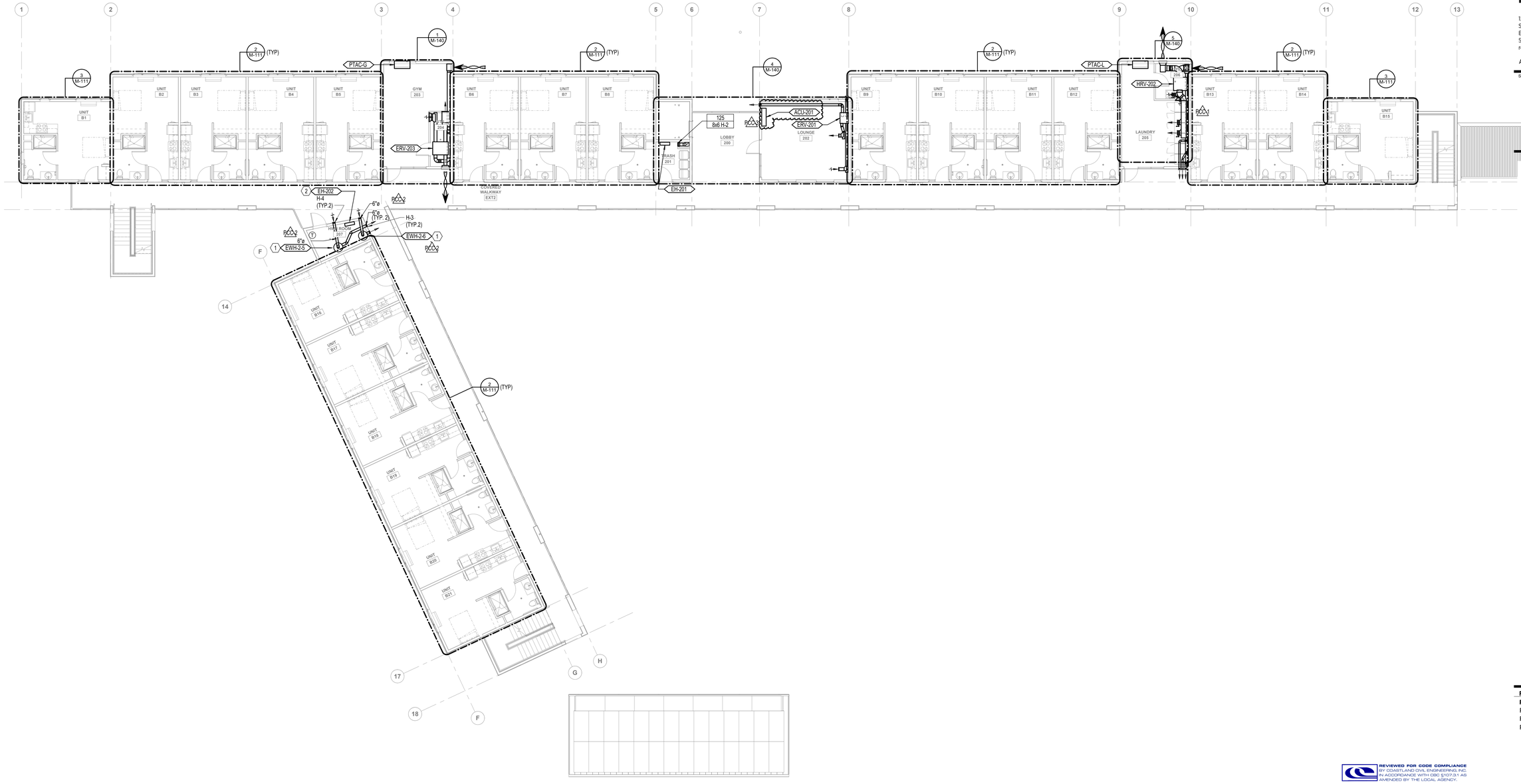
Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

MECHANICAL 1ST FLOOR PLAN AND TYPICAL UNITS A & B

M-111

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

6/5/2020 10:02:46 AM



1 MECHANICAL 2ND FLOOR PLAN
1/8" = 1'-0"

GENERAL NOTES:

A. PROVIDE VOLUME DAMPER AT EACH BRANCH OUTLET/INLET.

B. PROVIDE CABLE OPERATED VOLUME DAMPERS AT ALL INACCESSIBLE VOLUME DAMPERS.

C. RUN DUCTS AND PIPING CONCEALED, UNLESS SPECIFIED OTHERWISE, AND CLEAR OF CEILING INSERTS. ALL DUCTWORK SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO WALL AND UNDERSIDE OF BEAMS AND JOISTS.

D. ALL WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN PIPING AND DUCTS (INCLUDING DIVIDED DUCTS) AND TRANSITIONS AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.

E. VERIFY ALL EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. VERIFY AND PROVIDE DUCT TRANSITIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DIMENSIONS BEFORE FABRICATION.

F. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF AIR DEVICES.

G. ALL DETAILS APPLY TO THIS SHEET WHETHER TAGGED OR NOT. XXX

H. BRANCH DUCTWORK SIZE TO MATCH EQUIPMENT CONNECTION, UNLESS OTHERWISE NOTED.

I. BRANCH DUCTWORK TO DIFFUSERS AND GRILLES TO MATCH DIFFUSER CONNECTION, UNLESS OTHERWISE NOTED.

NOTES:

1. PROVIDE HYBRID ELECTRIC WATER HEATER DUCTWORK AND RELATED GRILLES IN ACCORDANCE MANUFACTURER'S REQUIREMENTS FOR VENTILATION. APPROPRIATE VENTILATION METHODS REQUIRED FOR ALL WATER HEATERS INSTALLED. REFER TO M-140 FOR OTHER EWH LOCATIONS.

2. MOUNT WALL HEATER MIN 1'-0" BELOW CEILING.

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

6/5/2020 10:02:49 AM

ROWELL BROKAW
1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com
Architecture. Design. Strategy.

STAMP

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER J. PFEIFFER
No. M35043
EXP 6/30/2022
MECHANICAL
STATE OF CALIFORNIA
3.2020

PAE
pae-engineers.com

REVISIONS TO THIS SHEET

REV.	DATE
PCC-3	6/3/2020
PCC-2	5/15/2020
PCC-1	4/6/2020

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

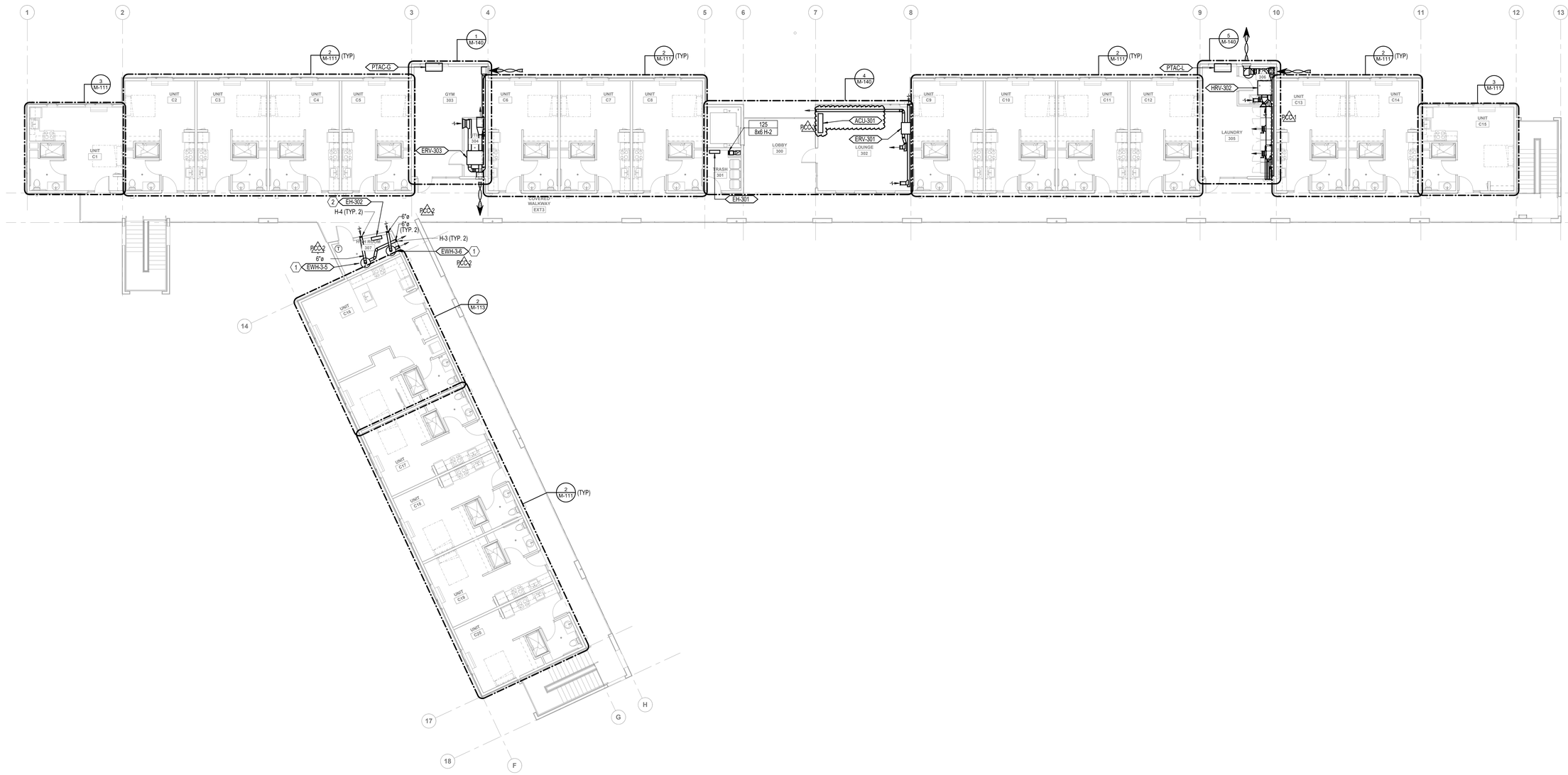
Owner
DANCO

Project Name
SAGE COMMONS

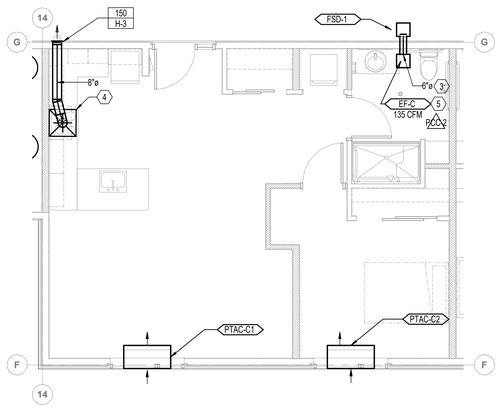
Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

MECHANICAL 2ND FLOOR PLAN

M-112



1 MECHANICAL 3RD FLOOR PLAN
1/8" = 1'-0"



2 MECHANICAL UNIT MGR FLOOR PLAN
1/4" = 1'-0"

NOTES:

1. PROVIDE HYBRID ELECTRIC WATER HEATER DUCTWORK AND RELATED GRILLES IN ACCORDANCE MANUFACTURER'S REQUIREMENTS FOR VENTILATION. APPROPRIATE VENTILATION METHODS REQUIRED FOR ALL WATER HEATERS INSTALLED. REFER TO M-140 FOR OTHER EWH LOCATIONS.

2. MOUNT WALL HEATER MIN 1'-0" BELOW CEILING.

3. ROUTE RESTROOM EXHAUST DUCTWORK THROUGH WOOD STRUCTURE AND TERMINATE AT BOTTOM OF WOOD FRAME WITHIN FIRST JOIST SPACE. PROVIDE CEILING FIRE DAMPER AT TERMINATION WITH INTEGRAL OBD AND GRILLE. (TYPICAL ALL RESTROOM EXHAUSTS)

4. RANGE HOOD PROVIDED BY ARCHITECTURAL.

PCC-2 5. FURNISH APARTMENT RESTROOM EXHAUST FANS WITH WITH PANASONIC CEILING DAMPER PC-RD05C5 TO MAINTAIN FIRE RATING OF STRUCTURE.

GENERAL NOTES:

A. PROVIDE VOLUME DAMPER AT EACH BRANCH OUTLET/INLET.

B. PROVIDE CABLE OPERATED VOLUME DAMPERS AT ALL INACCESSIBLE VOLUME DAMPERS.

C. RUN DUCTS AND PIPING CONCEALED, UNLESS SPECIFIED OTHERWISE, AND CLEAR OF CEILING INSERTS. ALL DUCTWORK SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO WALL AND UNDERSIDE OF BEAMS AND JOISTS.

D. ALL WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN PIPING AND DUCTS (INCLUDING DIVIDED DUCTS) AND TRANSITIONS AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.

E. VERIFY ALL EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. VERIFY AND PROVIDE DUCT TRANSITIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DIMENSIONS BEFORE FABRICATION.

F. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF AIR DEVICES.

G. ALL DETAILS APPLY TO THIS SHEET WHETHER TAGGED OR NOT. XXX

H. BRANCH DUCTWORK SIZE TO MATCH EQUIPMENT CONNECTION, UNLESS OTHERWISE NOTED.

I. BRANCH DUCTWORK TO DIFFUSERS AND GRILLES TO MATCH DIFFUSER CONNECTION, UNLESS OTHERWISE NOTED.

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

6/5/2020 10:02:53 AM

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER J. PRIOLEAU
No. M25043
EXP 6/30/2022
MECHANICAL
STATE OF CALIFORNIA
6.3.2020

PAE
pae-engineers.com

REVISIONS TO THIS SHEET

REV.	DATE
PCC-3	6/3/2020
PCC-2	5/15/2020
PCC-1	4/6/2020

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

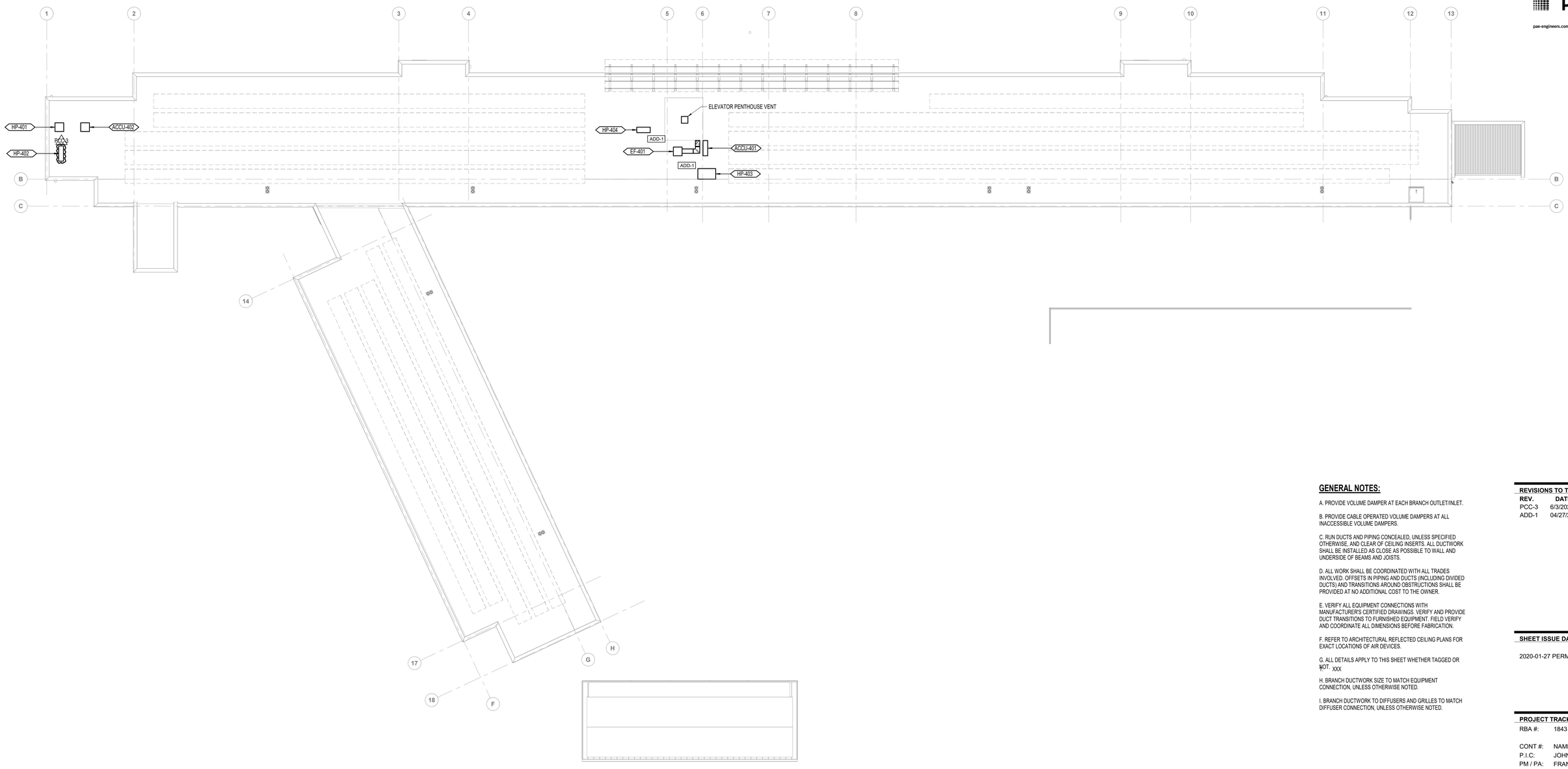
Owner
DANCO

Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE SANTA ROSA, CA

MECHANICAL 3RD FLOOR PLAN AND UNIT MGR APT.

M-113



1 MECHANICAL ROOF PLAN
1/8" = 1'-0"

GENERAL NOTES:

A. PROVIDE VOLUME DAMPER AT EACH BRANCH OUTLET/INLET.

B. PROVIDE CABLE OPERATED VOLUME DAMPERS AT ALL INACCESSIBLE VOLUME DAMPERS.

C. RUN DUCTS AND PIPING CONCEALED, UNLESS SPECIFIED OTHERWISE, AND CLEAR OF CEILING INSERTS. ALL DUCTWORK SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO WALL AND UNDERSIDE OF BEAMS AND JOISTS.

D. ALL WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN PIPING AND DUCTS (INCLUDING DIVIDED DUCTS) AND TRANSITIONS AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.

E. VERIFY ALL EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. VERIFY AND PROVIDE DUCT TRANSITIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DIMENSIONS BEFORE FABRICATION.

F. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF AIR DEVICES.

G. ALL DETAILS APPLY TO THIS SHEET WHETHER TAGGED OR NOT. XXX

H. BRANCH DUCTWORK SIZE TO MATCH EQUIPMENT CONNECTION, UNLESS OTHERWISE NOTED.

I. BRANCH DUCTWORK TO DIFFUSERS AND GRILLES TO MATCH DIFFUSER CONNECTION, UNLESS OTHERWISE NOTED.

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

6/5/2020 10:02:55 AM

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REGISTERED PROFESSIONAL ENGINEER
CHRIS J. PRIOR
No. M35043
EXP 6/30/2022
MECHANICAL
STATE OF CALIFORNIA
6.3.2020

PAE

pae-engineers.com

REVISIONS TO THIS SHEET

REV.	DATE
PCC-3	6/3/2020
ADD-1	04/27/2020

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner

DANCO

Project Name

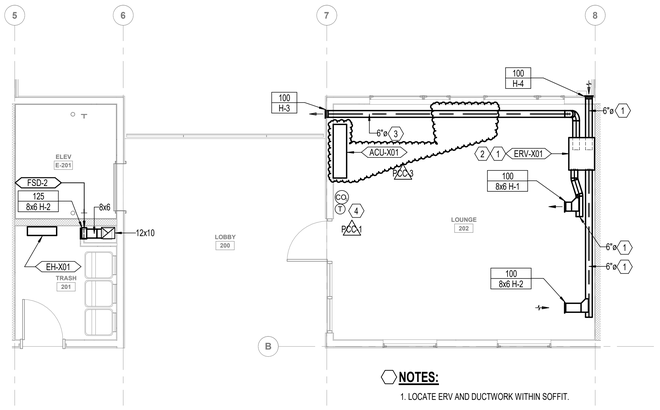
SAGE COMMONS

Project Address

**80 COLLEGE AVENUE
SANTA ROSA, CA**

MECHANICAL ROOF PLAN

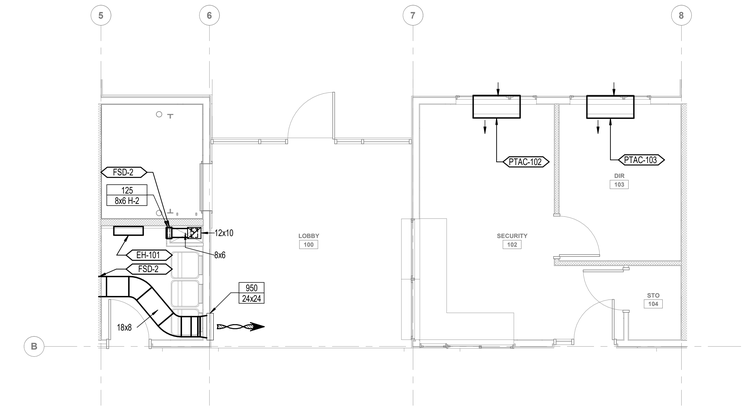
M-114



NOTES:

1. LOCATE ERV AND DUCTWORK WITHIN SOFFIT.
2. ERV OPERATES WHEN CO2 LEVELS IN LOUNGE REACH LOW LEVEL.
3. EXHAST DUCT ROUTED WIITHN WOOD STRUCTURE TO TERMINATION. ROUTE IN BETWEEN AND PARALLEL TO JOISTS.
4. THERMOSTAT SHALL BE MOUNTED NO MORE THAN 48" AFF AND IN ACCORDANCE WITH CBC §1136A & 11B-308.

4 MECHANICAL 2ND & 3RD FLOOR - ENLARGED - LOBBY
1/4" = 1'-0"



2 MECHANICAL 1ST FLOOR - ENLARGED - LOBBY
1/4" = 1'-0"

GENERAL NOTES:

A. PROVIDE VOLUME DAMPER AT EACH BRANCH OUTLET/INLET.

B. PROVIDE CABLE OPERATED VOLUME DAMPERS AT ALL INACCESSIBLE VOLUME DAMPERS.

C. RUN DUCTS AND PIPING CONCEALED, UNLESS SPECIFIED OTHERWISE, AND CLEAR OF CEILING INSERTS. ALL DUCTWORK SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO WALL AND UNDERSIDE OF BEAMS AND JOISTS.

D. ALL WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN PIPING AND DUCTS (INCLUDING DIVIDED DUCTS) AND TRANSITIONS AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.

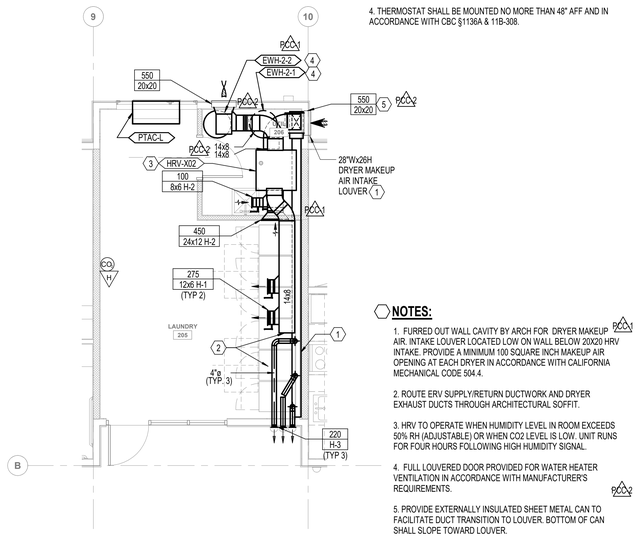
E. VERIFY ALL EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. VERIFY AND PROVIDE DUCT TRANSITIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DIMENSIONS BEFORE FABRICATION.

F. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF AIR DEVICES.

G. ALL DETAILS APPLY TO THIS SHEET WHETHER TAGGED OR NOT.

H. BRANCH DUCTWORK SIZE TO MATCH EQUIPMENT CONNECTION, UNLESS OTHERWISE NOTED.

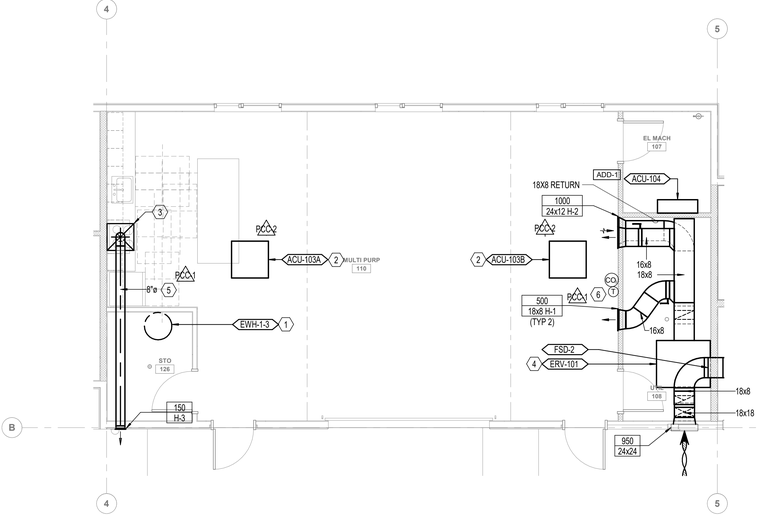
I. BRANCH DUCTWORK TO DIFFUSERS AND GRILLES TO MATCH DIFFUSER CONNECTION, UNLESS OTHERWISE NOTED.



NOTES:

1. FURRED OUT WALL CAVITY BY ARCH FOR DRYER MAKEUP AIR. INTAKE LOUVER LOCATED LOW ON WALL BELOW 20X20 HRV INTAKE. PROVIDE A MINIMUM 100 SQUARE INCH MAKEUP AIR OPENING AT EACH DRYER IN ACCORDANCE WITH CALIFORNIA MECHANICAL CODE 504.4. PCC-1
2. ROUTE ERV SUPPLY/RETURN DUCTWORK AND DRYER EXHAUST DUCTS THROUGH ARCHITECTURAL SOFFIT.
3. HRV TO OPERATE WHEN HUMIDITY LEVEL IN ROOM EXCEEDS 50% RH (ADJUSTABLE) OR WHEN CO2 LEVEL IS LOW. UNIT RUNS FOR FOUR HOURS FOLLOWING HIGH HUMIDITY SIGNAL.
4. FULL LOUVERED DOOR PROVIDED FOR WATER HEATER VENTILATION IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS. PCC-2
5. PROVIDE EXTERNALLY INSULATED SHEET METAL CAN TO FACILITATE DUCT TRANSITION TO LOUVER. BOTTOM OF CAN SHALL SLOPE TOWARD LOUVER.

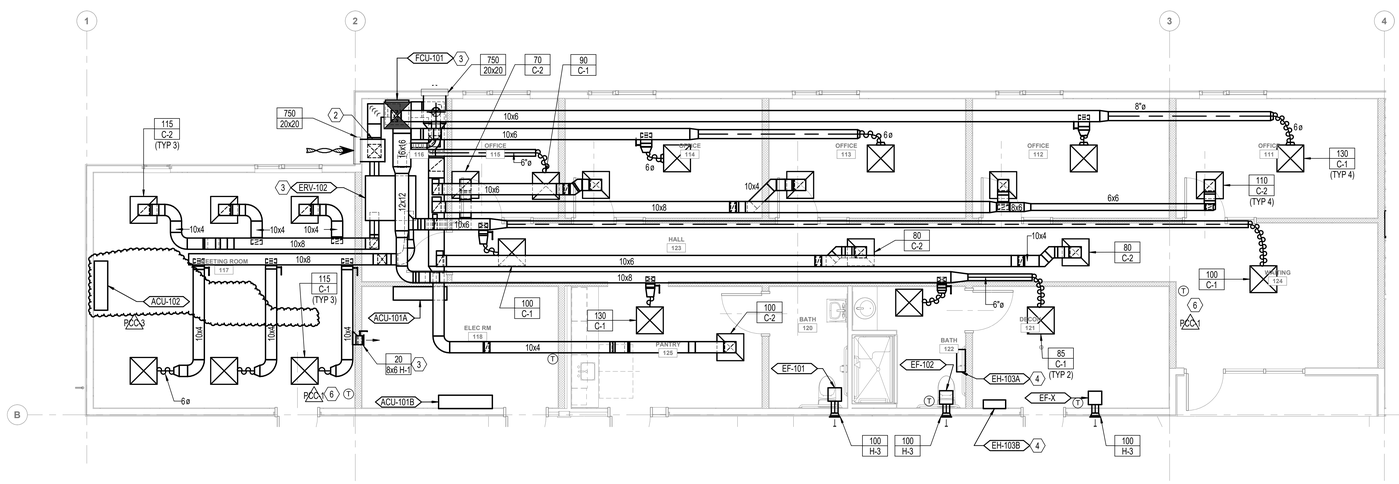
5 MECHANICAL 1ST, 2ND, & 3RD FLOOR - ENLARGED - LAUNDRY
1/4" = 1'-0"



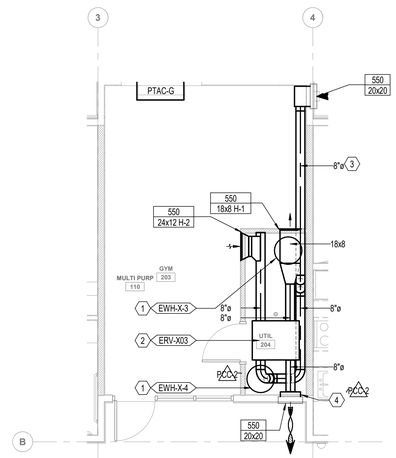
NOTES:

1. PROVIDE WATER HEATER DUCTWORK AND RELATED GRILLES, SIMILAR TO EWH-1-104 AND EWH-1-105.
2. CEILING CASSETTES ARE RECESSED INTO THE CEILING ABOVE. STRUCTURAL FRAMING DESIGN ACCOMMODATES PLACEMENT OF CASSETES BY HEADING OFF JOISTS. COORDINATE PLACEMENT WITH STRUCTURAL. REFER TO ARCHITECTURAL DETAILS AND SPECIFICATIONS FOR INSTALLATION REQUIREMENTS TO MAINTAIN FLOOR/CEILING FIRE RATING.
3. RANGE HOOD PROVIDED BY ARCHITECTURAL.
4. ERV TO BE CYCLED ON AND OFF BASED ON CO2 LEVELS IN SPACE. PCC-1
5. HOOD EXHAUST DUCT ROUTED THROUGH ARCHITECTURAL SOFFIT BELOW RATED CEILING.
6. THERMOSTAT SHALL BE MOUNTED NO MORE THAN 48" AFF AND IN ACCORDANCE WITH CBC §1136A & 11B-308.

3 MECHANICAL - ENLARGED - MULTIPURPOSE
1/4" = 1'-0"



1 MECHANICAL 2ND & 3RD FLOOR - ENLARGED - GYM
1/4" = 1'-0"



NOTES:

1. FULL LOUVERED DOOR PROVIDED FOR WATER HEATER VENTILATION IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS. PCC-2
2. ERV OPERATES WHILE GYM IS IN OCCUPIED MODE (SIGNAL IS PROVIDED BY OCCUPANCY SENSOR).
3. ROUTE INTAKE AIR DUCT IN ARCHITECTURAL SOFFIT.
4. PROVIDE EXTERNALLY INSULATED SHEET METAL CAN TO FACILITATE DUCT TRANSITION TO LOUVER. BOTTOM OF CAN SHALL SLOPE TOWARD LOUVER. PCC-2

6 MECHANICAL 1ST FLOOR - ENLARGED - OFFICES
1/4" = 1'-0"

NOTES:

1. FAN COIL UNIT RUNS WHEN AN OFFICE IS IN OCCUPIED MODE (SIGNAL PROVIDED BY OCCUPANCY SENSOR) OR WHEN TEMPERATURE IN HALLWAY DROPS BELOW HEATING LOW SETPOINT (ADJUSTABLE).
2. AUTO DAMPER FOR OSA TO FAN COIL UNIT. OPEN WHEN UNIT IS IN OPERATION. PROVIDE OSA VOLUME DAMPER BETWEEN AUTOMATIC DAMPER AND FCU; BALANCE DAMPERS TO MINIMUM 25% OSA.
3. ERV TO OPERATE WHILE MEETING ROOM IS IN OCCUPIED MODE. (SIGNAL IS PROVIDED BY OCCUPANCY SENSOR)
4. ELECTRIC HEATER PROVIDED IN DECON AND BATH FOR OCCUPANT COMFORT. PROVIDE WITH TEMPERATURE SENSOR FOR CONTROL.
5. DUCT AND REGISTER PENETRATIONS THROUGH FIRE RATED WALLS EXEMPT FROM THE REQUIREMENT FOR RATED DAMPERS SHALL BE INSTALLED IN ACCORDANCE WITH CALIFORNIA BUILDING CODE CHAPTER 7. SEE DETAIL 4/M-501.
6. THERMOSTAT SHALL BE MOUNTED NO MORE THAN 48" AFF AND IN ACCORDANCE WITH CBC §1136A & 11B-308. PCC-1

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REGISTERED PROFESSIONAL ENGINEER — CHRISTOPHER J. PFEIFFER — No. M35043 — EXP 6/30/2022 — MECHANICAL — STATE OF CALIFORNIA — 3.2020

PAE

pae-engineers.com

REVISIONS TO THIS SHEET

REV.	DATE
PCC-3	6/3/2020
PCC-2	5/15/2020
ADD-1	04/27/2020
PCC-1	4/6/2020

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner

DANCO

Project Name

SAGE COMMONS

Project Address

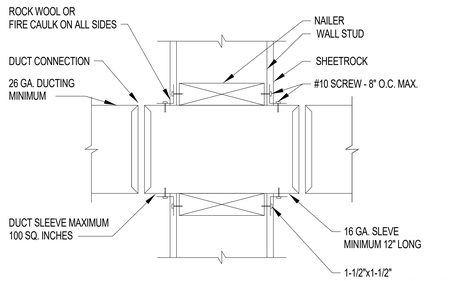
80 COLLEGE AVENUE
SANTA ROSA, CA

MECHANICAL ENLARGED PLANS

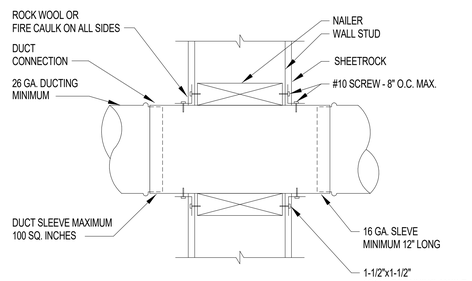
M-140

REVIEWED FOR CODE COMPLIANCE BY COASTLAND CIVIL ENGINEERING, INC. IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

6/5/2020 10:02:59 AM



RECTANGULAR WALL SLEEVE



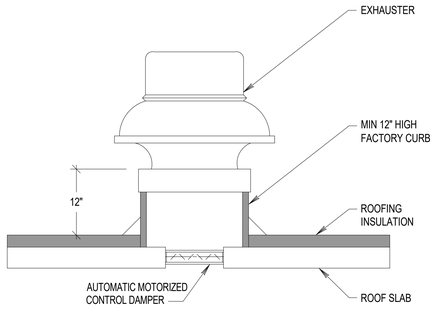
ROUND WALL SLEEVE

GENERAL NOTES:

A. WALL PENETRATIONS TO BE INSTALLED IN ACCORDANCE WITH CALIFORNIA BUILDING CODE SECTION 717, INCLUDING A MINIMUM 12" LONG X 0.06" THICK SLEEVE.

4 M509 FIRE PARTITION PENETRATION DETAIL

SCALE: NONE

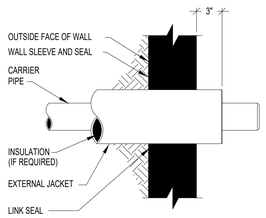


GENERAL NOTES:

A. SEE SPECIFICATIONS FOR VIBRATION ISOLATION AND SEISMIC RESTRAINT.

6 M501 ROOF EXHAUSTER

SCALE: NONE



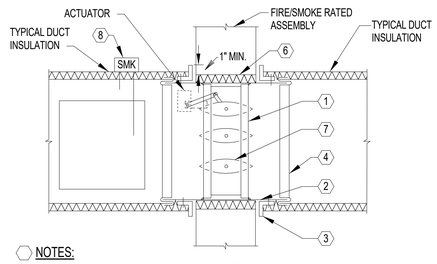
GENERAL NOTES:

A. FIRESTOPPING IS REQUIRED WHERE PENETRATING A FIRE-RESISTANCE-RATED WALL, PARTITION, FLOOR, FLOOR-CEILING ASSEMBLY, OR OTHER RATED ASSEMBLY IN ACCORDANCE WITH CPC CHAPTER 14. FIRESTOP SYSTEM SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH ASTM E119, ASTM E814, UL 263, OR UL 1479 WITH A POSITIVE PRESSURE DIFFERENTIAL OF NOT LESS THAN 0.01 INCHES OF WATER. REFER TO ARCHITECTURAL SPECIFICATIONS AND DRAWINGS FOR FIRESTOPPING REQUIREMENTS SPECIFIC TO EACH TYPE OF PENETRATION.

7 M501 PIPE PENETRATION DETAIL

SCALE: NONE

PCC-1



NOTES:

1. COMBINATION FIRE AND SMOKE DAMPER (VERTICAL SUPPLY TYPE SHOWN, HORIZONTAL & RETURN/EXHAUST SIMILAR).

2. GALVANIZED STEEL SLEEVE-GUAGE NOT LESS THAN CONNECTION DUCT. FASTEN TO DAMPER FRAME AND PERIMETER ANGLES. CAULK BETWEEN DAMPER FRAME & SLEEVE.

3. PERIMETER ANGLES-14 GA. GALVANIZED STEEL, 1 1/2" x 1 1/2" MIN. TO PROVIDE 1" MIN. OVERLAP OF OPENING ON ALL 4 SIDES. DO NOT FASTEN TO PARTITION.

4. AIR TIGHT, BREAKAWAY DUCT CONNECTION.

5. ACCESS PANEL-SIZE & LOCATION TO PERMIT SERVICING FUSIBLE ROD AND LINK. ACTUATOR TO BE LOCATED OUT OF AIR STREAM. LOCATE PANEL WITHIN 12" OF FSD.

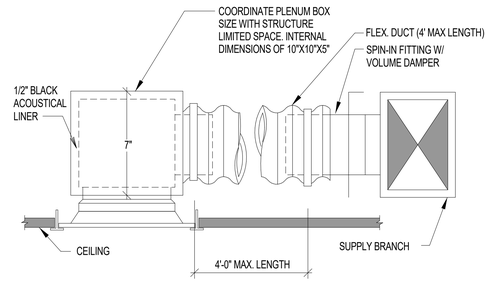
6. PROVIDE CLEARANCE ON ALL SIDES AS RECOMMENDED BY DAMPER MANUFACTURER. FILL OPENING WITH FIRESTOP MATERIAL.

7. PROVIDE AIRFOIL BLADES ON MEDIUM PRESSURE DUCTWORK.

8. SMOKE DETECTOR FURNISHED PER DIVISION 26, INSTALLED PER DIVISION 23, POWER WIRING PER DIVISION 26, CONTROL WIRING PER DIVISION 28.

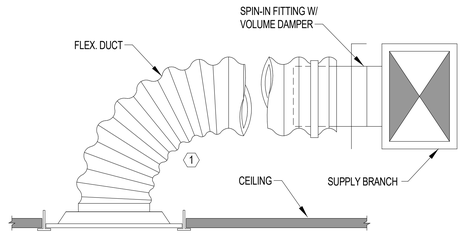
5 M501 COMBINATION FIRE/SMOKE DAMPER (FSD-2)

SCALE: NONE



1 M501 TYPICAL SQUARE NECK T-BAR DIFFUSER

SCALE: NONE

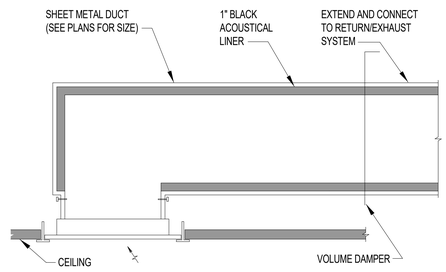


NOTES:

1. 1.5 DIA. MINIMUM FLEX DUCT RADIUS (4' MAX LENGTH). WHERE 1.5 DIA. TURN CAN NOT BE MET USE DETAIL 2/M6.01

2 M501 TYPICAL ROUND NECK T-BAR DIFFUSER

SCALE: NONE



3 M501 DUCTED RETURN/EXHAUST GRILLE

SCALE: NONE

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER J. PFEIFFER
No. M35043
EXP 6/30/2022
MECHANICAL
STATE OF CALIFORNIA
6.3.2020

PAE

pae-engineers.com

REVISIONS TO THIS SHEET

REV.	DATE
PCC-1	4/6/2020

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner

DANCO

Project Name

SAGE COMMONS

Project Address

80 COLLEGE AVENUE
SANTA ROSA, CA

DETAILS - MECHANICAL

M-501

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

6/5/2020 10:02:59 AM

PLUMBING PIPING

W	W	WASTE (ABOVE GRADE OR FLOOR)
W	W	WASTE (BELOW GRADE OR FLOOR)
SD	SD	STORM DRAIN (ABOVE GRADE OR FLOOR)
SD	SD	STORM DRAIN (BELOW GRADE OR FLOOR)
OD	OD	OVERFLOW DRAIN (ABOVE GRADE OR FLOOR)
OD	OD	OVERFLOW DRAIN (BELOW GRADE OR FLOOR)
D	D	DRAIN (CONDENSATE/INDIRECT)
	V	VENT
CW	CW	COLD WATER
HW	HW	HOT WATER
RHW	RHW	RECIRCULATING HOT WATER
TW	TW	TEMPERED WATER
HTW	HTW	140° HOT WATER

STANDARD PLUMBING ABBREVIATIONS

AD	AREA DRAIN	ID	INSIDE (DIAMETER/DIMENSION)
ADA	AMERICANS WITH DISABILITIES ACT	IE	INVERT ELEVATION
AFF	ABOVE FINISHED FLOOR	IN	INCH(ES)
AHP	APPARATUS HOUSING PLENUM	INSUL	INSULATION
ALT	ALTERNATIVE	ISOL	ISOLATOR(VION)
AL	ALUMINUM	JP	JOCKEY PUMP
AP	ACCESS PANEL	JS	JANIOR SINK
APPROX	APPROXIMATELY	KW	KILOWATT
ARCH	ARCHITECT(URAL)	KWH	KILOWATT HOUR
AUTO	AUTOMATIC	L	LENGTH
BLDG	BUILDING	LB	POUND
BOP	BOTTOM OF PIPE	LF	LINEAR FEET
BSMT	BASEMENT	MAX	MAXIMUM
BTU	BRITISH THERMAL UNIT	MBH	THOUSAND BTU PER HOUR
BTUH	BRITISH THERMAL UNITS PER HOUR	MCA	MINIMUM CIRCUIT AMPACITY
BV	BALANCING VALVE	MECH	MECHANICAL
CALC	CALCULATION	MFR	MANUFACTURER
CFH	CUBIC FEET PER HOUR	MIN	MINIMUM
CFM	CUBIC FEET PER MINUTE	MISC	MISCELLANEOUS
CFS	CUBIC FEET PER SECOND	MS	MOP SINK
CI	CAST IRON	MTD	MOUNTED
CL	CENTERLINE	NC	NORMALLY CLOSED
CLG	CEILING OR COOLING	NIC	NOT IN CONTRACT
CO	CLEAN OUT	NO	NORMALLY OPEN
CONC	CONCRETE	OC	ON CENTER DISTANCE
CONN	CONNECT(ION)	OD	OVERFLOW DRAIN
CONT	CONTINUE(ED)(UATION)	OS&Y	OUTSIDE SCREW & YOKE GATE VALVE
CP	CIRCULATING PUMP	PD	PLANTER DRAIN
CV	CHECK VALVE	P/FT	PITCH PER FOOT
DF	DRINKING FOUNTAIN	PG	PRESSURE GAUGE
DFU	DRAINAGE FIXTURE UNIT	PH	PHASE
DI	DEIONIZER	PIV	POST INDICATING VALVE
DIA	DIAMETER	PRV	PRESSURE REDUCING VALVE
DN	DOWN	PSI	POUNDS PER SQUARE INCH
DR	DRAIN	PSIG	POUNDS PER SQUARE INCH (GAUGE)
DROP	DROP (WITHIN FLOOR)	R (RAD)	RADIUS
DWG	DRAWING	RISE	RISE (WITHIN FLOOR)
(E)	EXISTING	RD	ROOF DRAIN
EDR	EXPRESS DRAIN RISER	REV	REVISION
EFF	EFFICIENCY	RPM	REVOLUTIONS PER MINUTE
ELEC	ELECTRIC(AL)	SA	SHOCK ABSORBER
ELEV	ELEVATION	SAD	SEE ARCHITECTURAL
ENGR	ENGINEER	SE	SEWAGE EJECTROR
EQ	EQUAL	SECT	SECTION
EQUIP	EQUIPMENT	SF	SQUARE FOOT(FEET)
ET	EXPANSION TANK	SH	SHOWER
EWC	ELECTRIC WATER COOLER	SIM	SIMILAR
EWH	ELECTRIC WATER HEATER	SK	SINK
EWT	ENTERING WATER TEMPERATURE	SPEC	SPECIFICATION
EXIST	EXISTING	SS	SERVICE SINK
EXP	EXPANSION	SQ	SQUARE
F	DEGREES FAHRENHEIT	SQ IN	SQUARE INCH(ES)
FCO	FLOOR CLEANOUT	STL	STEEL
FD	FLOOR DRAIN	STRUCT	STRUCTUR(E)(AL)
FDC	FIRE DEPARTMNET CONNECTION	TDH	TOTAL DISCHARGE HEAD
FHC	FIRE HOSE CABINET	TEMP	TEMPERATURE
FHV	FIRE HOSE VALVE	TMV	TEMPERATURE MIXING VALVE
FHVC	FIRE HOSE VALVE CABINET	TOP	TOP OF PIPE
FILT	FILTER	TPV	TRAP PRIMER VALVE
FL	FLOOR	TS	TAMPER SWITCH
FLA	FULL LOAD AMPACITY	TSP	TOTAL STATIC PRESSURE
FLEX	FLEXIBLE	TYP	TYPICAL
FP	FIRE PUMP	UON	UNLESS OTHERWISE NOTED
FPD	FLUID PRESSURE DROP	UP	UP (PENETRATES FLOOR SLAB)
FPM	FEET PER MINUTE	UR	URINAL
FPS	FEET PER SECOND	V	VOLTS
FS	FLOW SWITCH	VB	VOLUME BREAKER
FSK	FLOOR SINK	VEL	VELOCITY
FT	FEET/FOOT	VERT	VERTICAL
FU	FIXTURE UNIT	VFD	VARIABLE FREQUENCY DRIVE
FUT	FUTURE	VTR	VENT THROUGH ROOF
GA	GAGE/GAUGE	W	WIDTH
GAL	GALLON	WC	WATER CLOSET
GALV	GALVANIZED	WCO	WALL CLEANOUT
GPH	GALLONS PER HOUR	WFU	WATER FIXTURE UNITS
GPM	GALLONS PER MINUTE	WG	WATER GAUGE
GV	GATE VALVE	WPD	WATER PRESSURE DROP
H	HEIGHT	WTD	WATER TEMPERATURE DROP
HB	HOSE BIBB	WTR	WATER TEMPERATURE RISE
HD	HUB DRAIN	W/	WITH
HORIZ	HORIZONTAL	W/O	WITHOUT
HP	HORSEPOWER	ZONE	ZONE
HT	HEAT TRACE		

PLUMBING SYMBOLS

TB	THRUST BLOCK
CO	CLEANOUT
WCO	WALL CLEANOUT
FCO	FLOOR CLEANOUT
CTG	CLEANOUT TO GRADE
FD	FLOOR DRAIN
AD	AREA DRAIN
CB	CATCH BASIN
FS	FLOOR SINK
RD	ROOF DRAIN
OD	OVERFLOW DRAIN
TD	TRENCH DRAIN

SYMBOLS

A	ACCESS PANEL	K	CAP EXISTING / CAP FOR FUTURE
B	BELOW GRADE / FLOOR	R	RELOCATE EXISTING
C	CONNECT TO EXISTING	X	REMOVE EXISTING
E	EXISTING TO REMAIN	#	NUMBERED NOTE

1 REVISION NUMBER

ET-XXX — UNIT NUMBER; FLOOR UNIT IS LOCATED ON EQUIPMENT TYPE — EQUIPMENT

DETAIL NUMBER / DWG. SHEET NO. — DETAIL CALLOUT

SYSTEM TYPE / RISER NUMBER — RISER TAG

MISC. FITTINGS & SYMBOLS

	DIRECTION OF FLOW
	DIRECTION OF SLOPE
	PIPE SLEEVE
	REDUCER
	ANCHOR
	ELBOW (90°)
	ELBOW (45°)
	TEE
	CROSS
	PIPING CONNECTIONS
	JOINT OR COUPLING POINT
	UNION
	FLANGED CONNECTION
	CAP
	PLUG OR BLIND FLANGE
	RISER
	ELBOW UP
	ELBOW DOWN
	TEE UP
	TEE DOWN
	HORIZONTAL TEE
	FLEXIBLE CONNECTION
	BALL JOINT
MC	MECHANICAL COUPLING
	HEAT TRACE
	PIPE CONTINUATION

GENERAL NOTE

THIS IS A STANDARD LEGEND SHEET, THEREFORE, SOME SYMBOLS MAY APPEAR ON THIS SHEET THAT DO NOT APPEAR ON THE DRAWINGS.

MISC. VALVES & COCKS

	SHUT-OFF VALVE
	GLOBE VALVE
S	SHUT-OFF VALVE W/ TAMPER SWITCH
	TRIPLE DUTY VALVE
	CHECK VALVE
	2-WAY CONTROL VALVE
	3-WAY CONTROL VALVE
	BALANCING VALVE
FC	FLOW CONTROL VALVE
S	SOLENOID VALVE
	PRESSURE REDUCING VALVE
MAV	AIR VENT MANUAL
AAV	AIR VENT AUTOMATIC
	ANGLE RELIEF VALVE
	STRAINER
	STRAINER WITH BLOWDOWN
DV	DRAIN VALVE
HB	HOSE BIBB
WH	WALL HYDRANT
G GH	GROUND HYDRANT
F&T/B	STEAM TRAP
	PRESSURE GAUGE
	PRESSURE/TEMPERATURE TEST PLUG
T	THERMOMETER
F	FLOW SWITCH
T	TEMPERATURE TRANSMITTER
S (SIZE)	SHOCK ARRESTOR
V	VACUUM BREAKER
WFM	WATER FLOW METER
RPBA	REDUCED PRESSURE BACKFLOW ASSEMBLY
DCVA	DOUBLE CHECK VALVE ASSEMBLY
DCDA	DOUBLE CHECK DETECTOR ASSEMBLY
BWV	BACKWATER VALVE
UG	UNDERGROUND GATE VALVE W/BOX
PIV	UNDERGROUND GATE W/POST INDICATOR
	OUTSIDE SCREW & YOKE
	Y PATTERN BOILER BLOWDOWN VALVE
	NON-RETURN STOP VALVE
	QUICK OPENING BOILER BLOWDOWN VALVE
	GAS COCK VALVE
	RELIEF VALVE
	MIXING VALVE
P	PUMP

DEMOLITION LEGEND

REMOVE EXISTING PIPE

NEW AND EXISTING WORK

EXISTING PIPING — NEW PIPING

REVIEWED FOR CODE COMPLIANCE
BY CSWSTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

6/5/2020 10:03:00 AM

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REGISTERED PROFESSIONAL ENGINEER
CHARLES J. PAE
No. M35043
EXP 6/30/2022
MECHANICAL
STATE OF CALIFORNIA
3.2020

PAE
pae-engineers.com

REVISIONS TO THIS SHEET

REV.	DATE

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

LEGENDS, SYMBOLS AND ABBREVIATIONS - PLUMBING

P-001

FACILITY DOMESTIC WATER CALCULATION

PCC-1

COLD WATER

FIXTURE	QTY.	FIXTURE UNITS (F.U.)	TOTAL (F.U)	FLOW (GPM)
WC-1	54	2.5	135.0	-
WC-2	2	2.5	5.0	-
L-1	54	1	54.0	-
L-2	1	1	1.0	-
L-3	1	1	1.0	-
S-1	56	1.5	84.0	-
SH-1	55	2	110.0	-
MS-1	3	3	9.0	-
SB-1	9	4	36.0	-
TOTAL			**435**	**112**

GENERAL NOTES:
A. CALCULATIONS BASED ON CPC 2019 TABLE A103.1 AND CHART A103.1.

HOT WATER BRANCH CALCULATIONS

PCC-1

WORST CASE - EWH-X-1

FIXTURE	QTY.	FIXTURE UNITS (F.U.)	TOTAL (F.U)	FLOW (GPM)
L-1	3	1	3.0	-
S-1	3	1.5	4.5	-
SH-1	3	2	6.0	-
SB-1	3	4	12.0	-
TOTAL			**25.5**	**22**

Pipe Size (in.):	1-1/2
Velocity (ft/s):	4
Pressure Drop (psi/100ft)	3

GENERAL NOTES:
A. CALCULATIONS BASED ON CPC 2019 TABLE A103.1 AND CHARTS A103.1/A105.1.

HOT WATER PIPING INSULATION

PCC-1

HW AND RWH PIPING

SIZE (IN)	CONDUCTIVITY (in Btu•in/h•ft2•°F)	MEAN RATING TEMPERATURE (°F)	THICKNESS (IN)	R-VALUE
< 1	0.22*0.28	100	1.0	R-7.7
1 to < 1.5			1.5	R-12.5
1.5 to < 4			1.5	R-11

GENERAL NOTES:
A. PROVIDE INSULATION FOR HOT WATER AND RECIRCULATING HOT WATER PIPING IN ACCORDANCE WITH CALIFORNIA ENERGY CODE 2019 SECTION CEnC §120.3.

MISCELLANEOUS PLUMBING EQUIPMENT SCHEDULE

PCC-1

TAG NUMBER	LOCATION	DESCRIPTION	ELECTRICAL
MV-1	VARIES - SEE PLANS	MASTER MIXING VALVE 22 GPM MAX FLOW RATE (15 PSI LOSS) 140°F HW INLET TEMPERATURE 120°F OUTLET TEMPERATURE PROVIDE WITH LOCKING CABINET. BASED ON: LEONARD TM HIGH-LOW SERIES - TM-420B-LF-DT-IT-TC	-

PLUMBING DESIGN CRITERIA (CALIFORNIA)

DOMESTIC WATER PIPING SYSTEM:
BASIS OF DESIGN: 2019 CALIFORNIA PLUMBING CODE, APPENDIX A 'RECOMMENDED RULES FOR SIZING THE WATER SUPPLY SYSTEM'. PIPING SIZED ON 4 PSI/100 FT. DROP, VELOCITIES NOT TO EXCEED 8 FT./SEC. (COLD WATER) AND NOT TO EXCEED 5 FT./SEC. (HOT WATER).

WASTE AND VENT PIPING SYSTEM:
BASIS OF DESIGN: 2019 CALIFORNIA PLUMBING CODE, CHAPTER 7, 'SANITARY DRAINAGE'.
ALL WASTE PIPING SIZED AT 1/4"/FT. SLOPE UNLESS OTHERWISE NOTED.

ROOF DRAIN/STORM DRAIN PIPING SYSTEM:
BASIS OF DESIGN: 2019 CALIFORNIA PLUMBING CODE, CHAPTER 11, 'STORM DRAINAGE'.
STORM DRAIN PIPING SIZED AT 1/8"/FT. SLOPE UNLESS OTHERWISE NOTED AND A RAINFALL RATE OF 2"/HR.
COMBINED STORM DRAIN AND OVERFLOW DRAIN PIPING SIZED AT A RAINFALL RATE OF 2"/HR AND TWO TIMES THE COLLECTED ROOF...

PIPE SCHEDULE

SERVICE		MATERIAL
DOMESTIC WATER	BELOW GRADE DOMESTIC WATER SERVICE - 4" AND LARGER	DUCTILE IRON PIPE: DUCTILE IRON PIPE ANSI A21.51, AWWA C151, AND MECHANICAL JOINT TYPE FITTINGS WITH GASKETS, BOLTS, AND NUTS, ASME B16.4.
	BELOW GRADE - 3" AND SMALLER	COPPER: ASTM B88 HARD DRAWN COPPER TUBING, TYPE K, WROUGHT COPPER FITTINGS (150 PSI SERVICE), ANSI B16.50 BRAZED JOINTS.
	ABOVE GRADE - 4" AND SMALLER	COPPER: ASTM B88 HARD DRAWN COPPER TUBING, TYPE L, WROUGHT COPPER FITTINGS (150 PSI SERVICE), ANSI B16.22 SOLDERED JOINTS, ANSI B16.50 BRAZED JOINTS (PIPING 2 INCHES AND LARGER).
	ABOVE GRADE - FIXTURE SUPPLY	CROSS-LINKED POLYETHYLENE (PEX): PEX-A OR PEROXIDE METHOD, ASTM F876, ASTM F877, CAN/CDA-B137.5. COPPER MANIFOLDS WITH INTEGRAL VALVES. PEX-A COLD EXPANSION TYPE FITTINGS, ASTM F1960.
SANITARY WASTE	BELOW GRADE	CAST IRON SOIL PIPE, SERVICE WEIGHT (NO HUB): NO HUB PIPE AND FITTINGS ASTM A74, CISPI, WITH 28 GAUGE 304 STAINLESS STEEL CLAMP AND CORRUGATED SHIELD ASSEMBLIES HAVING NEOPRENE GASKETS ASTM C564, CISPI 310-90.
	BELOW GRADE	SCHEDULE 40 PVC OR ABS DWV: ASTM D2665-85a, ASTM D3311-82.
	ABOVE GRADE	CAST IRON SOIL PIPE, SERVICE WEIGHT (NO HUB): NO HUB PIPE AND FITTINGS ASTM A74, CISPI, WITH STAINLESS STEEL CLAMP AND CORRUGATED SHIELD ASSEMBLIES HAVING NEOPRENE GASKETS ASTM C564, CISPI 310-90.
	ABOVE GRADE	SCHEDULE 40 PVC OR ABS DWV: ASTM D2665-85a, ASTM D3311-82. NOT ALLOWED IN AIR PLENUMS.
STORM/OVERFLOW	BELOW GRADE	CAST IRON SOIL PIPE, SERVICE WEIGHT (NO HUB): NO HUB PIPE AND FITTINGS ASTM A74, CISPI, WITH 28 GAUGE 304 STAINLESS STEEL CLAMP AND CORRUGATED SHIELD ASSEMBLIES HAVING NEOPRENE GASKETS ASTM C564, CISPI 310-90.
	BELOW GRADE	SCHEDULE 40 ABS DWV: ASTM D2665-85a, ASTM D3311-82.
	ABOVE GRADE	CAST IRON SOIL PIPE, SERVICE WEIGHT (NO HUB): NO HUB PIPE AND FITTINGS ASTM A74, CISPI, WITH STAINLESS STEEL CLAMP AND CORRUGATED SHIELD ASSEMBLIES HAVING NEOPRENE GASKETS ASTM C564, CISPI 310-90.
	ABOVE GRADE	SCHEDULE 40 ABS DWV: ASTM D2665-85a, ASTM D3311-82. NOT ALLOWED IN AIR PLENUMS.
SANITARY VENT	BELOW GRADE	SCHEDULE 40 PVC OR ABS DWV: ASTM D2665-85a, ASTM D3311-82.
	ABOVE GRADE	CAST IRON SOIL PIPE, SERVICE WEIGHT (NO HUB): NO HUB PIPE AND FITTINGS ASTM A74, CISPI, WITH STAINLESS STEEL CLAMP AND CORRUGATED SHIELD ASSEMBLIES HAVING NEOPRENE GASKETS ASTM C564, CISPI 310-90.
	ABOVE GRADE	SCHEDULE 40 PVC OR ABS DWV: ASTM D2665-85a, ASTM D3311-82. NOT ALLOWED IN AIR PLENUMS.
TRAP PRIMING LINES		COPPER: ASTM B88 HARD DRAWN COPPER TUBING, TYPE L ANNEALED, WROUGHT COPPER FITTINGS (150 PSI SERVICE). ANSI B16.22 SOLDERED JOINTS; PEX, SIMILAR TO DOMESTIC WATER.

GENERAL NOTES:
A. REFER TO PROJECT SPECIFICATION 078400 FOR FIRESTOPPING REQUIREMENTS. PCC-2

PLUMBING PUMP SCHEDULE

TAG NUMBER	DESCRIPTION	LOCATION	SERVICE	TYPE	FLUID TYPE	FLUID TEMP. (F)	PERFORMANCE: FLOW (GPM)	PERFORMANCE: HEAD (FT)	HP	VOLT/ PHASE	RPM	VFD	MANUFACTURER & MODEL	NOTES
HWRP-X-X	HOT WATER RECIRCULATING PUMP	WATER HTR ROOMS & UTILITY ROOMS	HW CIRCULATION	IN-LINE	DOMESTIC WATER	120	3	20	1/6	120/1	3400	NO	TACO 2410	1, 2

NOTES:
1. TYPICAL OF 17 PUMPS THROUGHOUT BUILDING. SEE PLANS FOR LOCATIONS.
2. RECIRCULATION PUMP SHALL BE AUTOMATICALLY CONTROLLED BASED ON MEASUREMENT OF HOT WATER DEMAND AND HOT WATER RETURN TEMPERATURE IN ACCORDANCE WITH CALIFORNIA ENERGY CODE 110.3(C)2 AND SANTA ROSA ORDINANCE 18-33.150.1(C)8. PCC-1

PLUMBING FIXTURE SCHEDULE

TAG NUMBER	FIXTURE TYPE	ROUGH-IN SIZE (INCHES): W	V	CW	HW	TW	GPM/GPF	ELEC. CONNECTION	DESCRIPTION	NOTES
WC-1	WATER CLOSET	3	2	3/4	-	-	1.28	-	FLOOR MOUNTED, TANK TYPE, COMMERCIAL, ADA, CLOSED FRONT SEAT WITH LID	
WC-2	WATER CLOSET	3	2	3/4	-	-	1.28	-	FLOOR MOUNTED, TANK TYPE, COMMERCIAL, ADA, OPEN FRONT SEAT	PCC-1
L-1	LAVATORY	2	1-1/2	1/2	1/2	-	1.2	-	OVAL COUNTERMOUNT 20"x17-3/8"x7", MANUAL FAUCET, ADA PCC-2	1
L-2	LAVATORY - 1ST FLOOR RESTROOM	2	1-1/2	1/2	1/2	-	0.5	-	WALL HUNG, 20"x18", MANUAL FAUCET, ADA PCC-2	1
L-3	LAVATORY - 1ST FLOOR RESTROOM	2	1-1/2	1/2	1/2	-	0.5	-	OVAL COUNTERMOUNT 20"x17-3/8"x7", MANUAL FAUCET, ADA PCC-2	1
S-1	SINK - KITCHENS, MULTIPUPOSE, PANTRY	2	1-1/2	1/2	1/2	-	1.5	-	COUNTERTOP, 22"x19-1/2"x6-1/2", SINGLE COMPARTMENT, ADA	
SH-1	SHOWER	2	1-1/2	1/2	1/2	-	1.75	-	GELCOAT ENCLOSURE, 60x36-INCH ENCLOSURE, TRANSFER, ADA	
MS-1	MOP SINK	3	2	3/4	3/4	-	2.2	-	FLOOR/CORNER MOUNTED, 24x24-INCH	
SB-1	SUPPLY BOX (WASHING MACHINE)	2	1-1/2	1/2	1/2	-	11	Y	BOTTOM VALVE SUPPLIES, INTEGRAL SHOCK ARRESTORS, FIRE-RATED	2,3 PCC-1

GENERAL NOTES:
A. MAKE ALL ROUGH-IN AND FINAL CONNECTIONS IN CONFORMANCE WITH LOCAL CODES. INCLUDE TRAPS, TAIL PIECES, AND LINE STRAINERS AS REQUIRED.
B. FURNISH AND INSTALL PRESSURE REDUCING VALVES FOR ALL WATER LINES AS REQUIRED.

NOTES:
1. PROVIDE WITH POINT OF USE MIXING VALVE TO LIMIT OUTLET TEMPERATURE TO 120F.
2. BASED ON SPEED QUEEN SFNNCASP115TW01 WASHER, FRONT LOAD 22 LB CAPACITY. WHITE WITH PUMP DRAIN. SUPPLY AND DRAINAGE SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS AND CPC. PCC-1
3. FURNISH AND INSTALL CHROME PLATED VACUUM BREAKER ON SUPPLY LINES TO EACH FRONT LOAD WASHER.

WATER HEATER SCHEDULE

TAG NUMBER	DESCRIPTION	LOCATION	SERVICE	TYPE	STORAGE CAPACITY (GAL)	RECOVERY @ 90F RISE (GAL/HR)	ELECTRICAL: NO. OF ELEMENTS	ELECTRICAL: TOTAL kW	ELECTRICAL: kW PER ELEMENT	ELECTRICAL: FLA	ELECTRICAL: VOLT/ PHASE	WEIGHT LBS	MANUFACTURER & MODEL	NOTES
EWH-X-X	ELECTRIC WATER HEATER	VARIES - SEE PLANS	DOMESTIC HOT WATER	HEAT PUMP WATER HEATER	80	29	2	5	5	24	208/1	1000	RHEEM PRESTIGE PROPH80	1

GENERAL NOTES:
A. STRAP TO WALL PER CBC CHAPTER 5.
B. WATER HEATERS TO BE PROVIDED WITH VENTILATION IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS. REFER TO MECHANICAL DRAWINGS FOR VENTILATION DESIGN. PCC-2

NOTES:
1. TYPICAL OF 17. SEE PLANS FOR LOCATIONS.

TANK SCHEDULE

TAG NUMBER	DESCRIPTION	LOCATION	SERVICE	TYPE	SYSTEM TEMP. RANGE: MIN (°F)	SYSTEM TEMP. RANGE: MAX (°F)	FILL PRESSURE (PSIG)	MAX PRESSURE (PSIG)	RELIEF VALVE (PSIG)	MIN TANK VOLUME (GAL)	WEIGHT (LBS)	INLET SIZE (IN)	OUTLET SIZE (IN)	MANUFACTURER & MODEL	NOTES
DET-X	DOMESTIC WATER EXPANSION TANK	WATER HEATER ROOMS	DOMESTIC WATER	THERMAL EXPANSION - POTABLE	60	140	50	80	100	4	43	0.75	-	AMTROL	1

NOTES:
1. TYPICAL OF 17. LOCATE AT EACH WATER HEATER.

DRAINS AND CLEANOUTS SCHEDULE

PCC-1

TAG	DESCRIPTION	MANUFACTUR...	MODEL NO.	STRAINER	REMARKS
FD-1	FLOOR DRAIN	JR SMITH	2010-WF-1A-CAN	5" SQ	CAST IRON BODY WITH ADJUSTABLE NICKEL BRONZE STRAINER HEAD AND GRATE. FOR INSTALLATION IN WOOD FLOORS. PRIVIDE TRAP PRIMER CONNECTION.
FD-2	TROUGH FLOOR DRAIN	DECK-O-SEAL	DECK-O DRAIN	¼" MAX	1-1/2" WIDE X 3-1/4" HIGH WATER-TIGHT TRENCH STYLE DRAIN FOR WATER COLLECTION ADJACENT TO FIRST FLOOR SH-1. PROVIDE 2" PVC PIPE ADAPTER. OPENINGS IN GRATES ARE NOT TO EXCEED ¼" AND SHALL BE IN ACCORDANCE WITH CBC §11B-608.9 & §1127A.5.3.4. PROVIDE TRAP PRIMER CONNECTION.
FD-3	FLOOR DRAIN	JR SMITH	2110 SERIES	5" SQ	NO HUB, VANDAL RESISTANT, ROUND CAST IRON GRATE, CAST IRON BODY, PRIMER CONNECTION REQUIRED.
FS-1	FLOOR SINK	JR SMITH	3007-F-C	12" SQ	STAINLESS STEEL BODY & GRATE, 6" DEEP, FULL GRATE, EPOXY FLANGE. TRAP PRIMER CONNECTION REQUIRED. PCC-2
FCO	FLOOR CLEANOUT	JR SMITH	4020 SERIES	8" DIA	CAST IRON BODY, TAPERED BRONZE PLUG AND NICKEL BRONZE TOP, FLASHING FLANGE, VANDAL RESISTANT
RD-1	ROOF DRAIN	JR SMITH	1010 SERIES	16-INCH DOME	16-INCH LOW PROFILE DIAMETER DOME, CAST IRON BODY WITH COMBINED FLASHING CLAMP AND GRAVEL STOP, NO-HUB OUTLET, UNDER DECK CLAMP.
OD-1	OVERFLOW ROOF DRAIN	JR SMITH	1080 SERIES	16-INCH DOME	16-INCH LOW PROFILE DIAMETER DOME, 2-INCH WATER DAM, CAST IRON BODY WITH COMBINED FLASHING CLAMP AND GRAVEL STOP, NO-HUB OUTLET AND UNDER DECK CLAMP.
DSN-1	DOWNSPOUT NOZZLE	JR SMITH	1770 SERIES	-	NICKEL BRONZE, LOCATE AT BASE OF A WALL WHERE A CONCEALED LEADER DISCHARGES RAINWATER TO GROUND. NOZZLE DESIGN DIVERTS WATER AWAY FROM BUILDING, ELIMINATING WALL STAINS. WALL FLANGE COVERS ROUGH OPENING AND SERVES AS ANCHOR.
TP-1	TRAP PRIMER	JR SMITH	PRIME-EZE FIGURE #2698		CRHOME PLATED CAST BRONZE P-TRAP WITH GROUND JOINT CONNECTION AND ESCUTCHEONS, 1/2" PRIMER TUBE WITH COMPRESSION FITTING CONNECTION AT WALL. PROVIDE TP FOR EACH FLOOR DRAIN FROM CLOSEST LAVATORY OR SINK.
WCO	WALL CLEANOUT	JR SMITH	4532S-Y-U	5" DIA	ROUND STAINLESS STEEL VANDAL RESISTANT COVER AND SCREW.
CTG	CLEANOUT TO GRADE	JR SMITH	4223S-U	8" DIA	ROUND, EXTRA HEAVY DUTY CAST IRON TOP SET IN 12-INCH BY 12-INCH BY 4-INCH DEEP CONCRETE PAD, VANDAL RESISTANT.

GENERAL NOTES:
A. MAKE ALL ROUGH-IN AND FINAL CONNECTIONS IN CONFORMANCE WITH LOCAL CODES. INCLUDE TRAPS, TAIL PIECES, AND LINE STRAINERS AS REQUIRED.
B. FURNISH AND INSTALL ALL FLOOR SINKS,FLOOR DRAINS, AND FLOOR/GRADE CLEANOUTS FLUSH WITH FINISH FLOOR/GRADE. WALL CLEANOUT COVER SHALL BE INSTALLED FLUSH WITH FINISHED WALL.

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REGISTERED PROFESSIONAL ENGINEER — CHRISTOPHER J. PAE — No. M35043 — EXP 6/30/2022 — MECHANICAL — STATE OF CALIFORNIA — 3.2020

PAE

pae-engineers.com

REVISIONS TO THIS SHEET

REV.	DATE
PCC-2	5/15/2020
PCC-1	4/6/2020

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

Project Name
SAGE COMMONS

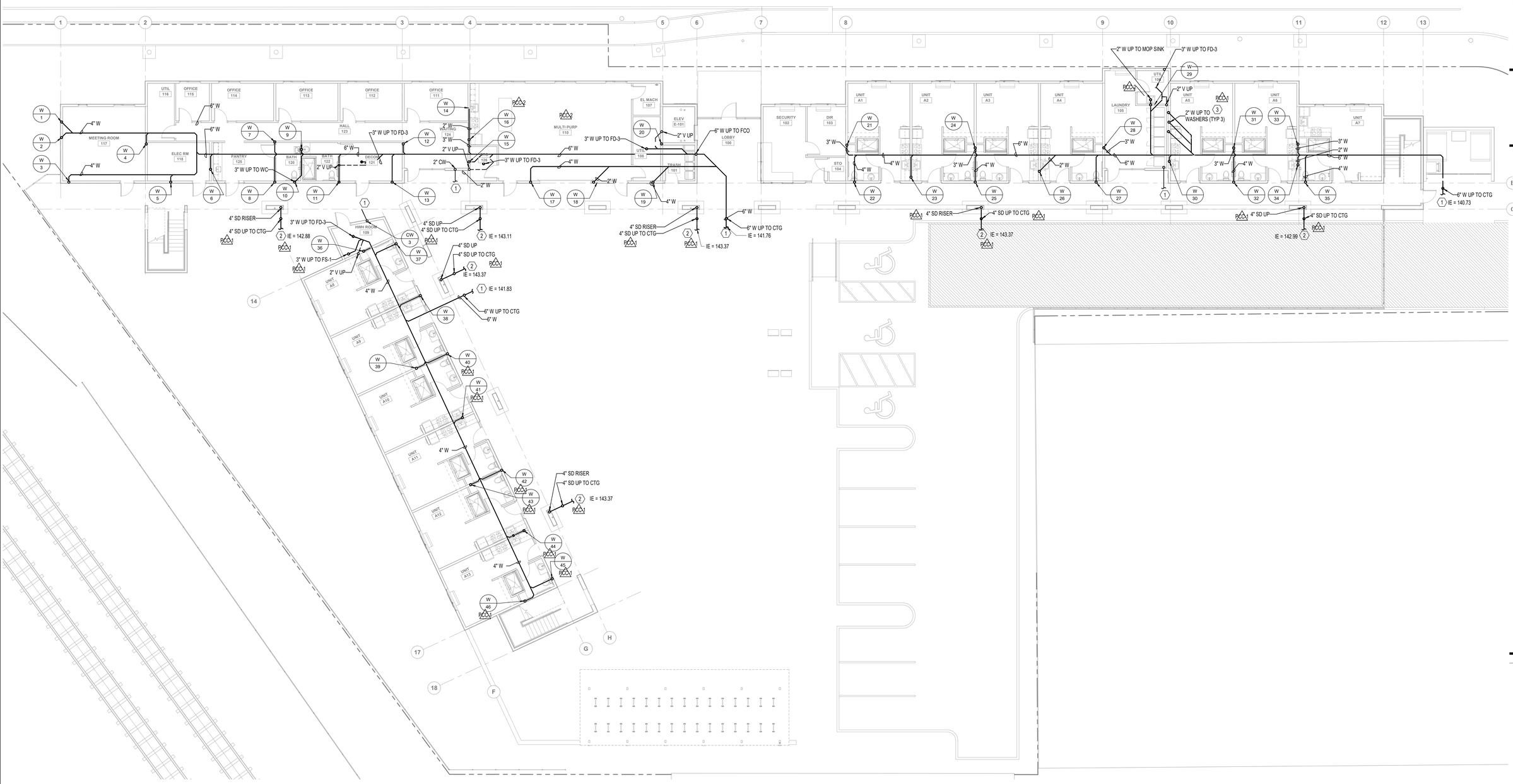
Project Address
80 COLLEGE AVENUE SANTA ROSA, CA

EQUIPMENT SCHEDULES - PLUMBING

P-002

REVIEWED FOR CODE COMPLIANCE BY COASTLAND CIVIL ENGINEERING INC. IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

6/5/2020 10:03:05 AM



1 PLUMBING UNDERGROUND PLAN
1/8" = 1'-0"

GENERAL NOTES:

A. IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO COORDINATE THE WORK WITH THAT OF ALL OTHER TRADES, INCLUDING BUT NOT LIMITED TO: ELECTRICAL, HVAC PROCESS PIPING SPRINKLER, PLUMBING, STRUCTURAL AND GENERAL ARCHITECTURE.

B. VERIFY EXACT SIZES, LOCATIONS, INVERTS AND ELEVATIONS PRIOR TO RUNNING ANY PIPING. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF ALL FIXTURES AND EQUIPMENT. REFER TO KITCHEN LAYOUT DRAWING FOR EXACT LOCATION AND ROUGH-IN REQUIREMENTS OF ALL KITCHEN FIXTURES AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT FLOOR DRAIN LOCATIONS.

D. SLOPE ALL WASTE PIPING AT A MINIMUM OF 1/4" PER FOOT, UNLESS NOTED OTHERWISE.

NOTES:

1. REFER TO CIVIL DRAWING 19-218 SHEET C4 FOR CONTINUATION.
2. REFER TO CIVIL DRAWING 19-218 SHEET C3 FOR CONTINUATION AND DETAIL 6/P-501 FOR STORM DRAIN DOWNSPOUT DETAILS.
3. CLOTHES WASHER STACKS SHALL MEET THE REQUIREMENTS OF CPC SECTION 711 FOR SUDS RELIEF AND SHALL NOT CONNECT INTO DRAINAGE PIPING SYSTEM WITHIN 8 FEET OF A VERTICAL TO HORIZONTAL CHANGE OF DIRECTION.

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

6/5/2020 10:03:08 AM

ROWELL BROKAW
1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com
Architecture. Design. Strategy.

STAMP
REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER J. PFEIFFER
No. M35043
EXP 6/30/2022
MECHANICAL
STATE OF CALIFORNIA
3.2020

PAE
pae-engineers.com

REVISIONS TO THIS SHEET

REV.	DATE
PCC-2	5/15/2020
PCC-1	4/6/2020

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C.: JOHN ROWELL
PM / PA: FRANK VISCONTI

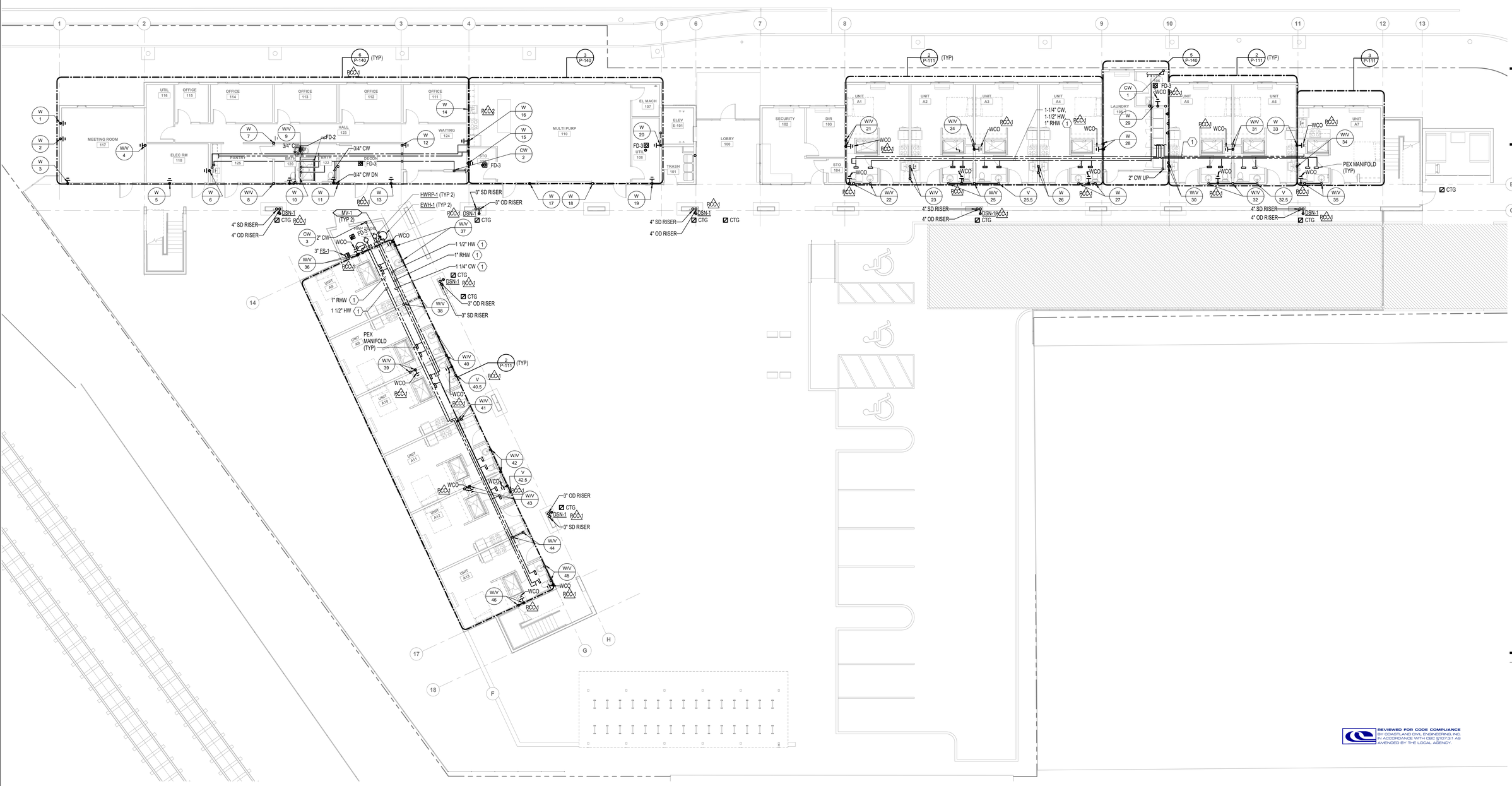
Owner
DANCO

Project Name
SAGE COMMONS

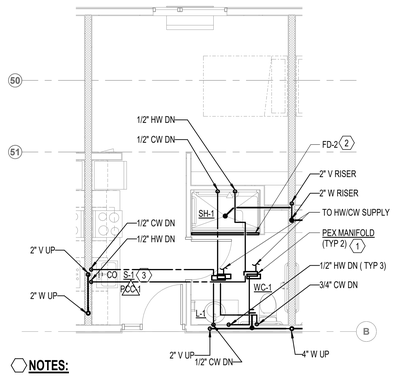
Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

PLUMBING UNDERGROUND PLAN

P-110



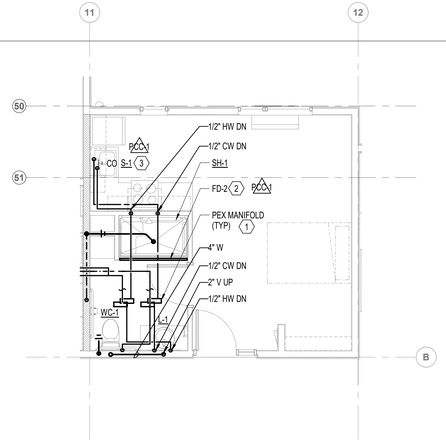
1 PLUMBING FIRST FLOOR PLAN
1/8" = 1'-0"



NOTES:

1. PEX MANIFOLD LOCATED BETWEEN WOODEN JOISTS IN STRUCTURE. PROVIDE ACCESS PANEL TO ACCESS EACH MANIFOLD.
2. PROVIDE TRAP PRIMER (TP-1) FOR FLOOR DRAINS, SUPPLY FROM L-1 DRAIN TRAP.
3. PROVIDE A CLEANOUT AT ALL KITCHEN SINKS.

2 PLUMBING TYPICAL PLAN - UNIT A
1/4" = 1'-0"



NOTES:

1. PEX MANIFOLD LOCATED BETWEEN WOODEN JOISTS IN STRUCTURE. PROVIDE ACCESS PANEL TO ACCESS EACH MANIFOLD.
2. PROVIDE TRAP PRIMER (TP-1) FOR FLOOR DRAINS, SUPPLY FROM L-1 DRAIN TRAP.
3. PROVIDE A CLEANOUT AT ALL KITCHEN SINKS.

3 PLUMBING TYPICAL PLAN - UNIT B
1/4" = 1'-0"

GENERAL NOTES:

A. IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO COORDINATE THE WORK WITH THAT OF ALL OTHER TRADES, INCLUDING BUT NOT LIMITED TO: ELECTRICAL, HVAC PROCESS PIPING SPRINKLER, PLUMBING, STRUCTURAL AND GENERAL ARCHITECTURE.

B. ALL PLUMBING EQUIPMENT, PIPING, INSULATION, ETC. INSTALLED IN HVAC PLENUM SPACES SHALL MEET CODE REQUIREMENTS FOR SMOKE AND COMBUSTIBILITY.

C. VERIFY EXACT SIZES, LOCATIONS, INVERTS AND ELEVATIONS PRIOR TO RUNNING ANY PIPING. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF ALL FIXTURES AND EQUIPMENT. REFER TO KITCHEN LAYOUT DRAWING FOR EXACT LOCATION AND ROUGH-IN REQUIREMENTS OF ALL KITCHEN FIXTURES AND EQUIPMENT.

D. WATER HEATERS SHALL BE INSTALLED WITH DRAIN PANS UNDER HEATERS. ROUTE PAN DRAINS TO NEAREST FLOOR DRAIN OR SAFE DRAIN.

E. PIPING ENTERING SERVICE CORRIDOR SHALL NOT RUN OVER ELECTRICAL PANELS AND SHALL BE COORDINATED WITH WORK OF OTHER TRADES.

F. PROVIDE ACCESS PANELS FOR ALL SHUTOFF VALVES AND SHOCK ARRESTORS IN NON ACCESSIBLE CEILING AREAS OR WALLS.

G. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT FLOOR DRAIN LOCATIONS.

H. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF ALL PLUMBING FIXTURES.

I. COMBINE VENTS 6 INCHES ABOVE FLOOD-LEVEL RIM OF HIGHEST PLUMBING FIXTURE SERVED.

NOTES:

1. ROUTE CW, HW AND RHW MAIN IN BETWEEN WOOD JOISTS IN STRUCTURE. COORDINATE PIPE ROUTING AND BEAM PENETRATIONS WITH STRUCTURAL.

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REGISTERED PROFESSIONAL ENGINEER — CHRISTOPHER J. PRIDDY — No. M35043 EXP 6/30/2022 — MECHANICAL — STATE OF CALIFORNIA

3.3.2020

PAE

pae-engineers.com

REVISIONS TO THIS SHEET

REV.	DATE
PCC-2	5/15/2020
PCC-1	4/6/2020

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH OSC §107.3.1 AS AMENDED BY THE LOCAL AGENCY

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

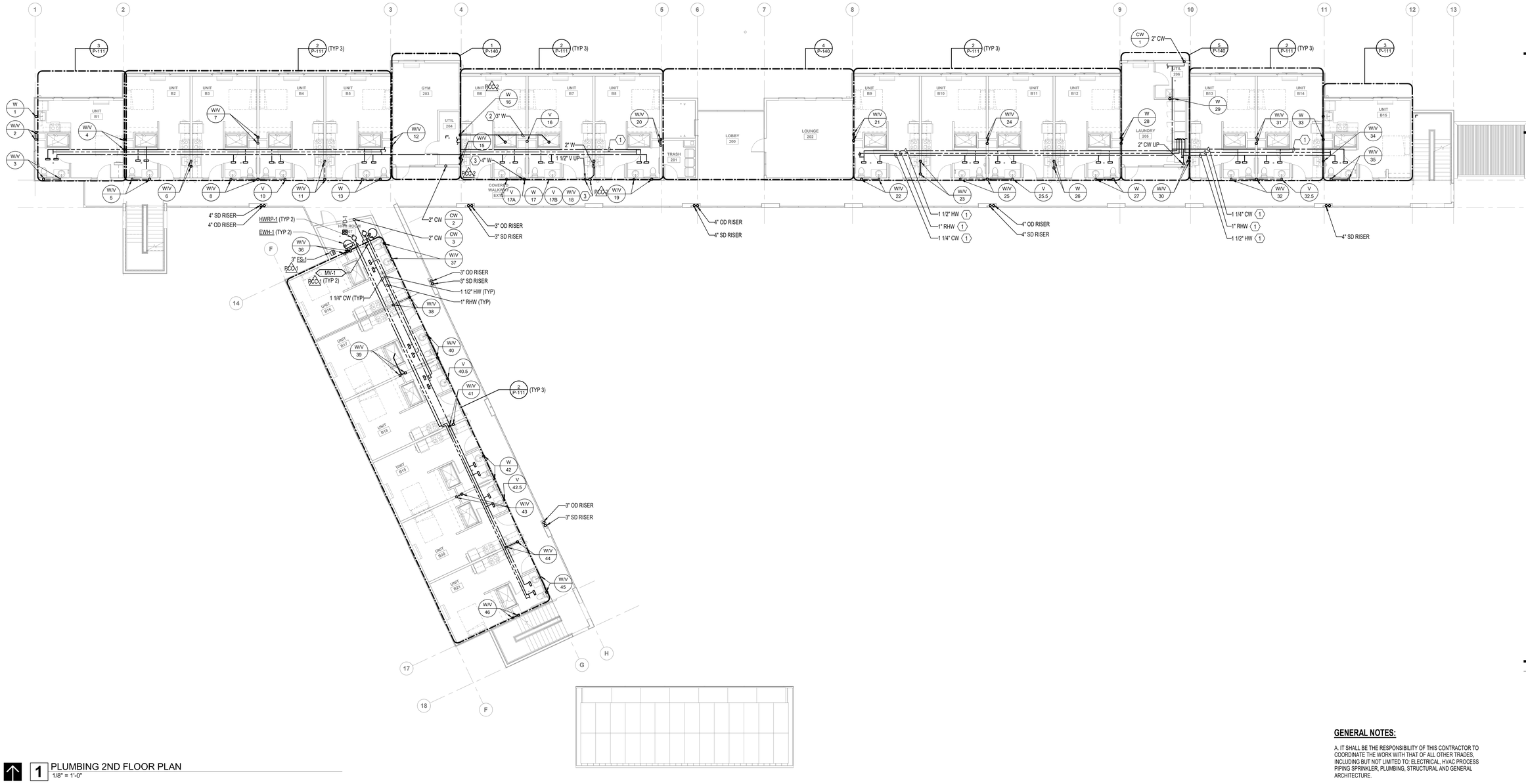
Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

PLUMBING 1ST FLOOR PLAN AND TYPICAL UNITS A & B

P-111

6/5/2020 10:03:14 AM



1 PLUMBING 2ND FLOOR PLAN
1/8" = 1'-0"

GENERAL NOTES:

A. IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO COORDINATE THE WORK WITH THAT OF ALL OTHER TRADES, INCLUDING BUT NOT LIMITED TO: ELECTRICAL, HVAC PROCESS PIPING SPRINKLER, PLUMBING, STRUCTURAL AND GENERAL ARCHITECTURE.

B. ALL PLUMBING EQUIPMENT, PIPING, INSULATION, ETC. INSTALLED IN HVAC PLENUM SPACES SHALL MEET CODE REQUIREMENTS FOR SMOKE AND COMBUSTIBILITY.

C. VERIFY EXACT SIZES, LOCATIONS, INVERTS AND ELEVATIONS PRIOR TO RUNNING ANY PIPING. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF ALL FIXTURES AND EQUIPMENT. REFER TO KITCHEN LAYOUT DRAWING FOR EXACT LOCATION AND ROUGH-IN REQUIREMENTS OF ALL KITCHEN FIXTURES AND EQUIPMENT.

D. WATER HEATERS SHALL BE INSTALLED WITH DRAIN PANS UNDER HEATERS. ROUTE PAN DRAINS TO NEAREST FLOOR DRAIN OR SAFE DRAIN.

E. PIPING ENTERING SERVICE CORRIDOR SHALL NOT RUN OVER ELECTRICAL PANELS AND SHALL BE COORDINATED WITH WORK OF OTHER TRADES.

F. PROVIDE ACCESS PANELS FOR ALL SHUTOFF VALVES AND SHOCK ARRESTORS IN NON ACCESSIBLE CEILING AREAS OR WALLS.

G. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT FLOOR DRAIN LOCATIONS.

H. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF ALL PLUMBING FIXTURES.

I. COMBINE VENTS 6 INCHES ABOVE FLOOD-LEVEL RIM OF HIGHEST PLUMBING FIXTURE SERVED.

NOTES:

1. ROUTE CW, HW AND RHW MAIN IN BETWEEN WOOD JOISTS IN STRUCTURE. COORDINATE PIPE ROUTING AND BEAM PENETRATIONS WITH STRUCTURAL.

PCC-2 2. RUN SHOWER WASTE PIPING BELOW FF THROUGH JOIST SPACE AS SHOWN.

3. OFFSET WASTE/VENT RISERS AS SHOWN TO AVOID STRUCTURAL COLUMN.

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

6/5/2020 10:03:18 AM

ROWELL BROKAW
1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com
Architecture. Design. Strategy.

STAMP

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER J. PAE
No. M35043
EXP 6/30/2022
MECHANICAL
STATE OF CALIFORNIA
3.2020

PAE
pae-engineers.com

REVISIONS TO THIS SHEET

REV.	DATE
PCC-2	5/15/2020
PCC-1	4/6/2020

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #:	1843
CONT #:	NAME
P.I.C:	JOHN ROWELL
PM / PA:	FRANK VISCONTI

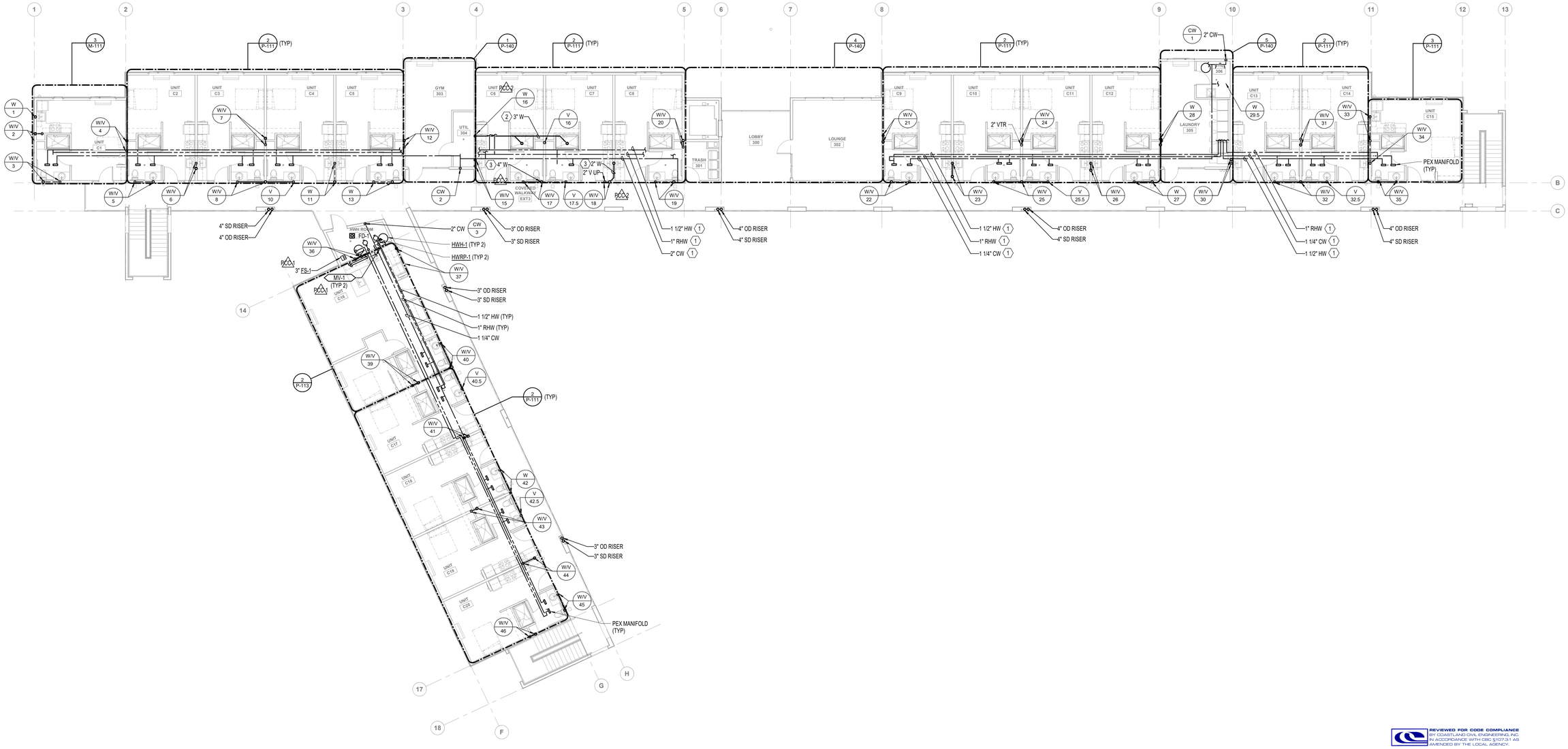
Owner
DANCO

Project Name
SAGE COMMONS

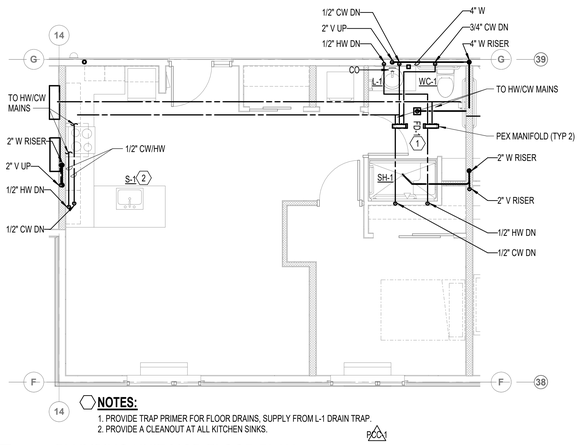
Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

PLUMBING 2ND FLOOR PLAN

P-112



1 PLUMBING 3RD FLOOR PLAN
1/8" = 1'-0"



NOTES:
1. PROVIDE TRAP PRIMER FOR FLOOR DRAINS, SUPPLY FROM L-1 DRAIN TRAP.
2. PROVIDE A CLEANOUT AT ALL KITCHEN SINKS.

PCC-1

2 PLUMBING UNIT MGR FLOOR PLAN
1/4" = 1'-0"

6/5/2020 10:03:23 AM

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

PAE

pae-engineers.com

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

GENERAL NOTES:

A. IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO COORDINATE THE WORK WITH THAT OF ALL OTHER TRADES, INCLUDING BUT NOT LIMITED TO: ELECTRICAL, HVAC PROCESS PIPING SPRINKLER, PLUMBING, STRUCTURAL AND GENERAL ARCHITECTURE.

B. ALL PLUMBING EQUIPMENT, PIPING, INSULATION, ETC. INSTALLED IN HVAC PLENUM SPACES SHALL MEET CODE REQUIREMENTS FOR SMOKE AND COMBUSTIBILITY.

C. VERIFY EXACT SIZES, LOCATIONS, INVERTS AND ELEVATIONS PRIOR TO RUNNING ANY PIPING. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF ALL FIXTURES AND EQUIPMENT. REFER TO KITCHEN LAYOUT DRAWING FOR EXACT LOCATION AND ROUGH-IN REQUIREMENTS OF ALL KITCHEN FIXTURES AND EQUIPMENT.

D. WATER HEATERS SHALL BE INSTALLED WITH DRAIN PANS UNDER HEATERS. ROUTE PAN DRAINS TO NEAREST FLOOR DRAIN OR SAFE DRAIN.

E. PIPING ENTERING SERVICE CORRIDOR SHALL NOT RUN OVER ELECTRICAL PANELS AND SHALL BE COORDINATED WITH WORK OF OTHER TRADES.

F. PROVIDE ACCESS PANELS FOR ALL SHUTOFF VALVES AND SHOCK ARRESTORS IN NON ACCESSIBLE CEILING AREAS OR WALLS.

G. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT FLOOR DRAIN LOCATIONS.

H. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF ALL PLUMBING FIXTURES.

I. COMBINE VENTS 6 INCHES ABOVE FLOOD-LEVEL RIM OF HIGHEST PLUMBING FIXTURE SERVED.

NOTES:

1. ROUTE CW, HW AND RHW MAIN IN BETWEEN WOOD JOISTS IN STRUCTURE. COORDINATE PIPE ROUTING AND BEAM PENETRATIONS WITH STRUCTURAL.

PCC-2 2. RUN SHOWER WASTE PIPING BELOW FF THROUGH JOIST SPACE AS SHOWN.

3. OFFSET WASTE/VENT RISERS AS SHOWN TO AVOID STRUCTURAL COLUMN.

REVISIONS TO THIS SHEET

REV.	DATE
PCC-2	5/15/2020
PCC-1	4/6/2020

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C.: JOHN ROWELL
PM / PA: FRANK VISCONTI

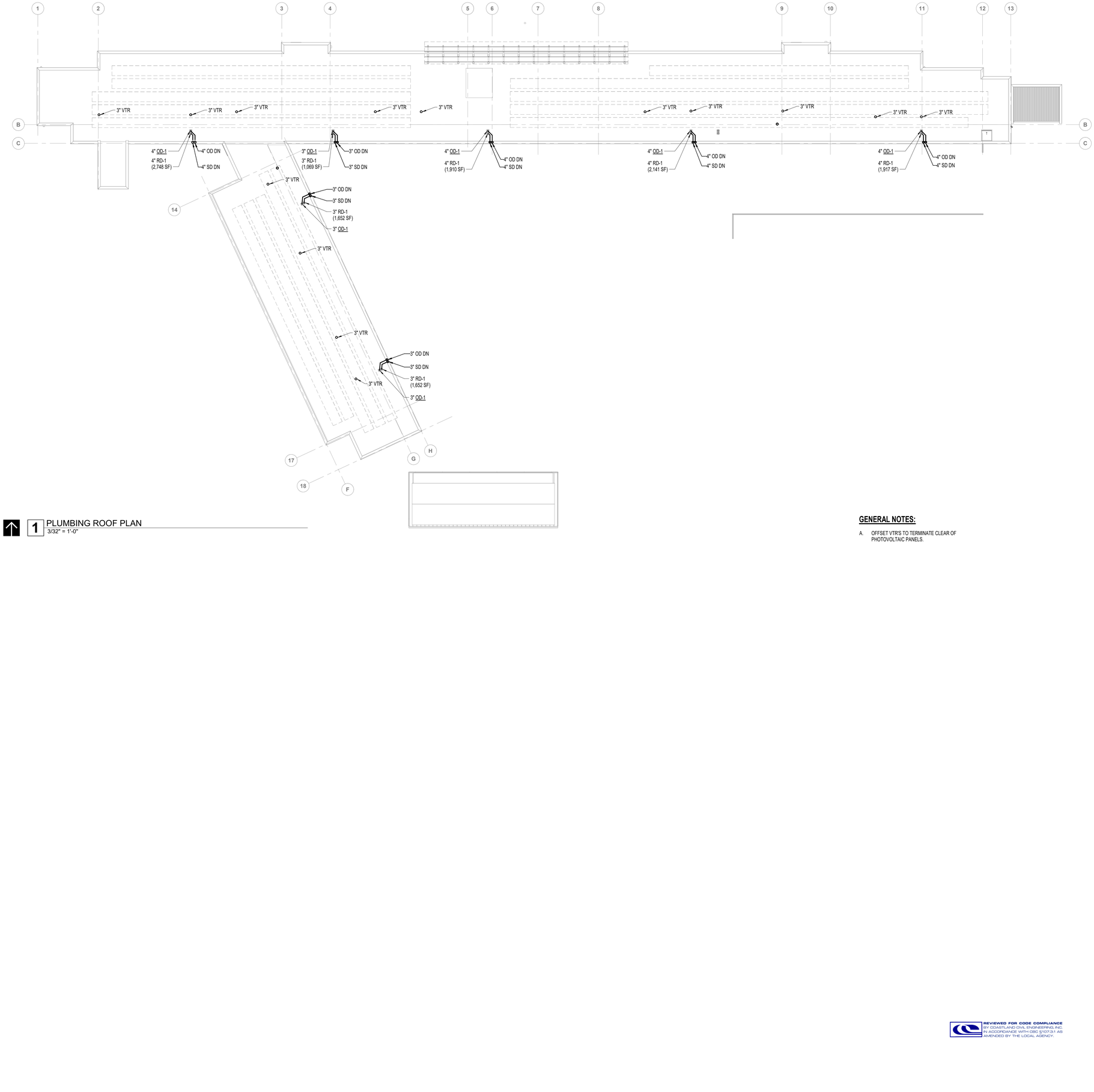
Owner
DANCO

Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE SANTA ROSA, CA

PLUMBING 3RD FLOOR PLAN AND UNIT MGR APT.

P-113



1 PLUMBING ROOF PLAN
3/32" = 1'-0"

GENERAL NOTES:

A. OFFSET VTR'S TO TERMINATE CLEAR OF PHOTOVOLTAIC PANELS.

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER J. PFEIFFER
No. M35043
EXP 6/30/2022
MECHANICAL
STATE OF CALIFORNIA
3 2020

PAE

pae-engineers.com

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

REVISIONS TO THIS SHEET

REV.	DATE

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C.: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner

DANCO

Project Name

SAGE COMMONS

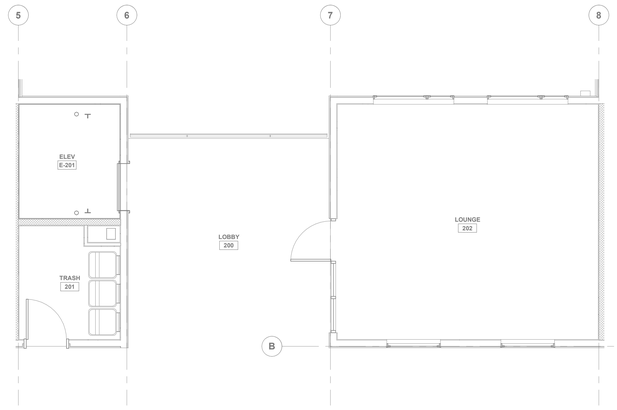
Project Address

80 COLLEGE AVENUE
SANTA ROSA, CA

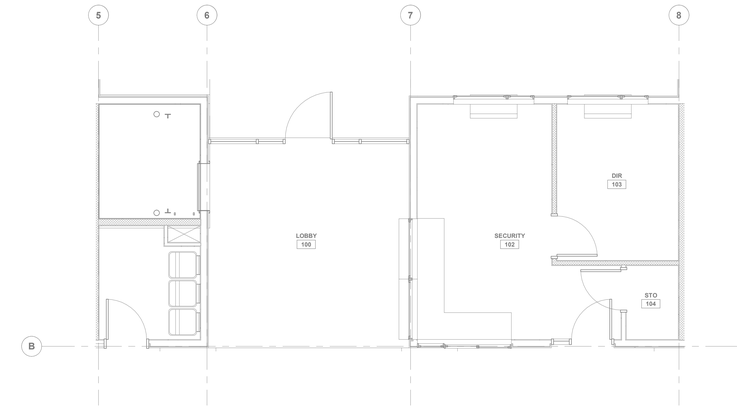
PLUMBING ROOF PLAN

P-114

6/5/2020 10:03:26 AM



4 PLUMBING 2ND FLOOR - ENLARGED - LOBBY
1/4" = 1'-0"



2 PLUMBING 1ST FLOOR - ENLARGED - LOBBY
1/4" = 1'-0"

GENERAL NOTES:

A. IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO COORDINATE THE WORK WITH THAT OF ALL OTHER TRADES, INCLUDING BUT NOT LIMITED TO: ELECTRICAL, HVAC PROCESS PIPING SPRINKLER, PLUMBING, STRUCTURAL AND GENERAL ARCHITECTURE.

B. ALL PLUMBING EQUIPMENT, PIPING, INSULATION, ETC. INSTALLED IN HVAC PLENUM SPACES SHALL MEET CODE REQUIREMENTS FOR SMOKE AND COMBUSTIBILITY.

C. VERIFY EXACT SIZES, LOCATIONS, INVERTS AND ELEVATIONS PRIOR TO RUNNING ANY PIPING. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF ALL FIXTURES AND EQUIPMENT. REFER TO KITCHEN LAYOUT DRAWING FOR EXACT LOCATION AND ROUGH-IN REQUIREMENTS OF ALL KITCHEN FIXTURES AND EQUIPMENT.

D. WATER HEATERS SHALL BE INSTALLED WITH DRAIN PANS UNDER HEATERS. ROUTE PAN DRAINS TO NEAREST FLOOR DRAIN OR SAFE DRAIN.

E. PIPING ENTERING SERVICE CORRIDOR SHALL NOT RUN OVER ELECTRICAL PANELS AND SHALL BE COORDINATED WITH WORK OF OTHER TRADES.

F. PROVIDE ACCESS PANELS FOR ALL SHUTOFF VALVES AND SHOCK ARRESTORS IN NON ACCESSIBLE CEILING AREAS OR WALLS.

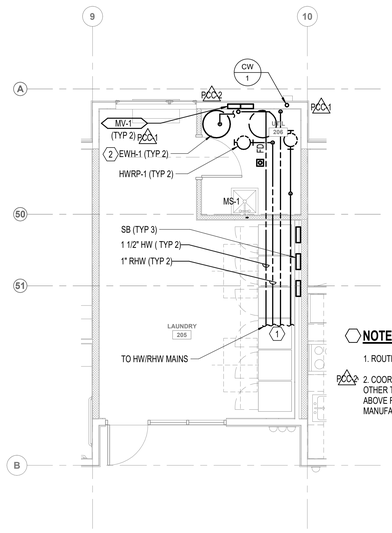
G. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT FLOOR DRAIN LOCATIONS.

H. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF ALL PLUMBING FIXTURES.

I. COMBINE VENTS 6 INCHES ABOVE FLOOD-LEVEL RIM OF HIGHEST PLUMBING FIXTURE SERVED.

J. PROVIDE TRAP PRIMER (TP-1) FOR EACH FLOOR DRAIN. CONNECT TO NEAREST SINK OR LAV. P2.1

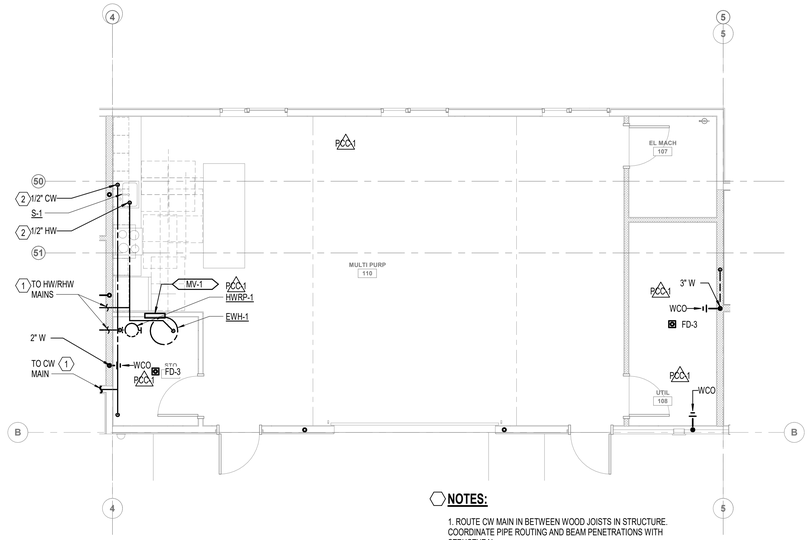
K. COORDINATE FINAL LOCATION/ORIENTATION OF WATER HEATERS WITH OTHER TRADES TO ENSURE 6" CLEARANCE IS PROVIDED ABOVE FILTER FOR MAINTENANCE IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS. P2.2



NOTES:

1. ROUTE WATER LINES THROUGH ARCHITECTURAL SOFFIT.
2. COORDINATE FINAL ORIENTATION OF WATER HEATER WITH OTHER TRADES IN AREA TO ENSURE 6" CLEARANCE IS PROVIDED ABOVE FILTER FOR MAINTENANCE IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS. P2.2

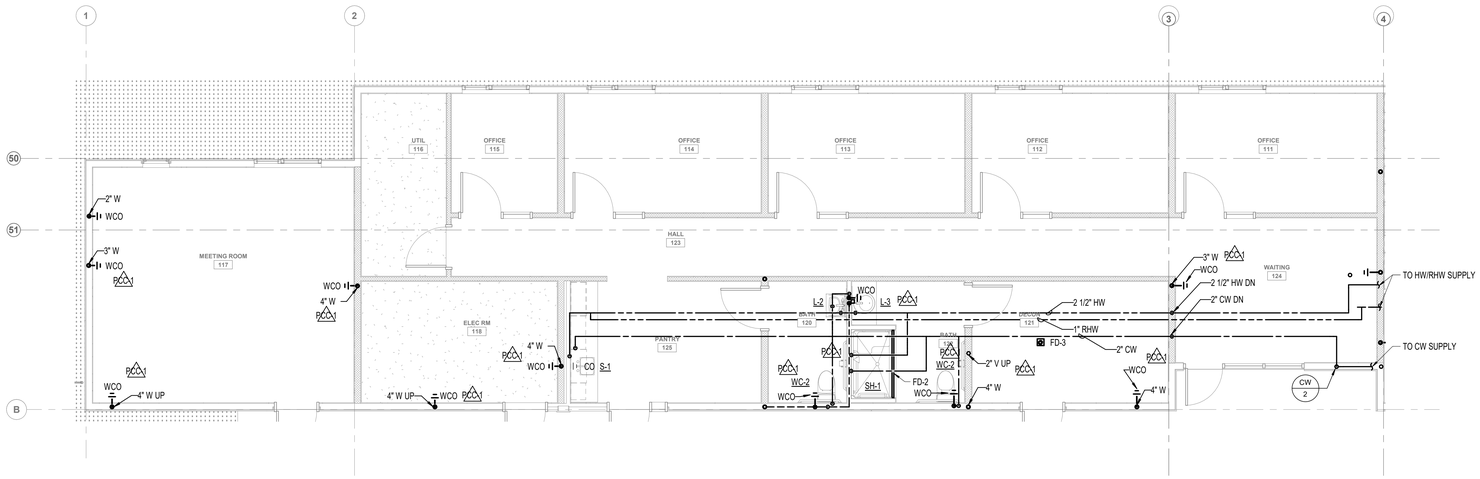
5 PLUMBING 2ND FLOOR - ENLARGED - LAUNDRY
1/4" = 1'-0"



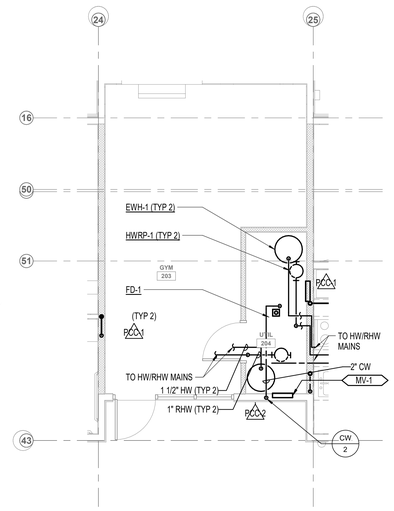
NOTES:

1. ROUTE CW MAIN IN BETWEEN WOOD JOISTS IN STRUCTURE. COORDINATE PIPE ROUTING AND BEAM PENETRATIONS WITH STRUCTURAL.
2. ROUTE WATER LINES THROUGH ARCHITECTURAL SOFFIT.

3 PLUMBING - ENLARGED - MULTIPURPOSE
1/4" = 1'-0"



6 PLUMBING 1ST FLOOR - ENLARGED - OFFICES
1/4" = 1'-0"



1 PLUMBING 2ND FLOOR - ENLARGED - GYM
1/4" = 1'-0"

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER J. PFEIFFER
No. M35043
EXP 6/30/2022
MECHANICAL
STATE OF CALIFORNIA
3.2226

PAE

pae-engineers.com

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

REVISIONS TO THIS SHEET

REV.	DATE
PCC-2	5/15/2020
PCC-1	4/6/2020

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C.: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

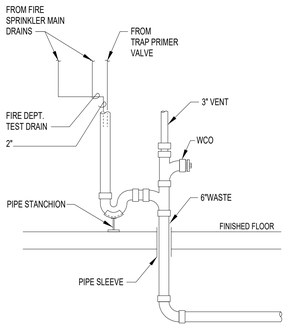
Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

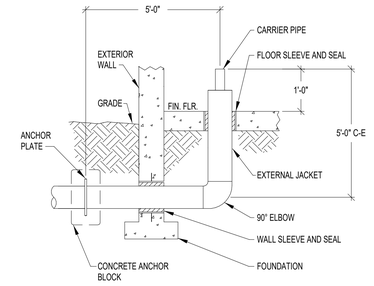
PLUMBING
ENLARGED PLANS

P-140

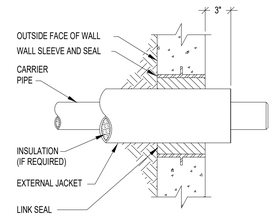
6/5/2020 10:03:29 AM



4 P_STANDPIPE DRAIN DETAIL
NONE



1 P_ BUILDING RISER ELEVATION
NONE

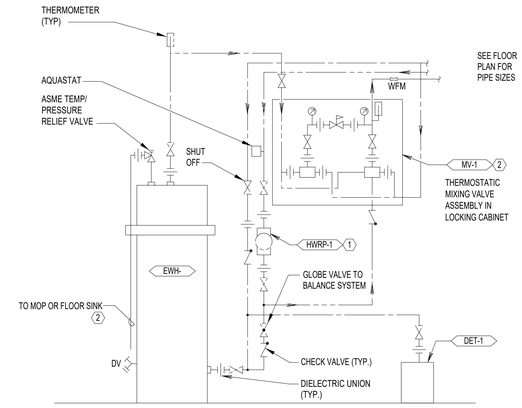


GENERAL NOTES:

A. FIRESTOPPING IS REQUIRED WHERE PENETRATING A FIRE-RESISTANCE-RATED WALL, PARTITION, FLOOR, FLOOR-CEILING ASSEMBLY, OR OTHER RATED ASSEMBLY IN ACCORDANCE WITH CPC CHAPTER 14. FIRESTOP SYSTEM SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH ASTM E119, ASTM E814, UL 263, OR UL 1479 WITH A POSITIVE PRESSURE DIFFERENTIAL OF NOT LESS THAN 0.01 INCHES OF WATER. REFER TO ARCHITECTURAL SPECIFICATIONS AND DRAWINGS FOR FIRESTOPPING REQUIREMENTS SPECIFIC TO EACH TYPE OF PENETRATION.

PCC-1

5 P_PIPE PENETRATION DETAIL
NONE



GENERAL NOTES:

A. SEE SPECIFICATION FOR SEISMIC RESTRAINT REQUIREMENTS.
B. STRAP EQUIPMENT TO WALL PER CPC CHAPTER 5.

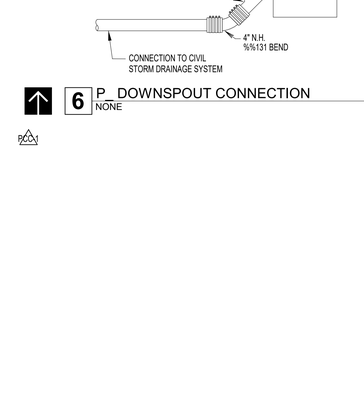
NOTES:

1. RECIRCULATION PUMP SHALL BE AUTOMATICALLY CONTROLLED BASED ON MEASUREMENT OF HOT WATER DEMAND AND HOT WATER RETURN TEMPERATURE IN ACCORDANCE WITH CALIFORNIA ENERGY CODE 110.3(C)2 AND SANTA ROSA ORDINANCE 18-33.150.1(C)8. CONTROL WIRING BETWEEN PUMP AND CONTROL DEVICES BY DIV 22. 2. HOT WATER TEMPERATURE TO FIXTURES SHALL NOT EXCEED 120F.

2. TERMINATE PRESSURE RELIEF IN ACCORDANCE WITH CPC 2019 CHAPTER 608. ROUTE TO MOP SINKS OR FLOOR SINKS WHERE PROVIDED IN THE WATER HEATER ROOM. IN OTHER AREAS, PIPING SHALL BE ROUTED TO THE EXTERIOR OF THE BUILDING.

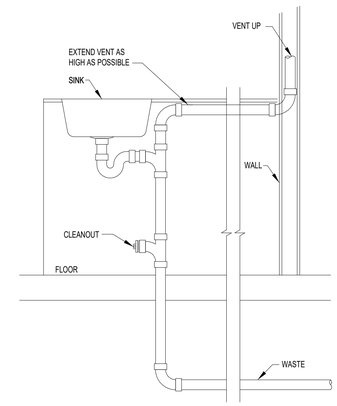
PCC-1

2 P_ELECTRIC WATER HEATER DETAIL
NONE



6 P_ DOWNSPOUT CONNECTION
NONE

PCC-1



3 P_PENNISULA SINK DETAIL
NONE

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER J. PAE
No. M35043
EXP 6/30/2022
MECHANICAL
STATE OF CALIFORNIA
5-3-2020

PAE

pae-engineers.com

REVISIONS TO THIS SHEET

REV.	DATE
PCC-1	4/6/2020

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C.: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner

DANCO

Project Name

SAGE COMMONS

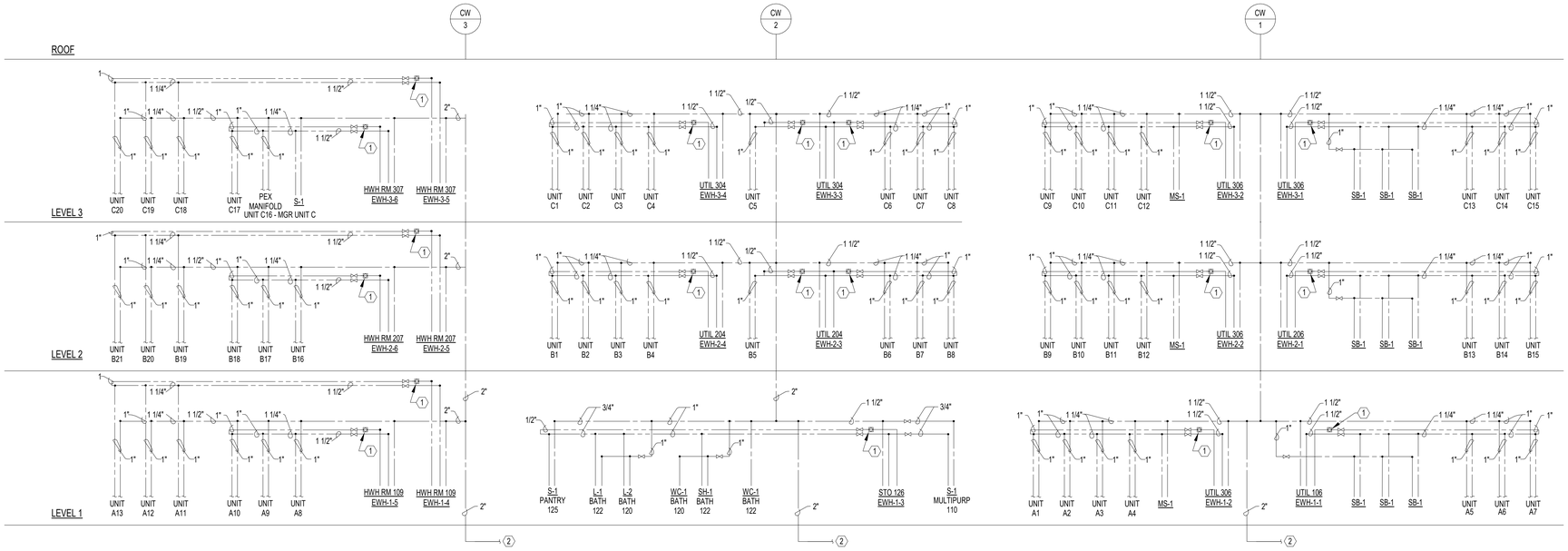
Project Address

80 COLLEGE AVENUE
SANTA ROSA, CA

DETAILS - PLUMBING

P-501

6/5/2020 10:03:29 AM



GENERAL NOTES:

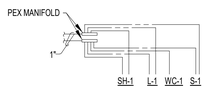
A. SIZE SHOCK ARRESTORS IN ACCORDANCE WITH PDI STANDARDS.

B. SEE 4/M-501 FOR PIPE SIZING AT WATER HEATERS.

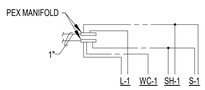
C. SEE PLUMBING FIXTURE CONNECTION SCHEDULE FOR SIZING OF PIPING TO INDIVIDUAL FIXTURES.

NOTES:

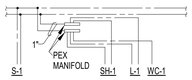
1. SET BALANCING VALVE @ 1 GPM.
2. STUB UP FROM UNDERGROUND DOMESTIC WATER LINE 5' OUTSIDE OF BUILDING. REFER TO CIVIL DRAWINGS FOR CONTINUATION.



TYPICAL UNIT A

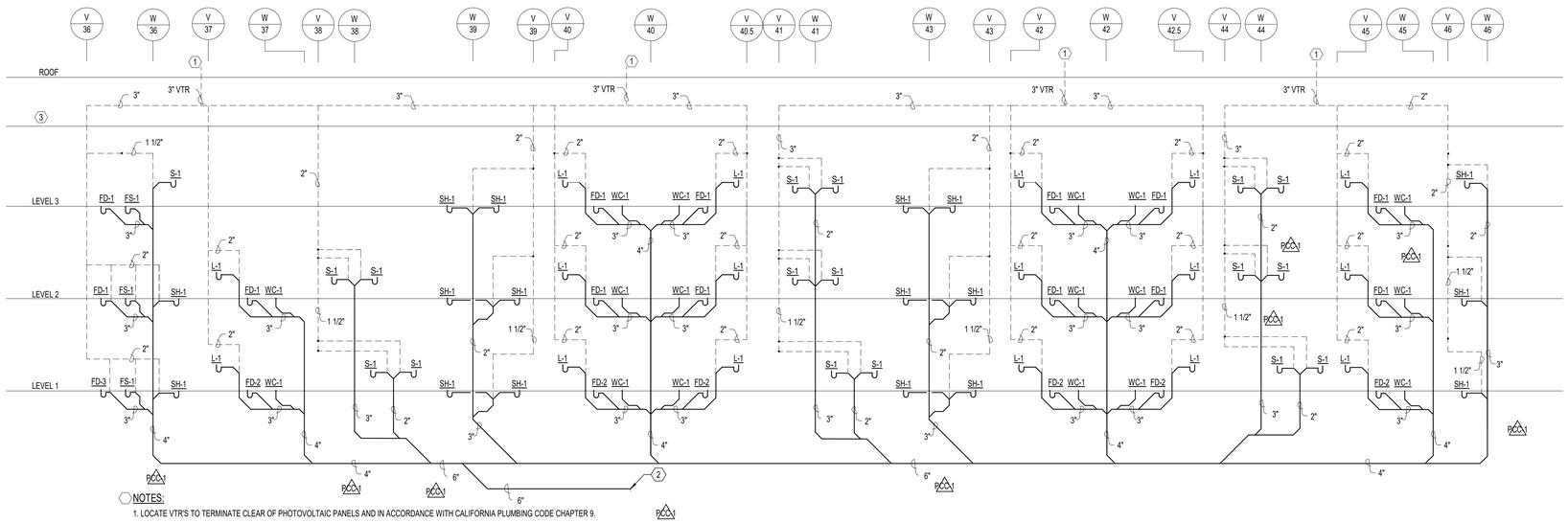


TYPICAL UNIT B



MGR UNIT C

1 DOMESTIC HOT AND COLD WATER RISER DIAGRAM
NONE



NOTES:

1. LOCATE VTR'S TO TERMINATE CLEAR OF PHOTOVOLTAIC PANELS AND IN ACCORDANCE WITH CALIFORNIA PLUMBING CODE CHAPTER 9.
2. CONNECT TO SANITARY SEWER LINE 5' OUTSIDE OF BUILDING. REFER TO CIVIL DRAWINGS FOR CONTINUATION.
3. CONNECT VENT RISERS TO COMMON VENT HEADER IN WOOD STRUCTURE ABOVE 3RD FLOOR. ROUTE HORIZONTAL VENT PIPE IN BETWEEN WOOD JOISTS, PARALLEL TO JOIST MEMBERS TO THE EXTENT PRACTICABLE. MAINTAIN 1/4" PER FOOT SLOPE FOR VENT PIPING IN ACCORDANCE WITH THE CALIFORNIA PLUMBING CODE.
4. PROVIDE A CLEANOUT AT THE BASE OF ALL WASTE RISERS AND AT EACH SINK S-1. REFER TO FLOOR PLANS FOR LOCATIONS.

2 WASTE & VENT RISER DIAGRAM - SOUTH BUILDING
NONE

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

ROWELL BROKAW
1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com
Architecture. Design. Strategy.

STAMP

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER J. PAE
No. M35043
EXP 6/30/2022
MECHANICAL
STATE OF CALIFORNIA
3.2020

PAE
pae-engineers.com

REVISIONS TO THIS SHEET

REV.	DATE
PCC-1	4/6/2020

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C.: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

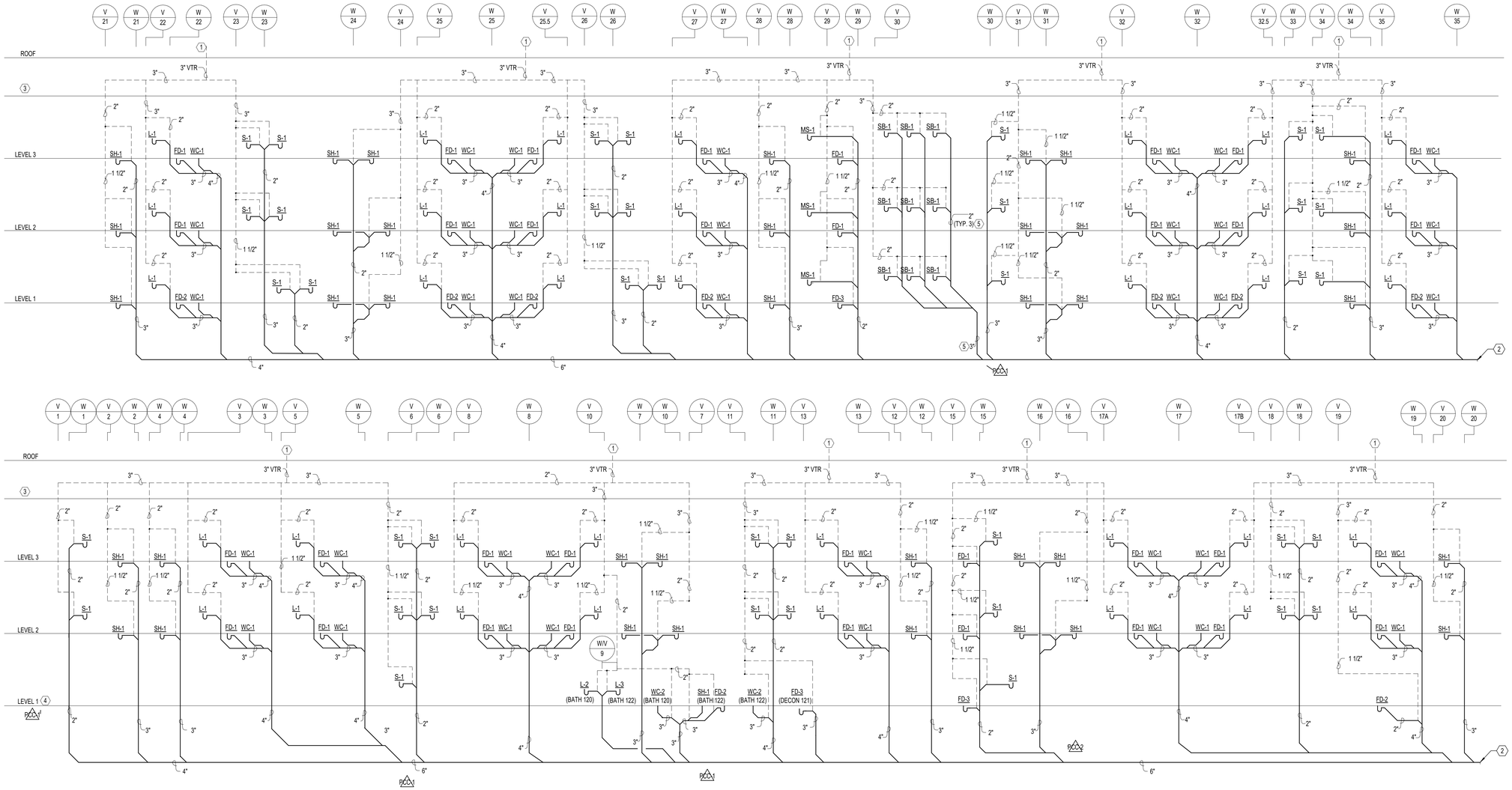
Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

RISER DIAGRAMS - PLUMBING

P-601

6/5/2020 10:03:32 AM



NOTES:

1. LOCATE VTR'S TO TERMINATE CLEAR OF PHOTOVOLTAIC PANELS AND IN ACCORDANCE WITH CALIFORNIA PLUMBING CODE CHAPTER 9..

2. CONNECT TO SANITARY SEWER LINE 5' OUTSIDE OF BUILDING. REFER TO CIVIL DRAWINGS FOR CONTINUATION.

3. CONNECT VENT RISERS TO COMMON VENT HEADER IN WOOD STRUCTURE ABOVE 3RD FLOOR. ROUTE HORIZONTAL VENT PIPE IN BETWEEN WOOD JOISTS, PARALLEL TO JOIST MEMBERS TO THE EXTENT PRACTICABLE. MAINTAIN 1/4" PER FOOT SLOPE FOR VENT PIPING IN ACCORDANCE WITH THE CALIFORNIA PLUMBING CODE.

4. PROVIDE A CLEANOUT AT THE BASE OF ALL WASTE RISERS AND AT EACH SINK S-1. REFER TO FLOOR PLANS FOR LOCATIONS.

5. CLOTHES WASHER STACKS SHALL MEET THE REQUIREMENTS OF CPC SECTION 711 FOR SUDS RELIEF AND SHALL NOT CONNECT INTO DRAINAGE PIPING SYSTEM WITHIN 8 FEET OF A VERTICAL TO HORIZONTAL CHANGE OF DIRECTION. FOLLOW MANUFACTURER'S INSTRUCTIONS FOR WASTE PIPING DESIGN. PCC-1

1 WASTE & VENT RISER DIAGRAM - NORTH BUILDING
NONE

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

6/5/2020 10:03:34 AM

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER J. PFEIFFER
No. M35043
EXP 6/30/2022
MECHANICAL
STATE OF CALIFORNIA
3.2020

PAE
pae-engineers.com

REVISIONS TO THIS SHEET

REV.	DATE
PCC-2	5/15/2020
PCC-1	4/6/2020

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C.: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

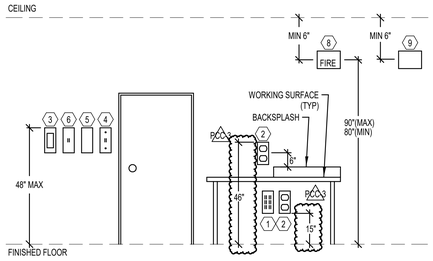
Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

RISER DIAGRAMS - PLUMBING

P-602

DEVICE MOUNTING HEIGHTS



GENERAL NOTES:

A. LOCATE ALL FIRE ALARM DEVICES PER CODE.

B. LOCATE ALL ACCESSIBLE SWITCHES PER ADA GUIDELINES.

C. FIELD COORDINATE ALL ABOVE COUNTER DEVICES WITH MILLWORK CONTRACTOR. MINIMUM 46" TO THE TOP OF THE BOX.

D. IF APPLICABLE, TELECOM CONSULTANTS' DRAWINGS TAKE PRECEDENCE OVER THIS DETAIL FOR TELECOM DEVICES.

NOTES:

1. TELECOM OUTLET.
2. RECEPTACLE.
3. FIRE ALARM PULL STATION.
4. LIGHT SWITCH.
5. CARD READER.
6. WALL PHONE.
7. ABOVE COUNTER DEVICE. MAINTAIN A CONSISTENT HEIGHT THROUGHOUT SPACE.
8. FIRE ALARM STROBE.
9. OCCUPANCY SENSOR.

ABBREVIATIONS - ELECTRICAL

AFF	ABOVE FINISHED FLOOR	KVA	KILOVOLT-AMPERE
ADA	AMERICANS DISABILITIES ACT	KVAR	KILOVOLT-AMPERE REACTIVE
A	AMPERE (AMP)	LA	LIGHTNING ARRESTOR
AL	ALUMINUM	LED	LIGHT EMITTING DIODE
ANN	REMOTE ANNUCIATOR	LRC	LIGHTING RELAY CONTROL PANEL
ARCH	ARCHITECT / ARCHITECTURAL	LTG	LIGHTING
ATS	AUTOMATIC TRANSFER SWITCH	LV	LOW VOLTAGE
AWG	AMERICAN WIRE GAUGE	MATV	MASTER ANTENNA TELEVISION
C	CONDUIT	MAX	MAXIMUM
CAT	CATEGORY CABLE	MCA	MINIMUM CIRCUIT AMPACITY
CB	CIRCUIT BREAKER	MCB	MAIN CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION	MCC	MOTOR CONTROL CENTER
CKT	CIRCUIT	MDP	MAIN DISTRIBUTION PANEL
CLG	CEILING	MECH	MECHANICAL
CT	CURRENT TRANSFORMER	MH	METAL HALIDE
CU	COPPER	MIN	MINIMUM
DN	DOWN	MLO	MAIN LUGS ONLY
EM	EMERGENCY	MOCP	MAXIMUM OVERCURRENT PROTECTION
EMT	ELECTRICAL METALLIC TUBING	MTS	MANUAL TRANSFER SWITCH
EP	EXPLOSION PROOF	MV	MEDIUM VOLTAGE
EPO	EMERGENCY POWER OFF	NIC	NOT IN CONTRACT
EWC	ELECTRIC WATER COOLER	NL	NIGHT LIGHT CIRCUIT
FA	FIRE ALARM	PA	PUBLIC ADDRESS
FLA	FULL LOAD AMPS	PE	PHOTOELECTRIC CELL
FLUOR	FLUORESCENT	PF	POWER FACTOR
FCIC	FURNISHED BY CONTRACTOR INSTALLED BY CONTRACTOR	PNL	PANELBOARD
		PVC	POLYVINYL CHLORIDE
FOIC	FURNISHED BY OWNER INSTALLED BY CONTRACTOR	PWR	POWER
		SDP	SUB-DISTRIBUTION PANEL
FOIO	FURNISHED BY OWNER INSTALLED BY OWNER	STR	STARTER
		SV	SOLENOID VALVE
GEN	GENERATOR	SW	SWITCH
GFP	GROUND FAULT PROTECTION	TD	TIME DELAY
GFI	GROUND FAULT INDICATOR	TP	TAMPERPROOF
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	TTB	TELEPHONE TERMINAL BOARD
GRC	GALVANIZED RIGID CONDUIT	TTC	TELEPHONE TERMINAL CABINET
GRD	GROUND	TV	TELEVISION
HP	HORSEPOWER	TYP	TYPICAL
HPS	HIGH PRESSURE SODIUM	UG	UNDERGROUND
HV	HIGH VOLTAGE	UPS	UNINTERRUPTIBLE POWER SUPPLY
HZ	HERTZ	V	VOLTAGE
IG	ISOLATED GROUND	VA	VOLT-AMPERE
INC	INCANDESCENT	VFD	VARIABLE FREQUENCY DRIVE
INV	INVERTER	VP	VAPORPROOF
JB	JUNCTION BOX	W	WATTS
KW	KILOWATT	WP	WEATHERPROOF
KWH	KILOWATT HOUR	XFMR	TRANSFORMER
KV	KILOVOLT		

ELECTRICAL EQUIPMENT DESIGNATION

E 4 L - 1 - A

POWER TYPE:
- BLANK - NORMAL POWER
- E - EMERGENCY POWER
- U - UNINTERRUPTIBLE POWER

VOLTAGE:
- 2 - 208Y/120V
- 4 - 480Y/277V
- 5 - 4160Y/2400V
- 15 - 12470Y/7200V

EQUIPMENT:
- D - MAIN DISTRIBUTION PANEL
- S - SUB DISTRIBUTION PANEL
- B - BUSWAY
- M - MOTOR CONTROL CENTER
- A - AUTOMATIC TRANSFER SWITCH
- P - POWER PANEL
- L - LIGHTING PANEL
- T - TRANSFORMER
- U - UPS
- LRC - LIGHTING RELAY CONTROL PANEL
- W - LAUNDRY POWER PANEL

BUILDING LEVEL:
- 0 - BASEMENT
- 1 - FIRST LEVEL
- 2 - SECOND LEVEL
- 3 - THIRD LEVEL
- 4 - FOURTH LEVEL
- ETC.

IDENTIFIER:
- A - FIRST IN SERIES OF EQUIPMENT
- B - SECOND IN SERIES OF EQUIPMENT
- ETC.

DESIGNATION SYMBOLS

---, 123	EQUIPMENT DESIGNATOR SEE SCHEDULE.
E, X	EXISTING TO REMAIN, EXISTING TO BE REMOVED
R, F	EXISTING TO BE RELOCATED, FUTURE
N, C	NEW, CONNECT TO
1	NOTE

POWER - SINGLE LINE DIAGRAM & RISER

- CIRCUIT BREAKER, WITH GROUND FAULT PROTECTION, DRAW OUT
- DISTRIBUTION SWITCHBOARD / PANELBOARD, WITH INTERNAL BUS
- UTILITY POLE
- PANELBOARD, TRANSFORMER
- SERVICE TRANSFORMER, WITH VAULT
- GENERATOR, AUTOMATIC TRANSFER SWITCH
- UTILITY METER, METER, NETWORKED POWER METERING / MONITORING
- SURGE PROTECTIVE DEVICE, PUSH BUTTON
- ELECTRICAL BUSWAY, BUSWAY PLUG-IN CIRCUIT BREAKER
- FEEDER CONTINUATION CALLOUT, FEEDER TAG
- FEEDER: DROP, RISE, CAP, BREAK, CONTINUATION
- SWITCH, FUSED SWITCH
- DISCONNECT, FUSED DISCONNECT
- MOTOR, MOTOR WITH CONTROLLER, MOTOR WITH STARTER
- PV ARRAY, INVERTER

FIRE ALARM

- SPRINKLER SYSTEM SWITCH: FLOW, TAMPER
- MANUAL FIRE ALARM STATION
- DETECTOR: IONIZATION, HEAT, PHOTOELECTRIC
- DETECTOR: BEAM
- DUCT DETECTOR, TYPE AS NOTED
- FIREMANS PHONE JACK
- MAGNETIC DOOR HOLDER, CLOSER

WALL	CEILING	NOTIFICATION DEVICES
		FIRE ALARM: VISUAL
		FIRE ALARM: HORN; HORN W/VISUAL
		FIRE ALARM: SPEAKER; SPEAKER W/VISUAL
		FIRE ALARM: BELL; BELL W/VISUAL
		FIRE ALARM: CHIME; CHIME W/VISUAL

POWER - PLANS

- WALL RECEPTACLE: DUPLEX, QUADPLEX
- SINGLE WALL RECEPTACLE, FACELESS GFCI REMOTE TEST BUTTON
- DENOTES GFCI
- DENOTES GFCI AND WEATHER PROOF
- DENOTES RECEPTACLE ABOVE COUNTER
- SPECIAL PURPOSE RECEPTACLE.
- CEILING RECEPTACLE: DUPLEX, QUADPLEX
- FB1 FB2 — FLUSH FLOORBOX RECEPTACLE. REFER TO SCHEDULE FOR QUANTITY AND TYPES OF DEVICES.
- PT1 PT2 — FLUSH POKE-THROUGH RECEPTACLE. REFER TO SCHEDULE FOR QUANTITY AND TYPES OF DEVICES.
- DENOTES SPLIT-WIRED, HALF SWITCHED / CONTROLLED VIA MANUAL CONTROL, MOTION CONTROL OR TIME-BASED CONTROL. SEE SPECIFICATIONS & PLANS.
- DENOTES FULL SWITCHED / CONTROLLED VIA MANUAL CONTROL, MOTION CONTROL OR TIME-BASED CONTROL. SEE SPECIFICATIONS & PLANS.
- FB3 FB4 — SWITCHED / CONTROLLED FLUSH FLOORBOX RECEPTACLE. REFER TO SCHEDULE & PLANS FOR CONTROL INFORMATION.
- PT3 PT4 — SWITCHED / CONTROLLED FLUSH POKE-THROUGH RECEPTACLE. REFER TO SCHEDULE & PLANS FOR CONTROL INFORMATION.
- FB1 X, PT1 X — LETTER DESIGNATOR:
  - E = EMERGENCY
  - U = UPS
  - S = STANDBY
  - C = CRITICAL
  - IG = ISOLATED GROUND
  - P = SURGE PROTECTIVE DEVICE
  - A = AFCI
  - B = WITH USB OUTLETS
- 2NP1.42. — DENOTES PANELBOARD AND CIRCUIT NUMBER.
- 42. — DENOTES CIRCUIT NUMBER. REFER TO SHEET GENERAL NOTES FOR PANELBOARD.
- PEDESTAL OUTLET: POWER & SIGNAL COMBINATION
- SURFACE OUTLET STRIP: DIMENSION AS SHOWN. SEE SPECIFICATIONS.
- 1,3,5 — POWER POLE, POWER, COMBINATION CIRCUITS AS INDICATED.
- JUNCTION BOX
- H 1,3,5 — JUNCTION BOX HOME RUN. CIRCUITS AS INDICATED.
- F 1,3,5 — JUNCTION BOX HOME RUN & FURNITURE FEED. CIRCUITS AS INDICATED.
- CONNECTION TO EQUIPMENT PROVIDED BY OTHERS
- PUSH BUTTON STATION: SINGLE, DOUBLE
- ELECTRICAL EQUIPMENT
- PANELBOARD: SURFACE, RECESSED
- ENCLOSURE: SURFACE, RECESSED
- T — TRANSFORMER
- GROUND ROD, IN TEST WELL
- GROUND PAD

GENERAL NOTE

THIS IS A STANDARD LEGEND SHEET, THEREFORE, SOME SYMBOLS MAY APPEAR ON THIS SHEET THAT DO NOT APPEAR ON THE DRAWINGS.

LIGHTING

EMERGENCY	NORMAL	
NA		TRACK: WITH CURRENT LIMITER, WITHOUT CURRENT LIMITER
		RECESSED DOWNLIGHT:: SQUARE, ROUND
		RECESSED WALLWASHER: SQUARE, ROUND
		RECESSED ADJUSTABLE ACCENT: SQUARE, ROUND
		DOWNLIGHT: SURFACE: SQUARE, ROUND
		WALL WASHER: SURFACE SQUARE, ROUND
		ADJUSTABLE ACCENT: SURFACE: SQUARE, ROUND
		ADJUSTABLE ACCENT: MULTILAMP
		LINEAR: RECESSED
		LINEAR: RECESSED ASYMMETRIC
		LINEAR: SURFACE
		LINEAR: SURFACE ASYMMETRIC
		LINEAR: SUSPENDED
		LINEAR: SUSPENDED ASYMMETRIC
		LINEAR: WALL MOUNTED
		LINEAR: WALL MOUNTED ASYMMETRIC
		STRIP LIGHT
NA		LINEAR: UNDERCABINET
	NA	LINEAR ACCENT: ARCHITECTURE INTEGRATED
	NA	PENDANT: SQUARE, ROUND
	NA	EXIT SIGN: TOP SURFACE OR TOP RECESSED: SINGLE , DOUBLE
	NA	EXIT SIGN: SIDE OR FLAG MOUNT: SINGLE , DOUBLE
	NA	EXIT SIGN: BACK SURFACE MOUNT
		WALL MOUNTED: RECESSED: SQUARE, ROUND
		WALL MOUNTED: SURFACE: SQUARE, ROUND
		POLE-MOUNTED: AREA: SQUARE, ROUND
		POLE-MOUNTED: STREET: RECTANGULAR, OVAL
		POLE-MOUNTED: PEDESTRIAN: SQUARE, ROUND
		BOLLARD 360: SQUARE, ROUND
		BOLLARD 180: SQUARE, ROUND
NA		INGRADE SQUARE, ROUND
NA		INGRADE ADJUSTABLE SQUARE, ROUND
NA		FLOOD LIGHT
CLCK		CONTROL STATION. REFER TO SCHEDULE.
$	$2	WALL SWITCH: 1 POLE, 2 POLE
$3	$4	WALL SWITCH: 3 WAY, 4 WAY
$K	$M	WALL SWITCH: KEY LOCK, MOMENTARY
$LV	$P	WALL SWITCH: LOW VOLTAGE, PILOT
$T	$D	WALL SWITCH: TIMER, MANUAL DIMMER
$OS	$OS D	WALL COMBINATION OCCUPANCY SWITCH, OCCUPANCY DIMMER
$OS	$OS D	WALL COMBINATION VACANCY SWITCH, VACANCY DIMMER
		PHOTOELECTRIC CELL: WALL MOUNTED, CEILING MOUNTED
		OCCUPANCY SENSOR: CEILING OR WALL MOUNTED
		VACANCY SENSOR: CEILING OR WALL MOUNTED "X" DESIGNATES DEVICE TYPE: U: ULTRASONIC R: INFRARED DT: DUAL TECHNOLOGY
L#		DESIGNATES LUMINAIRE TYPE (SEE LUMINAIRE SCHEDULE)
EM		DESIGNATES EMERGENCY FIXTURE
a,b,c,d,e...etc		DESIGNATES STANDALONE CONTROL ZONE.
42.	PNL:42.	DESIGNATES LIGHTING CIRCUIT, PANEL:CIRCUIT.
Z###		DESIGNATES NETWORK CONTROL ZONE. REFER TO SCHEDULE
		REFER TO ZONE SCHEDULE FOR CIRCUITING OF NETWORKED LIGHTING.

ELECTRICAL DRAWING LIST

SHEET #	SHEET NAME
E-001	LEGENDS, SYMBOLS AND ABBREVIATIONS - ELECTRICAL
E-002	EQUIPMENT SCHEDULES - ELECTRICAL
E-003	LUMINAIRE SCHEDULE - LIGHTING
E-004	TITLE 24 VOLTAGE DROP TABLES - ELECTRICAL
E-100	ELECTRICAL SITE PLAN
E-111	ELECTRICAL 1ST FLOOR PLAN AND TYPICAL UNITS A & B
E-112	ELECTRICAL 2ND FLOOR PLAN
E-113	ELECTRICAL 3RD FLOOR PLAN AND UNIT MGR APT.
E-114	ELECTRICAL ROOF PLAN
E-501	DETAILS - ELECTRICAL
E-601	PARTIAL ONE LINE DIAGRAMS - ELECTRICAL
E-602	PARTIAL ONE LINE DIAGRAMS - ELECTRICAL
E-701	PANEL SCHEDULES - ELECTRICAL
E-702	PANEL SCHEDULES - ELECTRICAL
EL-131	LIGHTING 1ST FLOOR RCP AND TYP UNITS A & B/ MULTIPURPOSE ROOM
EL-132	LIGHTING 2ND FLOOR RCP
EL-133	LIGHTING 3RD FLOOR RCP AND UNIT MGR APT.

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REGISTERED PROFESSIONAL ENGINEER STEPHEN J. TURNER No. E13789 Exp. 12/31/21 ELECTRICAL STATE OF CALIFORNIA

06-06-20

PAE

pae-engineers.com

REVISIONS TO THIS SHEET

REV.	DATE

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner

DANCO

Project Name

SAGE COMMONS

Project Address

80 COLLEGE AVENUE SANTA ROSA, CA

REVIEWED FOR CODE COMPLIANCE BY COASTLAND CIVIL ENGINEERING, INC. IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

LEGENDS, SYMBOLS AND ABBREVIATIONS - ELECTRICAL

E-001

6/5/2020 9:42:41 AM

MECHANICAL EQUIPMENT CONNECTION SCHEDULE

	EQUIPMENT DESCRIPTIONS			ELECTRICAL CHARACTERISTICS							CONNECTION CHARACTERISTICS				FEEDER CHARACTERISTICS			PANEL INFORMATION	SCCR	NOTES
	TAG	DESCRIPTION	LOCATION	KW	HP	FLA	MCA	MOCP	VOLTS	PHASE	VFD	1-POINT CONNE.	STARTER DIVISION	DISCONNECT DIVISION	CONDUIT DIA (INCH)	PHASE CONDUCTORS	GROUND CONDUCTOR	PANEL NAME	AVAILABLE FAULT AT EQUIPMENT (AMPS)	
	DUCT SMOKE DETECTORS	AT FSD'S	TYP AT TRASH RMS, ELV SHAFTS	0.1		0.8		20	120	1	NA	Y	28	NA	-	-	-	SEE PLANS		3
	FSD	FIRE SMOKE DAMPER	TRASH RMS	0.1		0.8		20	120	1	NA	Y	NA	26	1/2"	(2) #12	#12	VARIES		2
	FCU-101	FAN COIL UNIT - OFFICES	STORAGE 116	1.08		5.2	6.5	15	208	1	NA	Y	23	23	1/2"	(2) #12	#12	2P1C/6,8		
PCC-3	HP-401	MINI-SPLIT HEAT PUMP - ECU-101	ROOF	4.85		23.3	29.1	40	208	1	NA	Y	23	23	3/4"	(2) #8	#10	2P3B/6,8		
	HP-402	MINI-SPLIT HEAT PUMP - ACU-102	ROOF			23.2	29.0	44	208	1	NA	Y	23	23	3/4"	(2) #8	#10	2P3A/25,27		
1	HP-403	MINI-SPLIT HEAT PUMP - ACU-103	ROOF	6.86		26.4	33	50	208	3	NA	Y	23	23	3/4"	(3) #8	#10	2P2A/21,23,25		
	HP-404	MINI-SPLIT HEAT PUMP - ACU-104	ROOF			11.0		28	208	1	NA	Y	23	23	3/4"	(2) #10	#10	2P4B/26,28		1
	ACU-101A	SPLIT SYTEM - INDOOR UNIT	ELEC ROOM	0.07		0.5	0.6	15	208	1	NA	Y	23	23	3/4"	(2)#12	#12	2P1C/14,16		
	ACU-101B	SPLIT SYTEM - INDOOR UNIT	ELEC ROOM	0.07		0.5	0.6	15	208	1	NA	Y	23	23	3/4"	(2)#12	#12	2P1C/18,20		
PCC-3	ACU-102	SPLIT SYTEM - INDOOR UNIT	MEETING ROOM	0.07		0.5	0.6	15	208	1	NA	Y	23	23	3/4"	(2)#12	#12	2P1C/10,12		
	ACU-103A	SPLIT SYTEM - INDOOR UNIT	MULTI PURP	0.26		1.0	1.3	20	208	1	NA	Y	23	23	3/4"	(2)#12	#12	21PC/24,26		
	ACU-103B	SPLIT SYTEM - INDOOR UNIT	MULTI PURP	0.26		1.0	1.3	20	208	1	NA	Y	23	23	3/4"	(2)#12	#12	21PC/28,30		
	ACU-201	SPLIT SYTEM - INDOOR UNIT	2ND FLOOR LOUNGE	0.07		0.5	0.6	15	208	1	NA	Y	23	23	3/4"	(2)#12	#12	2P2A/17,19		
	ACU-301	SPLIT SYTEM - INDOOR UNIT	3RD FLOOR LOUNGE	0.07		0.5	0.6	15	208	1	NA	Y	23	23	3/4"	(2)#12	#12	2P3B/22,24		
	ACCU-401	SPLIT SYSTEM - OUTDOOR UNIT - LOUNGES	ROOF			23.2	29.0	44	208	1	NA	Y	23	23	1"	(2)#6	#10	2P3A/13,15		
	ACCU-402	SPLIT SYSTEM - OUTDOOR UNIT - ELEC 118	ROOF			23.2	29.0	44	208	1	NA	Y	23	23	1"	(2)#6	#10	2P3B/18,20		
1	ACU-104	SPLIT SYTEM - INDOOR UNIT	EL MACH 107			0.8	1.0		208	1	-	-	-	-	-	-	-	FED FROM OUTDOOR UNIT		1
	ERV-101	ERV - MULTIPURPOSE	MULTIPURPOSE	1.26		10.50		20	120	1	NA	Y	23	23	1/2"	(2) #12	#12	2P1A/20		
	ERV-102	ERV - MEETING ROOM	MEETING ROOM	0.64		2.9	3.6	20	208	1	NA	Y	23	23	1/2"	(2)#12	#12	2P1A/22		
	ERV-201	ERV - LOUNGE 2ND FLOOR	2ND FLOOR LOUNGE	0.08		0.60		20	120	1	NA	Y	23	23	1/2"	(2) #12	#12	2P2A/6		
	ERV-301	ERV - LOUNGE 3RD FLOOR	3RD FLOOR LOUNGE	0.08		0.60		20	120	1	NA	Y	23	23	1/2"	(2) #12	#12	2P3A/6		
	HRV-102	HRV - LAUNDRY FLOOR 1	LAUNDRY LEVEL 1	0.66		5.5		20	120	1	NA	Y	23	23	1/2"	(2) #12	#12	2V1/2		
	HRV-202	HRV - LAUNDRY FLOOR 2	LAUNDRY LEVEL 2	0.66		5.5		20	120	1	NA	Y	23	23	1/2"	(2) #12	#12	2V2/2		
	HRV-302	HRV - LAUNDRY FLOOR 3	LAUNDRY LEVEL 3	0.66		5.5		20	120	1	NA	Y	23	23	1/2"	(2) #12	#12	2V3/2		
	ERV-203	ERV - GYM FLOOR 2	GYM LEVEL 2	0.64		2.9	3.6	20	208	1	NA	Y	23	23	1/2"	(2) #12	#12	2P2A/8		
	ERV-303	ERV - GYM FLOOR 3	GYM LEVEL 3	0.64		2.9	3.6	20	208	1	NA	Y	23	23	1/2"	(2) #12	#12	2P3A/6		
	EF-X	EXHAUST FAN - APT BATHROOMS	TYP APT BATH	0.10		0.5		20	120	1	NA	Y	26	26	1/2"	(2) #12	#12	UNIT PANEL		
	EF-101	RESTROOM EXHAUST FAN	BATHROOM 120	0.10		0.5		20	120	1	NA	Y	26	26	1/2"	(2) #12	#12	2P1A/2		
	EF-102	BATH EXHAUST FAN	BATHROOM 122	0.10		0.5		20	120	1	NA	Y	26	26	1/2"	(2) #12	#12	2P1A/2		
	EF-401	TRASH EXHAUST FAN	ROOF		1.0	8.0		20	208	1	NA	Y	26	26	1/2"	(2) #12	#12	2P3A/9,11		
	EH-101	ELECT WALL HEATER	TRASH RM LEVEL 1	0.50		4.2		20	120	1	NA	Y	NA	26	1/2"	(2) #12	#12	2P1A/4		
	EH-201	ELECT WALL HEATER	TRASH RM LEVEL 2	0.50		4.2		20	120	1	NA	Y	NA	26	1/2"	(2) #12	#12	2P2A/10		
	EH-301	ELECT WALL HEATER	TRASH RM LEVEL 3	0.50		4.2		20	120	1	NA	Y	NA	26	1/2"	(2) #12	#12	2P3A/10		
	EH-102	ELECT WALL HEATER	HWH RM LEVEL 1	0.50		4.2		20	120	1	NA	Y	NA	26	1/2"	(2) #12	#12	2P1A/6		
	EH-202	ELECT WALL HEATER	HWH RM LEVEL 2	0.50		4.2		20	120	1	NA	Y	NA	26	1/2"	(2) #12	#12	2P2A/12		
	EH-302	ELECT WALL HEATER	HWH RM LEVEL 3	0.50		4.2		20	120	1	NA	Y	NA	26	1/2"	(2) #12	#12	2P3A/12		
	EH-103A	ELECT WALL HEATER	DECON 121	0.50		4.2		20	120	1	NA	Y	NA	26	1/2"	(2)#12	#12	2P1C/22		
	EH-103B	ELECT WALL HEATER	BATH 122	0.50		4.2		20	120	1	NA	Y	NA	26	1/2"	(2)#12	#12	2P1C/41		
	PTAC-A	PTAC - UNIT A	UNIT A	0.80				20	208	1	NA	Y	23	26	3/4"	(2)#12	#12	UNIT PANEL		
	PTAC-B	PTAC - UNIT B	UNIT B	0.80				20	208	1	NA	Y	23	26	3/4"	(2)#12	#12	UNIT PANEL		
	PTAC-102	PTAC - SECURITY	SECURITY	4.64				20	208	1	NA	Y	23	26	3/4"	(2)#12	#12	21PC/32		
	PTAC-103	PTAC - DIR.	DIR	0.64				20	208	1	NA	Y	23	26	3/4"	(2)#12	#12	21PC/34		
	PTAC-C1	PTAC - UNIT C	UNIT C LIVING ROOM	0.80				20	208	1	NA	Y	23	26	3/4"	(2)#12	#12	UNIT PANEL		
	PTAC-C2	PTAC - UNIT C	UNIT C BEDROOM	0.64				20	208	1	NA	Y	23	26	3/4"	(2)#12	#12	UNIT PANEL		
	PTAC-G	PTAC - GYM	GYM LEVEL 2	1.15				20	208	1	NA	Y	23	26	3/4"	(2)#12	#12	2P2A/9,11		
	PTAC-G	PTAC - GYM	GYM LEVEL 3	1.15				20	208	1	NA	Y	23	26	3/4"	(2)#12	#12	2P3B/26,28		
	PTAC-L	PTAC- LAUNDRY	LAUNDRY LEVEL 1	1.15				20	208	1	NA	Y	23	26	3/4"	(2)#12	#12	2W1/21,23		
	PTAC-L	PTAC- LAUNDRY	LAUNDRY LEVEL 2	1.15				20	208	1	NA	Y	23	26	3/4"	(2)#12	#12	2W2/21,23		
	PTAC-L	PTAC- LAUNDRY	LAUNDRY LEVEL 3	1.15				20	208	1	NA	Y	23	26	3/4"	(2)#12	#12	2W3/21,23		
	HWRP-1-1	RECIRCULATION HW PUMP	UTIL106	0.06	2	5.0		20	120	1	N	Y	NA	26	1/2"	(2) #12	#12	2P1A/8		
	HWRP-1-2	RECIRCULATION HW PUMP	UTIL106	0.06	2	5.0		20	120	1	N	Y	NA	26	1/2"	(2) #12	#12	2P1A/8		
	HWRP-1-3	RECIRCULATION HW PUMP	STO 126	0.06	2	5.0		20	120	1	N	Y	NA	26	1/2"	(2) #12	#12	2P1B/10		
	HWRP-1-4	RECIRCULATION HW PUMP	HWH ROOM 109	0.06	2	5.0		20	120	1	N	Y	NA	26	1/2"	(2) #12	#12	2P1B/12		
	HWRP-1-5	RECIRCULATION HW PUMP	HWH ROOM 109	0.06	2	5.0		20	120	1	N	Y	NA	26	1/2"	(2) #12	#12	2P1B/12		
	HWRP-2-1	RECIRCULATION HW PUMP	UTIL 206	0.06	2	5.0		20	120	1	N	Y	NA	26	1/2"	(2) #12	#12	2P2A/14		
	HWRP-2-2	RECIRCULATION HW PUMP	UTIL 206	0.06	2	5.0		20	120	1	N	Y	NA	26	1/2"	(2) #12	#12	2P2A/14		
	HWRP-2-3	RECIRCULATION HW PUMP	UTIL 204	0.06	2	5.0		20	120	1	N	Y	NA	26	1/2"	(2) #12	#12	2P2A/16		
	HWRP-2-4	RECIRCULATION HW PUMP	UTIL 204	0.06	2	5.0		20	120	1	N	Y	NA	26	1/2"	(2) #12	#12	2P2A/18		
	HWRP-2-5	RECIRCULATION HW PUMP	HWH ROOM 207	0.06	2	5.0		20	120	1	N	Y	NA	26	1/2"	(2) #12	#12	2P2A/18		
	HWRP-2-6	RECIRCULATION HW PUMP	HWH ROOM 207	0.06	2	5.0		20	120	1	N	Y	NA	26	1/2"	(2) #12	#12	2P2A/16		
	HWRP-3-1	RECIRCULATION HW PUMP	UTIL 306	0.06	2	5.0		20	120	1	N	Y	NA	26	1/2"	(2) #12	#12	2P3A/14		
	HWRP-3-2	RECIRCULATION HW PUMP	UTIL 306	0.06	2	5.0		20	120	1	N	Y	NA	26	1/2"	(2) #12	#12	2P3A/14		
	HWRP-3-3	RECIRCULATION HW PUMP	UTIL 304	0.06	2	5.0		20	120	1	N	Y	NA	26	1/2"	(2) #12	#12	2P3A/16		
	HWRP-3-4	RECIRCULATION HW PUMP	UTIL 304	0.06	2	5.0		20	120	1	N	Y	NA	26	1/2"	(2) #12	#12	2P3A/18		
	HWRP-3-5	RECIRCULATION HW PUMP	HWH ROOM 307	0.06	2	5.0		20	120	1	N	Y	NA	26	1/2"	(2) #12	#12	2P3A/18		
	HWRP-3-6	RECIRCULATION HW PUMP	HWH ROOM 307	0.06	2	5.0		20	120	1	N	Y	NA	26	1/2"	(2) #12	#12	2P3A/16		
	EWH-1-1	ELECTRIC WATER HEATER	UTIL106	5.00		24.0		20	208	1	NA	Y	26	26	3/4"	(2) #8	#10	2P1A/21,23		
	EWH-1-2	ELECTRIC WATER HEATER	UTIL106	5.00		24.0		20	208	1	NA	Y	26	26	3/4"	(2) #8	#10	2P1B/14,16		
	EWH-1-3	ELECTRIC WATER HEATER	STO 126	5.00		24.0		20	208	1	NA	Y	26	26	3/4"	(2) #8	#10	2P1B/18,20		
	EWH-1-4	ELECTRIC WATER HEATER	HWH ROOM 109	5.00		24.0		20	208	1	NA	Y	26	26	3/4"	(2) #8	#10	2P1B/22,24		
	EWH-1-5	ELECTRIC WATER HEATER	HWH ROOM 109	5.00		24.0		20	208	1	NA	Y	26	26	3/4"	(2) #8	#10	2P1B/26,28		
	EWH-2-1	ELECTRIC WATER HEATER	UTIL 206	5.00		24.0		20	208	1	NA	Y	26	26	3/4"	(2) #8	#10	2P2A/20,22		
	EWH-2-2	ELECTRIC WATER HEATER	UTIL 206	5.00		24.0		20	208	1	NA	Y	26	26	3/4"	(2) #8	#10	2P2A/24,26		
	EWH-2-3	ELECTRIC WATER HEATER	UTIL 204	5.00		24.0		20	208	1	NA	Y	26	26	3/4"	(2) #8	#10	2P2A/28,30		
	EWH-2-4	ELECTRIC WATER HEATER	UTIL 204	5.00		24.0		20	208	1	NA	Y	26	26						
	EWH-2-5	ELECTRIC WATER HEATER	HWH ROOM 207	5.00		24.0		20	208	1	NA	Y	26	26	3/4"	(2) #8	#10	2P2A/32,34		
	EWH-2-6	ELECTRIC WATER HEATER	HWH ROOM 207	5.00		24.0		20	208	1	NA	Y	26	26	3/4"	(2) #8	#10	2P2A/36,38		
	EWH-3-1	ELECTRIC WATER HEATER	UTIL 306	5.00		24.0		20	208	1	NA	Y	26	26	3/4"	(2) #8	#10	2P3A/20,22		
	EWH-3-2	ELECTRIC WATER HEATER	UTIL 306	5.00		24.0		20	208	1	NA	Y	26	26	3/4"	(2) #8	#10	2P3A/24,26		
	EWH-3-3	ELECTRIC WATER HEATER	UTIL 304	5.00		24.0		20	208	1	NA	Y	26	26	3/4"	(2) #8	#10	2P3A/28,30		
	EWH-3-4	ELECTRIC WATER HEATER	UTIL 304	5.00		24.0		20	208	1	NA	Y	26	26						
	EWH-3-5	ELECTRIC WATER HEATER	HWH ROOM 307	5.00		24.0		20	208	1	NA	Y	26	26	3/4"	(2) #8	#10	2P3A/32,34		
	EWH-3-6	ELECTRIC WATER HEATER	HWH ROOM 307	5.00		24.0		20	208	1	NA	Y	26	26	3/4"	(2) #8	#10	2P3A/36,38		
	FIRE SPRINKLER BELL		FSPK RM 106 - EXTERIOR	0.02				20	120	1	NA	Y	NA	26	1/2	(2) 12 AWG	(1) 12 AWG	2P1G-E		

GENERAL NOTES:

A. REFER TO ONE-LINE DIAGRAM OR PANEL SCHEDULES FOR OVERCURRENT PROTECTION CHARACTERISTICS AND CIRCUIT NUMBERS.
B. COORDINATE ALL EQUIPMENT CONNECTION REQUIREMENTS WITH INSTALLING CONTRACTOR PRIOR TO THE INSTALLATION OF ANY ELECTRICAL WORK.
C. VFD'S ARE FURNISHED BY DIVISION 23. INSTALL VFD AND PROVIDE PROVIDE LINE AND LOAD SIDE FEEDERS IN ELECTRICAL WORK.
D. COMBINATION STARTER/DISCONNECTS AND DISCONNECT SWITCHES SHALL BE LOCATED WITHIN SIGHT OF AND ADJACENT TO EQUIPMENT SERVED. COORDINATE INSTALLATION WITH EQUIPMENT INSTALLER.
E. NOT ALL EQUIPMENT IDENTIFIED HERE IS SHOWN ON FLOOR PLANS. REFER TO DRAWINGS IN OTHER DISCIPLINES FOR EQUIPMENT LOCATIONS.

NOTES:

PCC-3
1. INDOOR UNIT RECEIVES POWER FROM OUTDOOR CONDENSING UNIT.
2. LOCATIONS OF FIRE SMOKE DAMPERS (FSDS) ARE SHOWN ON MECHANICAL FLOOR PLANS. CONNECT ALL FSDS WITHIN THE SAME SECTOR AND FLOOR TO A SINGLE BRANCH CIRCUIT THAT DOES NOT EXCEED 200 FEET IN LENGTH BETWEEN THE SOURCE PANEL AND THE LAST FSD CONNECTED
3. LOCATIONS, AND TYPES OF ALL DUCT SMOKE DETECTORS (DSDS) ARE DEFINED BY THE FIRE ALARM DESIGN/BUILD CONTRACTOR. BRANCH CIRCUIT ALLOCATIONS FOR DSDS HAVE BEEN PROVIDED AND ARE SHOWN IN ELECTRICAL PANEL SCHEDULES. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL BRANCH CIRCUITS REQUIRED TO SERVE ALL DSDS REQUIRED BY THE FIRE ALARM DESIGN/BUILD CONTRACTOR.

PCC-3

ELECTRICAL EQUIPMENT CONNECTION SCHEDULE

DESIGNATOR	NAME	LOAD	VOLTAGE	PHASE	CONDUIT	BRANCH WIRING	CONNECTION TYPE	DISCONNECT	NOTES
ACS	ACCESS CONTROL SYSTEM	0.5 KW	120V	1 PH	1/2"C	(2)#12 + (1)#12G	HARD-WIRED	-	CONTRACTOR SHALL INSTALL CONTROL SYSTEM AND PROVIDE ELECTRICAL CONNECTION TO ALL POWER SUPPLIES, ELECTRIC STRIKES, AND ALL OTHER ASSOCIATED EQUIPMENT.EQUIPMENT INSTALLED BY DIV 28, CONNECTED BY DIV 26.
AD	AUTO-DOOR	0.3 KW	120V	1 PH	1/2"C	(2)#12 + (1)#12G	HARD WIRED	MMS	PROVIDE ELECTRICAL CONNECTION TO OPERATOR, PUSH BUTTONS, ALL ACCESSORIES FURNISHED BY VENDOR AND ANY CONTROL CONNECTION FROM THE ACCESS CONTROL SYSTEM. INSTALL PUSH-BUTTOM AT LOCATION INDICATED BY ARCHITECT.
MD	MOTORIZED DOOR	0.3 KW	120V	1 PH	1/2"C	(2)#12 + (1)#12G	HARD WIRED	MMS	COORDINATE INSTALLATION AUTODOOR CONTROLS AND SECUIRTY INSTALLER FOR ACCESS CONTROL INTERFACE.
DLC	DOOR LOCK CONTROLLER	0.1 KW	120V	1 PH	1/2"C	(2)#12 + (1)#12G	HARD-WIRED	-	PROVIDE 120V CONNECTION ABOVE CEILING TO DOOR LOCK CONTROLLER. COORDINATE REQUIREMENTS WITH DOOR ACCESS CONTROL SYSTEM VENDOR AND PROVIDE.
DRY	DRYER	5 KW	208V	1 PH	3/4"C	(3)#10 + (1)#10G	14-30R	-	
DW	DISHWASHER	.75 KW	120V	1 PH	1/2"C	(2)#12 + (1)#12G	5-20R GFCI	-	LOCATE GFCI RECEPTACLE IN ACCESSIBLE SPACE BELOW ADJACENT SINK. WIRE PLUG AND CORD SET TO DISHWASHER PER MFR REQUIREMENTS.
FACP	FIRE ALARM CONTROL PANEL	0.4 KW	120V	1 PH	3/4"C	(2)#12 + (1)#12G	HARD-WIRED	-	IN ADDITION TO POWER CONNECTION, PROVIDE TWO DEDICATED PHONE LINES.
TS	TAMPER SWITCH	0.01KW	28VDC	1 PH	1/2"C	-	HARD-WIRED	-	COORDINATE INSTALLATION REQUIREMENTS IN MANUFACTURE.
FS	FLOW SWITCH	0.01KW	28VDC	1 PH	1/2"C	-	HARD-WIRED	-	COORDINATE INSTALLATION REQUIREMENTS IN MANUFACTURE
PS	PRESSURE SWITCH	0.01KW	28VDC	1 PH	1/2"C	-	HARD-WIRED	-	COORDINATE INSTALLATION REQUIREMENTS IN MANUFACTURE.
KB	FIRE DEPARTMENT KNOX GATESWITCH	4A	28VDC	-	3/4"C	-	HARD-WIRED	-	PROVIDE CONNECTION FROM FIRE DEPARTEMNT KNOXBOX. GATESWITCH TO GATE CONTROLLER. COORDINAT...
MG	MOTORIZED GATE CONTROLLER	0.8 KW	120V	1 PH	1/2"C	(2)#12 + (1)#12G	HARD-WIRED	-	COORDINATE INSTALLATION GATE CONTROLS AND SECUIRTY INSTALLER FOR ACCESS CONTROL INTERFACE.
REF	REFRIGERATOR	0.75 KW	120V	1 PH	3/4"C	(2)#12 + (1)#12G	5-20R	-	PROVIDE FLUSH MOUNTED GFCI MODULE IN ACCESSABLE LOCATION ADJACENT TO REFRIGERATOR.
RH	RANGE HOOD	1/4 HP	120V	1 PH	3/4"C	(2)#12 + (1)#12G	5-20R	-	PROVIDE (2) 1-POLE SWITCHES ABOVE COUNTER. ONE POLE SHALL CONTROL HOOD LIGHT AND THE OTHER...
R	RANGE	8 KW	208V	1 PH	1"C	(3)#6 + (1)#10G	14-50R	-	MOUNT RECEPTACLE AT +18"

GENERAL NOTES:

A. DESIGNATORS ARE SHOWN NEXT TO RECEPTACLES OR EQUIPMENT CONNECTION SYMBOLS AND INDICATE WHERE THE REQUIREMENTS OF THIS SCHEDULE ARE TO BE APPLIED.

B. VERIFY ALL EQUIPMENT LOCATIONS WITH ARCHITECTURAL ELEVATIONS PRIOR TO ROUGH-IN.

C. DISCONNECTS: PROVIDE PER MANUFACTURER'S SHOP DRAWINGS. PROVIDE MANUAL MOTOR SWITCH (MMS) FOR SINGLE-PHASE LOADS, 1/2HP OR LESS.

ROWELL BROKAW
1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com
Architecture. Design. Strategy.

STAMP

REGISTERED PROFESSIONAL ENGINEER
STEPHEN J. TURNER
No. E13789
Exp. 12/31/21
ELECTRICAL
STATE OF CALIFORNIA

PAE
pae-engineers.com

REVISIONS TO THIS SHEET

REV.	DATE
PCC-3	6/3/2020
ADD-1	04/27/2020
PCC-1	4/6/2020

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

Project Name
SAGE COMMONS

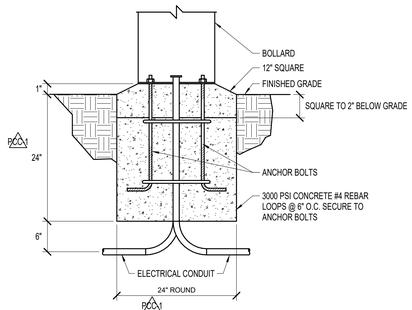
Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

EQUIPMENT SCHEDULES - ELECTRICAL

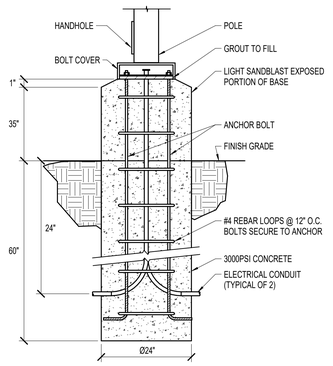
E-002

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

6/5/2020 9:42:43 AM



1 LIGHTING POLE BASE BOLLARD



NOTES:

1. CONCRETE BASE / FOOTING DESIGN SHALL BE VERIFIED AND APPROVED BY A STRUCTURAL ENGINEER PRIOR TO CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL POLE REQUIREMENTS WITH THE MANUFACTURER AND LOCAL AUTHORITY HAVING JURISDICTION AND SHALL MEET ALL APPLICABLE CODES.

2 LIGHTING POLE BASE ABOVE GRADE

INTERIOR LUMINAIRE SCHEDULE

FIXTURE TYPE	PRODUCT DESCRIPTION	BASIS OF DESIGN MANUFACTURER/SERIES	SIZE	INPUT WATTS	LAMP SOURCE	CONTROL GEAR	INPUT VOLTAGE	FINISH	MOUNTING	NOTES
L1	LINEAR RECESSED LED	RAB SWISH2X2	2'L X 2'W	19 W	LED 3500K, 84CRI 2376 DELIVERED LM	INTEGRAL 10% DIM	MVOLT	WHITE	RECESSED IN CEILING	
L2	LED LINEAR STRIPLIGHT	LITHONIA ZL1D SERIES METALUX SNLED SERIES	4' L	42 W	LED 3500K, 82CRI 5000 DELIVERED LM	INTEGRAL ELECTRONIC 0-10V DIMMING	120V	WHITE	SEE PLANS	
L4	DOWNLIGHT	JUNO SLIMFORM LED	13"D	20W	LED 3000K CCT 90 CRI 1800 DELIVERED LM	INTEGRAL 0-10V DIM	120V	AS SELECTED BY THE ARCHITECT	SURFACE	
L5	DOWNLIGHT	HALO SMD6 SERIES	6"D	15.7 W	LED 3000K CCT 90 CRI 1200 DELIVERED LM	INTEGRAL 5% DIM	120V	MATTE WHITE	CEILING MOUNTED	CONFIRM MOUNTING WITH CEILING TYPE AT EACH LOCATION
L6	DOWNLIGHT	HALO SMD6 SERIES	4"X4"	10 W	LED 3500K CCT >85 CRI 600 DELIVERED LM	INTEGRAL 5% DIM	120V	MATTE WHITE	CEILING MOUNTED	CONFIRM MOUNTING WITH CEILING TYPE AT EACH LOCATION
L7	WALL MOUNTED LED VANITY	MAXIM LIGHITNG SPEC VANITY SERIES	18" W X 2.25" D X 1.75" H	12 W	LED 3000K, 90 CRI 840 DELIVERED LM	INTEGRAL 0-10V DIM	120V	SATIN NICKEL	WALL MOUNTED	
L8	LED WALL SCONCE	LITHIUM WS SERIES	5" D X 16" H	20 W	LED 3000K, 90 CRI 1683 DELIVERED LM	ELV DIMMING	120V	BRUSHED ALUMINUM	WALL MOUNTED	TO BE MOUNTED AT 90°
L9	LED WALL SCONCE UPLIGHT/DOWNLIGHT	LUMINIS SY302 SERIES SYRIOS - LED	5" W X 11.75" H	20 W	LED 3000K, 80+ CRI 1400 LM	INTEGRAL ELECTRONIC	120V	AS SELECTED BY THE ARCHITECT	WALL	
L10	RECESSED LED STEP LIGHT	COLE LIGHTING L402 SERIES STEPLIGHT	5.25" W X 3.25" L X 3.5" D	3.06 W	LED 3000K 450 LM	INTEGRAL ELV DIMMING	120V	AS SELECTED BY THE ARCHITECT	RECESSED WALL	
L11	LED WALL PACK	LUMARK XTOR	5-3/4" W X 6-3/4" H X 4" D	26 W	LED 3000K, 70 CRI 2575 DELIVERED LM	INTEGRAL ELECTRONIC	120V	BRONZE	WALL MOUNTED	PROVIDE INTEGRAL OCCUPANCY SENSOR AND PHOTOCELL
L13	SURFACE WALL MOUNTED, FIXED OPTIC EMERGENCY LIGHT	LITHONIA ELM2LF	9.72" W X 4.68" H X 3.1" D	2.4 W	LED 5000K, 220 LM	INTEGRAL	120V	NA	WALL MOUNTED	
L14	SURFACE WALL MOUNTED, FIXED OPTIC EMERGENCY LIGHT	LITHONIA LHQM	19.25" W X 8" H X 4.75" D	3 W	LED 5000K, 220 LM	INTEGRAL	120V	NA	WALL MOUNTED	
X	SURFACE CEILING/WALL MOUNTED, EXIT SIGN	LITHONIA LHQM SERIES	12" WIDE X 2" DEEP X 8" HIGH	1.5 W	GREEN LED	INTEGRAL	120V	NA	WALL OR CEILING MOUNTED	PROVIDE SINGLE AND DOUBLE FACE WHERE SHOWN ON PLANS. PROVIDE WEATHER PROOF FOR EXTERIOR LOCATIONS.

LIGHTING CONTROL SCHEDULE

CONTROL AREA			ZONE CONTROL INPUTS				CIRCUITING INFORMATION	
ZONE	DESCRIPTION	OCCUPANCY SENSOR	PHOTOCELL F	DIMMING	EMERGENCY SOURCE	PANEL	CIRCUIT	LOAD (VA)
ZS001	BUILDING WALKWAY	Y	Y	Y	N	2P1B	5.	914
ZS001E	BUILDING WALKWAY	Y	Y	Y	Y	LTG INVERTER	1.	815.1
ZS002	MEETING RM 117	Y	Y	Y	N	2P1B	5.	95
ZS002E	MEETING RM 117	Y	Y	Y	Y	LTG INVERTER	1.	76
ZS003	MULTI PURP 110	Y	Y	Y	N	2P1B	7.	125.6
ZS003E	MULTI PURP 110	Y	Y	Y	Y	LTG INVERTER	1.	31.4
ZS004	MULTI PURP 110	Y	Y	Y	N	2P1B	7.	109.9
ZS004E	MULTI PURP 110	Y	Y	Y	Y	LTG INVERTER	1.	15.7
ZS005	SECURITY 102	Y	Y	Y	N	2P1B	7.	114
ZS005E	SECURITY 102	Y	Y	Y	Y	LTG INVERTER	1.	19
ZS006	LAUNDRY 105	Y	Y	Y	N	2P1B	7.	62.8
ZS006E	LAUNDRY 105	Y	Y	Y	Y	LTG INVERTER	1.	62.8
ZS007	BUILDING WALKWA...	Y	Y	Y	N	2P2A	13.	689.7
ZS007E	BUILDING WALKWA...	Y	Y	Y	Y	LTG INVERTER	3.	494
ZS008	GYM 203	Y	Y	Y	N	2P2A	13.	94.2
ZS008E	GYM 203	Y	Y	Y	Y	LTG INVERTER	3.	62.8
ZS009	LOUNGE 202	Y	Y	Y	N	2P2A	13.	94.2
ZS009E	LOUNGE 202	Y	Y	Y	Y	LTG INVERTER	3.	47.1
ZS010	LAUNDRY 205	Y	Y	Y	N	2P2A	13.	62.8
ZS010E	LAUNDRY 205	Y	Y	Y	Y	LTG INVERTER	3.	62.8
ZS011	BUILDING WALKWA...	Y	Y	Y	N	2P3B	1.	689.7
ZS011E	BUILDING WALKWA...	Y	Y	Y	Y	LTG INVERTER	5.	314
ZS012	LAUNDRY 305	Y	Y	Y	N	2P3B	1.	62.8
ZS012E	LAUNDRY 305	Y	Y	Y	Y	LTG INVERTER	5.	62.8
ZS013	GYM 303	Y	Y	Y	N	2P3B	1.	94.2
ZS013E	GYM 303	Y	Y	Y	Y	LTG INVERTER	5.	62.8
ZS014	LOUNGE 302	Y	Y	Y	N	2P3B	1.	78.5
ZS014E	LOUNGE 302	Y	Y	Y	Y	LTG INVERTER	5.	47.1
ZS100	COURTYARD...	Y	Y	Y	N	2P1B	17.	1200
ZS100E	SITE WALKWAY	Y	Y	Y	Y	LTG INVERTER	7.	93.6
ZS101	PARKING LOT	Y	Y	Y	N	2P1B	19.	241

GENERAL NOTES:

A. ALL ZONES ARE CONNECTED TO BUILDING ASTRONOMICAL TIMECLOCK, UNLESS OTHERWISE NOTED.
B. REFER TO DRAWINGS FOR LOCATIONS OF CONTROL STATIONS, GROUP BOUNDARIES AND ZONE DESIGNATIONS (AS NEEDED).
C. ZONES ON EMERGENCY POWER SHALL BE SEPARATED AS PER CODE.
D. MULTIPLE SWITCHES AT THE SAME LOCATION SHALL BE GANGED TOGETHER.
E. ALL LIKE CONTROL STATIONS CONTROLLING THE SAME ZONES SHALL BE DESIGNATED WITH THE SAME CONTROL STATION ID. QUANTITY OF DEVICES SHALL BE AS INDICATED IN PLAN
F. FOR ZONES THAT ARE DIMMING AND TIED TO A PHOTOCELL, THE PHOTOCELL SHALL PROVIDE DIMMING OUTPUT TO THE FIXTURE AND SHALL BE COMPATIBLE WITH THE LUMINAIRE DIMMING...
G. CONTRACTOR TO COORDINATE ALL CONTROL INPUTS TO BE COMPATIBLE WITH DIMMING PROTOCOL DEFINED IN LUMINAIRE SCHEDULE AND SEQUENCE OF OPERATIONS.
H. REFER TO THE SEQUENCE OF OPERATIONS SPECIFICATION SECTION 26 09 93 FOR CONTROLS INTENT

EXTERIOR LUMINAIRE SCHEDULE

FIXTURE TYPE	PRODUCT DESCRIPTION	BASIS OF DESIGN MANUFACTURER/SERIES	SIZE	INPUT WATTS	LAMP SOURCE	CONTROL GEAR	INPUT VOLTAGE	FINISH	MOUNTING	NOTES
S1	BOLLARD	BEGA 77221	7.5"W X 11"L X 34.5"H	7.8	LED 3000K CCT 80 CRI 643 DELIVERED LM	0-10V	120 V	PER ARCHITECT	ON GRADE	SEE DETAIL 1/E-003
S2	PARKING LOT POLE FIXTURES	LEOTEK ARIETA 13 4M2	3-7/8"W X 11"L	20	LED 3000K CCT 80 CRI 2000 DELIVERED LM TYPE 5 DISTRIBUTION	0-10V	120 V	PER ARCHITECT	ON GRADE	SEE DETAIL 2/E-003; POLE SIZED SUCH THAT FIXTURE HEAD IS 16' ABOVE FINISHED GRADE.
S3	PEDESTRIAL POLE	BEGA 99401	3-7/8"W X 11"L 8' POLE	16	LED 3000K CCT 85 CRI 1867 DELIVERED LM	0-10	120 V	PER ARCHITECT	ON GRADE	SEE DETAIL 2/E-003
S4	SURFACE MOUNTED LINEAR	HE WILLIAMS 96	7.38"W X 4.18"H X 4'L	30	LED 3000K CCT 85 CRI 4000 DELIVERED LM	0-10V	120 V	PER ARCHITECT	SURFACE	
S5	PATHWAY LIGHT	KICHLER LIGHTING ECLIPSE PATH LIGHT	9"D X 25"H	24.4W	LED	0-10V	12V	PER ARCHITECT	MOUNTING STAKE	PROVIDE POWER VIA A 300W 120V/12V OUTDOOR RATED TRANSFORMER EATON T300 OR EQUAL

RESIDENTIAL LUMINAIRE SCHEDULE

FIXTURE TYPE	PRODUCT DESCRIPTION	BASIS OF DESIGN MANUFACTURER/SERIES	SIZE	INPUT WATTS	LAMP SOURCE		INPUT VOLTAGE	FINISH	MOUNTING	NOTES
R1	DOWNLIGHT	JUNO SLIMFORM LED	11"D	15W	LED 3500K CCT 90 CRI 1300 DELIVERED LM	INTEGRAL 0-10V DIM	120V	AS SELECTED BY THE ARCHITECT	SURFACE MOUNTED TO CEILING	
R2	RESIDENTIAL SURFACE MOUNTED ROUND DOWNLIGHT	HALO SMD6 SERIES	6"D	15.3 W	LED 3500K CCT 90CRI 788 LM		120 V	MATTE WHITE	SURFACE MOUNTED TO CEILING	PROVIDE TRIM AS SELECTED BY THE ARCHITECT.
R3	RECESSED ROUND LED DOWNLIGHT	HALO SMD4 SERIES	4"D	15.7W	LED 3500K CCT 90CRI 600 DELIVERED LM		INTEGRAL 5% DIM	120V	MATTE WHITE	CEILING MOUNTED
R4	WALL MOUNTED LED VANITY	TIFFIN 24 BATH	24" X 4.3" X 4.5"	20W	LED	INTEGRAL 0-10V DIM	120V	SATIN NICKEL	WALL MOUNTED	

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

ROWELL BROKAW
1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com
Architecture. Design. Strategy.

STAMP

REGISTERED PROFESSIONAL ENGINEER
STEPHEN J. TURNER
No. E13789
Exp. 12/31/21
ELECTRICAL
STATE OF CALIFORNIA
06-04-20

PAE
pae-engineers.com

REVISIONS TO THIS SHEET

REV.	DATE
PCC-1	4/6/2020

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C.: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE SANTA ROSA, CA

LUMINAIRE SCHEDULE - LIGHTING

E-003

6/5/2020 9:42:46 AM

GENERAL NOTES:

A. CONTRACTOR PROVIDE WIRE GAUGE IN ACCORDANCE TO T24 SCHEDULE.

120V, 1-PHASE COPPER WIRE

MAXIMUM LENGTH OF CONDUCTOR IN FT TO BE USED PER VA AND WIRE SIZE

kVA	CONDUCTOR SIZE						
	#12	#10	#8	#6	#4	#2	#1
0.4	273ft	435ft	694ft	1,100ft	1,753ft	2,764ft	3,506ft
0.8	136ft	218ft	347ft	550ft	877ft	1,382ft	1,753ft
1.2	91ft	145ft	231ft	367ft	584ft	928ft	1,169ft
1.6	68ft	109ft	174ft	275ft	438ft	696ft	877ft
2.0	55ft	87ft	139ft	220ft	351ft	557ft	701ft
2.4	45ft	73ft	116ft	183ft	292ft	464ft	584ft
2.8	-	62ft	99ft	157ft	250ft	398ft	501ft
3.2	-	54ft	87ft	137ft	219ft	348ft	438ft
3.6	-	48ft	77ft	122ft	195ft	309ft	390ft
4.0	-	-	69ft	110ft	175ft	278ft	351ft
4.4	-	-	63ft	100ft	159ft	253ft	319ft
4.8	-	-	58ft	92ft	146ft	232ft	292ft
5.2	-	-	-	85ft	135ft	214ft	270ft
5.6	-	-	-	79ft	125ft	199ft	250ft
6.0	-	-	-	73ft	117ft	186ft	234ft
6.4	-	-	-	69ft	110ft	174ft	219ft
6.8	-	-	-	-	103ft	164ft	206ft
7.2	-	-	-	-	97ft	155ft	195ft
7.6	-	-	-	-	92ft	147ft	185ft
8.0	-	-	-	-	88ft	139ft	175ft
8.4	-	-	-	-	83ft	133ft	167ft
8.8	-	-	-	-	-	127ft	159ft
9.2	-	-	-	-	-	121ft	152ft
9.6	-	-	-	-	-	116ft	146ft
10.0	-	-	-	-	-	111ft	140ft
10.4	-	-	-	-	-	107ft	135ft
10.8	-	-	-	-	-	103ft	130ft
11.2	-	-	-	-	-	99ft	125ft
11.6	-	-	-	-	-	-	121ft
12.0	-	-	-	-	-	-	117ft
12.4	-	-	-	-	-	-	113ft
12.8	-	-	-	-	-	-	110ft
13.2	-	-	-	-	-	-	106ft
13.6	-	-	-	-	-	-	-
14.0	-	-	-	-	-	-	-
14.4	-	-	-	-	-	-	-
14.8	-	-	-	-	-	-	-
15.2	-	-	-	-	-	-	-
15.6	-	-	-	-	-	-	-
16.0	-	-	-	-	-	-	-

BASED ON 3% VOLTAGE DROP ALLOWED FOR BRANCH CIRCUITS PER TITLE 24 2013.

VOLTAGE DROP = (CIRCUIT AMPS) X (TWICE THE LENGTH OF CONDUCTOR) X (WIRE RESISTANCE)

208V, 1-PHASE COPPER WIRE

MAXIMUM LENGTH OF CONDUCTOR IN FT TO BE USED PER VA AND WIRE SIZE

kVA	CONDUCTOR SIZE						
	#12	#10	#8	#6	#4	#2	#1
0.7	468ft	748ft	1,192ft	1,888ft	3,010ft	4,779ft	6,020ft
1.4	234ft	374ft	596ft	944ft	1,505ft	2,389ft	3,010ft
2.1	156ft	249ft	397ft	629ft	1,003ft	1,593ft	2,007ft
2.8	117ft	187ft	298ft	472ft	753ft	1,195ft	1,505ft
3.5	94ft	150ft	238ft	378ft	602ft	956ft	1,204ft
4.2	78ft	125ft	199ft	315ft	502ft	796ft	1,003ft
4.9	-	107ft	170ft	270ft	430ft	683ft	860ft
5.6	-	93ft	149ft	236ft	376ft	597ft	753ft
6.3	-	83ft	132ft	210ft	334ft	531ft	669ft
7.0	-	-	119ft	189ft	301ft	478ft	602ft
7.7	-	-	108ft	172ft	274ft	434ft	547ft
8.4	-	-	99ft	157ft	251ft	398ft	502ft
9.1	-	-	-	145ft	232ft	368ft	463ft
9.8	-	-	-	135ft	215ft	341ft	430ft
10.5	-	-	-	126ft	201ft	319ft	401ft
11.2	-	-	-	118ft	188ft	299ft	376ft
11.9	-	-	-	-	177ft	281ft	354ft
12.6	-	-	-	-	167ft	265ft	334ft
13.3	-	-	-	-	158ft	252ft	317ft
14.0	-	-	-	-	151ft	239ft	301ft
14.7	-	-	-	-	-	226ft	287ft
15.4	-	-	-	-	-	217ft	274ft
16.1	-	-	-	-	-	208ft	262ft
16.8	-	-	-	-	-	199ft	251ft
17.5	-	-	-	-	-	191ft	241ft
18.2	-	-	-	-	-	184ft	232ft
18.9	-	-	-	-	-	177ft	223ft
19.6	-	-	-	-	-	171ft	215ft
20.3	-	-	-	-	-	-	208ft
21.0	-	-	-	-	-	-	201ft
21.7	-	-	-	-	-	-	194ft
22.4	-	-	-	-	-	-	188ft
23.1	-	-	-	-	-	-	-
23.8	-	-	-	-	-	-	-
24.5	-	-	-	-	-	-	-
25.2	-	-	-	-	-	-	-
25.9	-	-	-	-	-	-	-
26.6	-	-	-	-	-	-	-
27.3	-	-	-	-	-	-	-
28.0	-	-	-	-	-	-	-

BASED ON 3% VOLTAGE DROP ALLOWED FOR BRANCH CIRCUITS PER TITLE 24 2013.

VOLTAGE DROP = (CIRCUIT AMPS) X (TWICE THE LENGTH OF CONDUCTOR) X (WIRE RESISTANCE)

208V, 3-PHASE COPPER WIRE

MAXIMUM LENGTH OF CONDUCTOR IN FT TO BE USED PER VA AND WIRE SIZE

kVA	CONDUCTOR SIZE						
	#12	#10	#8	#6	#4	#2	#1
1.2	210ft	336ft	530ft	848ft	1,352ft	2,146ft	2,703ft
2.4	105ft	168ft	268ft	424ft	676ft	1,073ft	1,352ft
3.6	70ft	112ft	178ft	283ft	451ft	715ft	901ft
4.8	53ft	84ft	134ft	212ft	338ft	536ft	676ft
6.0	42ft	67ft	107ft	170ft	270ft	429ft	541ft
7.2	35ft	56ft	89ft	141ft	225ft	358ft	451ft
8.4	-	48ft	76ft	121ft	193ft	307ft	386ft
9.6	-	42ft	67ft	106ft	169ft	268ft	338ft
10.8	-	37ft	59ft	94ft	150ft	238ft	300ft
12.0	-	-	54ft	85ft	135ft	215ft	270ft
13.2	-	-	49ft	77ft	123ft	195ft	246ft
14.4	-	-	45ft	71ft	113ft	179ft	225ft
15.6	-	-	-	65ft	104ft	165ft	208ft
16.8	-	-	-	61ft	97ft	153ft	193ft
18.0	-	-	-	57ft	90ft	143ft	180ft
19.2	-	-	-	53ft	84ft	134ft	169ft
20.4	-	-	-	-	80ft	126ft	159ft
21.6	-	-	-	-	75ft	119ft	150ft
22.8	-	-	-	-	71ft	113ft	142ft
24.0	-	-	-	-	68ft	107ft	135ft
25.2	-	-	-	-	64ft	102ft	129ft
26.4	-	-	-	-	-	98ft	123ft
27.6	-	-	-	-	-	93ft	118ft
28.8	-	-	-	-	-	89ft	113ft
30.0	-	-	-	-	-	86ft	108ft
31.2	-	-	-	-	-	83ft	104ft
32.4	-	-	-	-	-	79ft	100ft
33.6	-	-	-	-	-	77ft	97ft
34.8	-	-	-	-	-	-	93ft
36.0	-	-	-	-	-	-	90ft
37.2	-	-	-	-	-	-	87ft
38.4	-	-	-	-	-	-	84ft
39.6	-	-	-	-	-	-	82ft
40.8	-	-	-	-	-	-	-
42.0	-	-	-	-	-	-	-
43.2	-	-	-	-	-	-	-
44.4	-	-	-	-	-	-	-
45.6	-	-	-	-	-	-	-
46.8	-	-	-	-	-	-	-
48.0	-	-	-	-	-	-	-

BASED ON 2% VOLTAGE DROP ALLOWED FOR FEEDERS PER TITLE 24 2013.

VOLTAGE DROP = (CIRCUIT AMPS) X (TWICE THE LENGTH OF CONDUCTOR) X (WIRE RESISTANCE)

208V, 3-PHASE COPPER WIRE

MAXIMUM LENGTH OF CONDUCTOR IN FT TO BE USED PER VA AND WIRE SIZE

kVA	CONDUCTOR SIZE								
	1/0	2/0	3/0	4/0	250KCM	300KCM	350KCM	400KCM	500KCM
3.4	1,204ft	1,520ft	1,918ft	2,417ft	2,853ft	3,425ft	4,004ft	4,577ft	5,699ft
6.8	602ft	760ft	959ft	1,208ft	1,427ft	1,713ft	2,002ft	2,289ft	2,848ft
10.2	401ft	507ft	639ft	806ft	951ft	1,142ft	1,335ft	1,526ft	1,898ft
13.6	301ft	380ft	480ft	604ft	713ft	856ft	1,001ft	1,144ft	1,424ft
17.0	241ft	304ft	384ft	483ft	571ft	685ft	801ft	915ft	1,139ft
20.4	201ft	253ft	320ft	403ft	476ft	571ft	667ft	763ft	949ft
23.8	172ft	217ft	274ft	345ft	408ft	489ft	572ft	654ft	814ft
27.2	151ft	190ft	240ft	302ft	357ft	428ft	500ft	572ft	712ft
30.6	134ft	169ft	213ft	269ft	317ft	381ft	445ft	509ft	633ft
34.0	120ft	152ft	192ft	242ft	285ft	343ft	400ft	458ft	570ft
37.4	109ft	138ft	174ft	220ft	259ft	311ft	364ft	416ft	518ft
40.8	100ft	127ft	160ft	201ft	238ft	285ft	334ft	381ft	475ft
44.2	93ft	117ft	148ft	186ft	219ft	263ft	308ft	352ft	438ft
47.6	86ft	109ft	137ft	173ft	204ft	245ft	286ft	327ft	407ft
51.0	80ft	101ft	128ft	161ft	190ft	228ft	267ft	305ft	380ft
54.4	-	95ft	120ft	151ft	178ft	214ft	250ft	286ft	356ft
57.8	-	89ft	113ft	142ft	168ft	201ft	236ft	269ft	335ft
61.2	-	84ft	107ft	134ft	159ft	190ft	222ft	254ft	316ft
64.6	-	-	101ft	127ft	150ft	180ft	211ft	241ft	300ft
68.0	-	-	96ft	121ft	143ft	171ft	200ft	229ft	285ft
71.4	-	-	91ft	115ft	136ft	163ft	191ft	218ft	271ft
74.8	-	-	-	110ft	130ft	156ft	182ft	208ft	259ft
78.2	-	-	-	105ft	124ft	149ft	174ft	199ft	248ft
81.6	-	-	-	101ft	119ft	143ft	167ft	191ft	237ft
85.0	-	-	-	-	114ft	137ft	160ft	183ft	228ft
88.4	-	-	-	-	110ft	132ft	154ft	176ft	219ft
91.8	-	-	-	-	106ft	127ft	148ft	170ft	211ft
95.2	-	-	-	-	-	122ft	143ft	163ft	203ft
98.6	-	-	-	-	-	118ft	138ft	158ft	196ft
102.0	-	-	-	-	-	114ft	133ft	153ft	190ft
105.4	-	-	-	-	-	-	129ft	148ft	184ft
108.8	-	-	-	-	-	-	125ft	143ft	178ft
112.2	-	-	-	-	-	-	-	139ft	173ft
115.6	-	-	-	-	-	-	-	135ft	168ft
119.0	-	-	-	-	-	-	-	131ft	163ft
122.4	-	-	-	-	-	-	-	-	158ft
125.8	-	-	-	-	-	-	-	-	154ft
129.2	-	-	-	-	-	-	-	-	150ft
132.6	-	-	-	-	-	-	-	-	146ft
136.0	-	-	-	-	-	-	-	-	142ft

BASED ON 2% VOLTAGE DROP ALLOWED FOR FEEDERS PER TITLE 24 2013.

VOLTAGE DROP = (CIRCUIT AMPS) X (TWICE THE LENGTH OF CONDUCTOR) X (WIRE RESISTANCE)

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1, AS AMENDED BY THE LOCAL AGENCY.

6/5/2020 9:42:50 AM

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

PAE

pae-engineers.com

REVISIONS TO THIS SHEET

REV.	DATE

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner

DANCO

Project Name

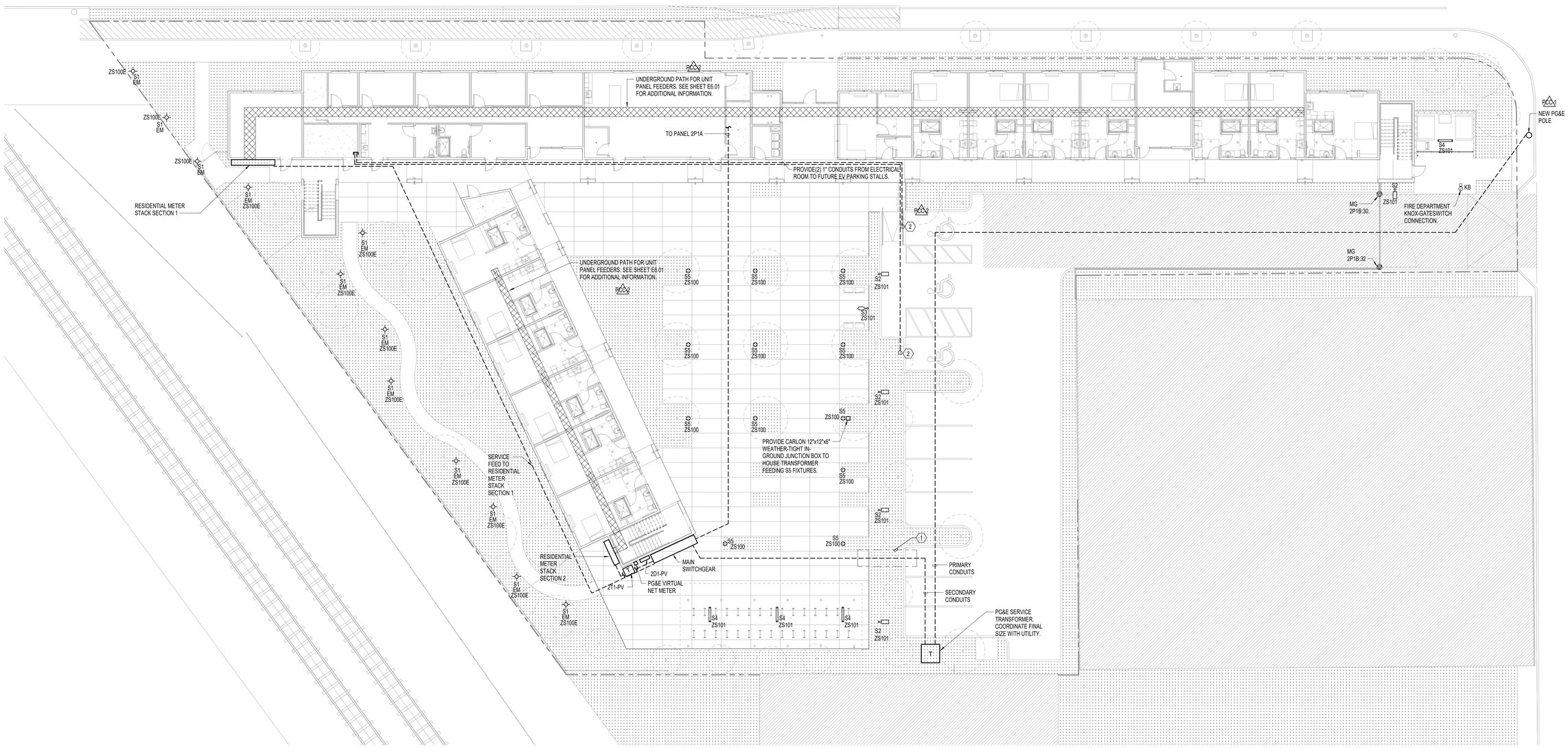
SAGE COMMONS

Project Address

80 COLLEGE AVENUE
SANTA ROSA, CA

TITLE 24 VOLTAGE DROP TABLES - ELECTRICAL

E-004



1 ELECTRICAL SITE PLAN
1" = 10'-0"

PCC-1

NOTES:

1. UTILITY TRANSFORMER SECONDARY CONDUITS BIO SWALE CROSSING. INSTALL PER PG&E GUIDELINES:
   - A MINIMUM COVER OF 48" BETWEEN THE TOP OF CONDUIT AND THE BOTTOM OF THE BIO SWALE.
   - 6" SAND BED BELOW CONDUIT
   - 6" SAND BED ON TOP OF CONDUIT.
   - COMPLETE TRENCH FILL WITH NATIVE DIRT.
2. STUB AND CAP CONDUIT IN HANDHOLD FOR FUTURE EV CHARGING STATION.

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

6/5/2020 9:42:56 AM

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REGISTERED PROFESSIONAL ENGINEER
STEPHEN J. TURNBULL
No. E13789
Exp. 12/31/21
ELECTRICAL
STATE OF CALIFORNIA
06-04-20

PAE

pae-engineers.com

REVISIONS TO THIS SHEET

REV.	DATE
PCC-2	5/15/2020
PCC-1	4/6/2020

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

ELECTRICAL SITE PLAN

E-100

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

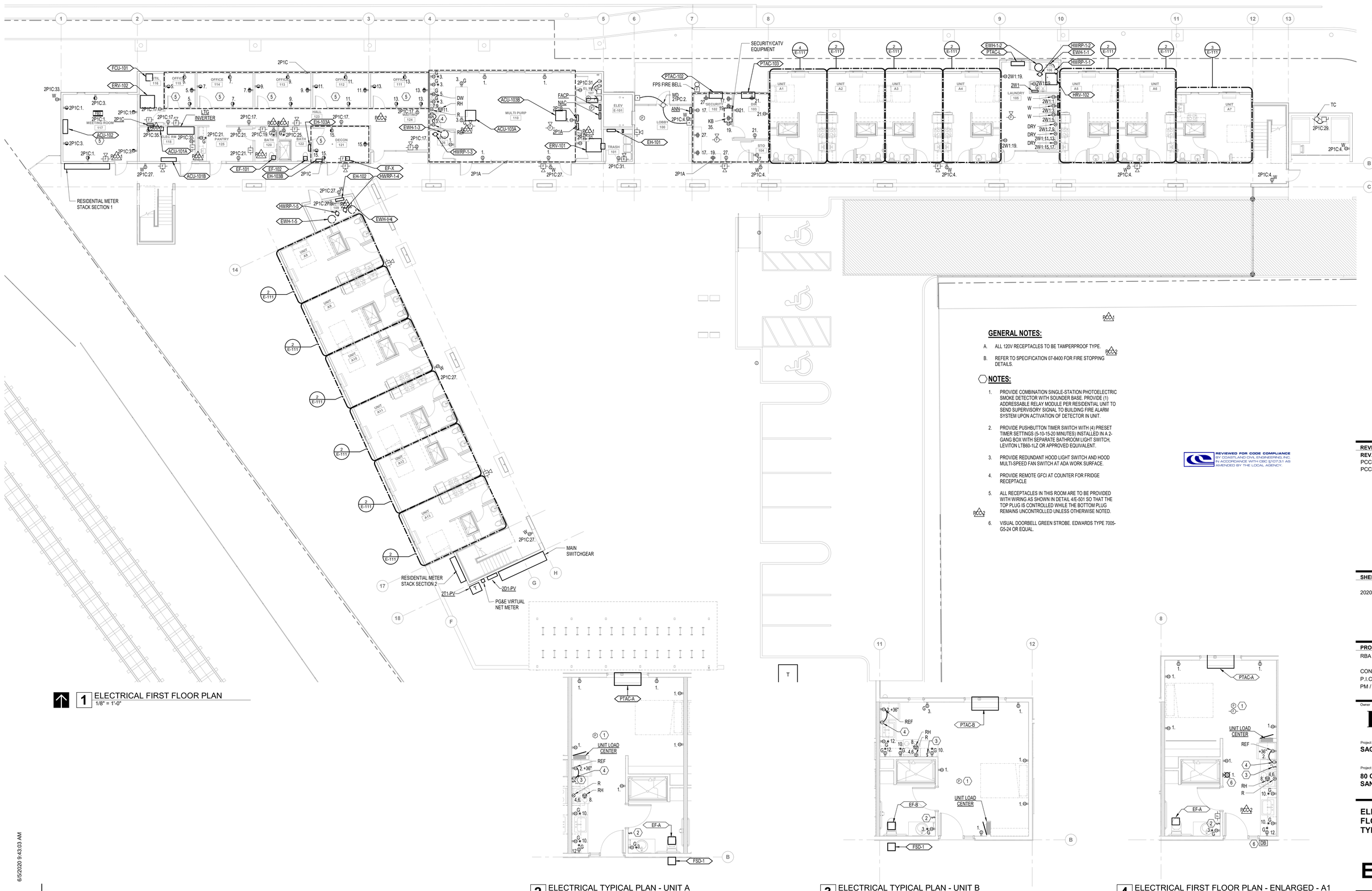
Architecture. Design. Strategy.

STAMP

REGISTERED PROFESSIONAL ENGINEER
STEPHEN J. TURNER
No. E13789
Exp. 12/31/21
ELECTRICAL
STATE OF CALIFORNIA
06.04.20

PAE

pae-engineers.com



GENERAL NOTES:

A. ALL 120V RECEPTACLES TO BE TAMPERPROOF TYPE.

B. REFER TO SPECIFICATION 07-8400 FOR FIRE STOPPING DETAILS.

NOTES:

1. PROVIDE COMBINATION SINGLE-STATION PHOTOELECTRIC SMOKE DETECTOR WITH SOUNDER BASE. PROVIDE (1) ADDRESSABLE RELAY MODULE PER RESIDENTIAL UNIT TO SEND SUPERVISORY SIGNAL TO BUILDING FIRE ALARM SYSTEM UPON ACTIVATION OF DETECTOR IN UNIT.
2. PROVIDE PUSHBUTTON TIMER SWITCH WITH (4) PRESET TIMER SETTINGS (5-10-15-20 MINUTES) INSTALLED IN A 2-GANG BOX WITH SEPARATE BATHROOM LIGHT SWITCH, LEVITON LTB60-1LZ OR APPROVED EQUIVALENT.
3. PROVIDE REDUNDANT HOOD LIGHT SWITCH AND HOOD MULTI-SPEED FAN SWITCH AT ADA WORK SURFACE.
4. PROVIDE REMOTE GFCI AT COUNTER FOR FRIDGE RECEPTACLE
5. ALL RECEPTACLES IN THIS ROOM ARE TO BE PROVIDED WITH WIRING AS SHOWN IN DETAIL 4/E-501 SO THAT THE TOP PLUG IS CONTROLLED WHILE THE BOTTOM PLUG REMAINS UNCONTROLLED UNLESS OTHERWISE NOTED.
6. VISUAL DOORBELL GREEN STROBE. EDWARDS TYPE 7005-G5-24 OR EQUAL.

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

REVISIONS TO THIS SHEET

REV.	DATE
PCC-2	5/15/2020
PCC-1	4/6/2020

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

ELECTRICAL 1ST FLOOR PLAN AND TYPICAL UNITS A & B

E-111

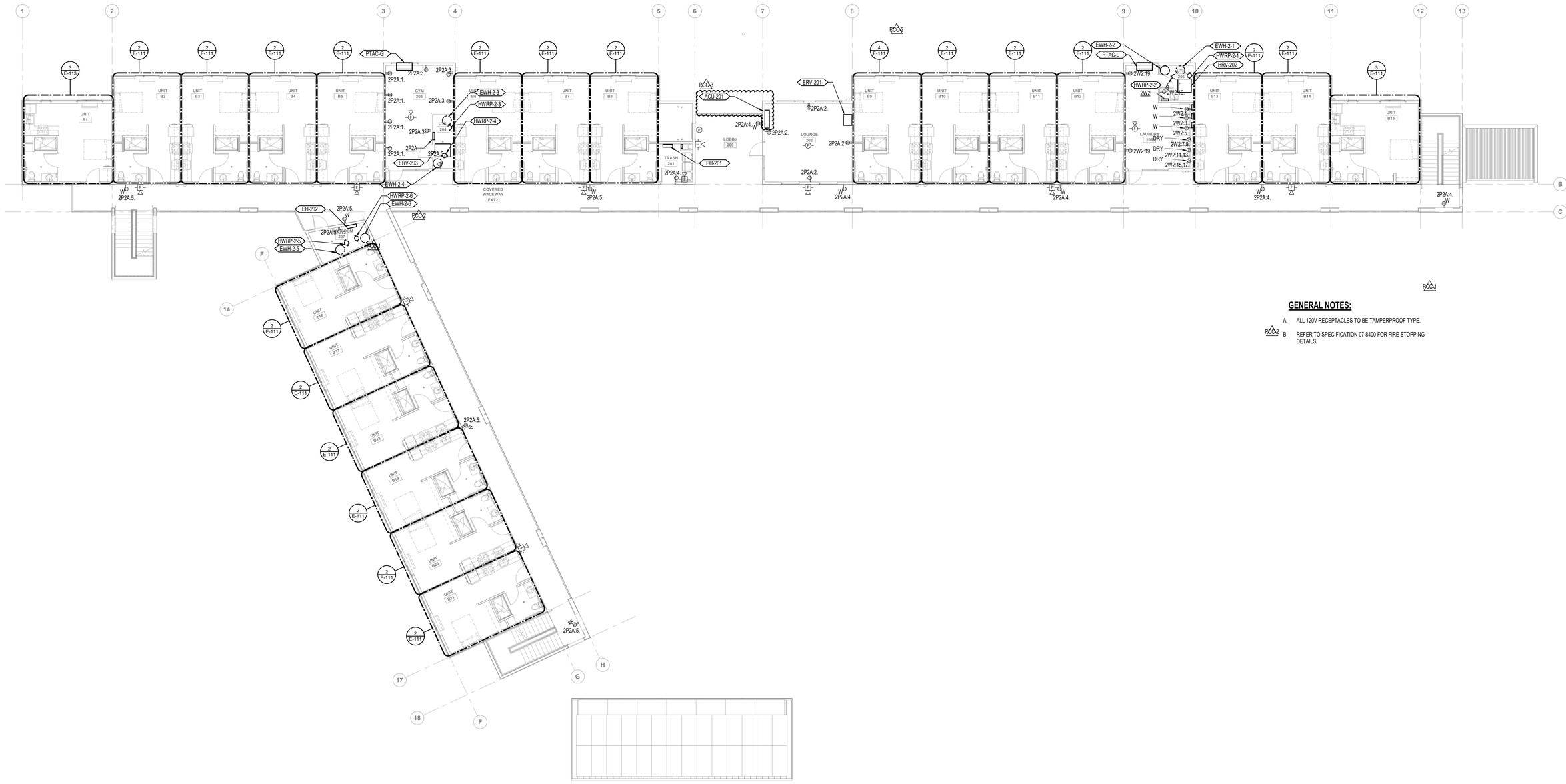
6/5/2020 9:43:03 AM

1 ELECTRICAL FIRST FLOOR PLAN
1/8" = 1'-0"

2 ELECTRICAL TYPICAL PLAN - UNIT A
1/4" = 1'-0"

3 ELECTRICAL TYPICAL PLAN - UNIT B
1/4" = 1'-0"

4 ELECTRICAL FIRST FLOOR PLAN - ENLARGED - A1
1/4" = 1'-0"



1 ELECTRICAL 2ND FLOOR PLAN
1/8" = 1'-0"

GENERAL NOTES:

A. ALL 120V RECEPTACLES TO BE TAMPERPROOF TYPE.

B. REFER TO SPECIFICATION 07-8400 FOR FIRE STOPPING DETAILS.

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REGISTERED PROFESSIONAL ENGINEER
STEPHEN J. TURNER
No. E13789
Exp. 12/31/21
ELECTRICAL
STATE OF CALIFORNIA
06-06-20

PAE

pae-engineers.com

REVISIONS TO THIS SHEET

REV.	DATE
PCC-3	6/3/2020
PCC-2	5/15/2020
PCC-1	4/6/2020

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner

DANCO

Project Name

SAGE COMMONS

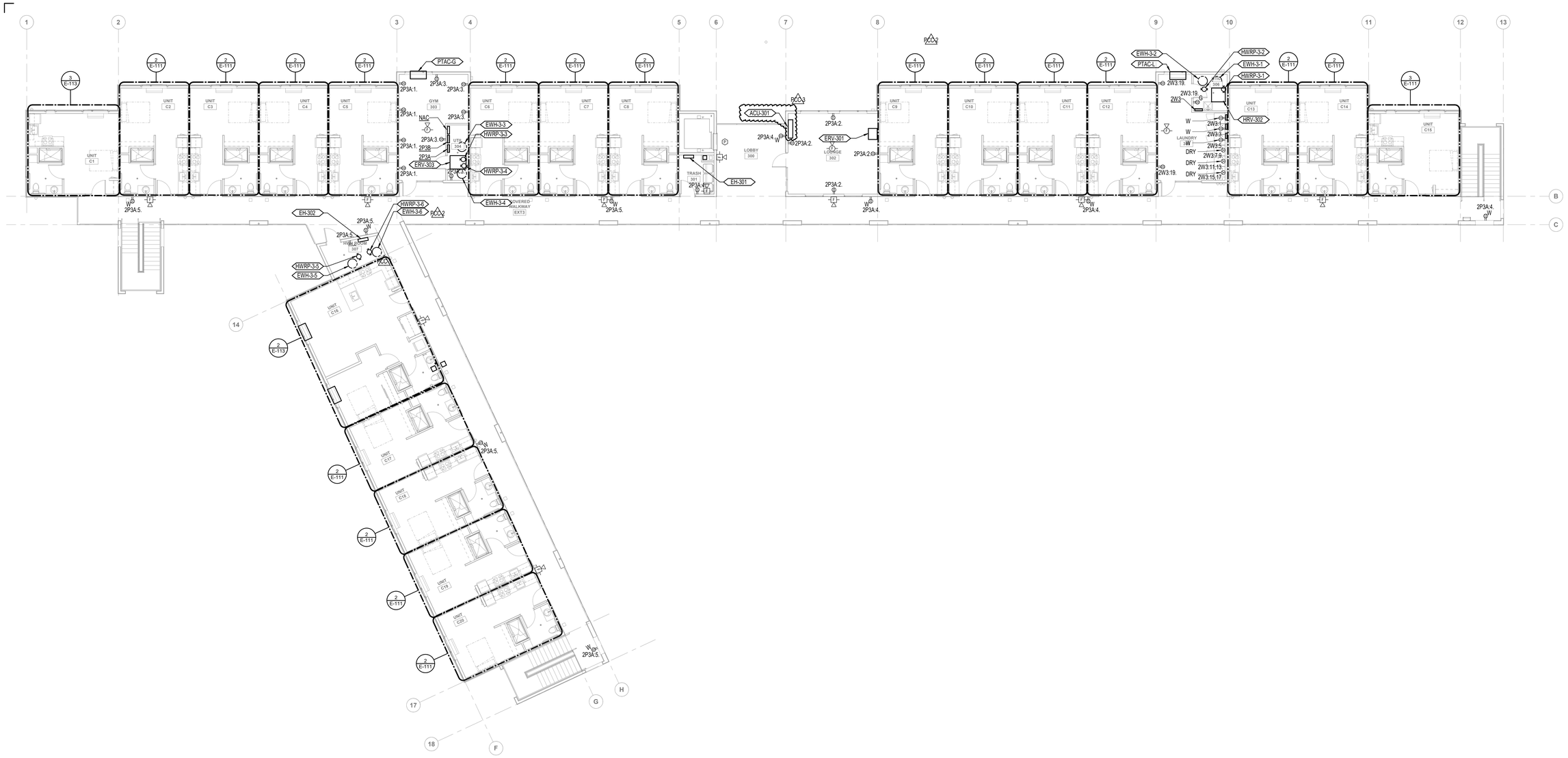
Project Address

80 COLLEGE AVENUE
SANTA ROSA, CA

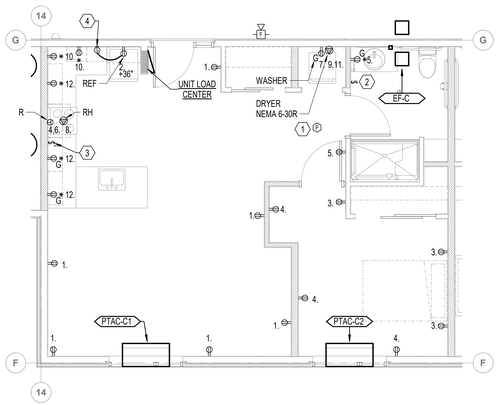
ELECTRICAL 2ND FLOOR PLAN

E-112

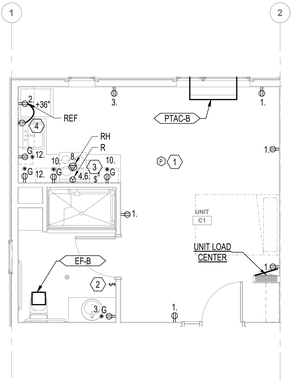
6/5/2020 9:43:08 AM



1 ELECTRICAL 3RD FLOOR PLAN
1/8" = 1'-0"



2 ELECTRICAL UNIT MGR FLOOR PLAN
1/4" = 1'-0"



3 ELECTRICAL TYPICAL PLAN - UNIT B - ALTERNATE CLOSET
1/4" = 1'-0"

GENERAL NOTES:

A. ALL 120V RECEPTACLES TO BE TAMPERPROOF TYPE.

B. REFER TO SPECIFICATION 07-8400 FOR FIRE STOPPING DETAILS.

NOTES:

1. PROVIDE COMBINATION SINGLE-STATION PHOTOELECTRIC SMOKE DETECTOR WITH SOUNDER BASE. PROVIDE (1) ADDRESSABLE RELAY MODULE PER RESIDENTIAL UNIT TO SEND SUPERVISORY SIGNAL TO BUILDING FIRE ALARM SYSTEM UPON ACTIVATION OF DETECTOR IN UNIT.
2. PROVIDE PUSHBUTTON TIMER SWITCH WITH (4) PRESET TIMER SETTINGS (5-10-15-20 MINUTES) INSTALLED IN A 2-GANG BOX WITH SEPARATE BATHROOM LIGHT SWITCH, LEVITON LTB60-1LZ OR APPROVED EQUIVALENT.
3. PROVIDE REDUNDANT HOOD LIGHT SWITCH AND HOOD MULTI-SPEED FAN SWITCH AT ADA WORK SURFACE.
4. PROVIDE REMOTE GFCI AT COUNTER FOR FRIDGE RECEPTACLE.

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

6/5/2020 9:43:14 AM

ROWELL BROKAW
1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com
Architecture. Design. Strategy.

STAMP
REGISTERED PROFESSIONAL ENGINEER
STEPHEN J. TURNER
No. E13789
Exp. 12/31/21
ELECTRICAL
STATE OF CALIFORNIA
06.04.20

PAE
pae-engineers.com

REVISIONS TO THIS SHEET

REV.	DATE
PCC-3	6/3/2020
PCC-2	5/15/2020
PCC-1	4/6/2020

SHEET ISSUE DATE
2020-01-27 PERMIT SET

PROJECT TRACKING
RBA #: 1843
CONT #: NAME
P.I.C.: JOHN ROWELL
PM / PA: FRANK VISCONTI

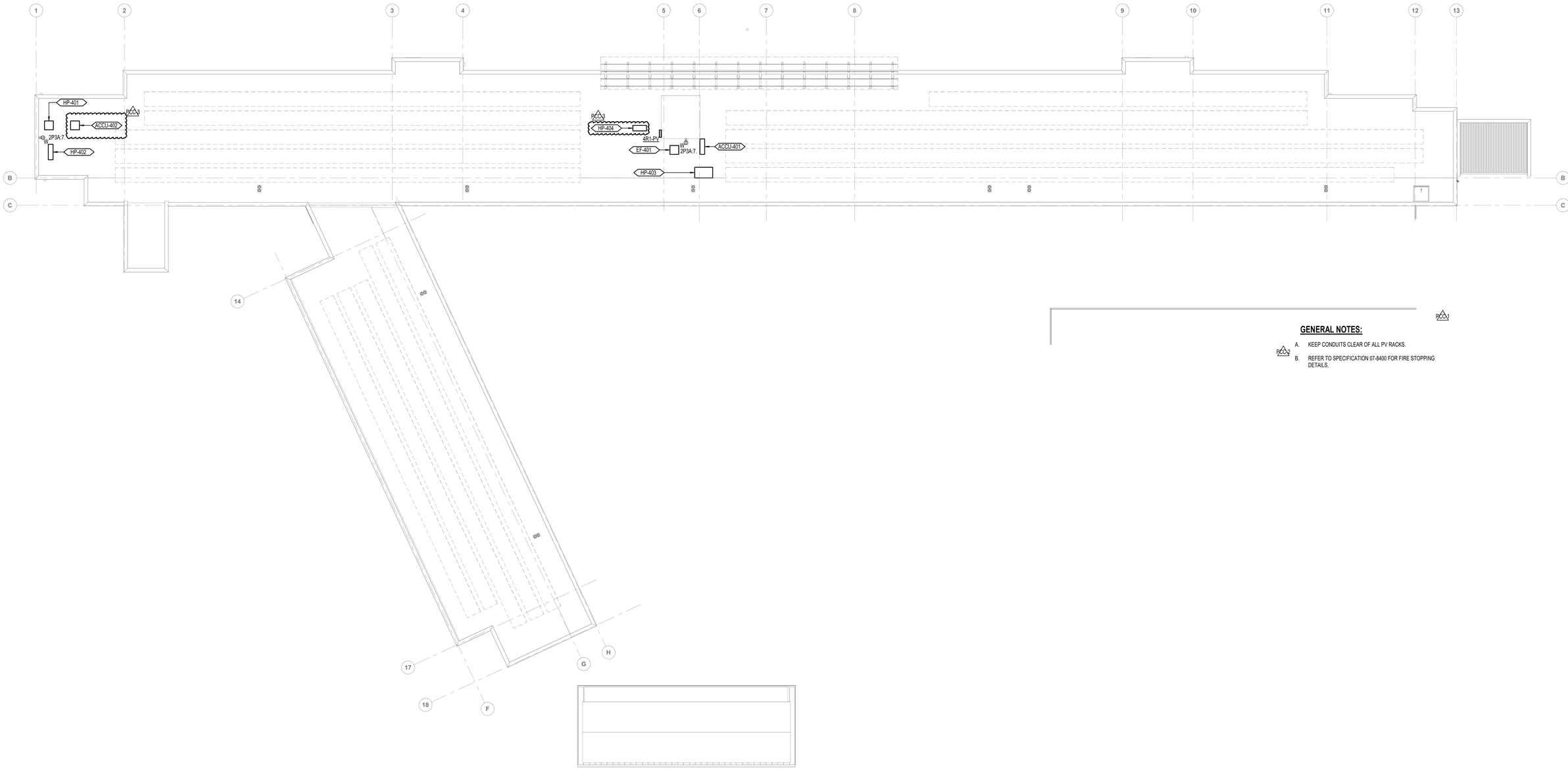
Owner
DANCO

Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

ELECTRICAL 3RD FLOOR PLAN AND UNIT MGR APT.

E-113



GENERAL NOTES:

PCC-1

PCC-2

A. KEEP CONDUITS CLEAR OF ALL PV RACKS.

B. REFER TO SPECIFICATION 07-8400 FOR FIRE STOPPING DETAILS.

1 ELECTRICAL ROOF PLAN
1/8" = 1'-0"

6/5/2020 9:43:18 AM

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REGISTERED PROFESSIONAL ENGINEER
STEPHEN J. TURNER
No. E13789
Exp. 12/31/21
ELECTRICAL
STATE OF CALIFORNIA
06-04-20

PAE

pae-engineers.com

REVISIONS TO THIS SHEET

REV.	DATE
PCC-3	6/3/2020
PCC-2	5/15/2020
PCC-1	4/6/2020

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner

DANCO

Project Name

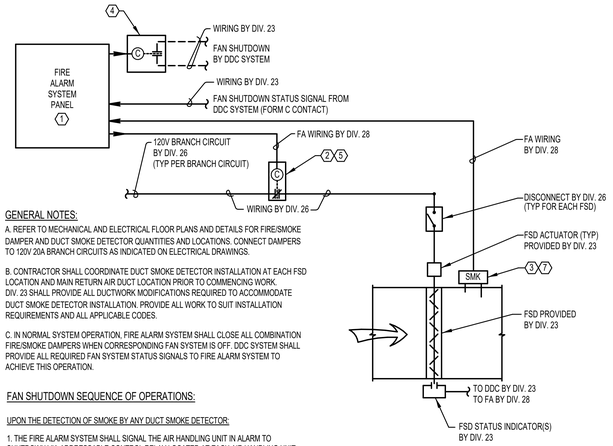
SAGE COMMONS

Project Address

80 COLLEGE AVENUE
SANTA ROSA, CA

ELECTRICAL ROOF PLAN

E-114



GENERAL NOTES:

A. REFER TO MECHANICAL AND ELECTRICAL FLOOR PLANS AND DETAILS FOR FIRE/SMOKE DAMPER AND DUCT SMOKE DETECTOR QUANTITIES AND LOCATIONS. CONNECT DAMPERS TO 120V 20A BRANCH CIRCUITS AS INDICATED ON ELECTRICAL DRAWINGS.

B. CONTRACTOR SHALL COORDINATE DUCT SMOKE DETECTOR INSTALLATION AT EACH FSD LOCATION AND MAIN RETURN AIR DUCT LOCATION PRIOR TO COMMENCING WORK. DIV. 23 SHALL PROVIDE ALL DUCTWORK MODIFICATIONS REQUIRED TO ACCOMMODATE DUCT SMOKE DETECTOR INSTALLATION. PROVIDE ALL WORK TO SUIT INSTALLATION REQUIREMENTS AND ALL APPLICABLE CODES.

C. IN NORMAL SYSTEM OPERATION, FIRE ALARM SYSTEM SHALL CLOSE ALL COMBINATION FIRE/SMOKE DAMPERS WHEN CORRESPONDING FAN SYSTEM IS OFF. DDC SYSTEM SHALL PROVIDE ALL REQUIRED FAN SYSTEM STATUS SIGNALS TO FIRE ALARM SYSTEM TO ACHIEVE THIS OPERATION.

FAN SHUTDOWN SEQUENCE OF OPERATIONS:

UPON THE DETECTION OF SMOKE BY ANY DUCT SMOKE DETECTOR:

1. THE FIRE ALARM SYSTEM SHALL SIGNAL THE AIR HANDLING UNIT IN ALARM TO SHUTDOWN VIA ADDRESSABLE CONTROL RELAY LOCATED AT EACH AIR HANDLING UNIT.
2. THE FIRE ALARM SYSTEM SHALL PROVIDE A SIGNAL TO THE DDC SYSTEM VIA SINGLE ADDRESSABLE CONTROL RELAY TO INITIATE THE DDC SYSTEM SHUTDOWN MODE.
3. UPON CONFIRMATION THAT ALL AIR HANDLING UNITS HAVE SHUTDOWN, THE DDC SYSTEM SHALL PROVIDE FAN SHUTDOWN STATUS SIGNAL TO FIRE ALARM SYSTEM.
4. THE FIRE ALARM SYSTEM SHALL CLOSE ALL COMBINATION FIRE/SMOKE DAMPERS VIA ADDRESSABLE CONTROL RELAY(S) 20-SECONDS (ADJUSTABLE) AFTER FAN SHUTDOWN SIGNAL OCCURRED.

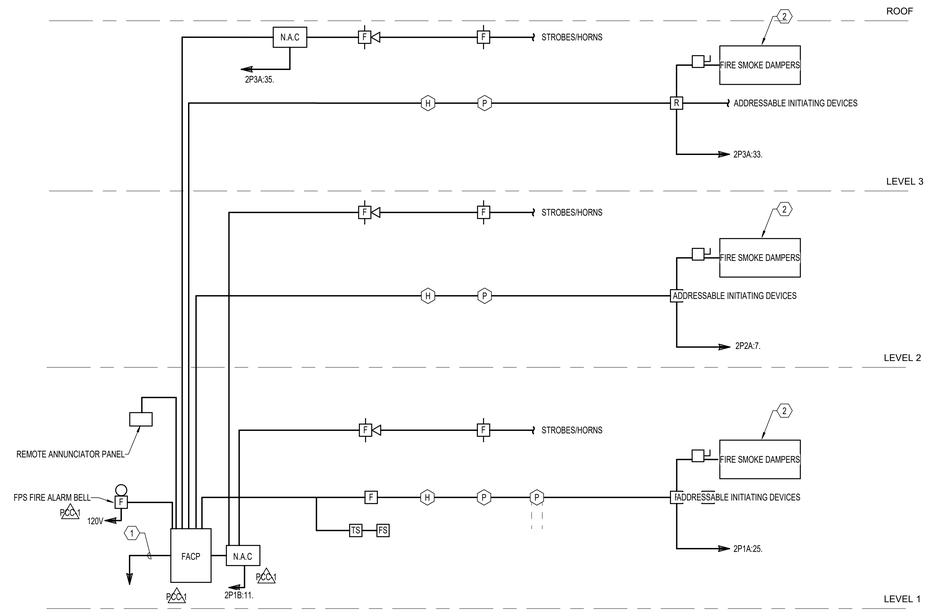
UPON FIRE ALARM RESET AFTER THE DETECTION OF SMOKE HAS OCCURRED:

1. THE FIRE ALARM SYSTEM SHALL OPEN ALL COMBINATION FIRE/SMOKE DAMPERS VIA ADDRESSABLE CONTROL RELAY(S).
2. THE FIRE ALARM SYSTEM SHALL DISABLE FAN SHUTDOWN SIGNAL TO THE DDC SYSTEM VIA SINGLE ADDRESSABLE CONTROL RELAY.
3. THE FIRE ALARM SYSTEM SHALL DISABLE SHUTDOWN SIGNAL TO EACH AIR HANDLING UNIT VIA ADDRESSABLE CONTROL RELAY.

NOTES:

1. REFER TO ELECTRICAL PLANS FOR FIRE ALARM PANEL LOCATION.
2. MOUNT ADJACENT TO APPROPRIATE ELECTRICAL PANEL.
3. PROVIDE/MAINTAIN WORKING ACCESS TO ALL DUCT SMOKE DETECTORS.
4. REMOTE ADDRESSABLE FIRE ALARM RELAY PROVIDED BY DIV. 28 (FORM C CONTACT). MOUNT ADJACENT TO FIRE ALARM PANEL.
5. REMOTE ADDRESSABLE FIRE ALARM RELAY BY DIV. 28 (PROGRAMMED FOR 20 SECOND DELAY AFTER FAN STOP SIGNAL).
6. NOT USED.
7. DUCT SMOKE DETECTOR FURNISHED BY DIV. 28. WIRED BY DIV. 28 TO FIRE ALARM SYSTEM. INSTALLED BY DIV. 23.

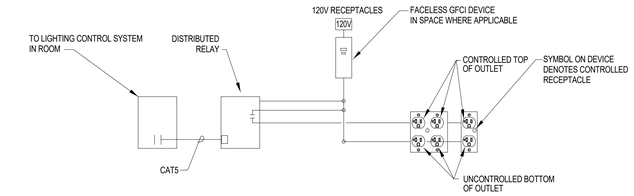
5 ELECTRICAL - HVAC AND FIRE ALARM SYSTEM INTERFACE



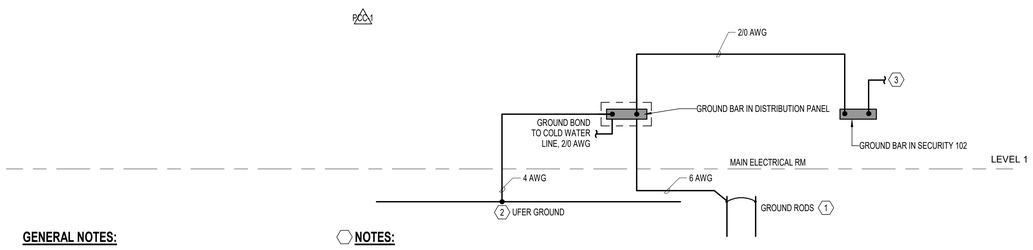
NOTES:

1. FIRE ALARM SIGNAL OUT TO CENTRAL MONITORING STATION. PCC1
2. LOCATION AND QUANTITY OF FSD'S ARE SHOWN ON MECHANICAL DRAWINGS.

1 FIRE ALARM SYSTEM RISER DIAGRAM



4 ELECTRICAL - CONTROLLED RECEPTACLE DETAIL



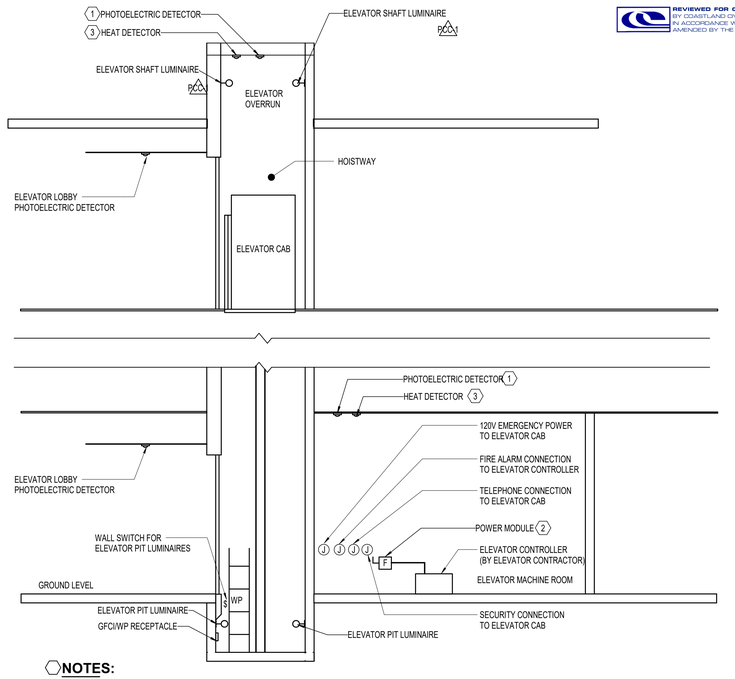
GENERAL NOTES:

A. ALL GROUNDING CONDUCTORS SHALL BE BARE COPPER CONDUCTORS UNLESS NOTED OTHERWISE, PROVIDE PVC RACEWAY AS NEEDED FOR PROTECTION.

NOTES:

1. PROVIDE TWO 5/8" GROUND RODS, 10' APART.
2. PROVIDE A 20 FOOT LENGTH OF 4 AWG BARE COPPER CONDUCTOR, EMBEDDED IN THE BOTTOM PORTION OF THE CONCRETE SLAB, ELECTRODE TO BE ENCASED BY A MINIMUM OF 2" CONCRETE - OR - CONNECT TO A STEEL REINFORCING BAR WITH A MINIMUM OF 20 FOOT LENGTH AND 1/2" SIZE.
3. PROVIDE GROUND BOND CONNECTIONS TO THE TELECOM ROOM: CABLE TRAY, EQUIPMENT RACKS, SIGNAL CONDUITS AND MISC EQUIPMENT PER BICSI STANDARDS.

3 GROUNDING RISER DIAGRAM



NOTES:

1. CONNECT AUXILLARY CONTACTS IN DETECTOR TO ELEVATOR CONTROLLER FOR ELEVATOR RECALL.
2. PROVIDE ELEVATOR POWER MODULE (WITH INTEGRAL SHUNT TRIP). CONNECT SHUNT TRIP CONTROL VIA HEAT DETECTORS' AUXILLARY CONTACTS IN HOISTWAY, EQUIPMENT ROOM AND PIT TO POWER MODULE. POWER SHALL BE AUTOMATICALLY DISCONNECTED UPON INITIATION OF ANY OF THESE HEAT DETECTORS.
3. CONNECT AUXILLARY CONTACTS IN HEAT DETECTOR TO POWER MODULE IN EQUIPMENT ROOM FOR ELEVATOR POWER SHUTDOWN.

GENERAL NOTES:

A. SIGNAL DEVICES AND CONNECTIONS ARE ONLY SHOWN FOR REFERENCE ON THESE DRAWINGS.

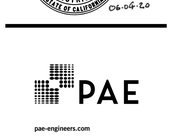
B. TELECOM CONNECTION TO ELEVATOR IS SHOWN ON TECHNOLOGY DRAWINGS.

C. PROVIDE A MINIMUM OF 19 FOOT CANDLES OF ILLUMINANCE THROUGHOUT THE ELEVATOR SHAFT.

2 ELECTRICAL - ELEVATOR DETAIL

ROWELL BROKAW
1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com
Architecture. Design. Strategy.

STAMP



PAE
pae-engineers.com

REVISIONS TO THIS SHEET

REV.	DATE
PCC-1	4/6/2020

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

DETAILS - ELECTRICAL

E-501

6/5/2020 9:43:21 AM

NOMINAL AMPACITY	FEEDER SCHEDULE COPPER: 3 PHASE, 3 WIRE + GROUND				FEEDER SCHEDULE COPPER: 3 PHASE, 4 WIRE + GROUND			
	TAG	CONDUIT SIZE (MIN)	PHASE CONDUCTORS (AWG or kcmil)	GROUND CONDUCTOR (AWG or kcmil)	TAG	CONDUIT SIZE (MIN)	PHASE & NEUTRAL CONDUCTORS (AWG or kcmil)	GROUND CONDUCTOR (AWG or kcmil)
20	203	1/2"	(3) 12	12	204	1/2"	(4) 12	12
30	303	1/2"	(3) 10	10	304	3/4"	(4) 10	10
40	403	3/4"	(3) 8	10	404	3/4"	(4) 8	10
50	503	3/4"	(3) 6	10	504	1"	(4) 6	10
60	603	3/4"	(3) 6	10	604	1"	(4) 6	10
70	703	1"	(3) 4	8	704	1 1/4"	(4) 4	8
80	803	1 1/4"	(3) 3	8	804	1 1/4"	(4) 3	8
90	903	1 1/4"	(3) 3	8	904	1 1/4"	(4) 3	8
100	1003	1 1/4"	(3) 2	8	1004	1 1/4"	(4) 2	8
110	1103	1 1/2"	(3) 1	6	1104	1 1/2"	(4) 1	6
125	1253	1 1/2"	(3) 1	6	1254	1 1/2"	(4) 1	6
150	1503	1 1/2"	(3) 1/0	6	1504	2"	(4) 1/0	6
175	1753	2"	(3) 2/0	6	1754	2"	(4) 2/0	6
200	2003	2"	(3) 3/0	6	2004	2"	(4) 3/0	6
225	2253	2"	(3) 4/0	4	2254	2 1/2"	(4) 4/0	4
250	2503	2"	(3) 4/0	4	2504	2 1/2"	(4) 250	3
300	3003	2 1/2"	(3) 250	4	3004	3"	(4) 350	2
350	3503	2 1/2"	(3) 350	3	3504	3 1/2"	(4) 500	1
400	4003	(2) 2"	(6) 3/0	(2) 3	4004	(2) 2"	(8) 3/0	(2) 3
450	4503	(2) 2"	(6) 4/0	(2) 2	4504	(2) 2 1/2"	(8) 4/0	(2) 2
500	5003	(2) 2"	(6) 4/0	(2) 2	5004	(2) 3"	(8) 250	(2) 1
600	6003	(2) 2 1/2"	(6) 250	(2) 1	6004	(2) 3"	(8) 350	(2) 2/0
800	8003	(2) 3"	(6) 500	(2) 1/0	8004	(3) 3"	(12) 350	(3) 2/0
1000	10003	(3) 3"	(9) 500	(3) 2/0	10004	(3) 4"	(12) 500	(3) 2/0
1200	12003	(4) 3"	(12) 350	(4) 3/0	12004	(4) 4"	(16) 500	(4) 250
1600	16003	(4) 4"	(12) 750	(4) 4/0	16004	(5) 4"	(20) 500	(5) 4/0
2000	20003	(5) 4"	(15) 750	(5) 250	20004	(6) 4"	(24) 500	(6) 250
2500	25003	(6) 4"	(18) 750	(6) 350	25004	(8) 4"	(32) 500	(8) 350
3000	30003	(7) 4"	(21) 750	(7) 500	30004	(9) 4"	(36) 500	(9) 500
4000	40003	(9) 4"	(27) 750	(9) 500	40004	(12) 4"	(48) 500	(12) 500

PCC-2

BUILDING CONNECTED ELECTRIC UTILITY SERVICE SUMMARY				
Service	Load (kVA)	Voltage (V)	Amperage (A)	Service Size (A)
House	274	208	760	
Residential	253	208	701	
Total	527	208	1462	2000

PCC-1

SERVICE LOAD CALCULATION SUMMARY (METER-STACK SECTION 1)			
UNIT TYPES	A - Studio	B Studio	Managers
QTY	32	5	0
SQ.FT	333.0	340	502
2 SMALL APPLIANCE CIRCUITS AT 1.5KVA...	3.0	3.0	3.0
LAUNDRY (KVA)	0.0	0.0	0.0
VENT-FAN (KVA)	0.3	0.3	0.3
MICROWAVE (KVA)	1.0	1.0	1.0
RANGE (KVA)	8.0	8.0	8.0
DRYER (KVA)	0.0	0.0	4.3
GENERAL LTG/RCPT (3W/SQ.FT) (KVA)	1.0	1.0	1.5
TOTAL GENERAL LOAD (KVA)	13.3	13.3	18.1
PTAC (KVA)	0.795	0.795	0.795
HEATER LOAD (KVA)	0.0	0.0	0.0
DWELLING UNIT (KVA) DEMAND LOAD	14.1	14.1	18.9
DWELLING UNIT (A) DEMAND LOAD	67.8	68	91
TOTAL UNIT (KVA) LOAD	451.01	70.58	18.90

TOTAL METER-STACK SECTION 1 FEEDER LOAD CALCULATION	
TOTAL METER-STACK CONNECTED LOAD (kVA):	540
TOTAL UNIT (QTY):	37
NEC TABLE 220.84 DEMAND FACTOR:	*0.29*
TOTAL METER STACK DEMAD LOAD (kVA):	156.74
TOTAL METER STACK DEMAD LOAD (A):	435.58

GENERAL NOTES:

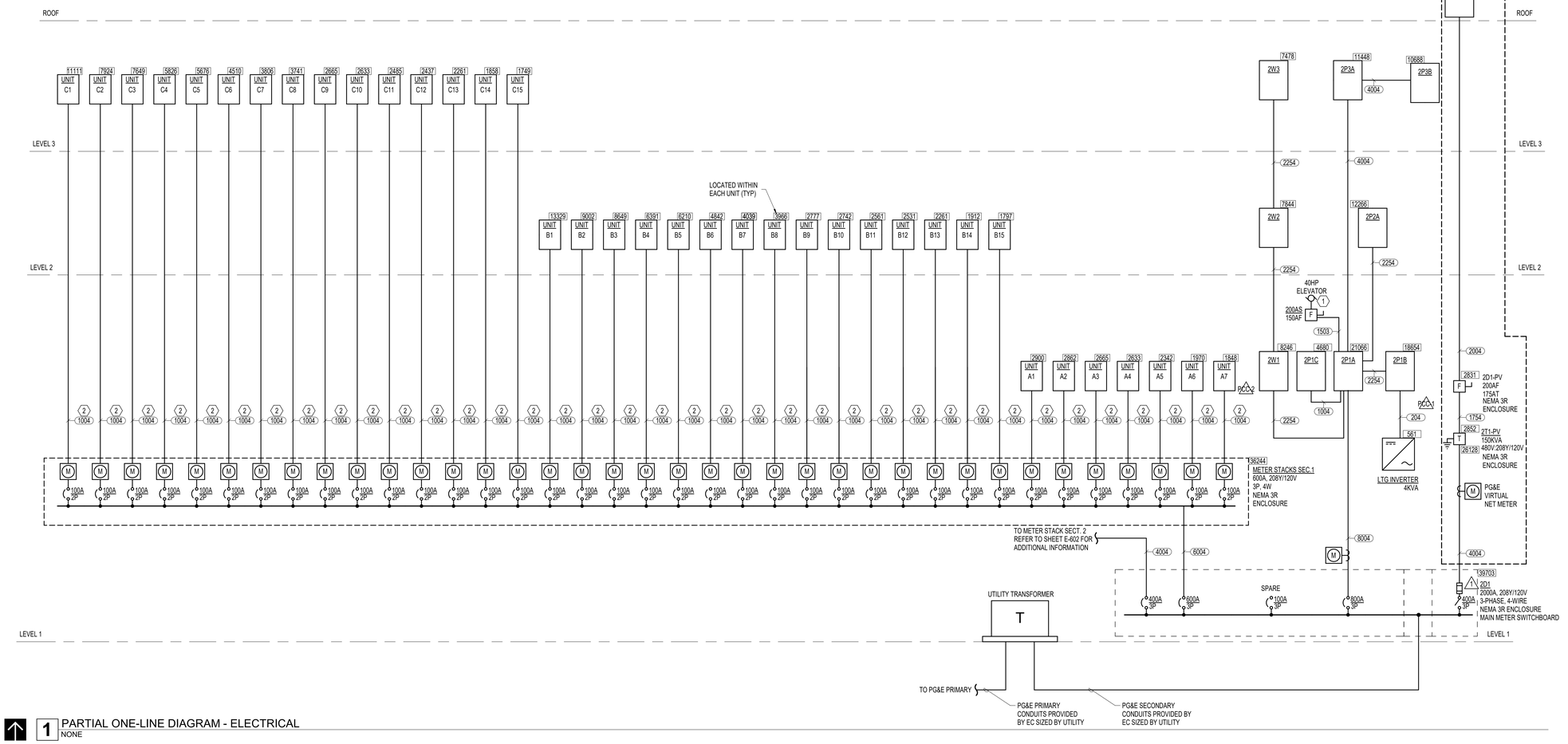
A. FAULT CALCULATIONS BASED OFF A 300KVA UTILITY TRANSFORMER.

CONSTRUCTION NOTES:

1. CONFIRM ELEVATOR SIZE AND REQUIREMENTS WITH ELEVATOR MANUFACTURER PRIOR TO ROUGH-IN. PROVIDE WITH BUSSMAN POWER MODULE AND SHUNT TRIP DISCONNECT.

PCC-2 2. FEEDERS TO BE ROUTED UNDERGROUND AND STUBBED UP INTO THE BUILDING. COORDINATE STUB-UP LOCATIONS WITH CIVIL AND STRUCTURAL.

THE SOLAR PHOTOVOLTAIC SYSTEM IS A CONTRACTOR DESIGN/BUILD SYSTEM UNDER A DEFERRED SUBMITTAL. REFER TO SPECIFICATION 260630 FOR REQUIREMENTS.



1 PARTIAL ONE-LINE DIAGRAM - ELECTRICAL
NONE

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

6/5/2020 9:43:24 AM

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REGISTERED PROFESSIONAL ENGINEER
STEPHEN J. TURNER
No. E13789
Exp. 12/31/21
ELECTRICAL
STATE OF CALIFORNIA
06.04.20

PAE
pae-engineers.com

REVISIONS TO THIS SHEET

REV.	DATE
PCC-2	5/15/2020
ADD-1	04/27/2020
PCC-1	4/6/2020

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C.: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

PARTIAL ONE LINE DIAGRAMS - ELECTRICAL

E-601

GENERAL NOTES:

A. FAULT CALCULATIONS BASED OFF A 300KVA UTILITY TRANSFORMER.

CONSTRUCTION NOTES:

1. FEEDERS TO BE ROUTED UNDERGROUND AND STUBBED UP INTO THE BUILDING. COORDINATE STUB-UP LOCATIONS WITH CIVIL AND STRUCTURAL.

PCC-2

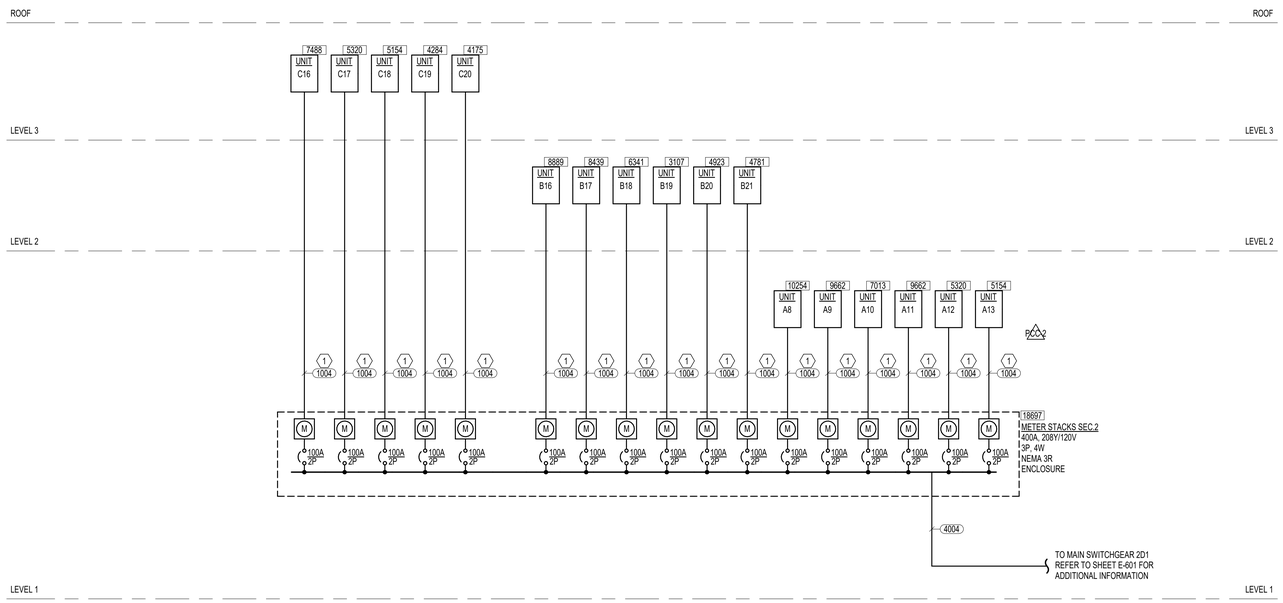
	FEEDER SCHEDULE COPPER: 3 PHASE, 3 WIRE + GROUND				FEEDER SCHEDULE COPPER: 3 PHASE, 4 WIRE + GROUND			
NOMINAL AMPACITY	TAG	CONDUIT SIZE (MIN)	PHASE CONDUCTORS (AWG or kcmil)	GROUND CONDUCTOR (AWG or kcmil)	TAG	CONDUIT SIZE (MIN)	PHASE & NEUTRAL CONDUCTORS (AWG or kcmil)	GROUND CONDUCTOR (AWG or kcmil)
20	203	1/2"	(3) 12	12	204	1/2"	(4) 12	12
30	303	1/2"	(3) 10	10	304	3/4"	(4) 10	10
40	403	3/4"	(3) 8	10	404	3/4"	(4) 8	10
50	503	3/4"	(3) 6	10	504	1"	(4) 6	10
60	603	3/4"	(3) 6	10	604	1"	(4) 6	10
70	703	1"	(3) 4	8	704	1 1/4"	(4) 4	8
80	803	1 1/4"	(3) 3	8	804	1 1/4"	(4) 3	8
90	903	1 1/4"	(3) 3	8	904	1 1/4"	(4) 3	8
100	1003	1 1/4"	(3) 2	8	1004	1 1/4"	(4) 2	8
110	1103	1 1/2"	(3) 1	6	1104	1 1/2"	(4) 1	6
125	1253	1 1/2"	(3) 1	6	1254	1 1/2"	(4) 1	6
150	1503	1 1/2"	(3) 1/0	6	1504	2"	(4) 1/0	6
175	1753	2"	(3) 2/0	6	1754	2"	(4) 2/0	6
200	2003	2"	(3) 3/0	6	2004	2"	(4) 3/0	6
225	2253	2"	(3) 4/0	4	2254	2 1/2"	(4) 4/0	4
250	2503	2"	(3) 4/0	4	2504	2 1/2"	(4) 250	3
300	3003	2 1/2"	(3) 250	4	3004	3"	(4) 350	2
350	3503	2 1/2"	(3) 350	3	3504	3 1/2"	(4) 500	1
400	4003	(2) 2"	(6) 3/0	(2) 3	4004	(2) 2"	(8) 3/0	(2) 3
450	4503	(2) 2"	(6) 4/0	(2) 2	4504	(2) 2 1/2"	(8) 4/0	(2) 2
500	5003	(2) 2"	(6) 4/0	(2) 2	5004	(2) 3"	(8) 250	(2) 1
600	6003	(2) 2 1/2"	(6) 250	(2) 1	6004	(2) 3"	(8) 350	(2) 2/0
800	8003	(2) 3"	(6) 500	(2) 1/0	8004	(3) 3"	(12) 350	(3) 2/0
1000	10003	(3) 3"	(9) 500	(3) 2/0	10004	(3) 4"	(12) 500	(3) 2/0
1200	12003	(4) 3"	(12) 350	(4) 3/0	12004	(4) 4"	(16) 500	(4) 250
1600	16003	(4) 4"	(12) 750	(4) 4/0	16004	(5) 4"	(20) 500	(5) 4/0
2000	20003	(5) 4"	(15) 750	(5) 250	20004	(6) 4"	(24) 500	(6) 250
2500	25003	(6) 4"	(18) 750	(6) 350	25004	(8) 4"	(32) 500	(8) 350
3000	30003	(7) 4"	(21) 750	(7) 500	30004	(9) 4"	(36) 500	(9) 500
4000	40003	(9) 4"	(27) 750	(9) 500	40004	(12) 4"	(48) 500	(12) 500

PCC-2

PCC-1

SERVICE LOAD CALCULATION SUMMARY (METER-STACK SECTION 2)			
UNIT TYPES	A - Studio	B Studio	Managers
QTY	16	0	1
SQ.FT	333.0	340.0	502.0
2 SMALL APPLIANCE CIRCUITS AT 1.5KVA..	3.0	3.0	3.0
LAUNDRY (KVA)	0.0	0.0	1.5
VENT-FAN (KVA)	0.3	0.3	0.3
MICROWAVE (KVA)	1.0	1.0	1.0
RANGE (KVA)	8.0	8.0	8.0
DRYER (KVA)	0.0	0.0	4.3
GENERAL LTG/RCPT (3W/SQ.FT) (KVA)	1.0	1.0	1.5
TOTAL GENERAL LOAD (KVA)	13.3	13.3	19.6
PTAC (kVA)	0.795	0.795	0.795
HEATER LOAD (kVA)	0.0	0.0	0.0
DWELLING UNIT (KVA) DEMAND LOAD	14.1	14.1	20.4
DWELLING UNIT (A) DEMAND LOAD	68	68	98
TOTAL UNIT (kVA) LOAD	225.50	0.00	20.40

TOTAL METER-STACK SECTION 2 FEEDER LOAD CALCULATION	
TOTAL METER-STACK CONNECTED LOAD (kVA):	246
TOTAL UNIT (QTY):	17
NEC TABLE 220.84 DEMAND FACTOR:	*0.39*
TOTAL METER STACK DEMAD LOAD (kVA):	95.90
TOTAL METER STACK DEMAD LOAD (A):	266.52



1 PARTIAL ONE-LINE DIAGRAM - ELECTRICAL
NONE

ROWELL BROKAW
1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com
Architecture. Design. Strategy.

STAMP

PAE
pae-engineers.com

REVISIONS TO THIS SHEET

REV.	DATE
PCC-2	5/15/2020
PCC-1	4/6/2020

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

PARTIAL ONE LINE DIAGRAMS - ELECTRICAL

E-602

6/5/2020 9:43:26 AM

PANEL SCHEDULE

PANEL: 2P1A LOCATION: UTIL 108 VOLTAGE: 208 Y/ 120 P: 3 W: 4
AMP: 800 MLO [ ] MCB [X] MOUNTING: [X] SURFACE [ ] FLUSH
TYPE: EXISTING [ ] NEW [X] STYLE: NEUTRAL: 100% FED FROM: 2D1 35 kAIC

CIRCUIT DESCRIPTION	LOAD TYPE	LOAD KVA	CKT BKR	P	CIR #	PH	CIR #	P	CKT BKR	LOAD KVA	LOAD TYPE	CIRCUIT DESCRIPTION
MULTI PURPOSE 110 - REC	REC	1.08	20	1	1	A	2	1	20	0.60	MTR	EF-101, EF-102
MULTI PURPOSE 110 - REC	REC	0.90	20	1	3	B	4	1	20	0.50	MISC	EH-101
MULTI PURPOSE 110 - DISHWASHER	MISC	0.75	20	1	5	C	6	1	20	0.50	MISC	EH-102
MULTIPURPOSE 110 - RANGE OVEN	MISC	4.00	20	2	7	A	8	1	20	1.20	MTR	HWRP-1-1, HWRP-1-2
-	MISC	4.00	-	-	9	B	10	3	150	7.90	MTR	ELEVATOR POWER MODULE
MULTIPURPOSE 110 - RANGE HOOD	MISC	0.67	20	1	11	C	12	-	-	7.90	MTR	-
MULTIPURPOSE 110 - REFRIGERATOR	MISC	0.75	20	1	13	A	14	-	-	7.90	MTR	-
SPARE			20	1	15	B	16	2	20			SPARE
SECURITY 102 - REC	REC	0.90	20	1	17	C	18	-	-			
SECURITY 102 - REC	REC	0.90	20	1	19	A	20	1	20	1.26	MISC	ERV-101
HWH-1-1	MISC	2.50	40	2	21	B	22	1	20	0.64	MISC	ERV-102
-	MISC	2.50	-	-	23	C	24	1	20			SPARE
FIRE SMOKE DAMPER	MISC	0.10	20	1	25	A	26	3	225	12.08	COMB	PANEL 2P1B
SECURITY 102 - REC	REC	1.08	20	1	27	B	28	-	-	9.90	COMB	-
2P3A	COMB	28.33	225	3	29	C	30	-	-	10.20	COMB	-
-	COMB	24.38	-	-	31	A	32	3	225	21.22	COMB	PANEL 2W1
-	COMB	21.89	-	-	33	B	34			20.33	COMB	
SECUIRTY CABINET			20	1	35	C	36			20.33	COMB	
2P2A	COMB	17.54	225	3	37	A	38	3	100	9.43	COMB	PANEL 2P1C
-	COMB	17.59		-	39	B	40			6.39	COMB	
-	COMB	16.64		-	41	C	42			6.45	COMB	

ESTIMATED MAXIMUM DEMAND (EMD) CALCULATIONS

LOAD SUMMARY:	LOAD TYPE	CONNECTED	NEC DEMAND
LIGHTING	LTG	9.61 KVA	12.0 KVA (125%)
RESIDENT...	RES	0.0 KVA	0.0 KVA (100/35/25 %)
SMALL APPLIANCE	RES	0.0 KVA	0.0 KVA (100/35/25 %)
LARGEST MOTOR	MTR	23.7 KVA	29.6 KVA (125%)
REMAINING...	MTR	47.6 KVA	47.6 KVA (100%)
GEN PURPOSE...	REC	45.7 KVA	27.9 KVA (50% > 10KVA)
COMPUTER REC	MISC	0.0 KVA	0.0 KVA (100%)
EQUIP/OTHER	MISC	140.6 KVA	140.6 KVA (100%)
HEATING	MISC	24.0 KVA	24.0 KVA (100%)
ELEVATOR	ELEV	0.0 KVA	0.0 KVA (100%)
KITCHEN EQPT	KITCH	0.0 KVA	0.0 KVA (.65)
TOTALS:		291.2 KVA	281.7 KVA
		808.4 AMP	781.9 AMP

CONNECTED PHASE LOADING
PHASE A: 102.45 KVA
PHASE B: 93.62 KVA
PHASE C: 95.17 KVA

NOTES:

PANEL SCHEDULE

PANEL: 2P1B LOCATION: UTIL 108 VOLTAGE: 208 Y/ 120 P: 3 W: 4
AMP: 225 MLO [ ] MCB [X] MOUNTING: [X] SURFACE [ ] FLUSH
TYPE: EXISTING [ ] NEW [X] STYLE: NEUTRAL: 100% FED FROM: 2P1A 22 kAIC

CIRCUIT DESCRIPTION	LOAD TYPE	LOAD KVA	CKT BKR	P	CIR #	PH	CIR #	P	CKT BKR	LOAD KVA	LOAD TYPE	CIRCUIT DESCRIPTION
RM 111-115 / 118-121 / 124 / 125 - LIGHTS	LTG	0.84	20	1	1	A	2	2	15	0.83	MTR	FCU-103
RM 101 / 107 / 108 / 109 / 126 - LIGHTS	LTG	0.29	20	1	3	B	4	-	-	0.83	MTR	-
WALKWAY / MEETING RM - LIGHTS	LTG	1.04	20	1	5	C	6	2	15	0.41	MTR	FCU-104
LNDRY / SCRTY / MLTIPRPSE - LIGHTS	LTG	0.35	20	1	7	A	8	-	-	0.41	MTR	-
RM DIR 103 - LIGHTS	LTG	0.16	20	1	9	B	10	1	20	0.60	MTR	HWRP-1-3
NAC	MISC	0.10	20	1	11	C	12	1	20	1.20	MTR	HWRP-1-4, HWRP-1-5
SPARE			20	1	13	A	14	2	40	2.50	MISC	HWH-1-2
SPARE			20	1	15	B	16	-	-	2.50	MISC	-
COURTYARD - LIGHTS	LTG	1.20	20	1	17	C	18	2	40	2.50	MISC	HWH-1-3
PARKING LOT / TRASH / BIKE STORAGE -...	LTG	0.24	20	1	19	A	20	-	-	2.50	MISC	-
EV CAPABLE			40	2	21	B	22	2	40	2.50	MISC	HWH-1-4
-			-	-	23	C	24	-	-	2.50	MISC	-
EV CAPABLE			40	2	25	A	26	2	40	2.50	MISC	HWH-1-5
-			-	-	27	B	28	-	-	2.50	MISC	-
SPARE			20	1	29	C	30	1	20	0.80	MTR	MG - GATE CONROLLER
SPARE			20	1	31	A	32	1	20	0.80	MTR	MG - GATE CONROLLER
SPARE			20	1	33	B	34	1	20			SPARE
SPARE			20	1	35	C	36	1	20			SPARE
LIGHTING INVERTER	COMB	1.11	20	3	37	A	38	1	20			SPARE
-	COMB	0.52	-	-	39	B	40	1	20			SPARE
-	COMB	0.46	-	-	41	C	42	1	20			SPARE

ESTIMATED MAXIMUM DEMAND (EMD) CALCULATIONS

LOAD SUMMARY:	LOAD TYPE	CONNECTED	NEC DEMAND
LIGHTING	LTG	6.2 KVA	7.8 KVA (125%)
RESIDENT...	RES	0.0 KVA	0.0 KVA (100/35/25 %)
SMALL APPLIANCE	RES	0.0 KVA	0.0 KVA (100/35/25 %)
LARGEST MOTOR	MTR	1.7 KVA	2.1 KVA (125%)
REMAINING...	MTR	4.2 KVA	4.2 KVA (100%)
GEN PURPOSE...	REC	0.0 KVA	0.0 KVA (50% > 10KVA)
COMPUTER REC	MISC	0.0 KVA	0.0 KVA (100%)
EQUIP/OTHER	MISC	0.1 KVA	0.1 KVA (100%)
HEATING	MISC	20.0 KVA	20.0 KVA (100%)
ELEVATOR	ELEV	0.0 KVA	0.0 KVA (100%)
KITCHEN EQPT	KITCH	0.0 KVA	0.0 KVA (.65)
TOTALS:		32.2 KVA	34.1 KVA
		89.3 AMP	94.8 AMP

CONNECTED PHASE LOADING
PHASE A: 12.08 KVA
PHASE B: 9.90 KVA
PHASE C: 10.20 KVA

NOTES:

PANEL SCHEDULE

PANEL: 2P1C LOCATION: STO 116 VOLTAGE: 208 Y/ 120 P: 3 W: 4
AMP: 225 MLO [ ] MCB [X] MOUNTING: [X] SURFACE [ ] FLUSH
TYPE: EXISTING [ ] NEW [X] STYLE: NEUTRAL: 100% FED FROM: 2P1A 10 kAIC

CIRCUIT DESCRIPTION	LOAD TYPE	LOAD KVA	CKT BKR	P	CIR #	PH	CIR #	P	CKT BKR	LOAD KVA	LOAD TYPE	CIRCUIT DESCRIPTION
MEETING RM 117 - REC	REC	0.72	20	1	1	A	2	1	20	0.30	MISC	LOBBY 100 - MOTORIZED DOOR
MEETING RM 117 - REC	REC	0.54	20	1	3	B	4	1	20	0.90	REC	LOBBY 100 / WALKWAY - REC
OFFICE 115 - REC	REC	0.90	20	1	5	C	6	2	15	0.54	MTR	FCU-101
OFFICE 114 - REC	REC	0.90	20	1	7	A	8	-	-	0.54	MTR	-
OFFICE 113 - REC	REC	0.90	20	1	9	B	10	2	15	0.07	MTR	ACU-102
OFFICE 112 - REC	REC	0.90	20	1	11	C	12	-	-	0.07	MTR	-
OFFICE 111 - REC	REC	1.08	20	1	13	A	14	2	15	0.04	MTR	ACU-101A
DECON 121 - REC	REC	0.90	20	1	15	B	16	-	-	0.04	MTR	-
HALL 123 / WAITING 124 - REC	REC	1.08	20	1	17	C	18	2	15	0.04	MTR	ACU-101B
BATH 120 - REC	REC	0.18	20	1	19	A	20	-	-	0.04	MTR	-
PANTRY 125 - REC	REC	0.54	20	1	21	B	22	1	20	0.50	MISC	EH-103A
CLOSET 127 - REC	REC	0.18	20	1	23	C	24	2	20	0.10	MTR	ACU-103A
BATH 122 - REC	REC	0.36	20	1	25	A	26	-	-	0.10	MTR	-
WALKWAY / HWH 109 - REC	REC	1.08	20	1	27	B	28	2	20	0.10	MTR	ACU-103B
TRASH COMPACTOR	MISC	1.68	20	1	29	C	30	-	-	0.10	MTR	-
TRASH 101 - REC	REC	0.54	20	1	31	A	32	1	20	4.64	MISC	PTAC - 102
OUTDOOR - REC	REC	0.18	20	1	33	B	34	1	20	0.64	MISC	PTAC - 103
ELECTRICAL RM - REC	REC	0.36	20	1	35	C	36	1	20			SPARE
SPARE			20	1	37	A	38	1	20			SPARE
SPARE			20	1	39	B	40	1	20			SPARE
EH-103B	MISC	0.50	20	1	41	C	42	1	20			SPARE

ESTIMATED MAXIMUM DEMAND (EMD) CALCULATIONS

LOAD SUMMARY:	LOAD TYPE	CONNECTED	NEC DEMAND
LIGHTING	LTG	0.0 KVA	0.0 KVA (125%)
RESIDENT...	RES	0.0 KVA	0.0 KVA (100/35/25 %)
SMALL APPLIANCE	RES	0.0 KVA	0.0 KVA (100/35/25 %)
LARGEST MOTOR	MTR	1.7 KVA	2.1 KVA (125%)
REMAINING...	MTR	0.1 KVA	0.1 KVA (100%)
GEN PURPOSE...	REC	12.2 KVA	11.1 KVA (50% > 10KVA)
COMPUTER REC	MISC	0.0 KVA	0.0 KVA (100%)
EQUIP/OTHER	MISC	7.3 KVA	7.3 KVA (100%)
HEATING	MISC	1.0 KVA	1.0 KVA (100%)
ELEVATOR	ELEV	0.0 KVA	0.0 KVA (100%)
KITCHEN EQPT	KITCH	0.0 KVA	0.0 KVA (.65)
TOTALS:		22.3 KVA	21.6 KVA
		61.8 AMP	59.9 AMP

CONNECTED PHASE LOADING
PHASE A: 9.43 KVA
PHASE B: 6.39 KVA
PHASE C: 6.45 KVA

NOTES:

PANEL SCHEDULE

PANEL: 2W1 LOCATION: UTIL 106 VOLTAGE: 208 Y/ 120 P: 3 W: 4
AMP: 225 MLO [ ] MCB [X] MOUNTING: [X] SURFACE [ ] FLUSH
TYPE: EXISTING [ ] NEW [X] STYLE: NEUTRAL: 100% FED FROM: 2P1A '10 kAIC

CIRCUIT DESCRIPTION	LOAD TYPE	LOAD KVA	CKT BKR	P	CIR #	PH	CIR #	P	CKT BKR	LOAD KVA	LOAD TYPE	CIRCUIT DESCRIPTION
LAUNDRY 105 - WASHER DEDICATED	MISC	1.20	20	1	1	A	2	1	20	0.50	MTR	HRV-102
LAUNDRY 105 - WASHER DEDICATED	MISC	1.20	20	1	3	B	4	1	20			SPARE
LAUNDRY 105 - WASHER DEDICATED	MISC	1.20	20	1	5	C	6	1	20			SPARE
LAUNDRY 105 - DRYER DEDICATED	MISC	2.50	30	2	7	A	8	1	20			SPARE
-	MISC	2.50	-	-	9	B	10	1	20			SPARE
LAUNDRY 105 - DRYER DEDICATED	MISC	2.50	30	2	11	C	12	1	20			SPARE
-	MISC	2.50	-	-	13	A	14	1	20			SPARE
LAUNDRY 105 - DRYER DEDICATED	MISC	2.50	30	2	15	B	16	1	20			SPACE
-	MISC	2.50	-	-	17	C	18	1	20			SPACE
LAUNDRY 105 - REC	REC	0.54	20	1	19	A	20	1	20			SPACE
PTAC-L	MTR	0.58	20	2	21	B	22	1	20			SPACE
-	MTR	0.58	-	-	23	C	24	1	20			SPACE
PANEL 2W2	COMB	13.98	225	3	25	A	26	1	20			SPACE
	COMB	13.55			27	B	28	1	20			SPACE
	COMB	13.55			29	C	30	1	20			SPACE

ESTIMATED MAXIMUM DEMAND (EMD) CALCULATIONS

LOAD SUMMARY:	LOAD TYPE	CONNECTED	NEC DEMAND
LIGHTING	LTG	0.0 KVA	0.0 KVA (125%)
RESIDENT...	RES	0.0 KVA	0.0 KVA (100/35/25 %)
SMALL APPLIANCE	RES	0.0 KVA	0.0 KVA (100/35/25 %)
LARGEST MOTOR	MTR	1.2 KVA	1.5 KVA (125%)
REMAINING...	MTR	3.3 KVA	3.3 KVA (100%)
GEN PURPOSE...	REC	1.6 KVA	1.6 KVA (50% > 10KVA)
COMPUTER REC	MISC	0.0 KVA	0.0 KVA (100%)
EQUIP/OTHER	MISC	55.8 KVA	55.8 KVA (100%)
HEATING	MISC	0.0 KVA	0.0 KVA (100%)
ELEVATOR	ELEV	0.0 KVA	0.0 KVA (100%)
KITCHEN EQPT	KITCH	0.0 KVA	0.0 KVA (.65)
TOTALS:		61.9 KVA	62.2 KVA
		171.7 AMP	172.5 AMP

CONNECTED PHASE LOADING
PHASE A: 21.22 KVA
PHASE B: 20.33 KVA
PHASE C: 20.33 KVA

NOTES:

PANEL SCHEDULE

PANEL: 2P2A LOCATION: UTIL 204 VOLTAGE: 208 Y/ 120 P: 3 W: 4
AMP: 225 MLO [ ] MCB [X] MOUNTING: [X] SURFACE [ ] FLUSH
TYPE: EXISTING [ ] NEW [X] STYLE: NEUTRAL: 100% FED FROM: 2P1A 18 kAIC

CIRCUIT DESCRIPTION	LOAD TYPE	LOAD KVA	CKT BKR	P	CIR #	PH	CIR #	P	CKT BKR	LOAD KVA	LOAD TYPE	CIRCUIT DESCRIPTION
GYM 203 - REC	REC	0.72	20	1	1	A	2	1	20	0.72	REC	LOUNGE 202 - REC
GYM 203 / UTIL 204 - REC	REC	0.90	20	1	3	B	4	1	20	1.08	REC	TRASH 201 / LOBBY 200 / WALKWAY - REC
COVERED WALKWAY - REC	REC	1.08	20	1	5	C	6	1	20	0.08	MTR	ERV-201
FIRE SMOKE DAMPER	MISC	0.10	20	1	7	A	8	1	20	0.66	MTR	ERV-203
PTAC-G	MTR	0.58	20	2	9	B	10	1	20	0.50	MISC	EH-201
-	MTR	0.58	-	-	11	C	12	1	20	0.50	MISC	EH-202
WALKWAY / GYM / LOUNGE / LAUNDRY - LIGHTS	LTG	0.94	20	1	13	A	14	1	20	1.20	MTR	HWRP-2-1, HWRP-2-2
UTILITY - LIGHTS	LTG	0.17	20	1	15	B	16	1	20	1.20	MTR	HWRP-2-3, HWRP-2-6
ACU-201	MTR	0.04	20	2	17	C	18	1	20	1.20	MTR	HWRP-2-4, HWRP-2-5
-	MTR	0.04	-	-	19	A	20	2	40	2.50	MISC	HWH-2-1
HP-403	MTR	3.16	50	3	21	B	22	-	-	2.50	MISC	-
-	MTR	3.16	-	-	23	C	24	2	40	2.50	MISC	HWH-2-2
-	MTR	3.16	-	-	25	A	26	-	-	2.50	MISC	-
SPARE					27	B	28	2	40	2.50	MISC	HWH-2-3
SPACE					29	C	30	-	-	2.50	MISC	-
SPACE					31	A	32	2	40	2.50	MISC	HWH-2-4
SPACE					33	B	34	-	-	2.50	MISC	-
SPACE					35	C	36	2	40	2.50	MISC	HWH-2-5
SPACE					37	A	38	-	-	2.50	MISC	-
SPACE					39	B	40	2	40	2.50	MISC	HWH-2-6
SPACE					41	C	42	-	-	2.50	MISC	-

ESTIMATED MAXIMUM DEMAND (EMD) CALCULATIONS

LOAD SUMMARY:	LOAD TYPE	CONNECTED	NEC DEMAND
LIGHTING	LTG	1.1 KVA	1.4 KVA (125%)
RESIDENT...	RES	0.0 KVA	0.0 KVA (100/35/25 %)
SMALL APPLIANCE	RES	0.0 KVA	0.0 KVA (100/35/25 %)
LARGEST MOTOR	MTR	0.7 KVA	0.8 KVA (125%)
REMAINING...	MTR	14.4 KVA	14.4 KVA (100%)
GEN PURPOSE...	REC	4.5 KVA	4.5 KVA (50% > 10KVA)
COMPUTER REC	MISC	0.0 KVA	0.0 KVA (100%)
EQUIP/OTHER	MISC	30.1 KVA	30.1 KVA (100%)
HEATING	MISC	1.0 KVA	1.0 KVA (100%)
ELEVATOR	ELEV	0.0 KVA	0.0 KVA (100%)
KITCHEN EQPT	KITCH	0.0 KVA	0.0 KVA (.65)
TOTALS:		51.8 KVA	52.2 KVA
		143.7 AMP	144.9 AMP

CONNECTED PHASE LOADING
PHASE A: 17.54 KVA
PHASE B: 17.59 KVA
PHASE C: 16.64 KVA

NOTES:

PANEL SCHEDULE

PANEL: 2W2 LOCATION: UTIL 206 VOLTAGE: 208 Y/ 120 P: 3 W: 4
AMP: 225 MLO [ ] MCB [X] MOUNTING: [X] SURFACE [ ] FLUSH
TYPE: EXISTING [ ] NEW [X] STYLE: NEUTRAL: 100% FED FROM: 2W1 10 kAIC

CIRCUIT DESCRIPTION	LOAD TYPE	LOAD KVA	CKT BKR	P	CIR #	PH	CIR #	P	CKT BKR	LOAD KVA	LOAD TYPE	CIRCUIT DESCRIPTION
LAUNDRY 205 - WASHER DEDICATED	MISC	1.20	20	1	1	A	2	1	20	0.50	MTR	HRV-202
LAUNDRY 205 - WASHER DEDICATED	MISC	1.20	20	1	3	B	4	1	20			SPARE
LAUNDRY 205 - WASHER DEDICATED	MISC	1.20	20	1	5	C	6	1	20			SPARE
LAUNDRY 205 - DRYER DEDICATED	MISC	2.50	30	2	7	A	8	1	20			SPARE
-	MISC	2.50	-	-	9	B	10	1	20			SPARE
LAUNDRY 205 - DRYER DEDICATED	MISC	2.50	30	2	11	C	12	1	20			SPARE
-	MISC	2.50	-	-	13	A	14	1	20			SPACE
LAUNDRY 205 - DRYER DEDICATED	MISC	2.50	30	2	15	B	16	1	20			SPACE
-	MISC	2.50	-	-	17	C	18	1	20			SPACE
LAUNDRY 205 - REC	REC	0.54	20	1	19	A	20	1	20			SPACE
PTAC-L	MTR	0.58	20	2	21	B	22	1	20			SPACE
-	MTR	0.58	-	-	23	C	24	1	20			SPACE
PANEL 2W3	COMB	6.74	225	3	25	A	26	1	20			SPACE
	COMB	6.78			27	B	28	1	20			SPACE
	COMB	6.78			29	C	30	1	20			SPACE

ESTIMATED MAXIMUM DEMAND (EMD) CALCULATIONS

LOAD SUMMARY:	LOAD TYPE	CONNECTED	NEC DEMAND
LIGHTING	LTG	0.0 KVA	0.0 KVA (125%)
RESIDENT...	RES	0.0 KVA	0.0 KVA (100/35/25 %)
SMALL APPLIANCE	RES	0.0 KVA	0.0 KVA (100/35/25 %)
LARGEST MOTOR	MTR	1.2 KVA	1.5 KVA (125%)
REMAINING...	MTR	1.6 KVA	1.6 KVA (100%)
GEN PURPOSE...	REC	1.1 KVA	1.1 KVA (50% > 10KVA)
COMPUTER REC	MISC	0.0 KVA	0.0 KVA (100%)
EQUIP/OTHER	MISC	37.2 KVA	37.2 KVA (100%)
HEATING	MISC	0.0 KVA	0.0 KVA (100%)
ELEVATOR	ELEV	0.0 KVA	0.0 KVA (100%)
KITCHEN EQPT	KITCH	0.0 KVA	0.0 KVA (.65)
TOTALS:		41.1 KVA	41.4 KVA
		114.0 AMP	114.8 AMP

CONNECTED PHASE LOADING
PHASE A: 13.98 KVA
PHASE B: 13.55 KVA
PHASE C: 13.55 KVA

NOTES:

PANEL SCHEDULE

PANEL: 2P3A LOCATION: UTIL 304 VOLTAGE: 208 Y/ 120 P: 3 W: 4
AMP: 225 MLO [ ] MCB [X] MOUNTING: [X] SURFACE [ ] FLUSH
TYPE: EXISTING [ ] NEW [X] STYLE: NEUTRAL: 100% FED FROM: 2P1A 14 kAIC

CIRCUIT DESCRIPTION	LOAD TYPE	LOAD KVA	CKT BKR	P	CIR #	PH	CIR #	P	CKT BKR	LOAD KVA	LOAD TYPE	CIRCUIT DESCRIPTION
GYM 303 - REC	REC	0.72	20	1	1	A	2	1	20	0.72	REC	LOUNGE 302 - REC
GYM 303 / UTIL 304 - REC	REC	0.90	20	1	3	B	4	1	20	0.90	REC	TRASH 301 / LOBBY 300 / WALKWAY - REC
WALKWAY / HWH 307 - REC	REC	1.08	20	1	5	C	6	1	20	0.08	MTR	ERV-301
ROOF - REC	REC	0.36	20	1	7	A	8	1	20	0.66	MTR	ERV-303
EH-401	REC	0.83	20	2	9	B	10	1	20	0.50	MISC	EH-301
-	REC	0.83	-	-	11	C	12	1	20	0.50	MISC	EH-302
ACCU-401	REC	2.41	40	2	13	A	14	1	20	1.20	MTR	HWRP-3-1, HWRP-3-2
-	REC	2.41	-	-	15	B	16	1	20	1.20	MTR	HWRP-3-3, HWRP-3-6
EF-401	REC	0.83	20	2	17	C	18	1	20	1.20	MTR	HWRP-3-4, HWRP-3-5
-	REC	0.83	-	-	19	A	20	2	40	2.50	MISC	HWH-3-1
ACCU-402	REC	2.42	45	2	21	B	22	-	-	2.50	MISC	-
-	REC	2.42	-	-	23	C	24	2	40	2.50	MISC	HWH-3-2
HP-402	REC	2.41	40	2	25	A	26	-	-	2.50	MISC	-
-	REC	2.41	-	-	27	B	28	2	40	2.50	MISC	HWH-3-3
SPARE			20	1	29	C	30	-	-	2.50	MISC	-
SPARE			20	-	31	A	32	2	40	2.50	MISC	HWH-3-4
FIRE SMOKE DAMPER	MISC	0.10	20	1	33	B	34	-	-	2.50	MISC	-
NAC	MISC	0.10	20	1	35	C	36	2	40	2.50	MISC	HWH-3-5
2P3B	COMB	4.51	225	3	37	A	38	-	-	2.50	MISC	-
-	COMB	1.35	-	-	39	B	40	2	40	2.50	MISC	HWH-3-6
-	COMB	2.42	-	-	41	C	42	-	-	2.50	MISC	-

ESTIMATED MAXIMUM DEMAND (EMD) CALCULATIONS

LOAD SUMMARY:	LOAD TYPE	CONNECTED	NEC DEMAND
LIGHTING	LTG	2.3 KVA	2.9 KVA (125%)
RESIDENT...	RES	0.0 KVA	0.0 KVA (100/35/25 %)
SMALL APPLIANCE	RES	0.0 KVA	0.0 KVA (100/35/25 %)
LARGEST MOTOR	MTR	23.2 KVA	29.0 KVA (125%)
REMAINING...	MTR	-4.6 KVA	-4.6 KVA (100%)
GEN PURPOSE...	REC	22.5 KVA	16.2 KVA (50% > 10KVA)
COMPUTER REC	MISC	0.0 KVA	0.0 KVA (100%)
EQUIP/OTHER	MISC	30.2 KVA	30.2 KVA (100%)
HEATING	MISC	1.0 KVA	1.0 KVA (100%)
ELEVATOR	ELEV	0.0 KVA	0.0 KVA (100%)
KITCHEN EQPT	KITCH	0.0 KVA	0.0 KVA (.65)
TOTALS:		74.6 KVA	74.7 KVA
		207.1 AMP	207.4 AMP

CONNECTED PHASE LOADING
PHASE A: 28.33 KVA
PHASE B: 24.38 KVA
PHASE C: 21.89 KVA

NOTES:

PANEL SCHEDULE

PANEL: 2P3B LOCATION: UTIL 304 VOLTAGE: 208 Y/ 120 P: 3 W: 4
AMP: 400 MLO [X] MCB [ ] MOUNTING: [X] SURFACE [ ] FLUSH
TYPE: EXISTING [ ] NEW [X] STYLE: NEUTRAL: 100% FED FROM: 2P3A 14 kAIC

CIRCUIT DESCRIPTION	LOAD TYPE	LOAD KVA	CKT BKR	P	CIR #	PH	CIR #	P	CKT BKR	LOAD KVA	LOAD TYPE	CIRCUIT DESCRIPTION
WALKWAY / GYM / LOUNGE / LAUNDRY - LIGHTS	LTG	0.94	20	1	1	A	2	2	25	1.14	MTR	HP-404
UTILITY - LIGHTS	LTG	0.21	20	1	3	B	4	-	-	1.14	MTR	-
SPARE			20	1	5	C	6	2	40	2.42	MTR	HP-401
SPARE			20	1	7	A	8	-	-	2.42	MTR	-
SPARE			20	1	9	B	10	2	35			SPACE
SPARE			20	1	11	C	12	-	-			SPACE
SPARE			20	1	13	A	14	2	15			SPACE
SPARE			20	1	15	B	16	-	-			SPACE
SPARE			20	1	17	C	18	2	40			SPACE
SPARE			20	1	19	A	20	-	-			SPACE
SPARE			20	1	21	B	22	2	15			SPACE
SPARE			20	1	23	C	24	-	-			SPACE
SPARE			20	1	25	A	26	2	20			SPACE
SPARE			20	1	27	B	28	-	-			SPACE
SPARE			20	1	29	C	30					SPACE
SPACE					31	A	32					SPACE
SPACE					33	B	34					SPACE
SPACE					35	C	36					SPACE
SPACE					37	A	38					SPACE
SPACE					39	B	40					SPACE
SPACE					41	C	42					SPACE

ESTIMATED MAXIMUM DEMAND (EMD) CALCULATIONS

LOAD SUMMARY:	LOAD TYPE	CONNECTED	NEC DEMAND
LIGHTING	LTG	1.2 KVA	1.4 KVA (125%)
RESIDENT...	RES	0.0 KVA	0.0 KVA (100/35/25 %)
SMALL APPLIANCE	RES	0.0 KVA	0.0 KVA (100/35/25 %)
LARGEST MOTOR	MTR	5.0 KVA	6.3 KVA (125%)
REMAINING...	MTR	2.1 KVA	2.1 KVA (100%)
GEN PURPOSE...	REC	0.0 KVA	0.0 KVA (50% > 10KVA)
COMPUTER REC	MISC	0.0 KVA	0.0 KVA (100%)
EQUIP/OTHER	MISC	0.0 KVA	0.0 KVA (100%)
HEATING	MISC	0.0 KVA	0.0 KVA (100%)
ELEVATOR	ELEV	0.0 KVA	0.0 KVA (100%)
KITCHEN EQPT	KITCH	0.0 KVA	0.0 KVA (.65)
TOTALS:		8.3 KVA	9.8 KVA
		23.0 AMP	27.3 AMP

CONNECTED PHASE LOADING
PHASE A: 4.51 KVA
PHASE B: 1.35 KVA
PHASE C: 2.42 KVA

NOTES:

2P1A	2P1B	2P1C
2W1	2P2A	2W2
	2P3A	2P3B

ROWELL BROKAW
1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com
Architecture. Design. Strategy.

STAMP
REGISTERED PROFESSIONAL ENGINEER STEPHEN J. TURINA No. E13789 Exp. 12/31/21 ELECTRICAL STATE OF CALIFORNIA 06.04.20

PAE
pae-engineers.com

REVISIONS TO THIS SHEET

REV.	DATE
PCC-3	6/3/2020
ADD-1	04/27/2020
PCC-1	4/6/2020

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

PANEL SCHEDULES - ELECTRICAL

E-701

6/5/2020 9:43:32 AM

4KVA EMERGENCY LIGHTING INVERTER SCHEDULE

PANEL: LTG INVERTER LOCATION: ELEC 118 VOLTAGE: 208 Y/ 120 P: 3 W: 4

AMP: 20 MLO ☐ MCB ☒ MOUNTING: ☒ SURFACE ☐ FLUSH

TYPE: EXISTING ☐ NEW ☒ STYLE: NEUTRAL: 100% FED FROM: 2P1B 10 kAIC

CIRCUIT DESCRIPTION	LOAD TYPE	LOAD KVA	CKT BKR	P	CIR #	P H	CIR #	P	CKT BKR	LOAD KVA	LOAD TYPE	CIRCUIT DESCRIPTION
FIRST FLOOR EMERGENCY - LIGHTS	LTG	1.02	20	1	1	A	2	1	20			SPARE
SECOND FLOOR EMERGENCY - LIGHTS	LTG	0.49	20	1	3	B	4	1	20			SPARE
THIRD FLOOR EMERGENCY - LIGHTS	LTG	0.46	20	1	5	C	6	1	20			SPARE
SITE EMERGENCY - LIGHTS	LTG	0.09	20	1	7	A	8	1	20			SPARE
EXIT SIGNS - LIGHTS	LTG	0.02	20	1	9	B	10	1	20			SPARE
SPARE			20	1	11	C	12	1	20			SPARE

PCC-3

ESTIMATED MAXIMUM DEMAND (EMD) CALCULATIONS

LOAD SUMMARY:	LOAD TYPE	CONNECTED NEC DEMAND	
LIGHTING	LTG	2.1 KVA	2.6 KVA (125%)
RESIDENT LTG/REC	RES	0.0 KVA	0.0 KVA (100/35/25 %)
SMALL APPLIANCE	RES	0.0 KVA	0.0 KVA (100/35/25 %)
LARGEST MOTOR	MTR	KVA	0.0 KVA (125%)
REMAINING MOTORS	MTR	0.0 KVA	0.0 KVA (100%)
GEN PURPOSE REC	REC	0.0 KVA	0.0 KVA (50% > 10KVA)
COMPUTER REC	MISC	0.0 KVA	0.0 KVA (100%)
EQUIP/OTHER	MISC	0.0 KVA	0.0 KVA (100%)
HEATING	MISC	0.0 KVA	0.0 KVA (100%)
ELEVATOR	ELEV	0.0 KVA	0.0 KVA (100%)
KITCHEN EQPT	KITCH	0.0 KVA	0.0 KVA (.65)
TOTALS:		2.1 KVA	2.6 KVA
		5.8 AMP	7.2 AMP

CONNECTED PHASE LOADING
PHASE A: 1.11 KVA
PHASE B: 0.52 KVA
PHASE C: 0.46 KVA

NOTES:

PANEL SCHEDULE

PANEL: 2W3 LOCATION: UTIL 306 VOLTAGE: 208 Y/ 120 P: 3 W: 4

AMP: 225 MLO ☐ MCB ☒ MOUNTING: ☒ SURFACE ☐ FLUSH

TYPE: EXISTING ☐ NEW ☒ STYLE: NEUTRAL: 100% FED FROM: 2W2 10 kAIC

CIRCUIT DESCRIPTION	LOAD TYPE	LOAD KVA	CKT BKR	P	CIR #	P H	CIR #	P	CKT BKR	LOAD KVA	LOAD TYPE	CIRCUIT DESCRIPTION
LAUNDRY 305 - WASHER DEDICATED	MISC	1.20	20	1	1	A	2	1	20			SPARE
LAUNDRY 305 - WASHER DEDICATED	MISC	1.20	20	1	3	B	4	1	20			SPARE
LAUNDRY 305 - WASHER DEDICATED	MISC	1.20	20	1	5	C	6	1	20			SPARE
LAUNDRY 305 - DRYER DEDICATED	MISC	2.50	30	2	7	A	8	1	20			SPARE
-	MISC	2.50	-	-	9	B	10					SPACE
LAUNDRY 305 - DRYER DEDICATED	MISC	2.50	30	2	11	C	12					SPACE
-	MISC	2.50	-	-	13	A	14					SPACE
LAUNDRY 305 - DRYER DEDICATED	MISC	2.50	30	2	15	B	16					SPACE
-	MISC	2.50	-	-	17	C	18					SPACE
LAUNDRY 305 - REC	REC	0.54	20	1	19	A	20					SPACE
PTAC-L	MTR	0.58	20	2	21	B	22					SPACE
-	MTR	0.58	-	-	23	C	24					SPACE
SPARE			20	1	25	A	26					SPACE
SPARE			20	1	27	B	28					SPACE
SPARE			20	1	29	C	30					SPACE

PCC-3

ESTIMATED MAXIMUM DEMAND (EMD) CALCULATIONS

LOAD SUMMARY:	LOAD TYPE	CONNECTED NEC DEMAND	
LIGHTING	LTG	0.0 KVA	0.0 KVA (125%)
RESIDENT...	RES	0.0 KVA	0.0 KVA (100/35/25 %)
SMALL APPLIANCE	RES	0.0 KVA	0.0 KVA (100/35/25 %)
LARGEST MOTOR	MTR	1.2 KVA	1.5 KVA (125%)
REMAINING...	MTR	-0.0 KVA	-0.0 KVA (100%)
GEN PURPOSE...	REC	0.5 KVA	0.5 KVA (50% > 10KVA)
COMPUTER REC	MISC	0.0 KVA	0.0 KVA (100%)
EQUIP/OTHER	MISC	18.6 KVA	18.6 KVA (100%)
HEATING	MISC	0.0 KVA	0.0 KVA (100%)
ELEVATOR	ELEV	0.0 KVA	0.0 KVA (100%)
KITCHEN EQPT	KITCH	0.0 KVA	0.0 KVA (.65)
TOTALS:		20.3 KVA	20.6 KVA
		56.3 AMP	57.1 AMP

CONNECTED PHASE LOADING
PHASE A: 6.74 KVA
PHASE B: 6.78 KVA
PHASE C: 6.78 KVA

NOTES:

PANEL SCHEDULE

PANEL: 2D1 LOCATION: UTIL 108 VOLTAGE: 208 Y/ 120 P: 3 W: 4

AMP: 2500 MLO ☐ MCB ☒ MOUNTING: ☒ SURFACE ☐ FLUSH

TYPE: EXISTING ☐ NEW ☒ STYLE: NEUTRAL: 100% FED FROM: PGE XFMR 42 kAIC

CIRCUIT DESCRIPTION	LOAD TYPE	LOAD KVA	CKT BKR	P	CIR #	P H	CIR #	P	CKT BKR	LOAD KVA	LOAD TYPE	CIRCUIT DESCRIPTION
METER STACK 1	MISC	51.46	600	3	1	A	2					SPACE
-	MISC	51.46	-	-	3	B	4					SPACE
-	MISC	51.46	-	-	5	C	6					SPACE
METER STACK 2	MISC	32.76	400	3	7	A	8					SPACE
-	MISC	32.76	-	-	9	B	10					SPACE
-	MISC	32.76	-	-	11	C	12					SPACE
SPARE			100	3	13	A	14					SPACE
-			-	-	15	B	16					SPACE
-			-	-	17	C	18					SPACE
2P1A	COMB	97.78	800	3	19	A	20					SPACE
	COMB	86.62	-	-	21	B	22					SPACE
	COMB	86.52	-	-	23	C	24					SPACE

PCC-1

ESTIMATED MAXIMUM DEMAND (EMD) CALCULATIONS

LOAD SUMMARY:	LOAD TYPE	CONNECTED NEC DEMAND	
LIGHTING	LTG	9.6 KVA	12.0 KVA (125%)
RESIDENT...	RES	0.0 KVA	0.0 KVA (100/35/25 %)
SMALL APPLIANCE	RES	0.0 KVA	0.0 KVA (100/35/25 %)
LARGEST MOTOR	MTR	KVA	0.0 KVA (125%)
REMAINING...	MTR	47.5 KVA	47.5 KVA (100%)
GEN PURPOSE...	REC	49.1 KVA	29.6 KVA (50% > 10KVA)
COMPUTER REC	MISC	0.0 KVA	0.0 KVA (100%)
EQUIP/OTHER	MISC	393.3 KVA	393.3 KVA (100%)
HEATING	MISC	24.0 KVA	24.0 KVA (100%)
ELEVATOR	ELEV	0.0 KVA	0.0 KVA (100%)
KITCHEN EQPT	KITCH	0.0 KVA	0.0 KVA (.65)
TOTALS:		523.6 KVA	506.4 KVA
		1453.3 AMP	1405.7 AMP

CONNECTED PHASE LOADING
PHASE A: 182.01 KVA
PHASE B: 170.84 KVA
PHASE C: 170.74 KVA

NOTES:

PANEL SCHEDULE - TYPICAL UNIT

PANEL: TYPICAL UNIT A LOCATIO... RESIDENTIAL UNIT VOLTS: 208 / 120 P 1 W: 3

AMP: 100 M... ☒ MCB ☐ AIC RATING: 10,000 MOUNT: ☐ SURFACE ☒ FLUSH

TYPE: EXISTING ☐ NEW ☒ STYLE: RESI LOAD CENTER NEUTRAL: 100% FED FROM:

CIRCUIT DESCRIPTION	LOAD TYPE	LOAD KVA	CKT BKR	P	CIR #	P H	CIR #	P	CKT BKR	LOAD KVA	LOAD TYPE	CIRCUIT DESCRIPTION
AFCI - EXF, LIGHTS, REC, SMOKE DETECTOR			20	1	1	A	2	1	20			DFCI - REFRIGERATOR
GFCI - BATHROOM REC			20	1	3	B	4	2	40			RANGE
PTAC-C1			20	1	5	A	6	-	-			-
SPARE			20	1	7	B	8	1	20			DFCI - KITCHEN HOOD
SPARE			20	1	9	A	10	1	20			DFCI - KITCHEN RECEPTACLE
SPARE			20	1	11	B	12	1	20			DFCI - KITCHEN RECEPTACLE
SPARE			20	1	13	A	14	-	-			SPACE
SPACE			-	-	15	B	16	-	-			SPACE
SPACE			-	-	17	A	18	-	-			SPACE
SPACE			-	-	19	B	20	-	-			SPACE

PCC-3

NOTES:
DFCI - DUAL FUNCTION CIRCUIT INTERRUPTER
GFCI - GROUND FAULT CIRCUIT INTERRUPTER
AFCI - ARC-FAULT CIRCUIT INTERRUPTER
REFER TO LOAD CALC SUMMARY FOR ON SHEET E-601 AND E602 FOR CALCULATED UNIT LOAD PER NEC 220.

PANEL SCHEDULE - TYPICAL UNIT

PANEL: TYPICAL UNIT B LOCATIO... RESIDENTIAL UNIT VOLTS: 208 / 120 P 1 W: 3

AMP: 100 M... ☒ MCB ☐ AIC RATING: 10,000 MOUNT: ☐ SURFACE ☒ FLUSH

TYPE: EXISTING ☐ NEW ☒ STYLE: RESI LOAD CENTER NEUTRAL: 100% FED FROM:

CIRCUIT DESCRIPTION	LOAD TYPE	LOAD KVA	CKT BKR	P	CIR #	P H	CIR #	P	CKT BKR	LOAD KVA	LOAD TYPE	CIRCUIT DESCRIPTION
AFCI - EXF, LIGHTS, REC, SMOKE DETECTOR			20	1	1	A	2	1	20			DFCI - REFRIGERATOR
GFCI - BATHROOM REC			20	1	3	B	4	2	40			RANGE
PTAC-C1			20	1	5	A	6	-	-			-
SPARE			20	1	7	B	8	1	20			DFCI - KITCHEN HOOD
SPARE			20	1	9	A	10	1	20			DFCI - KITCHEN RECEPTACLE
SPARE			20	1	11	B	12	1	20			DFCI - KITCHEN RECEPTACLE
SPARE			20	1	13	A	14	-	-			SPACE
SPACE			-	-	15	B	16	-	-			SPACE
SPACE			-	-	17	A	18	-	-			SPACE
SPACE			-	-	19	B	20	-	-			SPACE

PCC-3

NOTES:
DFCI - DUAL FUNCTION CIRCUIT INTERRUPTER
GFCI - GROUND FAULT CIRCUIT INTERRUPTER
AFCI - ARC-FAULT CIRCUIT INTERRUPTER
REFER TO LOAD CALC SUMMARY FOR ON SHEET E-601 AND E602 FOR CALCULATED UNIT LOAD PER NEC 220.

PANEL SCHEDULE - TYPICAL UNIT

PANEL: TYPICAL LOCATIO... RESIDENTIAL UNIT VOLTS: 208 / 120 P 1 W: 3

AMP: 100 M... ☒ MCB ☐ AIC RATING: 10,000 MOUNT: ☐ SURFACE ☒ FLUSH

TYPE: EXISTING ☐ NEW ☒ STYLE: RESI LOAD CENTER NEUTRAL: 100% FED FROM:

CIRCUIT DESCRIPTION	LOAD TYPE	LOAD KVA	CKT BKR	P	CIR #	P H	CIR #	P	CKT BKR	LOAD KVA	LOAD TYPE	CIRCUIT DESCRIPTION
AFCI - EXF, LIGHTS, LIVING ROOM			20	1	1	A	2	1	20			DFCI - REFRIGERATOR
AFCI - BEDROOM REC, SMOKES			20	1	3	B	4	2	40			RANGE
GFCI - BATHROOM REC			20	1	5	A	6	-	-			-
DFCI - WASHER/LAUNDRY			20	1	7	B	8	1	20			DFCI - KITCHEN HOOD
DRYER			30	2	9	A	10	1	20			DFCI - KITCHEN RECEPTACLE
-			-	-	11	B	12	1	20			DFCI - KITCHEN RECEPTACLE
PTAC-C1			20	1	13	A	14	-	-			SPACE
PTAC-C2			20	1	15	B	16	-	-			SPACE
SPACE			-	-	17	A	18	-	-			SPACE
SPACE			-	-	19	B	20	-	-			SPACE

PCC-1

NOTES:
DFCI - DUAL FUNCTION CIRCUIT INTERRUPTER
GFCI - GROUND FAULT CIRCUIT INTERRUPTER
AFCI - ARC-FAULT CIRCUIT INTERRUPTER
REFER TO LOAD CALC SUMMARY FOR ON SHEET E-601 AND E602 FOR CALCULATED UNIT LOAD PER NEC 220.

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.2.1 AS
AMENDED BY THE LOCAL AGENCY.

LTG INV	2W3	2D1
UNIT A	UNIT B	UNIT C

6/5/2020 9:43:33 AM

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REGISTERED PROFESSIONAL ENGINEER
STEPHEN J. TURNBULL
No. E13789
Exp. 12/31/21
ELECTRICAL
STATE OF CALIFORNIA
CIVIL ENGINEER

PAE

pae-engineers.com

REVISIONS TO THIS SHEET

REV.	DATE
PCC-3	6/3/2020
PCC-1	4/6/2020

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C.: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

PANEL SCHEDULES - ELECTRICAL

E-702

GENERAL NOTES:

A. PROVIDE AN UNSWITCH HOT EMERGENCY CIRCUIT TO EACH EXIT SIGN FROM LIGHTING INVERTER CIRCUIT 9.

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

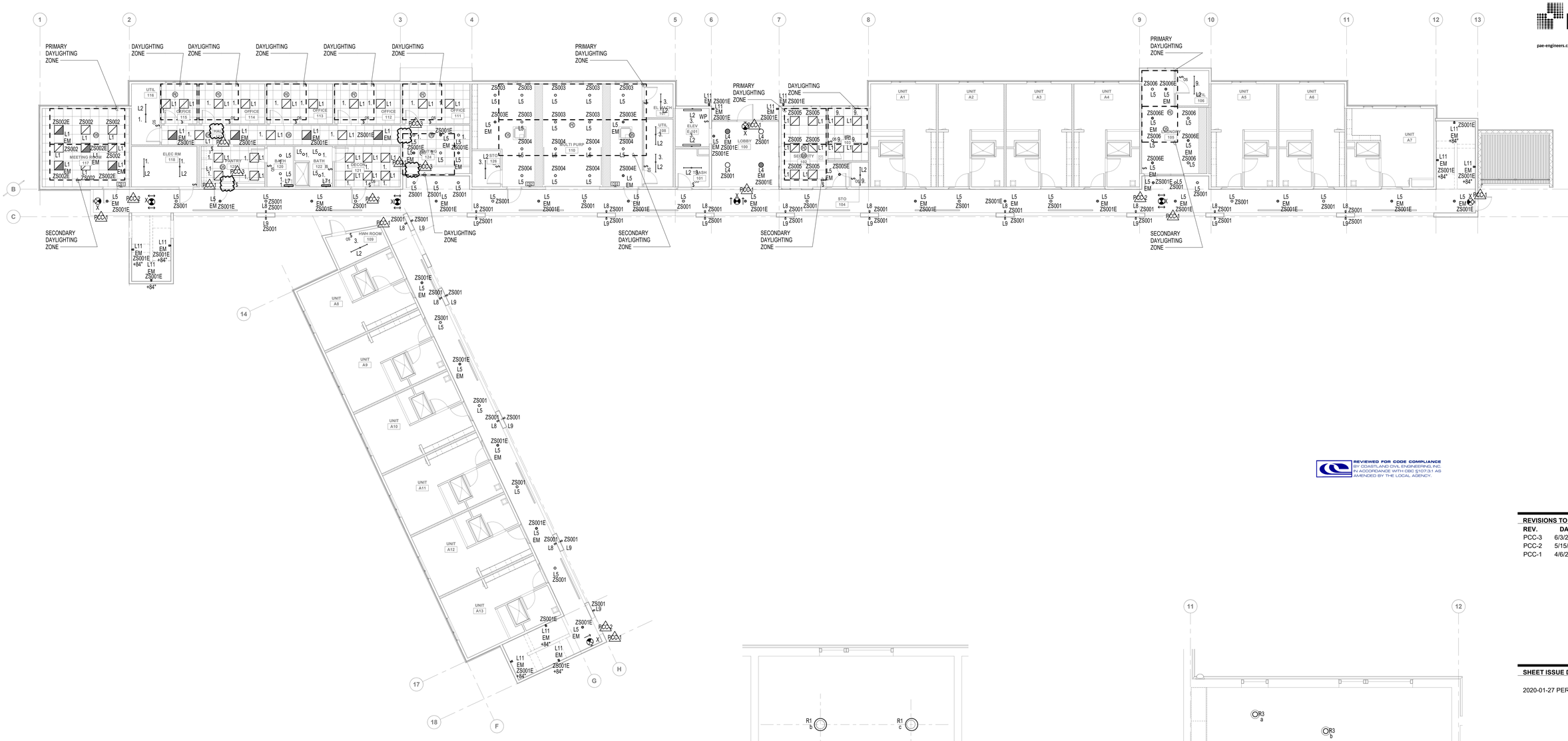
Architecture. Design. Strategy.

STAMP

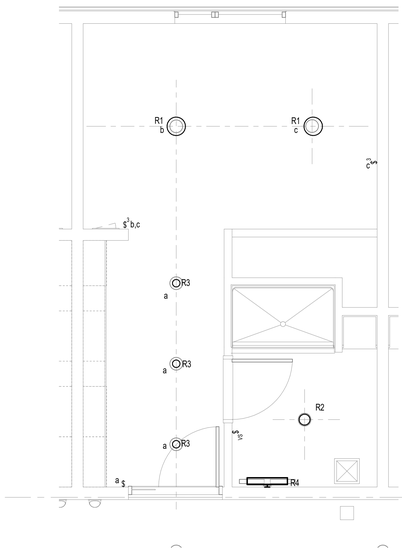
REGISTERED PROFESSIONAL ENGINEER
STEPHEN J. TURNER
No. E13789
Exp. 12/31/21
ELECTRICAL
STATE OF CALIFORNIA
06-04-20

PAE

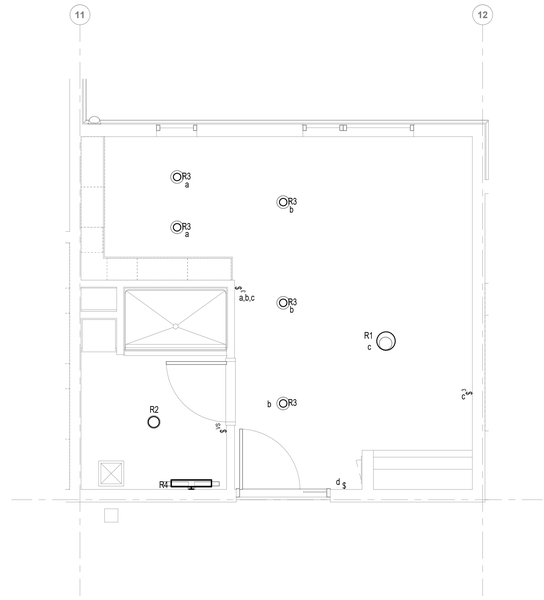
pae-engineers.com



1 LIGHTING 1ST FLOOR RCP
1/8" = 1'-0"



2 LIGHTING UNIT A - RCP
3/8" = 1'-0"



3 LIGHTING UNIT B - RCP
3/8" = 1'-0"

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH OBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

REVISIONS TO THIS SHEET

REV.	DATE
PCC-3	6/3/2020
PCC-2	5/15/2020
PCC-1	4/6/2020

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #:	NAME
P.I.C:	JOHN ROWELL
PM / PA:	FRANK VISCONTI

Owner
DANCO

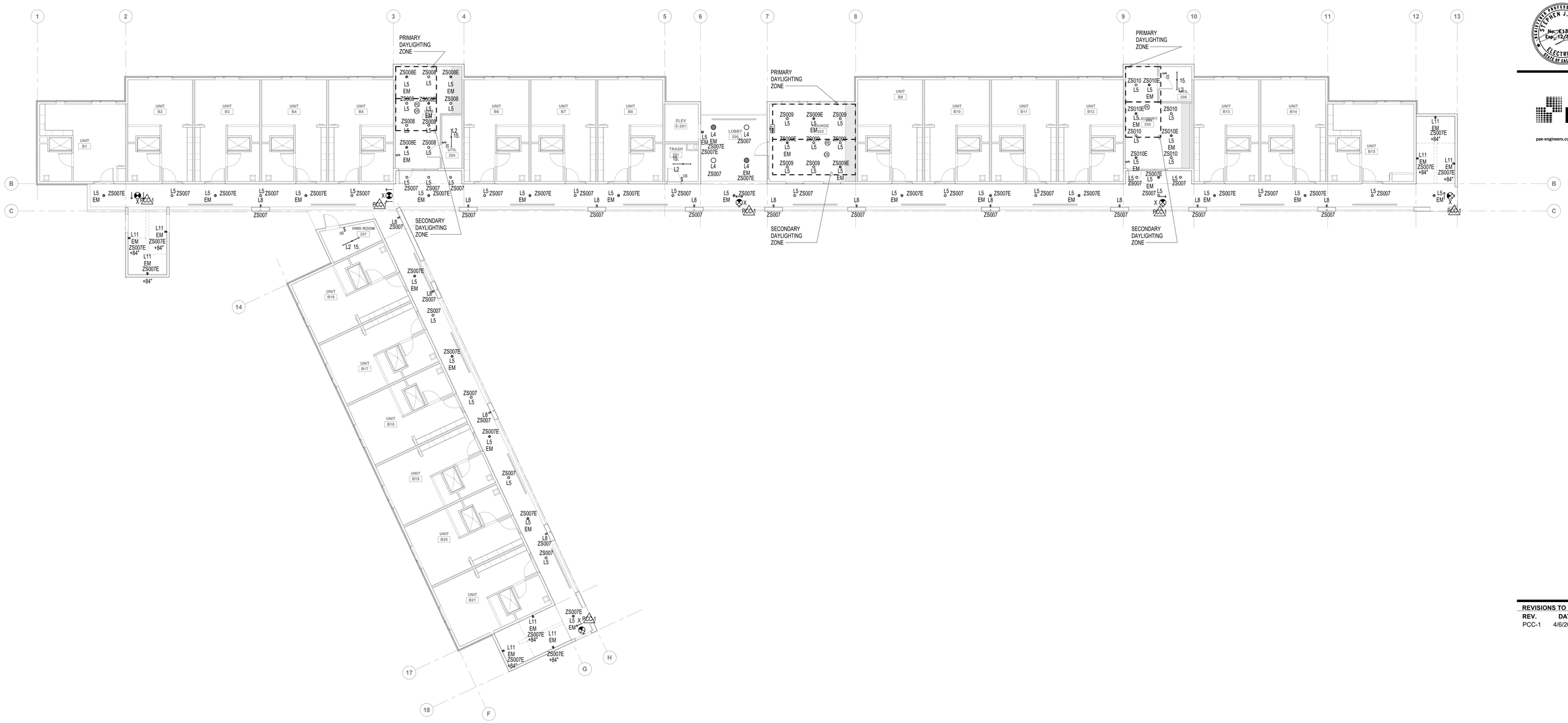
Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE SANTA ROSA, CA

LIGHTING 1ST FLOOR RCP AND TYP UNITS A & B/ MULTIPURPOSE ROOM

EL-131

6/5/2020 9:43:40 AM



1 LIGHTING 2ND FLOOR RCP
1/8" = 1'-0"

GENERAL NOTES:

A. PROVIDE AN UNSWITCH HOT EMERGENCY CIRCUIT TO EACH EXIT SIGN FROM LIGHTING INVERTER CIRCUIT 9.

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

6/5/2020 9:43:44 AM

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REGISTERED PROFESSIONAL ENGINEER
STEPHEN J. TURNER
No. E13789
Exp. 12/31/21
ELECTRICAL
STATE OF CALIFORNIA
06-04-20

PAE
pae-engineers.com

REVISIONS TO THIS SHEET

REV.	DATE
PCC-1	4/6/2020

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

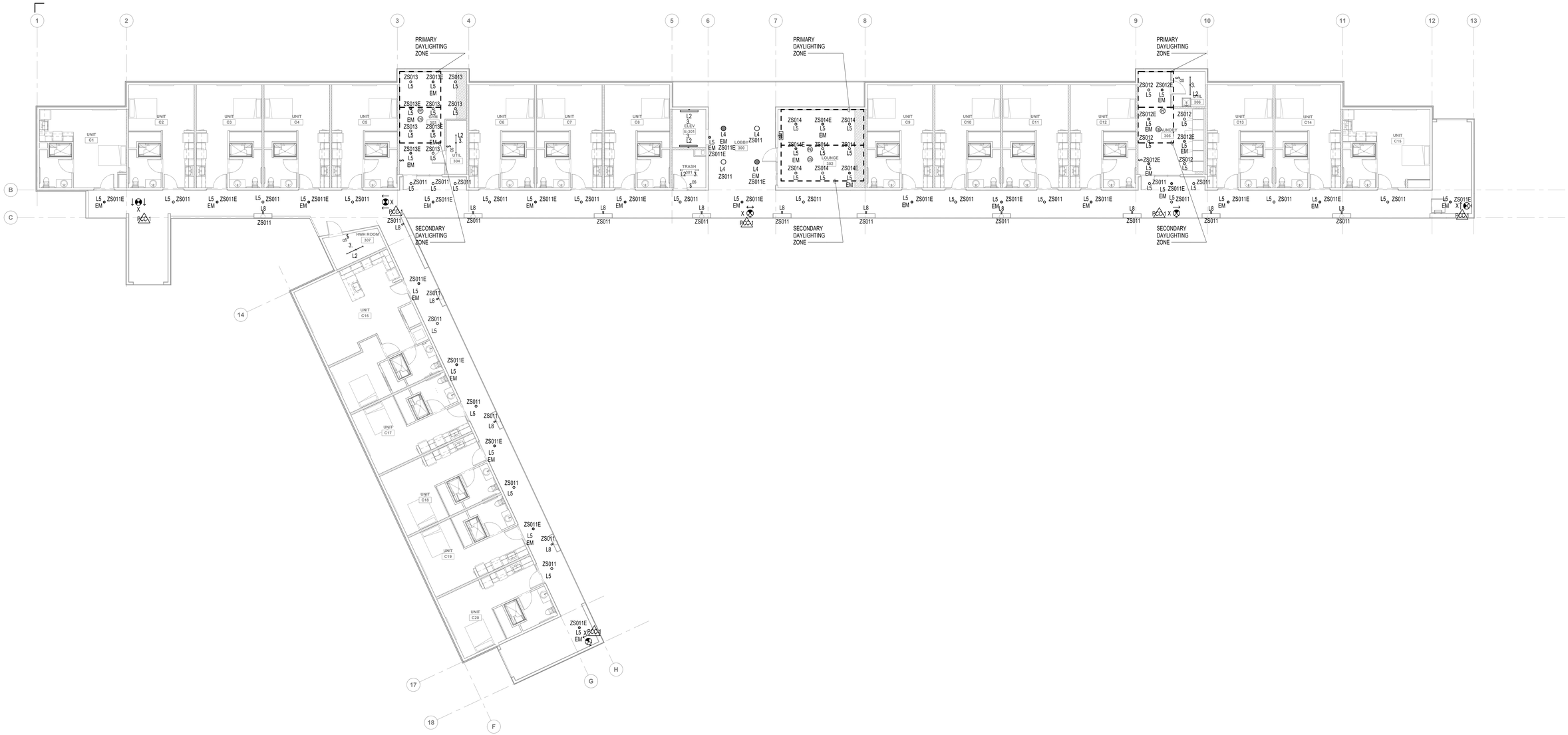
Owner
DANCO

Project Name
SAGE COMMONS

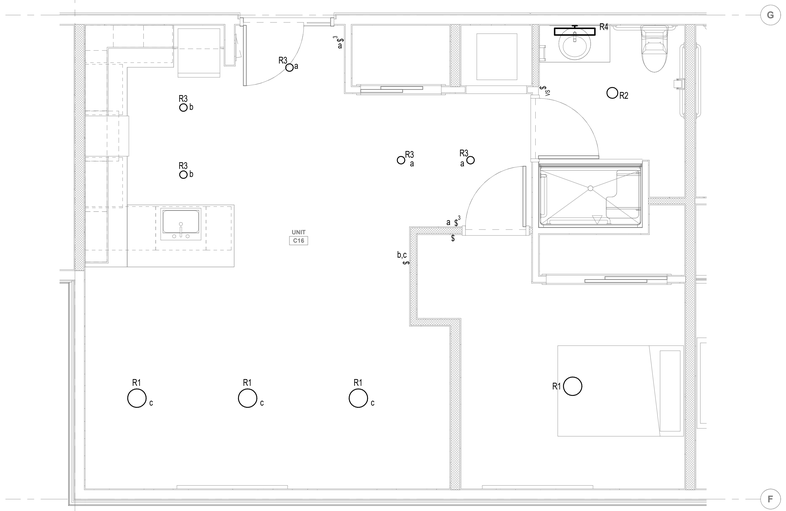
Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

LIGHTING 2ND FLOOR RCP

EL-132



1 LIGHTING 3RD FLOOR RCP
1/8" = 1'-0"



2 LIGHTING UNIT MGR RCP
3/8" = 1'-0"

6/5/2020 9:43:51 AM

GENERAL NOTES:

A. PROVIDE AN UNSWITCH HOT EMERGENCY CIRCUIT TO EACH EXIT SIGN FROM LIGHTING INVERTER CIRCUIT 9.

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REGISTERED PROFESSIONAL ENGINEER
STEPHEN J. TURNER
No. E13789
Exp. 12/31/21
ELECTRICAL
STATE OF CALIFORNIA

06.06.20

PAE

pae-engineers.com

REVISIONS TO THIS SHEET

REV.	DATE
PCC-1	4/6/2020

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C.: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner
DANCO

Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

LIGHTING 3RD FLOOR RCP AND UNIT MGR APT.

EL-133

FIRE PROTECTION DESIGN CRITERIA

NFPA 13 SHALL BE USED FOR THE LOCATION, SIZING, & INSTALLATION OF PIPING & SPRINKLER SYSTEMS UNLESS LOCAL FIRE MARSHAL OR OWNER'S INSURANCE UNDERWRITER REQUIREMENTS ARE MORE STRINGENT.

FIRE PROTECTION SPRINKLER DESIGN CRITERIA: (NFPA)
PROVIDE THE FOLLOWING HAZARD CLASSIFICATIONS AND DENSITIES PER CURRENT NFPA 13 STANDARDS:
- LIGHT HAZARD OCCUPANCIES: 0.10 GPM/FT2 DENSITY AT MOST REMOTE 1500 SQUARE FEET FOR PUBLIC AREAS.
- ORDINARY HAZARD OCCUPANCIES GROUP 1: 0.15 GPM/FT2 DENSITY AT MOST REMOTE 1500 SQUARE FEET FOR MECHANICAL ROOM, KITCHEN, LABORATORY.
- ORDINARY HAZARD OCCUPANCIES GROUP 2: 0.20 GPM/FT2 DENSITY AT MOST REMOTE 1500 SQUARE FEET FOR MECHANICAL ROOM, KITCHEN, LABORATORY, AND PARKING AREAS.

WATER SERVICE PRESSURE BASIS OF DESIGN: COORDINATION HAS BEEN DONE TO DETERMINE FIRE SERVICE WATER PRESSURE USED TO DEVELOP THE FIRE SPRINKLER SYSTEM DESIGN INFORMATION INCLUDED HEREIN.
THE CONTRACTOR SHALL BE REQUIRED TO OBTAIN CURRENT FLOW TEST INFORMATION PRIOR TO STARTING THEIR DESIGN OF THE FIRE SPRINKLER SYSTEM.

DESIGN CUSHION: PROVIDE AN EXCESS OF 10 PSI ADDITIONAL PRESSURE REQUIREMENTS INCORPORATED INTO THE DESIGN OVER SPECIFIED PRESSURE REQUIREMENTS.
AN ADDITIONAL DOMESTIC WATER DEMAND OF 135 GPM SHALL BE INCLUDED IN THE CALCULATIONS FOR THE COMBINATION DOMESTIC AND FIRE WATER SUPPLY.

REFER TO DRAWINGS FOR ZONE TYPES, CALLOUTS AND ADDITIONAL SCOPE ITEMS.

SCOPE OF WORK STATEMENT

THE FIRE PROTECTION SYSTEM IS DESIGN/BUILD BY THE FIRE PROTECTION CONTRACTOR. THE FIRE PROTECTION DOCUMENTS INCLUDED HEREIN ARE PROVIDED TO ESTABLISH A BASIS OF DESIGN DOCUMENT AND PERFORMANCE CRITERIA FOR THE FIRE PROTECTION CONTRACTOR.

THE FULL DESIGN OF THE FIRE PROTECTION SYSTEM INCLUDING COORDINATED SHOP DRAWINGS AND HYDRAULIC CALCULATIONS IS THE RESPONSIBILITY OF THE FIRE PROTECTION CONTRACTOR. FINAL DESIGN DOCUMENTS ARE A DEFFERED SUBMITTAL AND WILL BE SUBMITTED BY THE CONTRACTOR FOR PERMIT REVIEW.

FIRE PROTECTION DRAWING LIST

SHEET #	SHEET NAME
FP-001	LEGENDS, SYMBOLS AND ABBREVIATIONS - FIRE PROTECTION
FP-111	1ST FLOOR PLAN - FIRE PROTECTION
FP-112	2ND FLOOR PLAN - FIRE PROTECTION
FP-113	3RD FLOOR PLAN - FIRE PROTECTION
FP-602	RISER DIAGRAMS - FIRE PROTECTION

STANDARD MECHANICAL ABBREVIATIONS

AF	AIRFOIL	IE	INVERT ELEVATION
AFF	ABOVE FINISHED FLOOR	IN	INCH(ES)
AHP	APPARATUS HOUSING PLENUM	INSUL	INSULATION
ALT	ALTERNATIVE	ISOL	ISOLAT(OR)(ION)
AL	ALUMINUM	KW	KILOWATT
APD	AIR PRESSURE DROP	KWH	KILOWATT HOUR
APPROX	APPROXIMATELY	L	LENGTH
ARCH	ARCHITECT(URAL)	LAT	LEAVING AIR TEMP
AUTO	AUTOMATIC	LB	POUND
BDD	BACKDRAFT DAMPER	LDB	LEAVING DRY BULB
BI	BACKWARD INCLINED	LF	LINEAR FEET
BLDG	BUILDING	LFT	LEAVING FLUID TEMPERATURE
BSMT	BASEMENT	LVG	LEAVING
BTU	BRITISH THERMAL UNIT	LWB	LEAVING WET BULB
BTUH	BRITISH THERMAL UNITS PER HOUR	LWT	LEAVING WATER TEMPERATURE
CFH	CUBIC FEET PER HOUR	MAX	MAXIMUM
CFM	CUBIC FEET PER MINUTE	MBH	THOUSAND BTU PER HOUR
CFS	CUBIC FEET PER SECOND	MECH	MECHANICAL
CLG	CEILING OR COOLING	MFR	MANUFACTURER
CONC	CONCRETE	MIN	MINIMUM
CONN	CONNECTION	MISC	MISCELLANEOUS
CONT	CONTINUE(ED)(UATION)	MTD	MOUNTED
CL	CENTERLINE	NC	NORMALLY CLOSED
DDC	DIRECT DIGITAL CONTROL	NIC	NOT IN CONTRACT
DEFL	DEFLECTION	NO	NORMALLY OPEN
DN	DOWN	OAD	OUTSIDE AIR DAMPER
DP	DEW POINT	OC	ON CENTER DISTANCE
DWDI	DOUBLE WIDTH DOUBLE INLET	OSA	OUTSIDE AIR
DWG	DRAWING	PH	PHASE
EA	EXHAUST AIR	PP	POLYPROPYLENE
EAD	EXHAUST AIR DAMPER	PSI	POUNDS PER SQUARE INCH
EAT	ENTERING AIR TEMPERATURE	PVC	POLYVINYL CHLORIDE
EDB	ENTERING DRY BULB	PVS	PVC COATED STEEL
EFF	EFFICIENCY	R (RAD)	RADIUS
EFT	ENTERING FLUID TEMPERATURE	RA	RETURN AIR
ELEC	ELECTRIC(AL)	RAD	RETURN AIR DAMPER
ELEV	ELEVATION	REV	REVISION
ENGR	ENGINEER	RH	RELATIVE HUMIDITY
EQ	EQUAL	RPM	REVOLUTIONS PER MINUTE
EQUIP	EQUIPMENT	SA	SUPPLY AIR
ESP	EXTERNAL STATIC PRESSURE	SCFM	STANDARD CUBIC FEET PER MINUTE
EWB	ENTERING WET BULB	SD	SMOKE DAMPER
EWT	ENTERING WATER TEMPERATURE	SECT	SECTION
EX	EXTRACTOR	SENS	SENSIBLE
EXH	EXHAUST	SIM	SIMILAR
EXIST	EXISTING	SP	STATIC PRESSURE
EXP	EXPANSION	SPEC	SPECIFICATION
F	DEGREES FAHRENHEIT	SQ	SQUARE
FC	FORWARD CURVED	SF	SQUARE FOOT(FEET)
FIG	FIGURE	SQ IN	SQUARE INCH(ES)
FILT	FILTER	SS	STAINLESS STEEL
FLEX	FLEXIBLE	STL	STEEL
FPD	FLUID PRESSURE DROP	STRUCT	STRUCTURE(AL)
FPM	FEET PER MINUTE	SWP	SINGLE WALL PLENUM
FPS	FEET PER SECOND	SWSI	SINGLE WIDTH SINGLE INLET
FT	FEET(FOOT	TEMP	TEMPERATURE
FTR	FINNED TUBE RADIATOR	TSP	TOTAL STATIC PRESSURE
FU	FIXTURE UNIT	TYP	TYPICAL
FUT	FUTURE	V	VOLTS
FV	FACE VELOCITY	VD	VOLUME DAMPER
GA	GAGE/GAUGE	VEL	VELOCITY
GAL	GALLON	VERT	VERTICAL
GALV	GALVANIZED	VFD	VARIABLE FREQUENCY DRIVE
GLY	GLYCOL	VTR	VENT THROUGH ROOF
GPH	GALLONS PER HOUR	W	WIDTH
GPM	GALLONS PER MINUTE	WG	WATER GAUGE
H	HEIGHT	WPD	WATER PRESSURE DROP
HORIZ	HORIZONTAL	WTD	WATER TEMPERATURE DROP
HP	HORSEPOWER	WTR	WATER TEMPERATURE RISE
HTG	HEATING	W/	WITH
ID	INSIDE(DIAMETER/DIMENSION)	W/O	WITHOUT

DEMOLITION LEGEND

REMOVE EXISTING PIPE

NEW AND EXISTING WORK

EXISTING PIPING

NEW PIPING

FIRE PROTECTION SYMBOLS

FP — FIRE PROTECTION
SPR — FIRE SPRINKLER
DP — DRY PIPE SPRINKLER
PA — PRE-ACTION SYSTEM
WSP — WET STANDPIPE
DSP — DRY STANDPIPE
FDC — FIRE DEPARTMENT CONNECTION
SRC — STANDPIPE ROOF CONNECTION
SO — STANDPIPE OUTLET
UPRIGHT SPRINKLER HEAD
PENDANT SPRINKLER HEAD
SIDEWALL SPRINKLER HEAD
F — FLOW SWITCH
S — SUPERVISED SHUT-OFF VALVE
DPV — DRY PIPE VALVE ASSEMBLY
PAV — PRE-ACTION VALVE ASSEMBLY

SYMBOLS

A — ACCESS PANEL
B — BELOW GRADE / FLOOR
C — CONNECT TO EXISTING
E — EXISTING TO REMAIN
K — CAP EXISTING / CAP FOR FUTURE
R — RELOCATE EXISTING
X — REMOVE EXISTING
1 — NOTE

MISC. FITTINGS & SYMBOLS

DIRECTION OF FLOW
DIRECTION OF SLOPE
PIPE SLEEVE
REDUCER
ANCHOR
ELBOW (90°)
ELBOW (45°)
TEE
CROSS
PIPING CONNECTIONS
JOINT OR COUPLING POINT
UNION
FLANGED CONNECTION
CAP
PLUG OR BLIND FLANGE
RISER
ELBOW UP
ELBOW DOWN
TEE UP
TEE DOWN
HORIZONTAL TEE
FLEXIBLE CONNECTION
BALL JOINT
MC — MECHANICAL COUPLING
HEAT TRACE

GENERAL NOTE

THIS IS A STANDARD LEGEND SHEET, THEREFORE, SOME SYMBOLS MAY APPEAR ON THIS SHEET THAT DO NOT APPEAR ON THE DRAWINGS.

MISC. VALVES & COCKS

SHUT-OFF VALVE
GLOBE VALVE
S — SHUT-OFF VALVE W/ TAMPER SWITCH
TRIPLE DUTY VALVE
CHECK VALVE
2-WAY CONTROL VALVE
3-WAY CONTROL VALVE
BALANCING VALVE
FC — FLOW CONTROL VALVE
SOLENOID VALVE
PRESSURE REDUCING VALVE
MAV — AAV — AIR VENT (MANUAL/AUTOMATIC)
RELIEF VALVE
STRAINER
STRAINER W/ BLOWDOWN
DV — DRAIN VALVE
HB — HOSE BIBB
WH — WALL HYDRANT
GH — GROUND HYDRANT
F&T/IB — STEAM TRAP
PRESSURE GAUGE
PRESSURE/TEMPERATURE TEST PLUG
THERMOMETER
F — FLOW SWITCH
T — TEMPERATURE TRANSMITTER
S (SIZE) — SHOCK ARRESTOR
V — VACUUM BREAKER
WFM — WATER FLOW METER
RPBA — REDUCED PRESSURE BACKFLOW ASSEMBLY
DCVA — DOUBLE CHECK VALVE ASSEMBLY
DCDA — DOUBLE CHECK DETECTOR ASSEMBLY
BWV — BACKWATER VALVE
UG — PIV — UNDERGROUND GATE VALVE W/BOX
UNDERGROUND GATE W/POST INDICATOR
OUTSIDE SCREW & YOKE
Y PATTERN BOILER BLOWDOWN VALVE
NON-RETURN STOP VALVE
QUICK OPENING BOILER BLOWDOWN VALVE

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

6/5/2020 10:02:27 AM

ROWELL BROKAW
1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com
Architecture. Design. Strategy.

STAMP

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER J. PAE
No. M35043
EXP 6/30/2022
MECHANICAL
STATE OF CALIFORNIA
3 2020

PAE
pae-engineers.com

REVISIONS TO THIS SHEET

REV.	DATE

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

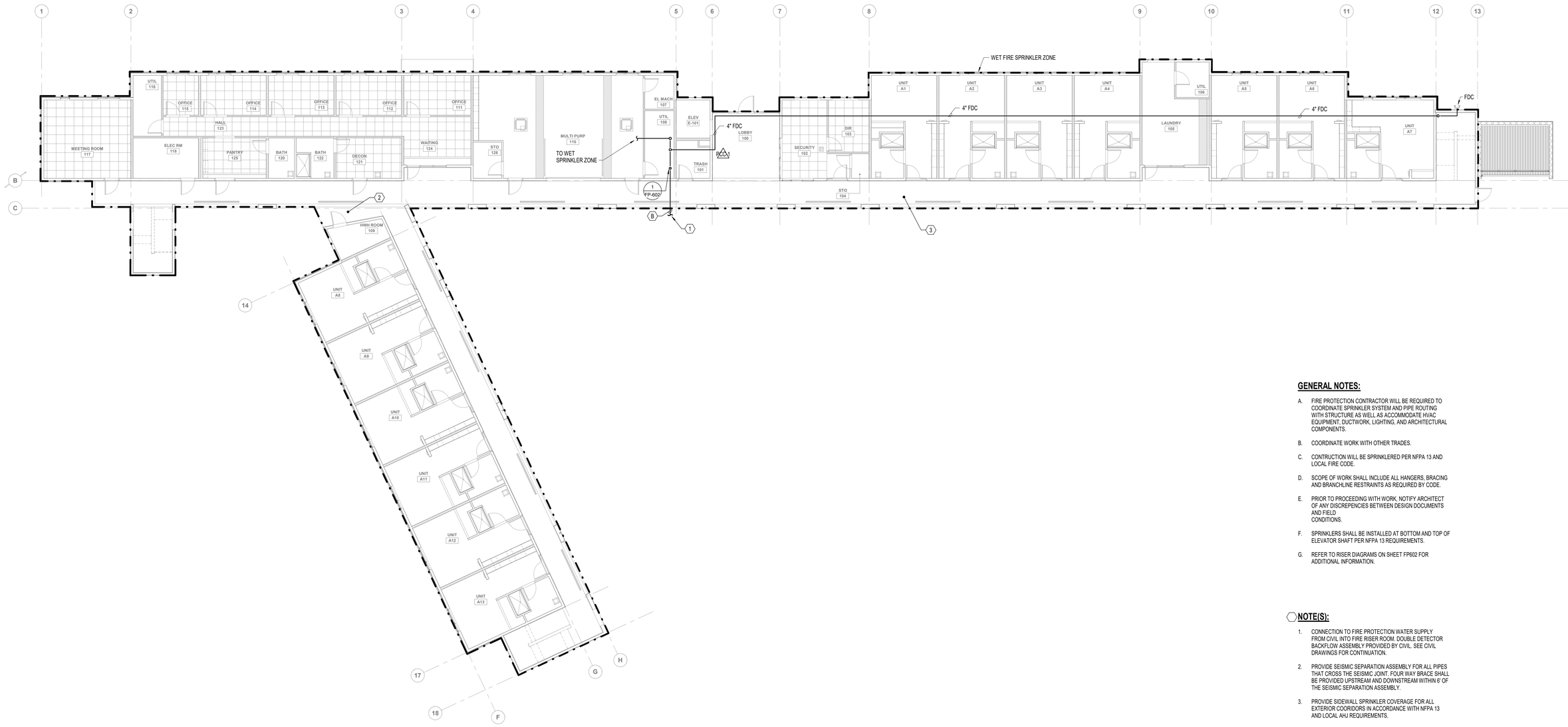
Owner
DANCO

Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

LEGENDS, SYMBOLS AND ABBREVIATIONS - FIRE PROTECTION

FP-001



1 FIRE PROTECTION - LEVEL 1
1/8" = 1'-0"

GENERAL NOTES:

A. FIRE PROTECTION CONTRACTOR WILL BE REQUIRED TO COORDINATE SPRINKLER SYSTEM AND PIPE ROUTING WITH STRUCTURE AS WELL AS ACCOMMODATE HVAC EQUIPMENT, DUCTWORK, LIGHTING, AND ARCHITECTURAL COMPONENTS.

B. COORDINATE WORK WITH OTHER TRADES.

C. CONTRUCTION WILL BE SPRINKLERED PER NFPA 13 AND LOCAL FIRE CODE.

D. SCOPE OF WORK SHALL INCLUDE ALL HANGERS, BRACING AND BRANCHLINE RESTRAINTS AS REQUIRED BY CODE.

E. PRIOR TO PROCEEDING WITH WORK, NOTIFY ARCHITECT OF ANY DISCREPENCIES BETWEEN DESIGN DOCUMENTS AND FIELD CONDITIONS.

F. SPRINKLERS SHALL BE INSTALLED AT BOTTOM AND TOP OF ELEVATOR SHAFT PER NFPA 13 REQUIREMENTS.

G. REFER TO RISER DIAGRAMS ON SHEET FP602 FOR ADDITIONAL INFORMATION.

NOTE(S):

1. CONNECTION TO FIRE PROTECTION WATER SUPPLY FROM CIVIL INTO FIRE RISER ROOM. DOUBLE DETECTOR BACKFLOW ASSEMBLY PROVIDED BY CIVIL. SEE CIVIL DRAWINGS FOR CONTINUATION.
2. PROVIDE SEISMIC SEPARATION ASSEMBLY FOR ALL PIPES THAT CROSS THE SEISMIC JOINT. FOUR WAY BRACE SHALL BE PROVIDED UPSTREAM AND DOWNSTREAM WITHIN 0' OF THE SEISMIC SEPARATION ASSEMBLY.
3. PROVIDE SIDEWALL SPRINKLER COVERAGE FOR ALL EXTERIOR COORIDORS IN ACCORDANCE WITH NFPA 13 AND LOCAL AHJ REQUIREMENTS.

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

6/5/2020 10:02:28 AM

ROWELL BROKAW
1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com
Architecture. Design. Strategy.

STAMP

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER J. BROKAW
No. M35043
EXP 6/30/2022
MECHANICAL
STATE OF CALIFORNIA
6.3.2020

PAE
pae-engineers.com

REVISIONS TO THIS SHEET

REV.	DATE
PCC-1	4/6/2020

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

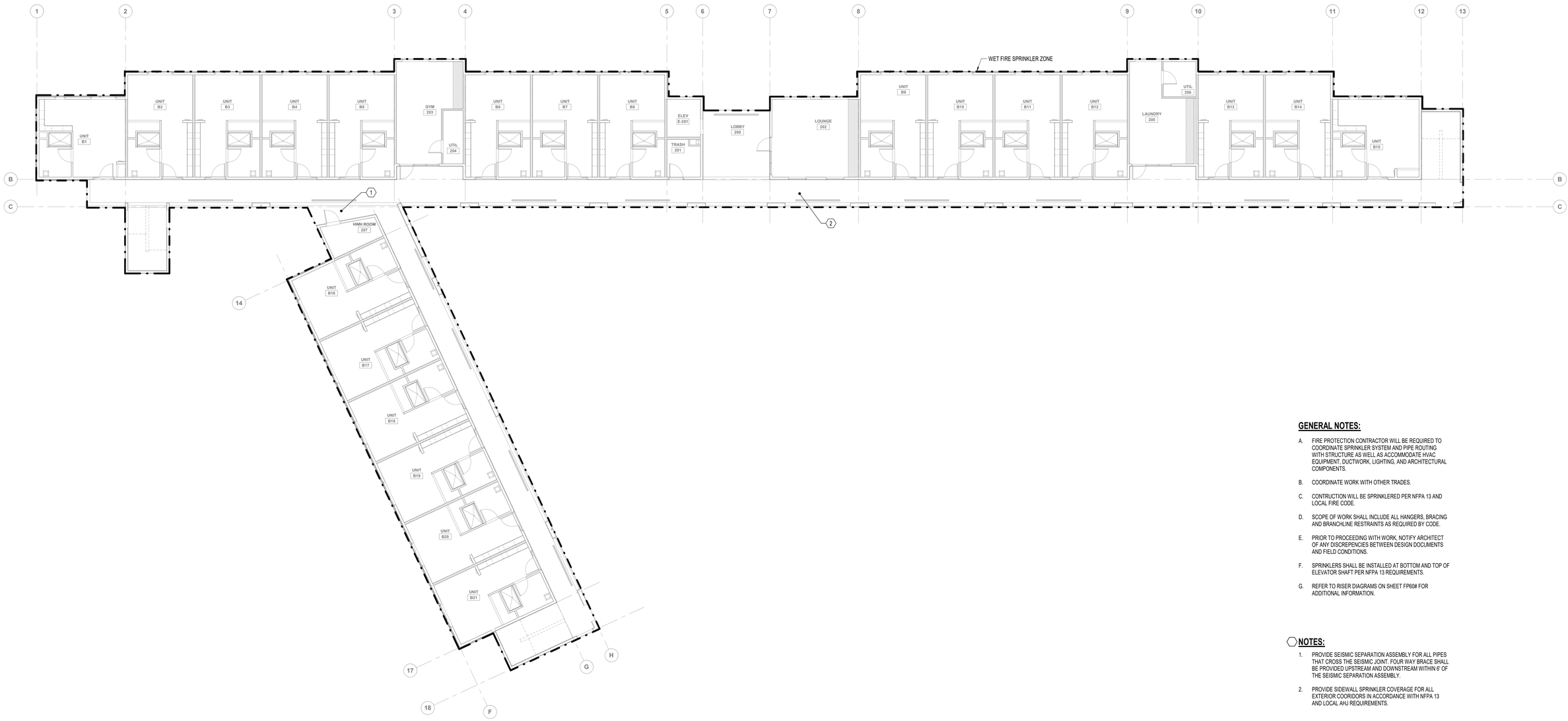
Owner
DANCO

Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

1ST FLOOR PLAN - FIRE PROTECTION

FP-111



1 FIRE PROTECTION - LEVEL 2
1/8" = 1'-0"

GENERAL NOTES:

A. FIRE PROTECTION CONTRACTOR WILL BE REQUIRED TO COORDINATE SPRINKLER SYSTEM AND PIPE ROUTING WITH STRUCTURE AS WELL AS ACCOMMODATE HVAC EQUIPMENT. DUCTWORK, LIGHTING, AND ARCHITECTURAL COMPONENTS.

B. COORDINATE WORK WITH OTHER TRADES.

C. CONTRUCTION WILL BE SPRINKLERED PER NFPA 13 AND LOCAL FIRE CODE.

D. SCOPE OF WORK SHALL INCLUDE ALL HANGERS, BRACING AND BRANCHLINE RESTRAINTS AS REQUIRED BY CODE.

E. PRIOR TO PROCEEDING WITH WORK, NOTIFY ARCHITECT OF ANY DISCREPENCIES BETWEEN DESIGN DOCUMENTS AND FIELD CONDITIONS.

F. SPRINKLERS SHALL BE INSTALLED AT BOTTOM AND TOP OF ELEVATOR SHAFT PER NFPA 13 REQUIREMENTS.

G. REFER TO RISER DIAGRAMS ON SHEET FP60# FOR ADDITIONAL INFORMATION.

⬡ NOTES:

1. PROVIDE SEISMIC SEPARATION ASSEMBLY FOR ALL PIPES THAT CROSS THE SEISMIC JOINT. FOUR WAY BRACE SHALL BE PROVIDED UPSTREAM AND DOWNSTREAM WITHIN 6' OF THE SEISMIC SEPARATION ASSEMBLY.

2. PROVIDE SIDEWALL SPRINKLER COVERAGE FOR ALL EXTERIOR COORIDORS IN ACCORDANCE WITH NFPA 13 AND LOCAL AHJ REQUIREMENTS.

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

6/5/2020 10:02:29 AM

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER J. BROKAW
No. M35043
EXP 6/30/2022
MECHANICAL
STATE OF CALIFORNIA
6.3.2020

PAE
pae-engineers.com

REVISIONS TO THIS SHEET

REV.	DATE

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

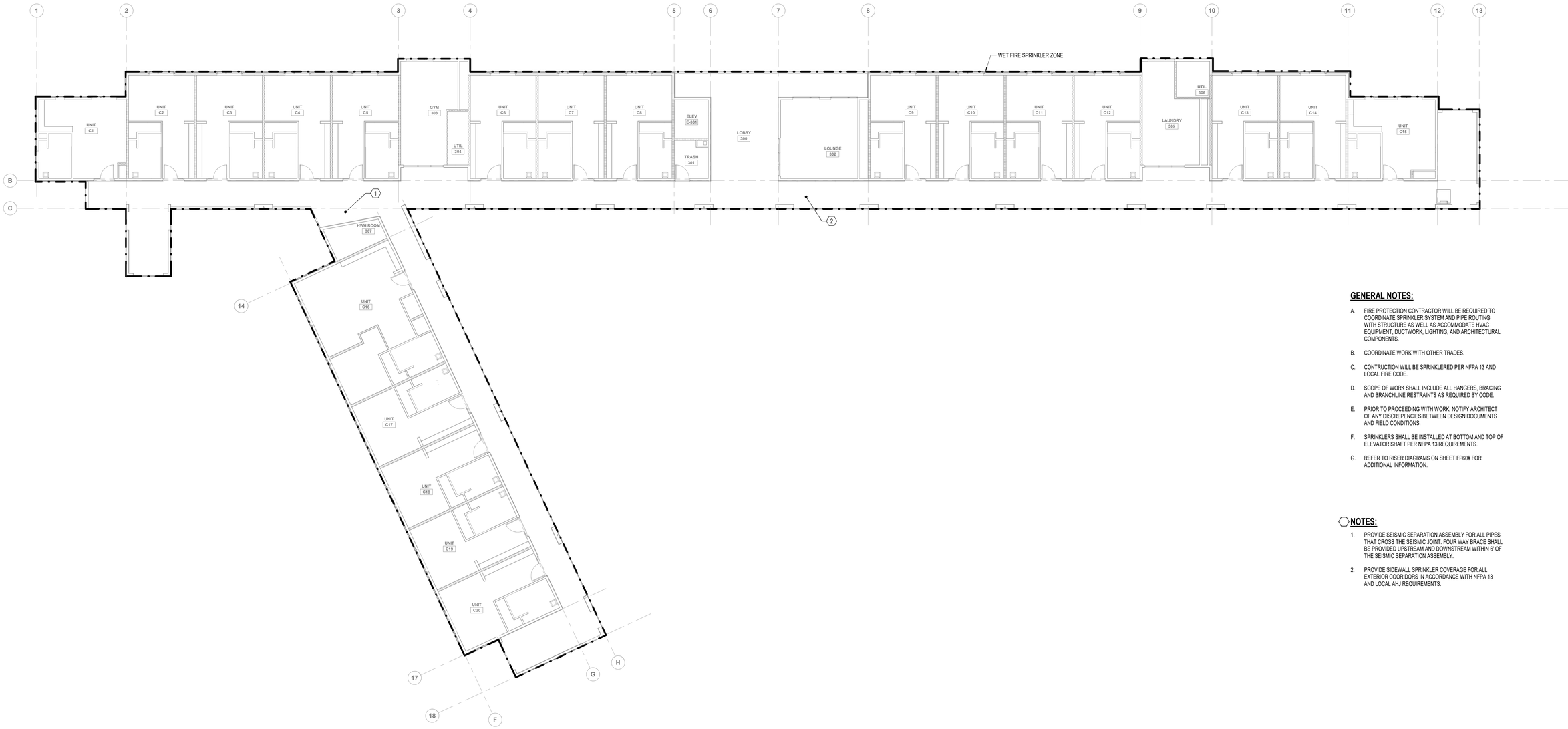
Owner
DANCO

Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

2ND FLOOR PLAN - FIRE PROTECTION

FP-112



GENERAL NOTES:

A. FIRE PROTECTION CONTRACTOR WILL BE REQUIRED TO COORDINATE SPRINKLER SYSTEM AND PIPE ROUTING WITH STRUCTURE AS WELL AS ACCOMMODATE HVAC EQUIPMENT, DUCTWORK, LIGHTING, AND ARCHITECTURAL COMPONENTS.

B. COORDINATE WORK WITH OTHER TRADES.

C. CONTRUCTION WILL BE SPRINKLERED PER NFPA 13 AND LOCAL FIRE CODE.

D. SCOPE OF WORK SHALL INCLUDE ALL HANGERS, BRACING AND BRANCHLINE RESTRAINTS AS REQUIRED BY CODE.

E. PRIOR TO PROCEEDING WITH WORK, NOTIFY ARCHITECT OF ANY DISCREPENCIES BETWEEN DESIGN DOCUMENTS AND FIELD CONDITIONS.

F. SPRINKLERS SHALL BE INSTALLED AT BOTTOM AND TOP OF ELEVATOR SHAFT PER NFPA 13 REQUIREMENTS.

G. REFER TO RISER DIAGRAMS ON SHEET FP60# FOR ADDITIONAL INFORMATION.

⬡ NOTES:

1. PROVIDE SEISMIC SEPARATION ASSEMBLY FOR ALL PIPES THAT CROSS THE SEISMIC JOINT. FOUR WAY BRACE SHALL BE PROVIDED UPSTREAM AND DOWNSTREAM WITHIN 6' OF THE SEISMIC SEPARATION ASSEMBLY.

2. PROVIDE SIDEWALL SPRINKLER COVERAGE FOR ALL EXTERIOR COORIDORS IN ACCORDANCE WITH NFPA 13 AND LOCAL AHJ REQUIREMENTS.

1 FIRE PROTECTION - LEVEL 3
1/8" = 1'-0"

6/5/2020 10:02:31 AM

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER J. PFEIFFER
No. M35043
EXP 6/30/2022
MECHANICAL
STATE OF CALIFORNIA
3.2020

PAE
pae-engineers.com

REVISIONS TO THIS SHEET

REV.	DATE

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C: JOHN ROWELL
PM / PA: FRANK VISCONTI

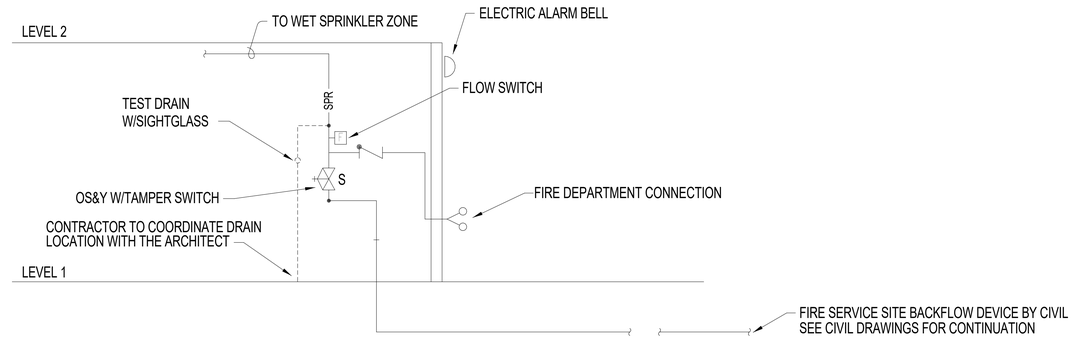
Owner
DANCO

Project Name
SAGE COMMONS

Project Address
80 COLLEGE AVENUE
SANTA ROSA, CA

3RD FLOOR PLAN - FIRE PROTECTION

FP-113



1 Riser Diagram - Fire Protection

ROWELL BROKAW

1203 Willamette Street
Suite 210
Eugene, Oregon 97401
541 485 1003
rowellbrokaw.com

Architecture. Design. Strategy.

STAMP

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER J. ROWELL
No. M35043
EXP 6/30/2022
MECHANICAL
STATE OF CALIFORNIA
3.2020

PAE

pae-engineers.com

REVISIONS TO THIS SHEET

REV.	DATE

SHEET ISSUE DATE

2020-01-27 PERMIT SET

PROJECT TRACKING

RBA #: 1843

CONT #: NAME
P.I.C.: JOHN ROWELL
PM / PA: FRANK VISCONTI

Owner

DANCO

Project Name

SAGE COMMONS

Project Address

80 COLLEGE AVENUE
SANTA ROSA, CA

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

RISER DIAGRAMS - FIRE PROTECTION

FP-602

6/5/2020 10:02:31 AM

CERTIFICATE OF COMPLIANCE — CF1R-PRF-01E (Page 13 of 42)

Project Name: Sage Commons - Res | **Calculation Date/Time:** 2020-04-02T12:33:53-07:00
Calculation Description: Title 24 Analysis | **Input File Name:** Sage Commons - Res.ribd19

OPAQUE SURFACES

01 Name	02 Zone	03 Construction	04 Azimuth	05 Orientation	06 Gross Area (ft^2)	07 Window and Door Area (ft2)	08 Tilt (deg)
Back Wall 31	1.1 Floor	2x6 ExtWall-Siding	180	Back	136	36.7	90
Right Wall 11	1.1 Floor	2x6 ExtWall-Stucco	270	Right	50	0	90
Front Wall 32	1.1 Floor	2x6 ExtWall-Stucco	0	Front	136	30.25	90
Back Wall 32	1.1 Floor	2x6 ExtWall-Stucco	180	Back	136	36.7	90
Front Wall 33	1.1 Floor	2x6 ExtWall-Stucco	0	Front	136	30.25	90
Back Wall 33	1.1 Floor	2x6 ExtWall-Stucco	180	Back	136	36.7	90
Front Wall 34	1.1 Floor	2x6 ExtWall-Stucco	0	Front	136	30.25	90
Left Wall 11	1.1 Floor	2x6 ExtWall-Stucco	90	Left	45	0	90
Back Wall 34	1.1 Floor	2x6 ExtWall-Stucco	180	Back	136	36.7	90
Front Wall 35	1.1 Floor	2x6 ExtWall-Stucco	0	Front	136	30.25	90
Back Wall 35	1.1 Floor	2x6 ExtWall-Stucco	180	Back	136	36.7	90
Right Wall 12	1.1 Floor	2x6 ExtWall-Stucco	270	Right	45	0	90
Front Wall 36	1.1 Floor	2x6 ExtWall-Stucco	0	Front	136	30.25	90
Left Wall 12	1.1 Floor	2x6 ExtWall-Stucco	90	Left	50	0	90
Back Wall 36	1.1 Floor	2x6 ExtWall-Stucco	180	Back	136	36.7	90
Front Wall 37	1.1 Floor	2x6 ExtWall-Stucco	0	Front	180	38.25	90
Left Wall 13	1.1 Floor	2x6 ExtWall-Stucco	90	Left	168	0	90
Back Wall 37	1.1 Floor	2x6 ExtWall-Stucco	180	Back	180	36.7	90
65 Wall 12	1.2 Floor	2x6 ExtWall-Stucco	65	n/a	136	36.7	90
245 Wall 12	1.2 Floor	2x6 ExtWall-Stucco	245	n/a	136	30.25	90
335 Wall 3	1.2 Floor	2x6 ExtWall-Stucco	335	n/a	99	0	90
65 Wall 13	1.2 Floor	2x6 ExtWall-Stucco	65	n/a	136	36.7	90
245 Wall 13	1.2 Floor	2x6 ExtWall-Stucco	245	n/a	136	30.25	90
65 Wall 14	1.2 Floor	2x6 ExtWall-Stucco	65	n/a	136	36.7	90
245 Wall 14	1.2 Floor	2x6 ExtWall-Stucco	245	n/a	136	30.25	90
65 Wall 15	1.2 Floor	2x6 ExtWall-Stucco	65	n/a	136	36.7	90

CERTIFICATE OF COMPLIANCE — CF1R-PRF-01E (Page 9 of 42)

Project Name: Sage Commons - Res | **Calculation Date/Time:** 2020-04-02T12:33:53-07:00
Calculation Description: Title 24 Analysis | **Input File Name:** Sage Commons - Res.ribd19

OPAQUE SURFACES

01 Name	02 Zone	03 Construction	04 Azimuth	05 Orientation	06 Gross Area (ft^2)	07 Window and Door Area (ft2)	08 Tilt (deg)
Front Wall 2	3.0 Floor	2x6 ExtWall-Siding	0	Front	121	30.25	90
Back Wall 2	3.0 Floor	2x6 ExtWall-Siding	180	Back	121	36.7	90
Right Wall 2	3.0 Floor	2x6 ExtWall-Siding	270	Right	44	0	90
Front Wall 3	3.0 Floor	2x6 ExtWall-Siding	0	Front	121	30.25	90
Back Wall 3	3.0 Floor	2x6 ExtWall-Siding	180	Back	121	36.7	90
Front Wall 4	3.0 Floor	2x6 ExtWall-Siding	0	Front	121	30.25	90
Back Wall 4	3.0 Floor	2x6 ExtWall-Siding	180	Back	121	36.7	90
Front Wall 5	3.0 Floor	2x6 ExtWall-Siding	0	Front	121	30.25	90
Left Wall	3.0 Floor	2x6 ExtWall-Siding	90	Left	40	0	90
Back Wall 5	3.0 Floor	2x6 ExtWall-Siding	180	Back	121	36.7	90
Front Wall 6	3.0 Floor	2x6 ExtWall-Siding	0	Front	121	30.25	90
Right Wall 3	3.0 Floor	2x6 ExtWall-Siding	270	Right	40	0	90
Back Wall 6	3.0 Floor	2x6 ExtWall-Siding	180	Back	121	36.7	90
Front Wall 7	3.0 Floor	2x6 ExtWall-Siding	0	Front	121	30.25	90
Back Wall 7	3.0 Floor	2x6 ExtWall-Siding	180	Back	121	36.7	90
Front Wall 8	3.0 Floor	2x6 ExtWall-Siding	0	Front	121	30.25	90
Left Wall 2	3.0 Floor	2x6 ExtWall-Siding	90	Left	44	0	90
Back Wall 8	3.0 Floor	2x6 ExtWall-Siding	180	Back	121	36.7	90
Front Wall 9	3.1 Floor	2x6 ExtWall-Siding	0	Front	121	30.25	90
Back Wall 9	3.1 Floor	2x6 ExtWall-Siding	180	Back	121	36.7	90
Right Wall 4	3.1 Floor	2x6 ExtWall-Siding	270	Right	44	0	90
Front Wall 10	3.1 Floor	2x6 ExtWall-Siding	0	Front	121	30.25	90
Back Wall 10	3.1 Floor	2x6 ExtWall-Siding	180	Back	121	36.7	90
Front Wall 11	3.1 Floor	2x6 ExtWall-Siding	0	Front	121	30.25	90
Back Wall 11	3.1 Floor	2x6 ExtWall-Siding	180	Back	121	36.7	90
Front Wall 12	3.1 Floor	2x6 ExtWall-Siding	0	Front	121	30.25	90

CERTIFICATE OF COMPLIANCE — CF1R-PRF-01E (Page 5 of 42)

Project Name: Sage Commons - Res | **Calculation Date/Time:** 2020-04-02T12:33:53-07:00
Calculation Description: Title 24 Analysis | **Input File Name:** Sage Commons - Res.ribd19

DWELLING UNIT INFORMATION

01 Dwelling Unit Name	02 Dwelling Unit Type	03 Zone
DDU-4 364-(3/6)	DU-4 364	3.1 Floor
DDU-4 364-(4/6)	DU-4 364	3.1 Floor
DDU-4 364-(5/6)	DU-4 364	3.1 Floor
DDU-4 364-(6/6)	DU-4 364	3.1 Floor
DDU-5 364-(1/4)	DU-5 364	3.2 Floor
DDU-5 364-(2/4)	DU-5 364	3.2 Floor
DDU-5 364-(3/4)	DU-5 364	3.2 Floor
DDU-5 364-(4/4)	DU-5 364	3.2 Floor
DDU-6 728-(1/1)	DU-6 728	3.2 Floor
DDU-7 380-(1/1)	DU-7 380	2.0 Floor
DDU-8 364-(1/7)	DU-8 364	2.0 Floor
DDU-8 364-(2/7)	DU-8 364	2.0 Floor
DDU-8 364-(3/7)	DU-8 364	2.0 Floor
DDU-8 364-(4/7)	DU-8 364	2.0 Floor
DDU-8 364-(5/7)	DU-8 364	2.0 Floor
DDU-8 364-(6/7)	DU-8 364	2.0 Floor
DDU-8 364-(7/7)	DU-8 364	2.0 Floor
DDU-9 380-(1/1)	DU-9 380	2.1 Floor
DDU-10 364-(1/6)	DU-10 364	2.1 Floor
DDU-10 364-(2/6)	DU-10 364	2.1 Floor
DDU-10 364-(3/6)	DU-10 364	2.1 Floor
DDU-10 364-(4/6)	DU-10 364	2.1 Floor
DDU-10 364-(5/6)	DU-10 364	2.1 Floor
DDU-10 364-(6/6)	DU-10 364	2.1 Floor
DDU-11 364-(1/6)	DU-11 364	2.2 Floor
DDU-11 364-(2/6)	DU-11 364	2.2 Floor

CERTIFICATE OF COMPLIANCE — CF1R-PRF-01E (Page 1 of 42)

Project Name: Sage Commons - Res | **Calculation Date/Time:** 2020-04-02T12:33:53-07:00
Calculation Description: Title 24 Analysis | **Input File Name:** Sage Commons - Res.ribd19

GENERAL INFORMATION

01	Project Name	Sage Commons - Res			
02	Run Title	Title 24 Analysis			
03	Project Location	80 College Avenue			
04	City	Santa Rosa	05	Standards Version	2019
06	Zip code	95401	07	Software Version	CBECC-Res 2019.1.2
08	Climate Zone	2	09	Front Orientation (deg/ Cardinal)	0
10	Building Type	Multifamily	11	Number of Dwelling Units	54
12	Project Scope	NewConstruction	13	Number of Bedrooms	1
14	Addition Cond. Floor Area (ft^2)	0	15	Number of Stories	3
16	Existing Cond. Floor Area (ft^2)	n/a	17	Fenestration Average U-factor	0.3
18	Total Cond. Floor Area (ft^2)	20100	19	Glazing Percentage (%)	13.03%
20	ADU Bedroom Count	n/a	21	ADU Conditioned Floor Area	n/a
22	Is Natural Gas Available?	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 — CF1R-PRF-01E (Page 14 of 42)

Project Name: Sage Commons - Res | **Calculation Date/Time:** 2020-04-02T12:33:53-07:00
Calculation Description: Title 24 Analysis | **Input File Name:** Sage Commons - Res.ribd19

OPAQUE SURFACES

01 Name	02 Zone	03 Construction	04 Azimuth	05 Orientation	06 Gross Area (ft^2)	07 Window and Door Area (ft2)	08 Tilt (deg)
245 Wall 15	1.2 Floor	2x6 ExtWall-Stucco	245	n/a	136	30.25	90
65 Wall 16	1.2 Floor	2x6 ExtWall-Stucco	65	n/a	136	36.7	90
245 Wall 16	1.2 Floor	2x6 ExtWall-Stucco	245	n/a	136	30.25	90
65 Wall 17	1.2 Floor	2x6 ExtWall-Stucco	65	n/a	136	36.7	90
155 Wall 3	1.2 Floor	2x6 ExtWall-Stucco	155	n/a	216	0	90
245 Wall 17	1.2 Floor	2x6 ExtWall-Stucco	245	n/a	136	30.25	90
Interior Floor	3.0 Floor	FloorToUnitBelow	n/a	n/a	380	n/a	n/a
Interior Floor 2	3.0 Floor	FloorToUnitBelow	n/a	n/a	364	n/a	n/a
Interior Floor 3	3.0 Floor	FloorToUnitBelow	n/a	n/a	364	n/a	n/a
Interior Floor 4	3.0 Floor	FloorToUnitBelow	n/a	n/a	364	n/a	n/a
Interior Floor 5	3.0 Floor	FloorToUnitBelow	n/a	n/a	364	n/a	n/a
Interior Floor 6	3.0 Floor	FloorToUnitBelow	n/a	n/a	364	n/a	n/a
Interior Floor 7	3.0 Floor	FloorToUnitBelow	n/a	n/a	364	n/a	n/a
Interior Floor 8	3.0 Floor	FloorToUnitBelow	n/a	n/a	364	n/a	n/a
Interior Floor 9	3.1 Floor	FloorToUnitBelow	n/a	n/a	364	n/a	n/a
Interior Floor 10	3.1 Floor	FloorToUnitBelow	n/a	n/a	364	n/a	n/a
Interior Floor 11	3.1 Floor	FloorToUnitBelow	n/a	n/a	364	n/a	n/a
Interior Floor 12	3.1 Floor	FloorToUnitBelow	n/a	n/a	364	n/a	n/a
Interior Floor 13	3.1 Floor	FloorToUnitBelow	n/a	n/a	364	n/a	n/a
Interior Floor 14	3.1 Floor	FloorToUnitBelow	n/a	n/a	364	n/a	n/a
Interior Floor 15	3.1 Floor	FloorToUnitBelow	n/a	n/a	380	n/a	n/a
Interior Floor 16	3.2 Floor	FloorToUnitBelow	n/a	n/a	364	n/a	n/a
Interior Floor 17	3.2 Floor	FloorToUnitBelow	n/a	n/a	364	n/a	n/a
Interior Floor 18	3.2 Floor	FloorToUnitBelow	n/a	n/a	364	n/a	n/a
Interior Floor 19	3.2 Floor	FloorToUnitBelow	n/a	n/a	364	n/a	n/a
Interior Floor 20	3.2 Floor	FloorToUnitBelow	n/a	n/a	364	n/a	n/a

CERTIFICATE OF COMPLIANCE — CF1R-PRF-01E (Page 10 of 42)

Project Name: Sage Commons - Res | **Calculation Date/Time:** 2020-04-02T12:33:53-07:00
Calculation Description: Title 24 Analysis | **Input File Name:** Sage Commons - Res.ribd19

OPAQUE SURFACES

01 Name	02 Zone	03 Construction	04 Azimuth	05 Orientation	06 Gross Area (ft^2)	07 Window and Door Area (ft2)	08 Tilt (deg)
Left Wall 3	3.1 Floor	2x6 ExtWall-Siding	90	Left	40	0	90
Back Wall 12	3.1 Floor	2x6 ExtWall-Siding	180	Back	121	36.7	90
Front Wall 13	3.1 Floor	2x6 ExtWall-Siding	0	Front	121	30.25	90
Back Wall 13	3.1 Floor	2x6 ExtWall-Siding	180	Back	121	36.7	90
Right Wall 5	3.1 Floor	2x6 ExtWall-Siding	270	Right	40	0	90
Front Wall 14	3.1 Floor	2x6 ExtWall-Siding	0	Front	121	30.25	90
Left Wall 4	3.1 Floor	2x6 ExtWall-Siding	90	Left	44	0	90
Back Wall 14	3.1 Floor	2x6 ExtWall-Siding	180	Back	121	36.7	90
Front Wall 15	3.1 Floor	2x6 ExtWall-Siding	0	Front	160	38.25	90
Left Wall 5	3.1 Floor	2x6 ExtWall-Siding	90	Left	149	0	90
Back Wall 15	3.1 Floor	2x6 ExtWall-Siding	180	Back	160	36.7	90
65 Wall	3.2 Floor	2x6 ExtWall-Siding	65	n/a	245	36.7	90
245 Wall	3.2 Floor	2x6 ExtWall-Siding	245	n/a	245	60.5	90
335 Wall	3.2 Floor	2x6 ExtWall-Siding	335	n/a	88	0	90
65 Wall 2	3.2 Floor	2x6 ExtWall-Siding	65	n/a	121	36.7	90
245 Wall 2	3.2 Floor	2x6 ExtWall-Siding	245	n/a	121	30.25	90
65 Wall 3	3.2 Floor	2x6 ExtWall-Siding	65	n/a	121	36.7	90
245 Wall 3	3.2 Floor	2x6 ExtWall-Siding	245	n/a	121	30.25	90
65 Wall 4	3.2 Floor	2x6 ExtWall-Siding	65	n/a	121	36.7	90
245 Wall 4	3.2 Floor	2x6 ExtWall-Siding	245	n/a	121	30.25	90
65 Wall 5	3.2 Floor	2x6 ExtWall-Siding	65	n/a	121	36.7	90
155 Wall	3.2 Floor	2x6 ExtWall-Siding	155	n/a	192	0	90
245 Wall 5	3.2 Floor	2x6 ExtWall-Siding	245	n/a	121	30.25	90
Front Wall 16	2.0 Floor	2x6 ExtWall-Siding	0	Front	160	38.25	90
Back Wall 16	2.0 Floor	2x6 ExtWall-Siding	180	Back	160	36.7	90
Right Wall 6	2.0 Floor	2x6 ExtWall-Siding	270	Right	149	6.25	90

CERTIFICATE OF COMPLIANCE — CF1R-PRF-01E (Page 6 of 42)

Project Name: Sage Commons - Res | **Calculation Date/Time:** 2020-04-02T12:33:53-07:00
Calculation Description: Title 24 Analysis | **Input File Name:** Sage Commons - Res.ribd19

DWELLING UNIT INFORMATION

01 Dwelling Unit Name	02 Dwelling Unit Type	03 Zone
DDU-11 364-(3/6)	DU-11 364	2.2 Floor
DDU-11 364-(4/6)	DU-11 364	2.2 Floor
DDU-11 364-(5/6)	DU-11 364	2.2 Floor
DDU-11 364-(6/6)	DU-11 364	2.2 Floor
DDU-12 380-(1/1)	DU-12 380	1.1 Floor
DDU-13 364-(1/6)	DU-13 364	1.1 Floor
DDU-13 364-(2/6)	DU-13 364	1.1 Floor
DDU-13 364-(3/6)	DU-13 364	1.1 Floor
DDU-13 364-(4/6)	DU-13 364	1.1 Floor
DDU-13 364-(5/6)	DU-13 364	1.1 Floor
DDU-13 364-(6/6)	DU-13 364	1.1 Floor
DDU-14 364-(1/6)	DU-14 364	1.2 Floor
DDU-14 364-(2/6)	DU-14 364	1.2 Floor
DDU-14 364-(3/6)	DU-14 364	1.2 Floor
DDU-14 364-(4/6)	DU-14 364	1.2 Floor
DDU-14 364-(5/6)	DU-14 364	1.2 Floor
DDU-14 364-(6/6)	DU-14 364	1.2 Floor

DWELLING UNIT TYPES

01 Name	02 CFA (ft2)	03 Number of Bedrooms	04 Number in Building	05 Space Conditioning Systems Assigned	06 DHW System Name	07 IAQ Vent Fan Name
DU-1 380	380	0	1	DDU-1 380 | :Heat Pump System 1:::2:3	DHW Sys 1	Minimum Exhaust IAQ Fan
DU-2 364	364	0	7	DDU-2 364 1/7 | :Heat Pump System 1:::2:3 DDU-2 364 2/7 | :Heat Pump System 1:::2:3 DDU-2 364 3/7 | :Heat Pump System 1:::2:3 DDU-2 364 4/7 | :Heat Pump System 1:::2:3	DHW Sys 1	Minimum Exhaust IAQ Fan

CERTIFICATE OF COMPLIANCE — CF1R-PRF-01E (Page 2 of 42)

Project Name: Sage Commons - Res | **Calculation Date/Time:** 2020-04-02T12:33:53-07:00
Calculation Description: Title 24 Analysis | **Input File Name:** Sage Commons - Res.ribd19

ENERGY DESIGN RATING

	Energy Design Ratings		Compliance Margins	
	Efficiency[1] (EDR)	Total[2] (EDR)	Efficiency[1] (EDR)	Total[2] (EDR)
Standard Design	70.3	44.2		
Proposed Design	53.9	27.3	16.4	16.9

RESULT: [3] COMPLIES

1: Efficiency EDR includes improvements to the building envelope and more efficient equipment
2: Total EDR includes efficiency and demand response measures such as photovoltaic (PV) systems and batteries
3: Building complies when efficiency and total compliance margins are greater than or equal to zero

- Standard Design PV Capacity: 68.29 kWdc

ENERGY USE SUMMARY

Energy Use (kTDV/ft^2-yr)	Standard Design	Proposed Design	Compliance Margin	Percent Improvement
Space Heating	11.2	16.3	-5.1	-45.5
Space Cooling	25.48	19.38	6.1	23.9
IAQ Ventilation	4.27	4.27	0	0
Water Heating	140.55	65.12	75.43	53.7
Self Utilization Credit	n/a	0	0	n/a
Compliance Energy Total	**181.5**	**105.07**	**76.43**	**42.1**

REQUIRED PV SYSTEMS - SIMPLIFIED

01 DC System Size (kWdc)	02 Exception	03 Module Type	04 Array Type	05 Power Electronics	06 CFI	07 Azimuth (deg)	08 Tilt Input	09 Array Angle (deg)	10 Tilt: (x in 12)	11 Inverter Eff. (%)	12 Annual Solar Access (%)
68.29	NA	Standard	Fixed (roof mount)	none	true	150-270	n/a	n/a	<=7:12	96	100

CERTIFICATE OF COMPLIANCE — CF1R-PRF-01E (Page 15 of 42)

Project Name: Sage Commons - Res | **Calculation Date/Time:** 2020-04-02T12:33:53-07:00
Calculation Description: Title 24 Analysis | **Input File Name:** Sage Commons - Res.ribd19

OPAQUE SURFACES

01 Name	02 Zone	03 Construction	04 Azimuth	05 Orientation	06 Gross Area (ft^2)	07 Window and Door Area (ft2)	08 Tilt (deg)
Interior Floor 21	3.2 Floor	FloorToUnitBelow	n/a	n/a	364	n/a	n/a
Interior Floor 22	2.0 Floor	FloorToUnitBelow	n/a	n/a	380	n/a	n/a
Interior Floor 23	2.0 Floor	FloorToUnitBelow	n/a	n/a	364	n/a	n/a
Interior Floor 24	2.0 Floor	FloorToUnitBelow	n/a	n/a	364	n/a	n/a
Interior Floor 25	2.0 Floor	FloorToUnitBelow	n/a	n/a	364	n/a	n/a
Interior Floor 26	2.0 Floor	FloorToUnitBelow	n/a	n/a	364	n/a	n/a
Interior Floor 27	2.0 Floor	FloorToUnitBelow	n/a	n/a	364	n/a	n/a
Interior Floor 28	2.0 Floor	FloorToUnitBelow	n/a	n/a	364	n/a	n/a
Interior Floor 29	2.0 Floor	FloorToUnitBelow	n/a	n/a	364	n/a	n/a
Interior Floor 30	2.1 Floor	FloorToUnitBelow	n/a	n/a	364	n/a	n/a
Interior Floor 31	2.1 Floor	FloorToUnitBelow	n/a	n/a	364	n/a	n/a
Interior Floor 32	2.1 Floor	FloorToUnitBelow	n/a	n/a	364	n/a	n/a
Interior Floor 33	2.1 Floor	FloorToUnitBelow	n/a	n/a	364	n/a	n/a
Interior Floor 34	2.1 Floor	FloorToUnitBelow	n/a	n/a	364	n/a	n/a
Interior Floor 35	2.1 Floor	FloorToUnitBelow	n/a	n/a	364	n/a	n/a
Interior Floor 36	2.1 Floor	FloorToUnitBelow	n/a	n/a	380	n/a	n/a
Interior Floor 37	2.2 Floor	FloorToUnitBelow	n/a	n/a	364	n/a	n/a
Interior Floor 38	2.2 Floor	FloorToUnitBelow	n/a	n/a	364	n/a	n/a
Interior Floor 39	2.2 Floor	FloorToUnitBelow	n/a	n/a	364	n/a	n/a
Interior Floor 40	2.2 Floor	FloorToUnitBelow	n/a	n/a	364	n/a	n/a
Interior Floor 41	2.2 Floor	FloorToUnitBelow	n/a	n/a	364	n/a	n/a
Interior Floor 42	2.2 Floor	FloorToUnitBelow	n/a	n/a	364	n/a	n/a

CERTIFICATE OF COMPLIANCE — CF1R-PRF-01E (Page 11 of 42)

Project Name: Sage Commons - Res | **Calculation Date/Time:** 2020-04-02T12:33:53-07:00
Calculation Description: Title 24 Analysis | **Input File Name:** Sage Commons - Res.ribd19

OPAQUE SURFACES

01 Name	02 Zone	03 Construction	04 Azimuth	05 Orientation	06 Gross Area (ft^2)	07 Window and Door Area (ft2)	08 Tilt (deg)
Front Wall 17	2.0 Floor	2x6 ExtWall-Siding	0	Front	121	30.25	90
Back Wall 17	2.0 Floor	2x6 ExtWall-Siding	180	Back	121	36.7	90
Right Wall 7	2.0 Floor	2x6 ExtWall-Siding	270	Right	44	0	90
Front Wall 18	2.0 Floor	2x6 ExtWall-Siding	0	Front	121	30.25	90
Back Wall 18	2.0 Floor	2x6 ExtWall-Siding	180	Back	121	36.7	90
Front Wall 19	2.0 Floor	2x6 ExtWall-Siding	0	Front	121	30.25	90
Back Wall 19	2.0 Floor	2x6 ExtWall-Siding	180	Back	121	36.7	90
Front Wall 20	2.0 Floor	2x6 ExtWall-Siding	0	Front	121	30.25	90
Left Wall 6	2.0 Floor	2x6 ExtWall-Siding	90	Left	40	0	90
Back Wall 20	2.0 Floor	2x6 ExtWall-Siding	180	Back	121	36.7	90
Front Wall 21	2.0 Floor	2x6 ExtWall-Siding	0	Front	121	30.25	90
Right Wall 8	2.0 Floor	2x6 ExtWall-Siding	270	Right	40	0	90
Back Wall 21	2.0 Floor	2x6 ExtWall-Siding	180	Back	121	36.7	90
Front Wall 22	2.0 Floor	2x6 ExtWall-Siding	0	Front	121	30.25	90
Back Wall 22	2.0 Floor	2x6 ExtWall-Siding	180	Back	121	36.7	90
Front Wall 23	2.0 Floor	2x6 ExtWall-Siding	0	Front	121	30.25	90
Left Wall 7	2.0 Floor	2x6 ExtWall-Siding	90	Left	44	0	90
Back Wall 23	2.0 Floor	2x6 ExtWall-Siding	180	Back	121	36.7	90
Front Wall 24	2.1 Floor	2x6 ExtWall-Siding	0	Front	121	30.25	90
Back Wall 24	2.1 Floor	2x6 ExtWall-Siding	180	Back	121	36.7	90
Right Wall 9	2.1 Floor	2x6 ExtWall-Siding	270	Right	44	0	90
Front Wall 25	2.1 Floor	2x6 ExtWall-Siding	0	Front	121	30.25	90
Back Wall 25	2.1 Floor	2x6 ExtWall-Siding	180	Back	121	36.7	90
Front Wall 26	2.1 Floor	2x6 ExtWall-Siding	0	Front	121	30.25	90
Back Wall 26	2.1 Floor	2x6 ExtWall-Siding	180	Back	121	36.7	90
Front Wall 27	2.1 Floor	2x6 ExtWall-Siding	0	Front	121	30.25	90

CERTIFICATE OF COMPLIANCE — CF1R-PRF-01E (Page 7 of 42)

Project Name: Sage Commons - Res | **Calculation Date/Time:** 2020-04-02T12:33:53-07:00
Calculation Description: Title 24 Analysis | **Input File Name:** Sage Commons - Res.ribd19

DWELLING UNIT TYPES

01 Name	02 CFA (ft2)	03 Number of Bedrooms	04 Number in Building	05 Space Conditioning Systems Assigned	06 DHW System Name	07 IAQ Vent Fan Name
				DDU-2 364 5/7 | :Heat Pump System 1:::2:3 DDU-2 364 6/7 | :Heat Pump System 1:::2:3 DDU-2 364 7/7 | :Heat Pump System 1:::2:3		
DU-3 380	380	0	1	DDU-3 380 | :Heat Pump System 2:::2:3	DHW Sys 3	Minimum Exhaust IAQ Fan
DU-4 364	364	0	6	DDU-4 364 1/6 | :Heat Pump System 2:::2:3 DDU-4 364 2/6 | :Heat Pump System 2:::2:3 DDU-4 364 3/6 | :Heat Pump System 2:::2:3 DDU-4 364 4/6 | :Heat Pump System 2:::2:3 DDU-4 364 5/6 | :Heat Pump System 2:::2:3 DDU-4 364 6/6 | :Heat Pump System 2:::2:3	DHW Sys 3	Minimum Exhaust IAQ Fan
DU-5 364	364	0	4	DDU-5 364 1/4 | :Heat Pump System 3:::2:3 DDU-5 364 2/4 | :Heat Pump System 3:::2:3 DDU-5 364 3/4 | :Heat Pump System 3:::2:3 DDU-5 364 4/4 | :Heat Pump System 3:::2:3	DHW Sys 5	Minimum Exhaust IAQ Fan
DU-6 728	728	1	1	DDU-6 728 | :Heat Pump System 3:::2:3	DHW Sys 5	Minimum Exhaust IAQ Fan
DU-7 380	380	0	1	DDU-7 380 | :Heat Pump System 4:::2:3	DHW Sys 7	Minimum Exhaust IAQ Fan
DU-8 364	364	0	7	DDU-8 364 1/7 | :Heat Pump System 4:::2:3 DDU-8 364 2/7 | :Heat Pump System 4:::2:3 DDU-8 364 3/7 | :Heat Pump System 4:::2:3 DDU-8 364 4/7 | :Heat Pump System 4:::2:3 DDU-8 364 5/7 | :Heat Pump System 4:::2:3 DDU-8 364 6/7 | :Heat Pump System 4:::2:3 DDU-8 364 7/7 | :Heat Pump System 4:::2:3	DHW Sys 7	Minimum Exhaust IAQ Fan
DU-9 380	380	0	1	DDU-9 380 | :Heat Pump System 5:::2:3	DHW Sys 9	Minimum Exhaust IAQ Fan
DU-10 364	364	0	6	DDU-10 364 1/6 | :Heat Pump System 5:::2:3 DDU-10 364 2/6 | :Heat Pump System 5:::2:3 DDU-10 364 3/6 | :Heat Pump System 5:::2:3 DDU-10 364 4/6 | :Heat Pump System 5:::2:3	DHW Sys 9	Minimum Exhaust IAQ Fan

CERTIFICATE OF COMPLIANCE — CF1R-PRF-01E (Page 3 of 42)

Project Name: Sage Commons - Res | **Calculation Date/Time:** 2020-04-02T12:33:53-07:00
Calculation Description: Title 24 Analysis | **Input File Name:** Sage Commons - Res.ribd19

REQUIRED SPECIAL FEATURES

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

- PV System: 68.29 kWdc
- Cool roof
- Multifamily: Recirculating demand control
- 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 buildng tables below. Registered CF2Rs and CF3Rs are required to be completed in the HERS Registry

Building-level Verifications:
- Quality insulation installation (QII)
- Indoor air quality ventilation
- Kitchen range hood

Cooling System Verifications:
- -- None --

Heating System Verifications:
- -- None --

HVAC Distribution System Verifications:
- -- None --

Domestic Hot Water System Verifications:
- Pipe Insulation, All Lines

BUILDING - FEATURES INFORMATION

01 Project Name	02 Conditioned Floor Area (ft^2)	03 Number of Dwelling Units	04 Number of Bedrooms	05 Number of Zones	06 Number of Ventilation Cooling Systems	07 Number of Water Heating Systems
Sage Commons - Res	20100	54	1	8	0	54

CERTIFICATE OF COMPLIANCE — CF1R-PRF-01E (Page 16 of 42)

Project Name: Sage Commons - Res | **Calculation Date/Time:** 2020-04-02T12:33:53-07:00
Calculation Description: Title 24 Analysis | **Input File Name:** Sage Commons - Res.ribd19

OPAQUE SURFACES - CATHEDRAL CEILINGS

01 Name	02 Zone	03 Construction	04 Azimuth	05 Orientation	06 Area (ft^2)	07 Skylight Area (ft^2)	08 Roof Rise (x in 12)	09 Roof Reflectance	10 Roof Emittance	11 Cool Roof
Roof	3.0 Floor	R-22 Cathedral | R-10 Abo	0	Front	380	0	0	0.65	0.85	Yes
Roof 2	3.0 Floor	R-22 Cathedral | R-10 Abo	0	Front	364	0	0	0.65	0.85	Yes
Roof 3	3.0 Floor	R-22 Cathedral | R-10 Abo	0	Front	364	0	0	0.65	0.85	Yes
Roof 4	3.0 Floor	R-22 Cathedral | R-10 Abo	0	Front	364	0	0	0.65	0.85	Yes
Roof 5	3.0 Floor	R-22 Cathedral | R-10 Abo	0	Front	364	0	0	0.65	0.85	Yes
Roof 6	3.0 Floor	R-22 Cathedral | R-10 Abo	0	Front	364	0	0	0.65	0.85	Yes
Roof 7	3.0 Floor	R-22 Cathedral | R-10 Abo	0	Front	364	0	0	0.65	0.85	Yes
Roof 8	3.0 Floor	R-22 Cathedral | R-10 Abo	0	Front	364	0	0	0.65	0.85	Yes
Roof 9	3.1 Floor	R-22 Cathedral | R-10 Abo	0	Front	364	0	0	0.65	0.85	Yes
Roof 10	3.1 Floor	R-22 Cathedral | R-10 Abo	0	Front	364	0	0	0.65	0.85	Yes
Roof 11	3.1 Floor	R-22 Cathedral | R-10 Abo	0	Front	364	0	0	0.65	0.85	Yes
Roof 12	3.1 Floor	R-22 Cathedral | R-10 Abo	0	Front	364	0	0	0.65	0.85	Yes
Roof 13	3.1 Floor	R-22 Cathedral | R-10 Abo	0	Front	364	0	0	0.65	0.85	Yes
Roof 14	3.1 Floor	R-22 Cathedral | R-10 Abo	0	Front	364	0	0	0.65	0.85	Yes
Roof 15	3.1 Floor	R-22 Cathedral | R-10 Abo	0	Front	380	0	0	0.65	0.85	Yes

CERTIFICATE OF COMPLIANCE — CF1R-PRF-01E (Page 12 of 42)

Project Name: Sage Commons - Res | **Calculation Date/Time:** 2020-04-02T12:33:53-07:00
Calculation Description: Title 24 Analysis | **Input File Name:** Sage Commons - Res.ribd19

OPAQUE SURFACES

01 Name	02 Zone	03 Construction	04 Azimuth	05 Orientation	06 Gross Area (ft^2)	07 Window and Door Area (ft2)	08 Tilt (deg)
Left Wall 8	2.1 Floor	2x6 ExtWall-Siding	90	Left	40	0	90
Back Wall 27	2.1 Floor	2x6 ExtWall-Siding	180	Back	121	36.7	90
Front Wall 28	2.1 Floor	2x6 ExtWall-Siding	0	Front	121	30.25	90
Back Wall 28	2.1 Floor	2x6 ExtWall-Siding	180	Back	121	36.7	90
Right Wall 10	2.1 Floor	2x6 ExtWall-Siding	270	Right	40	0	90
Front Wall 29	2.1 Floor	2x6 ExtWall-Siding	0	Front	121	30.25	90
Left Wall 9	2.1 Floor	2x6 ExtWall-Siding	90	Left	44	0	90
Back Wall 29	2.1 Floor	2x6 ExtWall-Siding	180	Back	121	36.7	90
Front Wall 30	2.1 Floor	2x6 ExtWall-Siding	0	Front	160	38.25	90
Left Wall 10	2.1 Floor	2x6 ExtWall-Siding	90	Left	149	0	90
Back Wall 30	2.1 Floor	2x6 ExtWall-Siding	180	Back	160	36.7	90
65 Wall 6	2.2 Floor	2x6 ExtWall-Siding	65	n/a	121	36.7	90
245 Wall 6	2.2 Floor	2x6 ExtWall-Siding	245	n/a	121	30.25	90
335 Wall 2	2.2 Floor	2x6 ExtWall-Siding	335	n/a	88	0	90
65 Wall 7	2.2 Floor	2x6 ExtWall-Siding	65	n/a	121	36.7	90
245 Wall 7	2.2 Floor	2x6 ExtWall-Siding	245	n/a	121	30.25	90
65 Wall 8	2.2 Floor	2x6 ExtWall-Siding	65	n/a	121	36.7	90
245 Wall 8	2.2 Floor	2x6 ExtWall-Siding	245	n/a	121	30.25	90
65 Wall 9	2.2 Floor	2x6 ExtWall-Siding	65	n/a	121	36.7	90
245 Wall 9	2.2 Floor	2x6 ExtWall-Siding	245	n/a	121	30.25	90
65 Wall 10	2.2 Floor	2x6 ExtWall-Siding	65	n/a	121	36.7	90
245 Wall 10	2.2 Floor	2x6 ExtWall-Siding	245	n/a	121	30.25	90
65 Wall 11	2.2 Floor	2x6 ExtWall-Siding	65	n/a	121	36.7	90
155 Wall 2	2.2 Floor	2x6 ExtWall-Siding	155	n/a	192	0	90
245 Wall 11	2.2 Floor	2x6 ExtWall-Siding	245	n/a	121	30.25	90
Front Wall 31	1.1 Floor	2x6 ExtWall-Stucco	0	Front	136	30.25	90

CERTIFICATE OF COMPLIANCE — CF1R-PRF-01E (Page 8 of 42)

Project Name: Sage Commons - Res | **Calculation Date/Time:** 2020-04-02T12:33:53-07:00
Calculation Description: Title 24 Analysis | **Input File Name:** Sage Commons - Res.ribd19

DWELLING UNIT TYPES

01 Name	02 CFA (ft2)	03 Number of Bedrooms	04 Number in Building	05 Space Conditioning Systems Assigned	06 DHW System Name	07 IAQ Vent Fan Name
				DDU-10 364 5/6 | :Heat Pump System 5:::2:3 DDU-10 364 6/6 | :Heat Pump System 5:::2:3		
DU-11 364	364	0	6	DDU-11 364 1/6 | :Heat Pump System 6:::2:3 DDU-11 364 2/6 | :Heat Pump System 6:::2:3 DDU-11 364 3/6 | :Heat Pump System 6:::2:3 DDU-11 364 4/6 | :Heat Pump System 6:::2:3 DDU-11 364 5/6 | :Heat Pump System 6:::2:3 DDU-11 364 6/6 | :Heat Pump System 6:::2:3	DHW Sys 11	Minimum Exhaust IAQ Fan
DU-12 380	380	0	1	DDU-12 380 | :Heat Pump System 7:::2:3	DHW Sys 13	Minimum Exhaust IAQ Fan
DU-13 364	364	0	6	DDU-13 364 1/6 | :Heat Pump System 7:::2:3 DDU-13 364 2/6 | :Heat Pump System 7:::2:3 DDU-13 364 3/6 | :Heat Pump System 7:::2:3 DDU-13 364 4/6 | :Heat Pump System 7:::2:3 DDU-13 364 5/6 | :Heat Pump System 7:::2:3 DDU-13 364 6/6 | :Heat Pump System 7:::2:3	DHW Sys 13	Minimum Exhaust IAQ Fan
DU-14 364	364	0	6	DDU-14 364 1/6 | :Heat Pump System 8:::2:3 DDU-14 364 2/6 | :Heat Pump System 8:::2:3 DDU-14 364 3/6 | :Heat Pump System 8:::2:3 DDU-14 364 4/6 | :Heat Pump System 8:::2:3 DDU-14 364 5/6 | :Heat Pump System 8:::2:3 DDU-14 364 6/6 | :Heat Pump System 8:::2:3	DHW Sys 15	Minimum Exhaust IAQ Fan

OPAQUE SURFACES

01 Name	02 Zone	03 Construction	04 Azimuth	05 Orientation	06 Gross Area (ft^2)	07 Window and Door Area (ft2)	08 Tilt (deg)
Front Wall	3.0 Floor	2x6 ExtWall-Siding	0	Front	160	38.25	90
Back Wall	3.0 Floor	2x6 ExtWall-Siding	180	Back	160	36.7	90
Right Wall	3.0 Floor	2x6 ExtWall-Siding	270	Right	149	6.25	90

CERTIFICATE OF COMPLIANCE — CF1R-PRF-01E (Page 4 of 42)

Project Name: Sage Commons - Res | **Calculation Date/Time:** 2020-04-02T12:33:53-07:00
Calculation Description: Title 24 Analysis | **Input File Name:** Sage Commons - Res.ribd19

ZONE INFORMATION

01 Zone Name	02 Zone Type	03 Zone Floor Area (ft^2)	04 Avg. Ceiling Height	05 Number of Dwelling Units
3.0 Floor	Conditioned	2928	8	8
3.1 Floor	Conditioned	2564	8	7
3.2 Floor	Conditioned	2184	8	5
2.0 Floor	Conditioned	2928	8	8
2.1 Floor	Conditioned	2564	8	7
2.2 Floor	Conditioned	2184	8	6
1.1 Floor	Conditioned	2564	9	7
1.2 Floor	Conditioned	2184	9	6

DWELLING UNIT INFORMATION

01 Dwelling Unit Name	02 Dwelling Unit Type	03 Zone
DDU-1 380-(1/1)	DU-1 380	3.0 Floor
DDU-2 364-(1/7)	DU-2 364	3.0 Floor
DDU-2 364-(2/7)	DU-2 364	3.0 Floor
DDU-2 364-(3/7)	DU-2 364	3.0 Floor
DDU-2 364-(4/7)	DU-2 364	3.0 Floor
DDU-2 364-(5/7)	DU-2 364	3.0 Floor
DDU-2 364-(6/7)	DU-2 364	3.0 Floor
DDU-2 364-(7/7)	DU-2 364	3.0 Floor
DDU-3 380-(1/1)	DU-3 380	3.1 Floor
DDU-4 364-(1/6)	DU-4 364	3.1 Floor
DDU-4 364-(2/6)	DU-4 364	3.1 Floor

REVIEWED FOR CODE COMPLIANCE BY COASTLAND CIVIL ENGINEERING, INC. IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

2019 Low-Rise Residential Mandatory Measures Summary

Building Envelope Measures:	
§ 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 Section 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 Section 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):	**Ceiling and Rafter Roof Insulation.** Minimum R-22 insulation in wood-frame ceiling; or the weighted average U-factor must not exceed 0.043. Minimum R-19 or weighted average U-factor of 0.054 or less in a rafter roof alteration. 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 continuous 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, (R-19 in 2x6 or U-factor of 0.074 or less). Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102, equivalent to an installed value of R-13 in a wood framed assembly. Masonry walls must meet Table 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%; 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 0.58; or the weighted average U-factor of all fenestration must not exceed 0.58.*
Fireplaces, Decorative Gas Appliances, and Gas Log Measures:	
§ 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 Measures:	
§ 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 Energy Commission.*
§ 110.2(a):	**HVAC Efficiency.** Equipment must meet the applicable efficiency requirements in Table 110.2-A through Table 110.2-K.*
§ 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)4:	**Water Heating Recirculation Loops Serving Multiple Dwelling Units.** Water heating recirculation loops serving multiple dwelling units must meet the air release valve, backflow prevention, pump priming, pump isolation valve, and recirculation loop connection requirements of § 110.3(c)4.
§ 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.
§ 110.5:	**Pilot Lights.** Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces; household cooking appliances (appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu/hr are exempt); 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 5 feet from the outlet of any dryer vent.
§ 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:	**Storage Tank Insulation.** Unfired hot water tanks, such as storage tanks and backup storage tanks for solar water-heating systems, must have a minimum of R-12 external insulation or R-16 internal insulation where the internal insulation R-value is indicated on the exterior of the tank.
§ 150.0(j)2A:	**Water Piping, Solar Water-heating System Piping, and Space Conditioning System Line Insulation.** All domestic hot water piping must be insulated as specified in Section 609.11 of the California Plumbing Code. In addition, the following piping conditions must have a minimum insulation wall thickness of 1 inch or a minimum insulation R-value of 7.7: the first 5 feet of cold water pipes from the storage tank; all hot water piping with a nominal diameter equal to or greater than 3/4 inch and less than 1 inch; all hot water piping with a nominal diameter less than 3/4 inch that is: associated with a domestic hot water recirculation system, from the heating source to storage tank or between tanks, buried below grade, and from the heating source to kitchen fixtures.*
§ 150.0(j)3:	**Insulation Protection.** Piping insulation must be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind as required by Section 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 include all of the following: A dedicated 125 volt, 20 amp electrical receptacle that is connected to the electric panel with a 120/240 volt 3 conductor, 10 AWG copper branch circuit, within 3 feet from the water heater without obstruction. Both ends of the unused conductor must be labeled with the word "spare" and be electrically isolated. Have a reserved single pole circuit breaker space in the electrical panel adjacent to the circuit breaker for the branch circuit and labeled with the words "Future 240V Use"; a Category III or IV vent, or a Type B vent with straight pipe between the outside termination and the space where the water heater is installed; a condensate drain that is no more than 2 inches higher than the base of the water heater, and allows natural draining without pump assistance; and a gas supply line with a capacity of at least 200,000 Btu per hour.
§ 150.0(n)2:	**Recirculating Loops.** Recirculating loops serving multiple dwelling units must meet the requirements of § 110.3(c)5.
§ 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 Measures:	
§ 110.8(d)3:	**Ducts.** Insulation installed on an existing space-conditioning duct must comply with California Mechanical Code (CMC) Section 604.0. 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 the requirements of the CMC Section 601.0, 602.0, 603.0, 604.0, 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 a minimum installed level of R-6.0 or a minimum installed level of R-4.2 when ducts are entirely in conditioned space as confirmed through field verification and diagnostic testing (RA3.1.4.3.8). Portions of the duct system completely exposed and surrounded by directly conditioned space are not required to be insulated. 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 requirements of UL 181, UL 181A, or UL 181B or aerosol sealant that meets the requirements of UL 723. If mastic or tape is used to seal openings greater than ¼ inch, the combination of mastic and either mesh or tape must be used. Building cavities, support platforms for air handlers, 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 cavities and support platforms must not be compressed to cause reductions in the cross-sectional area.*
§ 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, sunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather must be suitable for outdoor service. For example, protected by aluminum, sheet metal, painted canvas, or plastic cover. Cellular foam insulation must be protected as above or painted with a coating that is water retardant and provides shielding from solar radiation.
§ 150.0(m)10:	**Porous Inner Core Flex Duct.** Porous inner core flex ducts must have a non-porous layer 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 § 150.0(m)11 and Reference Residential Appendix RA3.
§ 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 2 inch depth or can be 1 inch if sized per Equation 150.0-A. Pressure drops and labeling must meet the requirements in §150.0(m)12. Filters must be accessible for regular service.*
§ 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.*
Requirements for 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)1C:	**Single Family Detached Dwelling Units.** 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 provided at rates determined by ASHRAE 62.2 Sections 4.1.1 and 4.1.2 and as specified in § 150.0(o)1C.
§ 150.0(o)1E:	**Multifamily Attached Dwelling Units.** Multifamily attached dwelling units must have mechanical ventilation airflow provided at rates in accordance with Equation 150.0-B and must be either a balanced system or continuous supply or continuous exhaust system. If a balanced system is not used, all units in the building must use the same system type and the dwelling-unit envelope leakage must be ≤ 0.3 CFM at 50 Pa (0.2 inch water) per square foot of dwelling unit envelope surface area and verified in accordance with Reference Residential Appendix RA3.8.
§ 150.0(o)1F:	**Multifamily Building Central Ventilation Systems.** Central ventilation systems that serve multiple dwelling units must be balanced to provide ventilation airflow for each dwelling unit served at a rate equal to or greater than the rate specified by Equation 150.0-B. All unit airflows must be within 20% of the unit with the lowest airflow rate as it relates to the individual unit's minimum required airflow rate needed for compliance.
§ 150.0(o)1G:	**Kitchen Range Hoods.** Kitchen range hoods must be rated for sound in accordance with Section 7.2 of ASHRAE 62.2.
§ 150.0(o)2:	**Field Verification and Diagnostic Testing.** Dwelling unit ventilation airflow must be verified in accordance with Reference Residential Appendix RA3.7. Kitchen range hoods must be verified in accordance with Reference Residential Appendix RA3.7.4.3 to confirm it is rated by HVI to comply with the airflow rates and sound requirements as specified in Section 5 and 7.2 of ASHRAE 62.2.
Pool and Spa Systems and Equipment Measures:	
§ 110.4(a):	**Certification by Manufacturers.** Any pool or spa heating system or equipment must be certified to have all of the following: a thermal efficiency that complies with the Appliance Efficiency Regulations; 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 Measures:	
§ 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.
§ 150.0(k)1B:	**Blank Electrical Boxes.** The number of electrical boxes that are more than 5 feet above the finished floor and do not contain a luminaire or other device must be no greater than the number of bedrooms. These electrical boxes must be served by a dimmer, vacancy sensor control, or fan speed control.
§ 150.0(k)1C:	**Recessed Downlight Luminaires in Ceilings.** Luminaires recessed into ceilings must meet all of the requirements for: insulation contact (IC) labeling; air leakage; sealing; maintenance; and socket and light source as described in § 150.0(k)1C.
§ 150.0(k)1D:	**Electronic Ballasts for Fluorescent Lamps.** Ballasts for fluorescent lamps rated 13 watts or greater must be electronic and must have an output frequency no less than 20 kHz.
§ 150.0(k)1E:	**Night Lights, Step Lights, and Path Lights.** Night lights, step lights and path lights are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided they are rated to consume no more than 5 watts of power and emit no more than 150 lumens.
§ 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).*
§ 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)2C:	**Interior Switches and Controls.** Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually turned ON and OFF.*
§ 150.0(k)2D:	**Interior Switches and Controls.** Controls and equipment must be installed in accordance with manufacturer's instructions.
§ 150.0(k)2E:	**Interior Switches and Controls.** Controls must not bypass a dimmer, occupant sensor, or vacancy sensor function if the control is installed to comply with § 150.0(k).
§ 150.0(k)2F:	**Interior Switches and Controls.** Lighting controls must comply with the applicable requirements of § 110.9.
§ 150.0(k)2G:	**Interior Switches and Controls.** An energy management control system (EMCS) may be used to comply with control requirements if it: provides functionality of the specified control according to § 110.9; meets the Installation Certificate requirements of § 130.4; meets the EMCS requirements of § 130.0(e); and meets all other requirements in § 150.0(k)2.
§ 150.0(k)2H:	**Interior Switches and Controls.** A multiscene programmable controller may be used to comply with dimmer requirements in § 150.0(k) if it provides the functionality of a dimmer according to § 110.9, and complies with all other applicable requirements in § 150.0(k)2.
§ 150.0(k)2I:	**Interior Switches and Controls.** In bathrooms, garages, laundry rooms, and utility rooms, at least one luminaire in each of these spaces must be controlled by an occupant sensor or a vacancy sensor providing automatic-off functionality. If an occupant sensor is installed, it must be initially configured to manual-on operation using the manual control required under Section 150.0(k)2C.
§ 150.0(k)2J:	**Interior Switches and Controls.** Luminaires that are or contain light sources that meet Reference Joint Appendix JA8 requirements for dimming, and that are not controlled by occupancy or vacancy sensors, must have dimming controls.*
§ 150.0(k)2K:	**Interior Switches and Controls.** Under cabinet lighting must be controlled separately from ceiling-installed lighting systems.
§ 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 meet the requirement in item § 150.0(k)3Ai (ON and OFF switch) and the requirements in either § 150.0(k)3Aii (photocell and either a motion sensor or automatic time switch control) or § 150.0(k)3Aiii (astronomical time clock), or an EMCS.
§ 150.0(k)3B:	**Residential Outdoor Lighting.** For low-rise residential buildings with four or more dwelling units, outdoor lighting for private patios, entrances, balconies, and porches; and residential parking lots and carports with less than eight vehicles per site must comply with either Section 150.0(k)3A or with the applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.
§ 150.0(k)3C:	**Residential Outdoor Lighting.** For low-rise residential buildings with four or more dwelling units, any outdoor lighting for residential parking lots or carports with a total of eight or more vehicles per site and any outdoor lighting not regulated by Section 150.0(k)3B or Section 150.0(k)3D must comply with the applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.
§ 150.0(k)4:	**Internally illuminated address signs.** Internally illuminated address signs must comply with § 140.8; or must consume no more than 5 watts of power as determined according to § 130.0(c).
§ 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 Sections 110.9, 130.0, 130.1, 130.4, 140.6, and 141.0.
§ 150.0(k)6A:	**Interior Common Areas of Low-rise Multifamily Residential Buildings.** In a low-rise multifamily residential building where the total interior common area in a single building equals 20 percent or less of the floor area, permanently installed lighting for the interior common areas in that building must be comply with Table 150.0-A and be controlled by an occupant sensor.
§ 150.0(k)6B:	**Interior Common Areas of Low-rise Multifamily Residential Buildings.** In a low-rise multifamily residential building where the total interior common area in a single building equals more than 20 percent of the floor area, permanently installed lighting in the interior common areas in that building must: i. Comply with the applicable requirements in Sections 110.9, 130.0, 130.1, 140.6 and 141.0; and ii. Lighting installed in corridors and stairwells must be controlled by occupant sensors that reduce the lighting power in each space by at least 50 percent. The occupant sensors must be capable of turning the light fully on and off from all designed paths of ingress and egress.
Solar Ready Buildings:	
§ 110.10(a)1:	**Single Family Residences.** Single family residences located in subdivisions with ten 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) through § 110.10(e).
§ 110.10(a)2:	**Low-rise Multifamily Buildings.** Low-rise multi-family buildings that do not have a photovoltaic system installed must comply with the requirements of § 110.10(b) through § 110.10(d).
§ 110.10(b)1:	**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. For low-rise multi-family buildings the solar zone must be located on the roof or overhang of the building, or on the roof or overhang of another structure located within 250 feet of the building, or on covered parking installed with the building project, and have a total area no less than 15 percent of the total roof area of the building excluding any skylight area. The solar zone requirement is applicable to the entire building, including mixed occupancy.*
§ 110.10(b)2:	**Azimuth.** All sections of the solar zone located on steep-sloped roofs must be oriented between 90 degrees and 300 degrees 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 distance, measured in the horizontal plane, 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) through § 110.10(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".

No.	REVISION	DATE
1	PLAN CHECK	04/02/2020

DANCO COMMUNITIES
5251 ERICSON WAY
ARCATA, CA 95532

SAGE COMMONS
80 COLLEGE AVENEUE
SANTA ROSA, CA

RESIDENTIAL

ENERGY FORMS
TITLE-24 COMPLIANCE DOCUMENTS

DuctTesters
336 W. Main Street
Ripon, CA 95366
(209) 579-5000
(209) 522-5001

DATE CREATED 01/27/2020

SHEET **EN-1.0**

CERTIFICATE OF COMPLIANCE CF1R-PRF-01E
Project Name: Sage Commons - Res **Calculation Date/Time:** 2020-04-02T12:33:53-07:00 (Page 17 of 42)
Calculation Description: Title 24 Analysis **Input File Name:** Sage Commons - Res.ribd19

OPAQUE SURFACES - CATHEDRAL CEILINGS

01	02	03	04	05	06	07	08	09	10	11
Name	Zone	Construction	Azimuth	Orientation	Area (ft²)	Skylight Area (ft²)	Roof Rise (x in 12)	Roof Reflectance	Roof Emittance	Cool Roof
Roof 16	3.2 Floor	R-22 Cathedral | R-10 Abo	0	Front	728	0	0	0.65	0.85	Yes
Roof 17	3.2 Floor	R-22 Cathedral | R-10 Abo	0	Front	364	0	0	0.65	0.85	Yes
Roof 18	3.2 Floor	R-22 Cathedral | R-10 Abo	0	Front	364	0	0	0.65	0.85	Yes
Roof 19	3.2 Floor	R-22 Cathedral | R-10 Abo	0	Front	364	0	0	0.65	0.85	Yes
Roof 20	3.2 Floor	R-22 Cathedral | R-10 Abo	0	Front	364	0	0	0.65	0.85	Yes

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
W04 - 2040	Window	Front Wall	Front	0			1	8	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656	Window	Front Wall	Front	0			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight	Window	Back Wall	Back	180			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W05 - 2626	Window	Right Wall	Right	270			1	6.25	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 2	Window	Front Wall 2	Front	0			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 2	Window	Back Wall 2	Back	180			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 3	Window	Front Wall 3	Front	0			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 3	Window	Back Wall 3	Back	180			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 4	Window	Front Wall 4	Front	0			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 4	Window	Back Wall 4	Back	180			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 5	Window	Front Wall 5	Front	0			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 5	Window	Back Wall 5	Back	180			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen

CERTIFICATE OF COMPLIANCE CF1R-PRF-01E
Project Name: Sage Commons - Res **Calculation Date/Time:** 2020-04-02T12:33:53-07:00 (Page 18 of 42)
Calculation Description: Title 24 Analysis **Input File Name:** Sage Commons - Res.ribd19

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
W02 - 5656 6	Window	Front Wall 6	Front	0			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 6	Window	Back Wall 6	Back	180			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 7	Window	Front Wall 7	Front	0			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 7	Window	Back Wall 7	Back	180			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 8	Window	Front Wall 8	Front	0			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 8	Window	Back Wall 8	Back	180			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 9	Window	Front Wall 9	Front	0			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 9	Window	Back Wall 9	Back	180			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 10	Window	Front Wall 10	Front	0			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 10	Window	Back Wall 10	Back	180			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 11	Window	Front Wall 11	Front	0			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 11	Window	Back Wall 11	Back	180			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 12	Window	Front Wall 12	Front	0			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 12	Window	Back Wall 12	Back	180			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 13	Window	Front Wall 13	Front	0			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 13	Window	Back Wall 13	Back	180			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 14	Window	Front Wall 14	Front	0			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 14	Window	Back Wall 14	Back	180			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W04 - 2040 2	Window	Front Wall 15	Front	0			1	8	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 15	Window	Front Wall 15	Front	0			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 15	Window	Back Wall 15	Back	180			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 16	Window	65 Wall		65			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 16	Window	245 Wall		245			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 17	Window	245 Wall		245			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 17	Window	65 Wall 2		65			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen

CERTIFICATE OF COMPLIANCE CF1R-PRF-01E
Project Name: Sage Commons - Res **Calculation Date/Time:** 2020-04-02T12:33:53-07:00 (Page 19 of 42)
Calculation Description: Title 24 Analysis **Input File Name:** Sage Commons - Res.ribd19

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
W02 - 5656 18	Window	245 Wall 2		245			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 18	Window	65 Wall 3		65			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 19	Window	245 Wall 3		245			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 19	Window	65 Wall 4		65			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 20	Window	245 Wall 4		245			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 20	Window	65 Wall 5		65			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 21	Window	245 Wall 5		245			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
W04 - 2040 3	Window	Front Wall 16	Front	0			1	8	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 22	Window	Front Wall 16	Front	0			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 21	Window	Back Wall 16	Back	180			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W05 - 2626 2	Window	Right Wall 6	Right	270			1	6.25	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 23	Window	Front Wall 17	Front	0			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 22	Window	Back Wall 17	Back	180			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 24	Window	Front Wall 18	Front	0			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 23	Window	Back Wall 18	Back	180			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 25	Window	Front Wall 19	Front	0			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 24	Window	Back Wall 19	Back	180			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 26	Window	Front Wall 20	Front	0			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 25	Window	Back Wall 20	Back	180			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 27	Window	Front Wall 21	Front	0			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 26	Window	Back Wall 21	Back	180			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 28	Window	Front Wall 22	Front	0			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 27	Window	Back Wall 22	Back	180			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 29	Window	Front Wall 23	Front	0			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 28	Window	Back Wall 23	Back	180			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen

CERTIFICATE OF COMPLIANCE CF1R-PRF-01E
Project Name: Sage Commons - Res **Calculation Date/Time:** 2020-04-02T12:33:53-07:00 (Page 20 of 42)
Calculation Description: Title 24 Analysis **Input File Name:** Sage Commons - Res.ribd19

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
W02 - 5656 30	Window	Front Wall 24	Front	0			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 29	Window	Back Wall 24	Back	180			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 31	Window	Front Wall 25	Front	0			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 30	Window	Back Wall 25	Back	180			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 32	Window	Front Wall 26	Front	0			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 31	Window	Back Wall 26	Back	180			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 33	Window	Front Wall 27	Front	0			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 32	Window	Back Wall 27	Back	180			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 34	Window	Front Wall 28	Front	0			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 33	Window	Back Wall 28	Back	180			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 35	Window	Front Wall 29	Front	0			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 34	Window	Back Wall 29	Back	180			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W04 - 2040 4	Window	Front Wall 30	Front	0			1	8	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 36	Window	Front Wall 30	Front	0			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 35	Window	Back Wall 30	Back	180			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 36	Window	65 Wall 6		65			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 37	Window	245 Wall 6		245			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 37	Window	65 Wall 7		65			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 38	Window	245 Wall 7		245			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 38	Window	65 Wall 8		65			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 39	Window	245 Wall 8		245			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 39	Window	65 Wall 9		65			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 40	Window	245 Wall 9		245			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 40	Window	65 Wall 10		65			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 41	Window	245 Wall 10		245			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen

CERTIFICATE OF COMPLIANCE CF1R-PRF-01E
Project Name: Sage Commons - Res **Calculation Date/Time:** 2020-04-02T12:33:53-07:00 (Page 21 of 42)
Calculation Description: Title 24 Analysis **Input File Name:** Sage Commons - Res.ribd19

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
Sidelight 41	Window	65 Wall 11		65			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 42	Window	245 Wall 11		245			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 43	Window	Front Wall 31	Front	0			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 42	Window	Back Wall 31	Back	180			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 44	Window	Front Wall 32	Front	0			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 43	Window	Back Wall 32	Back	180			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 45	Window	Front Wall 33	Front	0			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 44	Window	Back Wall 33	Back	180			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 46	Window	Front Wall 34	Front	0			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 45	Window	Back Wall 34	Back	180			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 47	Window	Front Wall 35	Front	0			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 46	Window	Back Wall 35	Back	180			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 48	Window	Front Wall 36	Front	0			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 47	Window	Back Wall 36	Back	180			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W04 - 2040 5	Window	Front Wall 37	Front	0			1	8	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 49	Window	Front Wall 37	Front	0			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 48	Window	Back Wall 37	Back	180			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 49	Window	65 Wall 12		65			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 50	Window	245 Wall 12		245			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 50	Window	65 Wall 13		65			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 51	Window	245 Wall 13		245			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 51	Window	65 Wall 14		65			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 52	Window	245 Wall 14		245			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 52	Window	65 Wall 15		65			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 53	Window	245 Wall 15		245			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen

CERTIFICATE OF COMPLIANCE CF1R-PRF-01E
Project Name: Sage Commons - Res **Calculation Date/Time:** 2020-04-02T12:33:53-07:00 (Page 22 of 42)
Calculation Description: Title 24 Analysis **Input File Name:** Sage Commons - Res.ribd19

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
Sidelight 53	Window	65 Wall 16		65			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 54	Window	245 Wall 16		245			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen
Sidelight 54	Window	65 Wall 17		65			1	16.7	0.3	NFRC	0.23	NFRC	Bug Screen
W02 - 5656 55	Window	245 Wall 17		245			1	30.25	0.3	NFRC	0.23	NFRC	Bug Screen

OPAQUE DOORS

01	02	03	04
Name	Side of Building	Area (ft²)	U-factor
3068	Back Wall	20	0.7
3068 2	Back Wall 2	20	0.7
3068 3	Back Wall 3	20	0.7
3068 4	Back Wall 4	20	0.7
3068 5	Back Wall 5	20	0.7
3068 6	Back Wall 6	20	0.7
3068 7	Back Wall 7	20	0.7
3068 8	Back Wall 8	20	0.7
3068 9	Back Wall 9	20	0.7
3068 10	Back Wall 10	20	0.7
3068 11	Back Wall 11	20	0.7
3068 12	Back Wall 12	20	0.7
3068 13	Back Wall 13	20	0.7
3068 14	Back Wall 14	20	0.7
3068 15	Back Wall 15	20	0.7
3068 16	65 Wall	20	0.7
3068 17	65 Wall 2	20	0.7

CERTIFICATE OF COMPLIANCE CF1R-PRF-01E
Project Name: Sage Commons - Res **Calculation Date/Time:** 2020-04-02T12:33:53-07:00 (Page 23 of 42)
Calculation Description: Title 24 Analysis **Input File Name:** Sage Commons - Res.ribd19

OPAQUE DOORS

01	02	03	04
Name	Side of Building	Area (ft²)	U-factor
3068 18	65 Wall 3	20	0.7
3068 19	65 Wall 4	20	0.7
3068 20	65 Wall 5	20	0.7
3068 21	Back Wall 16	20	0.7
3068 22	Back Wall 17	20	0.7
3068 23	Back Wall 18	20	0.7
3068 24	Back Wall 19	20	0.7
3068 25	Back Wall 20	20	0.7
3068 26	Back Wall 21	20	0.7
3068 27	Back Wall 22	20	0.7
3068 28	Back Wall 23	20	0.7
3068 29	Back Wall 24	20	0.7
3068 30	Back Wall 25	20	0.7
3068 31	Back Wall 26	20	0.7
3068 32	Back Wall 27	20	0.7
3068 33	Back Wall 28	20	0.7
3068 34	Back Wall 29	20	0.7
3068 35	Back Wall 30	20	0.7
3068 36	65 Wall 6	20	0.7
3068 37	65 Wall 7	20	0.7
3068 38	65 Wall 8	20	0.7
3068 39	65 Wall 9	20	0.7
3068 40	65 Wall 10	20	0.7
3068 41	65 Wall 11	20	0.7
3068 42	Back Wall 31	20	0.7
3068 43	Back Wall 32	20	0.7

CERTIFICATE OF COMPLIANCE CF1R-PRF-01E
Project Name: Sage Commons - Res **Calculation Date/Time:** 2020-04-02T12:33:53-07:00 (Page 24 of 42)
Calculation Description: Title 24 Analysis **Input File Name:** Sage Commons - Res.ribd19

OPAQUE DOORS

01	02	03	04
Name	Side of Building	Area (ft²)	U-factor
3068 44	Back Wall 33	20	0.7
3068 45	Back Wall 34	20	0.7
3068 46	Back Wall 35	20	0.7
3068 47	Back Wall 36	20	0.7
3068 48	Back Wall 37	20	0.7
3068 49	65 Wall 12	20	0.7
3068 50	65 Wall 13	20	0.7
3068 51	65 Wall 14	20	0.7
3068 52	65 Wall 15	20	0.7
3068 53	65 Wall 16	20	0.7
3068 54	65 Wall 17	20	0.7

SLAB FLOORS

01	02	03	04	05	06	07
Name	Zone	Area (ft2)	Perimeter (ft)	Edge Insul. R-value and Depth	Carpeted Fraction	Heated
Slab-on-Grade	1.1 Floor	364	36	None	80%	No
Slab-on-Grade 2	1.1 Floor	364	30	None	80%	No
Slab-on-Grade 3	1.1 Floor	364	30	None	80%	No
Slab-on-Grade 4	1.1 Floor	364	36	None	80%	No
Slab-on-Grade 5	1.1 Floor	364	36	None	80%	No
Slab-on-Grade 6	1.1 Floor	364	36	None	80%	No
Slab-on-Grade 7	1.1 Floor	380	59	None	80%	No
Slab-on-Grade 8	1.2 Floor	364	41	None	80%	No

CERTIFICATE OF COMPLIANCE CF1R-PRF-01E
Project Name: Sage Commons - Res **Calculation Date/Time:** 2020-04-02T12:33:53-07:00 (Page 25 of 42)
Calculation Description: Title 24 Analysis **Input File Name:** Sage Commons - Res.ribd19

SLAB FLOORS

01	02	03	04	05	06	07
Name	Zone	Area (ft2)	Perimeter (ft)	Edge Insul. R-value and Depth	Carpeted Fraction	Heated
Slab-on-Grade 9	1.2 Floor	364	30	None	80%	No
Slab-on-Grade 10	1.2 Floor	364	30	None	80%	No
Slab-on-Grade 11	1.2 Floor	364	30	None	80%	No
Slab-on-Grade 12	1.2 Floor	364	30	None	80%	No
Slab-on-Grade 13	1.2 Floor	364	54	None	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
2x6 ExtWall-Siding	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O. C.	R-21	None / None	0.066	Inside Finish: Gypsum Board Cavity / Frame: R-21 / 2x6 Exterior Finish: Wood Siding/sheathing/decking
2x6 ExtWall-Stucco	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-22 Cathedral | R-10 Abo	Cathedral Ceilings	Wood Framed Ceiling	2x10 @ 24 in. O. C.	R-22	None / R-10	0.031	Roofing: Light Roof (Asphalt Shingle) Above Deck Insulation: R-10 Sheathing Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: R-22 / 2x10 Inside Finish: Gypsum Board
2x6 IntWall	Interior Walls	Wood Framed Wall	2x6 @ 16 in. O. C.	R-21	None / None	0.064	Inside Finish: Gypsum Board Cavity / Frame: R-21 / 2x6 Other Side Finish: Gypsum Board

CERTIFICATE OF COMPLIANCE CF1R-PRF-01E
Project Name: Sage Commons - Res **Calculation Date/Time:** 2020-04-02T12:33:53-07:00 (Page 26 of 42)
Calculation Description: Title 24 Analysis **Input File Name:** Sage Commons - Res.ribd19

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
FloorToUnitBelow	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

BUILDING ENVELOPE - HERS VERIFICATION

01	02	03	04
Quality Insulation Installation (QII)	Quality Installation of Spray Foam Insulation	Building Envelope Air Leakage	CFM50
Required	Not Required	Not Required	n/a

WATER HEATING SYSTEMS

01	02	03	04	05	06	07	08	09
Name	System Type	Number of Systems in Building	Multi-Family Distribution Type	Dwelling Unit Distribution Type	Water Heater Name (#)	Solar Heating System	Compact Distribution	HERS Verification
DHW Sys 1	Domestic Hot Water (DHW)	1	Multi-family: Recirculating demand control	HERS Verified Pipe Insulation credit	DHW Sys 1-heater (1)	n/a	None	DHW Sys 1-hers-dhw
DHW Sys 3	Domestic Hot Water (DHW)	1	Multi-family: Recirculating demand control	HERS Verified Pipe Insulation credit	DHW Sys 3-heater (1)	n/a	None	DHW Sys 3-hers-dhw
DHW Sys 5	Domestic Hot Water (DHW)	1	Multi-family: Recirculating demand control	HERS Verified Pipe Insulation credit	DHW Sys 5-heater (1)	n/a	None	DHW Sys 5-hers-dhw
DHW Sys 7	Domestic Hot Water (DHW)	1	Multi-family: Recirculating demand control	HERS Verified Pipe Insulation credit	DHW Sys 7-heater (1)	n/a	None	DHW Sys 7-hers-dhw

CERTIFICATE OF COMPLIANCE CF1R-PRF-01E
Project Name: Sage Commons - Res **Calculation Date/Time:** 2020-04-02T12:33:53-07:00 (Page 27 of 42)
Calculation Description: Title 24 Analysis **Input File Name:** Sage Commons - Res.ribd19

DHW Sys 9	Domestic Hot Water (DHW)	1	Multi-family: Recirculating demand control	HERS Verified Pipe Insulation credit	DHW Sys 9-heater (1)	n/a	None	DHW Sys 9-hers-dhw
DHW Sys 11	Domestic Hot Water (DHW)	1	Multi-family: Recirculating demand control	HERS Verified Pipe Insulation credit	DHW Sys 11-heater (1)	n/a	None	DHW Sys 11-hers-dhw
DHW Sys 13	Domestic Hot Water (DHW)	1	Multi-family: Recirculating demand control	HERS Verified Pipe Insulation credit	DHW Sys 13-heater (1)	n/a	None	DHW Sys 13-hers-dhw
DHW Sys 15	Domestic Hot Water (DHW)	1	Multi-family: Recirculating demand control	HERS Verified Pipe Insulation credit	DHW Sys 15-heater (1)	n/a	None	DHW Sys 15-hers-dhw

WATER HEATERS

01	02	03	04	05	06	07	08	09	10	11	12
Name	Heating Element Type	Tank Type	# Units	Tank Vol. (gal)	Energy Factor or Efficiency	Input Rating or Pilot	Tank Insulation R-value (Int/Ext)	Standby Loss or Recovery Eff.	1st Hr. Rating or Flow Rate	NEEA Heat Pump Brand or Model	Tank Location or Ambient Condition
DHW Heater 1	Heat Pump	n/a	0	80	NEEA	n/a	n/a	76	80 gal	Rheem\RheemPRO PH80RH350DCB	Outside
DHW Heater 3	Heat Pump	n/a	0	80	NEEA	n/a	n/a	76	80 gal	Rheem\RheemPRO PH80RH350DCB	Outside
DHW Heater 5	Heat Pump	n/a	0	80	NEEA	n/a	n/a	76	80 gal	Rheem\RheemPRO PH80RH350DCB	Outside
DHW Heater 7	Heat Pump	n/a	0	80	NEEA	n/a	n/a	76	80 gal	Rheem\RheemPRO PH80RH350DCB	Outside
DHW Heater 9	Heat Pump	n/a	0	80	NEEA	n/a	n/a	76	80 gal	Rheem\RheemPRO PH80RH350DCB	Outside
DHW Heater 11	Heat Pump	n/a	0	80	NEEA	n/a	n/a	76	80 gal	Rheem\RheemPRO PH80RH350DCB	Outside

CERTIFICATE OF COMPLIANCE CF1R-PRF-01E
Project Name: Sage Commons - Res **Calculation Date/Time:** 2020-04-02T12:33:53-07:00 (Page 28 of 42)
Calculation Description: Title 24 Analysis **Input File Name:** Sage Commons - Res.ribd19

WATER HEATERS

01	02	03	04	05	06	07	08	09	10	11	12
Name	Heating Element Type	Tank Type	# Units	Tank Vol. (gal)	Energy Factor or Efficiency	Input Rating or Pilot	Tank Insulation R-value (Int/Ext)	Standby Loss or Recovery Eff.	1st Hr. Rating or Flow Rate	NEEA Heat Pump Brand or Model	Tank Location or Ambient Condition
DHW Heater 13	Heat Pump	n/a	0	80	NEEA	n/a	n/a	76	80 gal	Rheem\RheemPRO PH80RH350DCB	Outside
DHW Heater 15	Heat Pump	n/a	0	80	NEEA	n/a	n/a	76	80 gal	Rheem\RheemPRO PH80RH350DCB	Outside

WATER HEATERS - CHPWH

01	02	03	04	05	06	07
Name	HPWH Compressor Type	Number of Compressors	Loop Tank Volume (gal)	Loop Tank Heater Type	Primary Tank Volume (gal)	Recirc Pump Power (Watts)
DHW Sys 1	Sanden	1	100	Commercial Elec Resistance	80	87.25
DHW Sys 3	Sanden	1	100	Commercial Elec Resistance	80	87.25
DHW Sys 5	Sanden	1	100	Commercial Elec Resistance	80	87.25
DHW Sys 7	Sanden	1	100	Commercial Elec Resistance	80	87.25
DHW Sys 9	Sanden	1	100	Commercial Elec Resistance	80	87.25
DHW Sys 11	Sanden	1	100	Commercial Elec Resistance	80	87.25
DHW Sys 13	Sanden	1	100	Commercial Elec Resistance	80	87.25
DHW Sys 15	Sanden	1	100	Commercial Elec Resistance	80	87.25

CERTIFICATE OF COMPLIANCE CF1R-PRF-01E
Project Name: Sage Commons - Res **Calculation Date/Time:** 2020-04-02T12:33:53-07:00 (Page 29 of 42)
Calculation Description: Title 24 Analysis **Input File Name:** Sage Commons - Res.ribd19

WATER HEATING - HERS VERIFICATION

01	02	03	04	05	06	07	08
Name	Pipe Insulation	Parallel Piping	Compact Distribution	Compact Distribution Type	Recirculation Control	Central DHW Distribution	Shower Drain Water Heat Recovery
DDU-1 380 | DHW Sys 1	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-2 364 1/7 | DHW Sys 1	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-2 364 2/7 | DHW Sys 1	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-2 364 3/7 | DHW Sys 1	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-2 364 4/7 | DHW Sys 1	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-2 364 5/7 | DHW Sys 1	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-2 364 6/7 | DHW Sys 1	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-2 364 7/7 | DHW Sys 1	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-3 380 | DHW Sys 3	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-4 364 1/6 | DHW Sys 3	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-4 364 2/6 | DHW Sys 3	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-4 364 3/6 | DHW Sys 3	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-4 364 4/6 | DHW Sys 3	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-4 364 5/6 | DHW Sys 3	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-4 364 6/6 | DHW Sys 3	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required

CERTIFICATE OF COMPLIANCE CF1R-PRF-01E
Project Name: Sage Commons - Res **Calculation Date/Time:** 2020-04-02T12:33:53-07:00 (Page 30 of 42)
Calculation Description: Title 24 Analysis **Input File Name:** Sage Commons - Res.ribd19

WATER HEATING - HERS VERIFICATION

01	02	03	04	05	06	07	08
Name	Pipe Insulation	Parallel Piping	Compact Distribution	Compact Distribution Type	Recirculation Control	Central DHW Distribution	Shower Drain Water Heat Recovery
DDU-5 364 1/4 | DHW Sys 5	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-5 364 2/4 | DHW Sys 5	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-5 364 3/4 | DHW Sys 5	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-5 364 4/4 | DHW Sys 5	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-6 728 | DHW Sys 5	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-7 380 | DHW Sys 7	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-8 364 1/7 | DHW Sys 7	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-8 364 2/7 | DHW Sys 7	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-8 364 3/7 | DHW Sys 7	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-8 364 4/7 | DHW Sys 7	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-8 364 5/7 | DHW Sys 7	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-8 364 6/7 | DHW Sys 7	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-8 364 7/7 | DHW Sys 7	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-9 380 | DHW Sys 9	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-10 364 1/6 | DHW Sys 9	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required

CERTIFICATE OF COMPLIANCE CF1R-PRF-01E
Project Name: Sage Commons - Res **Calculation Date/Time:** 2020-04-02T12:33:53-07:00 (Page 31 of 42)
Calculation Description: Title 24 Analysis **Input File Name:** Sage Commons - Res.ribd19

WATER HEATING - HERS VERIFICATION

01	02	03	04	05	06	07	08
Name	Pipe Insulation	Parallel Piping	Compact Distribution	Compact Distribution Type	Recirculation Control	Central DHW Distribution	Shower Drain Water Heat Recovery
DDU-10 364 2/6 | DHW Sys 9	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-10 364 3/6 | DHW Sys 9	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-10 364 4/6 | DHW Sys 9	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-10 364 5/6 | DHW Sys 9	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-10 364 6/6 | DHW Sys 9	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-11 364 1/6 | DHW Sys 11	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-11 364 2/6 | DHW Sys 11	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-11 364 3/6 | DHW Sys 11	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-11 364 4/6 | DHW Sys 11	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-11 364 5/6 | DHW Sys 11	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-11 364 6/6 | DHW Sys 11	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-12 380 | DHW Sys 13	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-13 364 1/6 | DHW Sys 13	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-13 364 2/6 | DHW Sys 13	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-13 364 3/6 | DHW Sys 13	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required

CERTIFICATE OF COMPLIANCE CF1R-PRF-01E
Project Name: Sage Commons - Res **Calculation Date/Time:** 2020-04-02T12:33:53-07:00 (Page 32 of 42)
Calculation Description: Title 24 Analysis **Input File Name:** Sage Commons - Res.ribd19

WATER HEATING - HERS VERIFICATION

01	02	03	04	05	06	07	08
Name	Pipe Insulation	Parallel Piping	Compact Distribution	Compact Distribution Type	Recirculation Control	Central DHW Distribution	Shower Drain Water Heat Recovery
DDU-13 364 4/6 | DHW Sys 13	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-13 364 5/6 | DHW Sys 13	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-13 364 6/6 | DHW Sys 13	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-14 364 1/6 | DHW Sys 15	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-14 364 2/6 | DHW Sys 15	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-14 364 3/6 | DHW Sys 15	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-14 364 4/6 | DHW Sys 15	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-14 364 5/6 | DHW Sys 15	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DDU-14 364 6/6 | DHW Sys 15	Required	Not Required	Not Required	None	Not Required	Not Required	Not Required

SPACE CONDITIONING SYSTEMS

01	02	03	04	05	06	07	08	09	10	11
Name	System Type	Heating Unit Name	Cooling Unit Name	Fan Name	Distribution Name	Required Thermostat Type	Status	Verified Existing Condition	Heating Equipment Count	Cooling Equipment Count
DDU-1 380 | :Heat Pump System 1:::2:3	Heat pump heating cooling	Heat Pump System 1	Heat Pump System 1			Non-setback thermostat	New	NA	1	1
DDU-2 364 1/7 | :Heat Pump System 1:::2:3	Heat pump heating cooling	Heat Pump System 1	Heat Pump System 1			Non-setback thermostat	New	NA	1	1

2019 Low-Rise Residential Mandatory Measures Summary

Building Envelope Measures:

§ 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 Section 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 Section 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): **Ceiling and Rafter Roof Insulation.** Minimum R-22 insulation in wood-frame ceiling; or the weighted average U-factor must not exceed 0.043. Minimum R-19 or weighted average U-factor of 0.054 or less in a rafter roof alteration. 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 continuous 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, (R-19 in 2x6 or U-factor of 0.074 or less). Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102, equivalent to an installed value of R-13 in a wood framed assembly. Masonry walls must meet Table 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%; 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 0.58; or the weighted average U-factor of all fenestration must not exceed 0.58.*

Fireplaces, Decorative Gas Appliances, and Gas Log Measures:

§ 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 Measures:

§ 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 Energy Commission.*

§ 110.2(a): **HVAC Efficiency.** Equipment must meet the applicable efficiency requirements in Table 110.2-A through Table 110.2-K.*

§ 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)4: **Water Heating Recirculation Loops Serving Multiple Dwelling Units.** Water heating recirculation loops serving multiple dwelling units must meet the air release valve, backflow prevention, pump priming, pump isolation valve, and recirculation loop connection requirements of § 110.3(c)4.

§ 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.

§ 110.5: **Pilot Lights.** Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces; household cooking appliances (appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu/hr are exempt); 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 5 feet from the outlet of any dryer vent.

§ 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: **Storage Tank Insulation.** Unfired hot water tanks, such as storage tanks and backup storage tanks for solar water-heating systems, must have a minimum of R-12 external insulation or R-16 internal insulation where the internal insulation R-value is indicated on the exterior of the tank.

§ 150.0(j)2A: **Water Piping, Solar Water-heating System Piping, and Space Conditioning System Line Insulation.** All domestic hot water piping must be insulated as specified in Section 609.11 of the California Plumbing Code. In addition, the following piping conditions must have a minimum insulation wall thickness of 1 inch or a minimum insulation R-value of 7.7: the first 5 feet of cold water pipes from the storage tank; all hot water piping with a nominal diameter equal to or greater than 3/4 inch and less than 1 inch; all hot water piping with a nominal diameter less than 3/4 inch that is: associated with a domestic hot water recirculation system, from the heating source to storage tank or between tanks, buried below grade, and from the heating source to kitchen fixtures.*

§ 150.0(j)3: **Insulation Protection.** Piping insulation must be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind as required by Section 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 include all of the following: A dedicated 125 volt, 20 amp electrical receptacle that is connected to the electric panel with a 120/240 volt 3 conductor, 10 AWG copper branch circuit, within 3 feet from the water heater without obstruction. Both ends of the unused conductor must be labeled with the word "spare" and be electrically isolated. Have a reserved single pole circuit breaker space in the electrical panel adjacent to the circuit breaker for the branch circuit and labeled with the words "Future 240V Use"; a Category III or IV vent, or a Type B vent with straight pipe between the outside termination and the space where the water heater is installed; a condensate drain that is no more than 2 inches higher than the base of the water heater, and allows natural draining without pump assistance; and a gas supply line with a capacity of at least 200,000 Btu per hour.

§ 150.0(n)2: **Recirculating Loops.** Recirculating loops serving multiple dwelling units must meet the requirements of § 110.3(c)5.

§ 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 Measures:

§ 110.8(d)3: **Ducts.** Insulation installed on an existing space-conditioning duct must comply with California Mechanical Code (CMC) Section 604.0. 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 the requirements of the CMC Section 601.0, 602.0, 603.0, 604.0, 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 a minimum installed level of R-6.0 or a minimum installed level of R-4.2 when ducts are entirely in conditioned space as confirmed through field verification and diagnostic testing (RA3.1.4.3.8). Portions of the duct system completely exposed and surrounded by directly conditioned space are not required to be insulated. 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 requirements of UL 181, UL 181A, or UL 181B or aerosol sealant that meets the requirements of UL 723. If mastic or tape is used to seal openings greater than ¼ inch, the combination of mastic and either mesh or tape must be used. Building cavities, support platforms for air handlers, 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 cavities and support platforms must not be compressed to cause reductions in the cross-sectional area.*

§ 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, sunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather must be suitable for outdoor service. For example, protected by aluminum, sheet metal, painted canvas, or plastic cover. Cellular foam insulation must be protected as above or painted with a coating that is water retardant and provides shielding from solar radiation.

§ 150.0(m)10: **Porous Inner Core Flex Duct.** Porous inner core flex ducts must have a non-porous layer 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 § 150.0(m)11 and Reference Residential Appendix RA3.

§ 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 2 inch depth or can be 1 inch if sized per Equation 150.0-A. Pressure drops and labeling must meet the requirements in §150.0(m)12. Filters must be accessible for regular service.*

§ 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.*

Requirements for 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)1C: **Single Family Detached Dwelling Units.** 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 provided at rates determined by ASHRAE 62.2 Sections 4.1.1 and 4.1.2 and as specified in § 150.0(o)1C.

§ 150.0(o)1E: **Multifamily Attached Dwelling Units.** Multifamily attached dwelling units must have mechanical ventilation airflow provided at rates in accordance with Equation 150.0-B and must be either a balanced system or continuous supply or continuous exhaust system. If a balanced system is not used, all units in the building must use the same system type and the dwelling-unit envelope leakage must be ≤ 0.3 CFM at 50 Pa (0.2 inch water) per square foot of dwelling unit envelope surface area and verified in accordance with Reference Residential Appendix RA3.8.

§ 150.0(o)1F: **Multifamily Building Central Ventilation Systems.** Central ventilation systems that serve multiple dwelling units must be balanced to provide ventilation airflow for each dwelling unit served at a rate equal to or greater than the rate specified by Equation 150.0-B. All unit airflows must be within 20% of the unit with the lowest airflow rate as it relates to the individual unit's minimum required airflow rate needed for compliance.

§ 150.0(o)1G: **Kitchen Range Hoods.** Kitchen range hoods must be rated for sound in accordance with Section 7.2 of ASHRAE 62.2.

§ 150.0(o)2: **Field Verification and Diagnostic Testing.** Dwelling unit ventilation airflow must be verified in accordance with Reference Residential Appendix RA3.7. Kitchen range hoods must be verified in accordance with Reference Residential Appendix RA3.7.4.3 to confirm it is rated by HVI to comply with the airflow rates and sound requirements as specified in Section 5 and 7.2 of ASHRAE 62.2.

Pool and Spa Systems and Equipment Measures:

§ 110.4(a): **Certification by Manufacturers.** Any pool or spa heating system or equipment must be certified to have all of the following: a thermal efficiency that complies with the Appliance Efficiency Regulations; 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 Measures:

§ 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.

§ 150.0(k)1B: **Blank Electrical Boxes.** The number of electrical boxes that are more than 5 feet above the finished floor and do not contain a luminaire or other device must be no greater than the number of bedrooms. These electrical boxes must be served by a dimmer, vacancy sensor control, or fan speed control.

§ 150.0(k)1C: **Recessed Downlight Luminaires in Ceilings.** Luminaires recessed into ceilings must meet all of the requirements for: insulation contact (IC) labeling; air leakage; sealing; maintenance; and socket and light source as described in § 150.0(k)1C.

§ 150.0(k)1D: **Electronic Ballasts for Fluorescent Lamps.** Ballasts for fluorescent lamps rated 13 watts or greater must be electronic and must have an output frequency no less than 20 kHz.

§ 150.0(k)1E: **Night Lights, Step Lights, and Path Lights.** Night lights, step lights and path lights are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided they are rated to consume no more than 5 watts of power and emit no more than 150 lumens.

§ 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).*

§ 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)2C: **Interior Switches and Controls.** Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually turned ON and OFF.*

§ 150.0(k)2D: **Interior Switches and Controls.** Controls and equipment must be installed in accordance with manufacturer's instructions.

§ 150.0(k)2E: **Interior Switches and Controls.** Controls must not bypass a dimmer, occupant sensor, or vacancy sensor function if the control is installed to comply with § 150.0(k).

§ 150.0(k)2F: **Interior Switches and Controls.** Lighting controls must comply with the applicable requirements of § 110.9.

§ 150.0(k)2G: **Interior Switches and Controls.** An energy management control system (EMCS) may be used to comply with control requirements if it: provides functionality of the specified control according to § 110.9; meets the Installation Certificate requirements of § 130.4; meets the EMCS requirements of § 130.0(e); and meets all other requirements in § 150.0(k)2.

§ 150.0(k)2H: **Interior Switches and Controls.** A multiscene programmable controller may be used to comply with dimmer requirements in § 150.0(k) if it provides the functionality of a dimmer according to § 110.9, and complies with all other applicable requirements in § 150.0(k)2.

§ 150.0(k)2I: **Interior Switches and Controls.** In bathrooms, garages, laundry rooms, and utility rooms, at least one luminaire in each of these spaces must be controlled by an occupant sensor or a vacancy sensor providing automatic-off functionality. If an occupant sensor is installed, it must be initially configured to manual-on operation using the manual control required under Section 150.0(k)2C.

§ 150.0(k)2J: **Interior Switches and Controls.** Luminaires that are or contain light sources that meet Reference Joint Appendix JA8 requirements for dimming, and that are not controlled by occupancy or vacancy sensors, must have dimming controls.*

§ 150.0(k)2K: **Interior Switches and Controls.** Under cabinet lighting must be controlled separately from ceiling-installed lighting systems.

§ 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 meet the requirement in item § 150.0(k)3Ai (ON and OFF switch) and the requirements in either § 150.0(k)3Aii (photocell and either a motion sensor or automatic time switch control) or § 150.0(k)3Aiii (astronomical time clock), or an EMCS.

§ 150.0(k)3B: **Residential Outdoor Lighting.** For low-rise residential buildings with four or more dwelling units, outdoor lighting for private patios, entrances, balconies, and porches; and residential parking lots and carports with less than eight vehicles per site must comply with either Section 150.0(k)3A or with the applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.

§ 150.0(k)3C: **Residential Outdoor Lighting.** For low-rise residential buildings with four or more dwelling units, any outdoor lighting for residential parking lots or carports with a total of eight or more vehicles per site and any outdoor lighting not regulated by Section 150.0(k)3B or Section 150.0(k)3D must comply with the applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.

§ 150.0(k)4: **Internally illuminated address signs.** Internally illuminated address signs must comply with § 140.8; or must consume no more than 5 watts of power as determined according to § 130.0(c).

§ 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 Sections 110.9, 130.0, 130.1, 130.4, 140.6, and 141.0.

§ 150.0(k)6A: **Interior Common Areas of Low-rise Multifamily Residential Buildings.** In a low-rise multifamily residential building where the total interior common area in a single building equals 20 percent or less of the floor area, permanently installed lighting for the interior common areas in that building must be comply with Table 150.0-A and be controlled by an occupant sensor.

§ 150.0(k)6B: **Interior Common Areas of Low-rise Multifamily Residential Buildings.** In a low-rise multifamily residential building where the total interior common area in a single building equals more than 20 percent of the floor area, permanently installed lighting for the interior common areas in that building must:
i. Comply with the applicable requirements in Sections 110.9, 130.0, 130.1, 140.6 and 141.0; and
ii. Lighting installed in corridors and stairwells must be controlled by occupant sensors that reduce the lighting power in each space by at least 50 percent. The occupant sensors must be capable of turning the light fully on and off from all designed paths of ingress and egress.

Solar Ready Buildings:

§ 110.10(a)1: **Single Family Residences.** Single family residences located in subdivisions with ten 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) through § 110.10(e).

§ 110.10(a)2: **Low-rise Multifamily Buildings.** Low-rise multi-family buildings that do not have a photovoltaic system installed must comply with the requirements of § 110.10(b) through § 110.10(d).

§ 110.10(b)1: **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. For low-rise multi-family buildings the solar zone must be located on the roof or overhang of the building, or on the roof or overhang of another structure located within 250 feet of the building, or on covered parking installed with the building project, and have a total area no less than 15 percent of the total roof area of the building excluding any skylight area. The solar zone requirement is applicable to the entire building, including mixed occupancy.*

§ 110.10(b)2: **Azimuth.** All sections of the solar zone located on steep-sloped roofs must be oriented between 90 degrees and 300 degrees 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 distance, measured in the horizontal plane, 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) through § 110.10(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".

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

No.	REVISION	DATE
1	PLAN CHECK	04/02/2020

DANCO COMMUNITIES
5251 ERICSON WAY
ARCATA, CA 95532

SAGE COMMONS
80 COLLEGE AVENEUE
SANTA ROSA, CA

RESIDENTIAL

ENERGY FORMS
TITLE-24 COMPLIANCE DOCUMENTS

336 W. Main Street
Ripon, CA 95366
(209) 579-5000
(209) 522-5001
DuctTesters

DATE CREATED
01/27/2020

SHEET
EN-1.1

SPACE CONDITIONING SYSTEMS

01	02	03	04	05	06	07	08	09	10	11
Name	System Type	Heating Unit Name	Cooling Unit Name	Fan Name	Distribution Name	Required Thermostat Type	Status	Verified Existing Condition	Heating Equipment Count	Cooling Equipment Count
DDU-2 364 2/7 | :Heat Pump System 1:::2:3	Heat pump heating cooling	Heat Pump System 1	Heat Pump System 1			Non-setback thermostat	New	NA	1	1
DDU-2 364 3/7 | :Heat Pump System 1:::2:3	Heat pump heating cooling	Heat Pump System 1	Heat Pump System 1			Non-setback thermostat	New	NA	1	1
DDU-2 364 4/7 | :Heat Pump System 1:::2:3	Heat pump heating cooling	Heat Pump System 1	Heat Pump System 1			Non-setback thermostat	New	NA	1	1
DDU-2 364 5/7 | :Heat Pump System 1:::2:3	Heat pump heating cooling	Heat Pump System 1	Heat Pump System 1			Non-setback thermostat	New	NA	1	1
DDU-2 364 6/7 | :Heat Pump System 1:::2:3	Heat pump heating cooling	Heat Pump System 1	Heat Pump System 1			Non-setback thermostat	New	NA	1	1
DDU-2 364 7/7 | :Heat Pump System 1:::2:3	Heat pump heating cooling	Heat Pump System 1	Heat Pump System 1			Non-setback thermostat	New	NA	1	1
DDU-3 380 | :Heat Pump System 2:::2:3	Heat pump heating cooling	Heat Pump System 2	Heat Pump System 2			Non-setback thermostat	New	NA	1	1
DDU-4 364 1/6 | :Heat Pump System 2:::2:3	Heat pump heating cooling	Heat Pump System 2	Heat Pump System 2			Non-setback thermostat	New	NA	1	1
DDU-4 364 2/6 | :Heat Pump System 2:::2:3	Heat pump heating cooling	Heat Pump System 2	Heat Pump System 2			Non-setback thermostat	New	NA	1	1
DDU-4 364 3/6 | :Heat Pump System 2:::2:3	Heat pump heating cooling	Heat Pump System 2	Heat Pump System 2			Non-setback thermostat	New	NA	1	1
DDU-4 364 4/6 | :Heat Pump System 2:::2:3	Heat pump heating cooling	Heat Pump System 2	Heat Pump System 2			Non-setback thermostat	New	NA	1	1
DDU-4 364 5/6 | :Heat Pump System 2:::2:3	Heat pump heating cooling	Heat Pump System 2	Heat Pump System 2			Non-setback thermostat	New	NA	1	1

SPACE CONDITIONING SYSTEMS

01	02	03	04	05	06	07	08	09	10	11
Name	System Type	Heating Unit Name	Cooling Unit Name	Fan Name	Distribution Name	Required Thermostat Type	Status	Verified Existing Condition	Heating Equipment Count	Cooling Equipment Count
DDU-4 364 6/6 | :Heat Pump System 2:::2:3	Heat pump heating cooling	Heat Pump System 2	Heat Pump System 2			Non-setback thermostat	New	NA	1	1
DDU-5 364 1/4 | :Heat Pump System 3:::2:3	Heat pump heating cooling	Heat Pump System 3	Heat Pump System 3			Non-setback thermostat	New	NA	1	1
DDU-5 364 2/4 | :Heat Pump System 3:::2:3	Heat pump heating cooling	Heat Pump System 3	Heat Pump System 3			Non-setback thermostat	New	NA	1	1
DDU-5 364 3/4 | :Heat Pump System 3:::2:3	Heat pump heating cooling	Heat Pump System 3	Heat Pump System 3			Non-setback thermostat	New	NA	1	1
DDU-5 364 4/4 | :Heat Pump System 3:::2:3	Heat pump heating cooling	Heat Pump System 3	Heat Pump System 3			Non-setback thermostat	New	NA	1	1
DDU-6 728 | :Heat Pump System 3:::2:3	Heat pump heating cooling	Heat Pump System 3	Heat Pump System 3			Non-setback thermostat	New	NA	2	2
DDU-7 380 | :Heat Pump System 4:::2:3	Heat pump heating cooling	Heat Pump System 4	Heat Pump System 4			Non-setback thermostat	New	NA	1	1
DDU-8 364 1/7 | :Heat Pump System 4:::2:3	Heat pump heating cooling	Heat Pump System 4	Heat Pump System 4			Non-setback thermostat	New	NA	1	1
DDU-8 364 2/7 | :Heat Pump System 4:::2:3	Heat pump heating cooling	Heat Pump System 4	Heat Pump System 4			Non-setback thermostat	New	NA	1	1
DDU-8 364 3/7 | :Heat Pump System 4:::2:3	Heat pump heating cooling	Heat Pump System 4	Heat Pump System 4			Non-setback thermostat	New	NA	1	1
DDU-8 364 4/7 | :Heat Pump System 4:::2:3	Heat pump heating cooling	Heat Pump System 4	Heat Pump System 4			Non-setback thermostat	New	NA	1	1
DDU-8 364 5/7 | :Heat Pump System 4:::2:3	Heat pump heating cooling	Heat Pump System 4	Heat Pump System 4			Non-setback thermostat	New	NA	1	1

SPACE CONDITIONING SYSTEMS

01	02	03	04	05	06	07	08	09	10	11
Name	System Type	Heating Unit Name	Cooling Unit Name	Fan Name	Distribution Name	Required Thermostat Type	Status	Verified Existing Condition	Heating Equipment Count	Cooling Equipment Count
DDU-8 364 6/7 | :Heat Pump System 4:::2:3	Heat pump heating cooling	Heat Pump System 4	Heat Pump System 4			Non-setback thermostat	New	NA	1	1
DDU-8 364 7/7 | :Heat Pump System 4:::2:3	Heat pump heating cooling	Heat Pump System 4	Heat Pump System 4			Non-setback thermostat	New	NA	1	1
DDU-9 380 | :Heat Pump System 5:::2:3	Heat pump heating cooling	Heat Pump System 5	Heat Pump System 5			Non-setback thermostat	New	NA	1	1
DDU-10 364 1/6 | :Heat Pump System 5:::2:3	Heat pump heating cooling	Heat Pump System 5	Heat Pump System 5			Non-setback thermostat	New	NA	1	1
DDU-10 364 2/6 | :Heat Pump System 5:::2:3	Heat pump heating cooling	Heat Pump System 5	Heat Pump System 5			Non-setback thermostat	New	NA	1	1
DDU-10 364 3/6 | :Heat Pump System 5:::2:3	Heat pump heating cooling	Heat Pump System 5	Heat Pump System 5			Non-setback thermostat	New	NA	1	1
DDU-10 364 4/6 | :Heat Pump System 5:::2:3	Heat pump heating cooling	Heat Pump System 5	Heat Pump System 5			Non-setback thermostat	New	NA	1	1
DDU-10 364 5/6 | :Heat Pump System 5:::2:3	Heat pump heating cooling	Heat Pump System 5	Heat Pump System 5			Non-setback thermostat	New	NA	1	1
DDU-10 364 6/6 | :Heat Pump System 5:::2:3	Heat pump heating cooling	Heat Pump System 5	Heat Pump System 5			Non-setback thermostat	New	NA	1	1
DDU-11 364 1/6 | :Heat Pump System 6:::2:3	Heat pump heating cooling	Heat Pump System 6	Heat Pump System 6			Non-setback thermostat	New	NA	1	1
DDU-11 364 2/6 | :Heat Pump System 6:::2:3	Heat pump heating cooling	Heat Pump System 6	Heat Pump System 6			Non-setback thermostat	New	NA	1	1
DDU-11 364 3/6 | :Heat Pump System 6:::2:3	Heat pump heating cooling	Heat Pump System 6	Heat Pump System 6			Non-setback thermostat	New	NA	1	1

SPACE CONDITIONING SYSTEMS

01	02	03	04	05	06	07	08	09	10	11
Name	System Type	Heating Unit Name	Cooling Unit Name	Fan Name	Distribution Name	Required Thermostat Type	Status	Verified Existing Condition	Heating Equipment Count	Cooling Equipment Count
DDU-11 364 4/6 | :Heat Pump System 6:::2:3	Heat pump heating cooling	Heat Pump System 6	Heat Pump System 6			Non-setback thermostat	New	NA	1	1
DDU-11 364 5/6 | :Heat Pump System 6:::2:3	Heat pump heating cooling	Heat Pump System 6	Heat Pump System 6			Non-setback thermostat	New	NA	1	1
DDU-11 364 6/6 | :Heat Pump System 6:::2:3	Heat pump heating cooling	Heat Pump System 6	Heat Pump System 6			Non-setback thermostat	New	NA	1	1
DDU-12 380 | :Heat Pump System 7:::2:3	Heat pump heating cooling	Heat Pump System 7	Heat Pump System 7			Non-setback thermostat	New	NA	1	1
DDU-13 364 1/6 | :Heat Pump System 7:::2:3	Heat pump heating cooling	Heat Pump System 7	Heat Pump System 7			Non-setback thermostat	New	NA	1	1
DDU-13 364 2/6 | :Heat Pump System 7:::2:3	Heat pump heating cooling	Heat Pump System 7	Heat Pump System 7			Non-setback thermostat	New	NA	1	1
DDU-13 364 3/6 | :Heat Pump System 7:::2:3	Heat pump heating cooling	Heat Pump System 7	Heat Pump System 7			Non-setback thermostat	New	NA	1	1
DDU-13 364 4/6 | :Heat Pump System 7:::2:3	Heat pump heating cooling	Heat Pump System 7	Heat Pump System 7			Non-setback thermostat	New	NA	1	1
DDU-13 364 5/6 | :Heat Pump System 7:::2:3	Heat pump heating cooling	Heat Pump System 7	Heat Pump System 7			Non-setback thermostat	New	NA	1	1
DDU-13 364 6/6 | :Heat Pump System 7:::2:3	Heat pump heating cooling	Heat Pump System 7	Heat Pump System 7			Non-setback thermostat	New	NA	1	1
DDU-14 364 1/6 | :Heat Pump System 8:::2:3	Heat pump heating cooling	Heat Pump System 8	Heat Pump System 8			Non-setback thermostat	New	NA	1	1
DDU-14 364 2/6 | :Heat Pump System 8:::2:3	Heat pump heating cooling	Heat Pump System 8	Heat Pump System 8			Non-setback thermostat	New	NA	1	1

SPACE CONDITIONING SYSTEMS

01	02	03	04	05	06	07	08	09	10	11
Name	System Type	Heating Unit Name	Cooling Unit Name	Fan Name	Distribution Name	Required Thermostat Type	Status	Verified Existing Condition	Heating Equipment Count	Cooling Equipment Count
DDU-14 364 3/6 | :Heat Pump System 8:::2:3	Heat pump heating cooling	Heat Pump System 8	Heat Pump System 8			Non-setback thermostat	New	NA	1	1
DDU-14 364 4/6 | :Heat Pump System 8:::2:3	Heat pump heating cooling	Heat Pump System 8	Heat Pump System 8			Non-setback thermostat	New	NA	1	1
DDU-14 364 5/6 | :Heat Pump System 8:::2:3	Heat pump heating cooling	Heat Pump System 8	Heat Pump System 8			Non-setback thermostat	New	NA	1	1
DDU-14 364 6/6 | :Heat Pump System 8:::2:3	Heat pump heating cooling	Heat Pump System 8	Heat Pump System 8			Non-setback thermostat	New	NA	1	1

HVAC - HEAT PUMPS

01	02	03	04	05	06	07	08	09	10	11
Name	System Type	Number of Units	Heating			Cooling		Zonally Controlled	Compressor Type	HERS Verification
			HSPF/COP	Cap 47	Cap 17	SEER	EER			
Heat Pump System 1	Room HP	8	8.608	6100	5500	12	12.07	Not Zonal	Single Speed	Heat Pump System 1-hers-htpump
Heat Pump System 2	Room HP	7	8.608	6100	5500	12	12.07	Not Zonal	Single Speed	Heat Pump System 2-hers-htpump
Heat Pump System 3	Room HP	6	8.608	6100	5500	12	12.07	Not Zonal	Single Speed	Heat Pump System 3-hers-htpump
Heat Pump System 4	Room HP	8	8.608	6100	5500	12	12.07	Not Zonal	Single Speed	Heat Pump System 4-hers-htpump
Heat Pump System 5	Room HP	7	8.608	6100	5500	12	12.07	Not Zonal	Single Speed	Heat Pump System 5-hers-htpump

HVAC - HEAT PUMPS

01	02	03	04	05	06	07	08	09	10	11
Name	System Type	Number of Units	Heating			Cooling		Zonally Controlled	Compressor Type	HERS Verification
			HSPF/COP	Cap 47	Cap 17	SEER	EER			
Heat Pump System 6	Room HP	6	8.608	6100	5500	12	12.07	Not Zonal	Single Speed	Heat Pump System 6-hers-htpump
Heat Pump System 7	Room HP	7	8.608	6100	5500	12	12.07	Not Zonal	Single Speed	Heat Pump System 7-hers-htpump
Heat Pump System 8	Room HP	6	8.608	6100	5500	12	12.07	Not Zonal	Single Speed	Heat Pump System 8-hers-htpump

HVAC HEAT PUMPS - HERS VERIFICATION

01	02	03	04	05	06	07	08	09
Name	Verified Airflow	Airflow Target	Verified EER	Verified SEER	Verified Refrigerant Charge	Verified HSPF	Verified Heating Cap 47	Verified Heating Cap 17
Heat Pump System 1-hers-htpump	Not Required	0	Not Required	Not Required	No	No	No	No
Heat Pump System 2-hers-htpump	Not Required	0	Not Required	Not Required	No	No	No	No
Heat Pump System 3-hers-htpump	Not Required	0	Not Required	Not Required	No	No	No	No
Heat Pump System 4-hers-htpump	Not Required	0	Not Required	Not Required	No	No	No	No
Heat Pump System 5-hers-htpump	Not Required	0	Not Required	Not Required	No	No	No	No
Heat Pump System 6-hers-htpump	Not Required	0	Not Required	Not Required	No	No	No	No
Heat Pump System 7-hers-htpump	Not Required	0	Not Required	Not Required	No	No	No	No
Heat Pump System 8-hers-htpump	Not Required	0	Not Required	Not Required	No	No	No	No

IAQ (INDOOR AIR QUALITY) FANS

01	02	03	04	05	06
Dwelling Unit	IAQ CFM	IAQ Watts/CFM	IAQ Fan Type	IAQ Recovery Effectiveness (%)	IAQ Recovery Effectiveness - SREIAQ Recovery Effectiveness - SRE
DDU-1 380 1/1	26	0.25	Default	0	n/a
DDU-2 364 1/7	26	0.25	Default	0	n/a
DDU-2 364 2/7	26	0.25	Default	0	n/a
DDU-2 364 3/7	26	0.25	Default	0	n/a
DDU-2 364 4/7	26	0.25	Default	0	n/a
DDU-2 364 5/7	26	0.25	Default	0	n/a
DDU-2 364 6/7	26	0.25	Default	0	n/a
DDU-2 364 7/7	26	0.25	Default	0	n/a
DDU-3 380 1/1	26	0.25	Default	0	n/a
DDU-4 364 1/6	26	0.25	Default	0	n/a
DDU-4 364 2/6	26	0.25	Default	0	n/a
DDU-4 364 3/6	26	0.25	Default	0	n/a
DDU-4 364 4/6	26	0.25	Default	0	n/a
DDU-4 364 5/6	26	0.25	Default	0	n/a
DDU-4 364 6/6	26	0.25	Default	0	n/a
DDU-5 364 1/4	26	0.25	Default	0	n/a
DDU-5 364 2/4	26	0.25	Default	0	n/a
DDU-5 364 3/4	26	0.25	Default	0	n/a
DDU-5 364 4/4	26	0.25	Default	0	n/a
DDU-6 728 1/1	37	0.25	Default	0	n/a
DDU-7 380 1/1	26	0.25	Default	0	n/a
DDU-8 364 1/7	26	0.25	Default	0	n/a
DDU-8 364 2/7	26	0.25	Default	0	n/a
DDU-8 364 3/7	26	0.25	Default	0	n/a

IAQ (INDOOR AIR QUALITY) FANS

01	02	03	04	05	06
Dwelling Unit	IAQ CFM	IAQ Watts/CFM	IAQ Fan Type	IAQ Recovery Effectiveness (%)	IAQ Recovery Effectiveness - SREIAQ Recovery Effectiveness - SRE
DDU-8 364 4/7	26	0.25	Default	0	n/a
DDU-8 364 5/7	26	0.25	Default	0	n/a
DDU-8 364 6/7	26	0.25	Default	0	n/a
DDU-8 364 7/7	26	0.25	Default	0	n/a
DDU-9 380 1/1	26	0.25	Default	0	n/a
DDU-10 364 1/6	26	0.25	Default	0	n/a
DDU-10 364 2/6	26	0.25	Default	0	n/a
DDU-10 364 3/6	26	0.25	Default	0	n/a
DDU-10 364 4/6	26	0.25	Default	0	n/a
DDU-10 364 5/6	26	0.25	Default	0	n/a
DDU-10 364 6/6	26	0.25	Default	0	n/a
DDU-11 364 1/6	26	0.25	Default	0	n/a
DDU-11 364 2/6	26	0.25	Default	0	n/a
DDU-11 364 3/6	26	0.25	Default	0	n/a
DDU-11 364 4/6	26	0.25	Default	0	n/a
DDU-11 364 5/6	26	0.25	Default	0	n/a
DDU-11 364 6/6	26	0.25	Default	0	n/a
DDU-12 380 1/1	26	0.25	Default	0	n/a
DDU-13 364 1/6	26	0.25	Default	0	n/a
DDU-13 364 2/6	26	0.25	Default	0	n/a
DDU-13 364 3/6	26	0.25	Default	0	n/a
DDU-13 364 4/6	26	0.25	Default	0	n/a
DDU-13 364 5/6	26	0.25	Default	0	n/a
DDU-13 364 6/6	26	0.25	Default	0	n/a
DDU-14 364 1/6	26	0.25	Default	0	n/a

IAQ (INDOOR AIR QUALITY) FANS

01	02	03	04	05	06
Dwelling Unit	IAQ CFM	IAQ Watts/CFM	IAQ Fan Type	IAQ Recovery Effectiveness (%)	IAQ Recovery Effectiveness - SREIAQ Recovery Effectiveness - SRE
DDU-14 364 2/6	26	0.25	Default	0	n/a
DDU-14 364 3/6	26	0.25	Default	0	n/a
DDU-14 364 4/6	26	0.25	Default	0	n/a
DDU-14 364 5/6	26	0.25	Default	0	n/a
DDU-14 364 6/6	26	0.25	Default	0	n/a

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name: Derrick Yeung	Documentation Author Signature: Derrick Yeung
Company: DuctTesters, Inc.	Signature Date: 04/02/2020
Address: 336 West Main Street	CEA/ HERS Certification Identification (If applicable):
City/State/Zip: Ripon, CA 95366	Phone: 209-579-5000

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: Derrick Yeung	Responsible Designer Signature: Derrick Yeung
Company: DuctTesters, Inc.	Date Signed: 04/02/2020
Address: 336 West Main Street	License:
City/State/Zip: Ripon, CA 95366	Phone: 209-579-5000

REVIEWED FOR CODE COMPLIANCE BY COASTLAND CIVIL ENGINEERING, INC. IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

2019 Low-Rise Residential Mandatory Measures Summary

Building Envelope Measures:	
§ 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 Section 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 Section 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):	**Ceiling and Rafter Roof Insulation.** Minimum R-22 insulation in wood-frame ceiling; or the weighted average U-factor must not exceed 0.043. Minimum R-19 or weighted average U-factor of 0.054 or less in a rafter roof alteration. 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 continuous 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, (R-19 in 2x6 or U-factor of 0.074 or less). Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102, equivalent to an installed value of R-13 in a wood framed assembly. Masonry walls must meet Table 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%; 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 0.58; or the weighted average U-factor of all fenestration must not exceed 0.58.*
Fireplaces, Decorative Gas Appliances, and Gas Log Measures:	
§ 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 Measures:	
§ 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 Energy Commission.*
§ 110.2(a):	**HVAC Efficiency.** Equipment must meet the applicable efficiency requirements in Table 110.2-A through Table 110.2-K.*
§ 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)4:	**Water Heating Recirculation Loops Serving Multiple Dwelling Units.** Water heating recirculation loops serving multiple dwelling units must meet the air release valve, backflow prevention, pump priming, pump isolation valve, and recirculation loop connection requirements of § 110.3(c)4.
§ 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.
§ 110.5:	**Pilot Lights.** Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces; household cooking appliances (appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu/hr are exempt); 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 5 feet from the outlet of any dryer vent.
§ 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:	**Storage Tank Insulation.** Unfired hot water tanks, such as storage tanks and backup storage tanks for solar water-heating systems, must have a minimum of R-12 external insulation or R-16 internal insulation where the internal insulation R-value is indicated on the exterior of the tank.
§ 150.0(j)2A:	**Water Piping, Solar Water-heating System Piping, and Space Conditioning System Line Insulation.** All domestic hot water piping must be insulated as specified in Section 609.11 of the California Plumbing Code. In addition, the following piping conditions must have a minimum insulation wall thickness of 1 inch or a minimum insulation R-value of 7.7: the first 5 feet of cold water pipes from the storage tank; all hot water piping with a nominal diameter equal to or greater than 3/4 inch and less than 1 inch; all hot water piping with a nominal diameter less than 3/4 inch that is: associated with a domestic hot water recirculation system, from the heating source to storage tank or between tanks, buried below grade, and from the heating source to kitchen fixtures.*
§ 150.0(j)3:	**Insulation Protection.** Piping insulation must be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind as required by Section 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 include all of the following: A dedicated 125 volt, 20 amp electrical receptacle that is connected to the electric panel with a 120/240 volt 3 conductor, 10 AWG copper branch circuit, within 3 feet from the water heater without obstruction. Both ends of the unused conductor must be labeled with the word "spare" and be electrically isolated. Have a reserved single pole circuit breaker space in the electrical panel adjacent to the circuit breaker for the branch circuit and labeled with the words "Future 240V Use"; a Category III or IV vent, or a Type B vent with straight pipe between the outside termination and the space where the water heater is installed; a condensate drain that is no more than 2 inches higher than the base of the water heater, and allows natural draining without pump assistance; and a gas supply line with a capacity of at least 200,000 Btu per hour.
§ 150.0(n)2:	**Recirculating Loops.** Recirculating loops serving multiple dwelling units must meet the requirements of § 110.3(c)5.
§ 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 Measures:	
§ 110.8(d)3:	**Ducts.** Insulation installed on an existing space-conditioning duct must comply with California Mechanical Code (CMC) Section 604.0. 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 the requirements of the CMC Section 601.0, 602.0, 603.0, 604.0, 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 a minimum installed level of R-6.0 or a minimum installed level of R-4.2 when ducts are entirely in conditioned space as confirmed through field verification and diagnostic testing (RA3.1.4.3.8). Portions of the duct system completely exposed and surrounded by directly conditioned space are not required to be insulated. 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 requirements of UL 181, UL 181A, or UL 181B or aerosol sealant that meets the requirements of UL 723. If mastic or tape is used to seal openings greater than ¼ inch, the combination of mastic and either mesh or tape must be used. Building cavities, support platforms for air handlers, 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 cavities and support platforms must not be compressed to cause reductions in the cross-sectional area.*
§ 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, sunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather must be suitable for outdoor service. For example, protected by aluminum, sheet metal, painted canvas, or plastic cover. Cellular foam insulation must be protected as above or painted with a coating that is water retardant and provides shielding from solar radiation.
§ 150.0(m)10:	**Porous Inner Core Flex Duct.** Porous inner core flex ducts must have a non-porous layer 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 § 150.0(m)11 and Reference Residential Appendix RA3.
§ 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 2 inch depth or can be 1 inch if sized per Equation 150.0-A. Pressure drops and labeling must meet the requirements in §150.0(m)12. Filters must be accessible for regular service.*
§ 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.*
Requirements for 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)1C:	**Single Family Detached Dwelling Units.** 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 provided at rates determined by ASHRAE 62.2 Sections 4.1.1 and 4.1.2 and as specified in § 150.0(o)1C.
§ 150.0(o)1E:	**Multifamily Attached Dwelling Units.** Multifamily attached dwelling units must have mechanical ventilation airflow provided at rates in accordance with Equation 150.0-B and must be either a balanced system or continuous supply or continuous exhaust system. If a balanced system is not used, all units in the building must use the same system type and the dwelling-unit envelope leakage must be ≤ 0.3 CFM at 50 Pa (0.2 inch water) per square foot of dwelling unit envelope surface area and verified in accordance with Reference Residential Appendix RA3.8.
§ 150.0(o)1F:	**Multifamily Building Central Ventilation Systems.** Central ventilation systems that serve multiple dwelling units must be balanced to provide ventilation airflow for each dwelling unit served at a rate equal to or greater than the rate specified by Equation 150.0-B. All unit airflows must be within 20% of the unit with the lowest airflow rate as it relates to the individual unit's minimum required airflow rate needed for compliance.
§ 150.0(o)1G:	**Kitchen Range Hoods.** Kitchen range hoods must be rated for sound in accordance with Section 7.2 of ASHRAE 62.2.
§ 150.0(o)2:	**Field Verification and Diagnostic Testing.** Dwelling unit ventilation airflow must be verified in accordance with Reference Residential Appendix RA3.7. Kitchen range hoods must be verified in accordance with Reference Residential Appendix RA3.7.4.3 to confirm it is rated by HVI to comply with the airflow rates and sound requirements as specified in Section 5 and 7.2 of ASHRAE 62.2.
Pool and Spa Systems and Equipment Measures:	
§ 110.4(a):	**Certification by Manufacturers.** Any pool or spa heating system or equipment must be certified to have all of the following: a thermal efficiency that complies with the Appliance Efficiency Regulations; 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 Measures:	
§ 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.
§ 150.0(k)1B:	**Blank Electrical Boxes.** The number of electrical boxes that are more than 5 feet above the finished floor and do not contain a luminaire or other device must be no greater than the number of bedrooms. These electrical boxes must be served by a dimmer, vacancy sensor control, or fan speed control.
§ 150.0(k)1C:	**Recessed Downlight Luminaires in Ceilings.** Luminaires recessed into ceilings must meet all of the requirements for: insulation contact (IC) labeling; air leakage; sealing; maintenance; and socket and light source as described in § 150.0(k)1C.
§ 150.0(k)1D:	**Electronic Ballasts for Fluorescent Lamps.** Ballasts for fluorescent lamps rated 13 watts or greater must be electronic and must have an output frequency no less than 20 kHz.
§ 150.0(k)1E:	**Night Lights, Step Lights, and Path Lights.** Night lights, step lights and path lights are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided they are rated to consume no more than 5 watts of power and emit no more than 150 lumens.
§ 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).*
§ 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)2C:	**Interior Switches and Controls.** Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually turned ON and OFF.*
§ 150.0(k)2D:	**Interior Switches and Controls.** Controls and equipment must be installed in accordance with manufacturer's instructions.
§ 150.0(k)2E:	**Interior Switches and Controls.** Controls must not bypass a dimmer, occupant sensor, or vacancy sensor function if the control is installed to comply with § 150.0(k).
§ 150.0(k)2F:	**Interior Switches and Controls.** Lighting controls must comply with the applicable requirements of § 110.9.
§ 150.0(k)2G:	**Interior Switches and Controls.** An energy management control system (EMCS) may be used to comply with control requirements if it: provides functionality of the specified control according to § 110.9; meets the Installation Certificate requirements of § 130.4; meets the EMCS requirements of § 130.0(e); and meets all other requirements in § 150.0(k)2.
§ 150.0(k)2H:	**Interior Switches and Controls.** A multiscene programmable controller may be used to comply with dimmer requirements in § 150.0(k) if it provides the functionality of a dimmer according to § 110.9, and complies with all other applicable requirements in § 150.0(k)2.
§ 150.0(k)2I:	**Interior Switches and Controls.** In bathrooms, garages, laundry rooms, and utility rooms, at least one luminaire in each of these spaces must be controlled by an occupant sensor or a vacancy sensor providing automatic-off functionality. If an occupant sensor is installed, it must be initially configured to manual-on operation using the manual control required under Section 150.0(k)2C.
§ 150.0(k)2J:	**Interior Switches and Controls.** Luminaires that are or contain light sources that meet Reference Joint Appendix JA8 requirements for dimming, and that are not controlled by occupancy or vacancy sensors, must have dimming controls.*
§ 150.0(k)2K:	**Interior Switches and Controls.** Under cabinet lighting must be controlled separately from ceiling-installed lighting systems.
§ 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 meet the requirement in item § 150.0(k)3Ai (ON and OFF switch) and the requirements in either § 150.0(k)3Aii (photocell and either a motion sensor or automatic time switch control) or § 150.0(k)3Aiii (astronomical time clock), or an EMCS.
§ 150.0(k)3B:	**Residential Outdoor Lighting.** For low-rise residential buildings with four or more dwelling units, outdoor lighting for private patios, entrances, balconies, and porches; and residential parking lots and carports with less than eight vehicles per site must comply with either Section 150.0(k)3A or with the applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.
§ 150.0(k)3C:	**Residential Outdoor Lighting.** For low-rise residential buildings with four or more dwelling units, any outdoor lighting for residential parking lots or carports with a total of eight or more vehicles per site and any outdoor lighting not regulated by Section 150.0(k)3B or Section 150.0(k)3D must comply with the applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.
§ 150.0(k)4:	**Internally illuminated address signs.** Internally illuminated address signs must comply with § 140.8; or must consume no more than 5 watts of power as determined according to § 130.0(c).
§ 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 Sections 110.9, 130.0, 130.1, 130.4, 140.6, and 141.0.
§ 150.0(k)6A:	**Interior Common Areas of Low-rise Multifamily Residential Buildings.** In a low-rise multifamily residential building where the total interior common area in a single building equals 20 percent or less of the floor area, permanently installed lighting for the interior common areas in that building must be comply with Table 150.0-A and be controlled by an occupant sensor.
§ 150.0(k)6B:	**Interior Common Areas of Low-rise Multifamily Residential Buildings.** In a low-rise multifamily residential building where the total interior common area in a single building equals more than 20 percent of the floor area, permanently installed lighting for the interior common areas in that building must: i. Comply with the applicable requirements in Sections 110.9, 130.0, 130.1, 140.6 and 141.0; and ii. Lighting installed in corridors and stairwells must be controlled by occupant sensors that reduce the lighting power in each space by at least 50 percent. The occupant sensors must be capable of turning the light fully on and off from all designed paths of ingress and egress.
Solar Ready Buildings:	
§ 110.10(a)1:	**Single Family Residences.** Single family residences located in subdivisions with ten 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) through § 110.10(e).
§ 110.10(a)2:	**Low-rise Multifamily Buildings.** Low-rise multi-family buildings that do not have a photovoltaic system installed must comply with the requirements of § 110.10(b) through § 110.10(d).
§ 110.10(b)1:	**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. For low-rise multi-family buildings the solar zone must be located on the roof or overhang of the building, or on the roof or overhang of another structure located within 250 feet of the building, or on covered parking installed with the building project, and have a total area no less than 15 percent of the total roof area of the building excluding any skylight area. The solar zone requirement is applicable to the entire building, including mixed occupancy.*
§ 110.10(b)2:	**Azimuth.** All sections of the solar zone located on steep-sloped roofs must be oriented between 90 degrees and 300 degrees 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 distance, measured in the horizontal plane, 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) through § 110.10(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".

DATE	REVISION	No.
04/02/2020	PLAN CHECK	1

DANCO COMMUNITIES
5251 ERICSON WAY
ARCATA, CA 95532

SAGE COMMONS
80 COLLEGE AVENEUE
SANTA ROSA, CA
RESIDENTIAL

ENERGY FORMS
TITLE-24 COMPLIANCE DOCUMENTS

336 W. Main Street
Ripon, CA 95366
(209) 579-5000
(209) 522-5001

DuctTesters

DATE CREATED 01/27/2020

SHEET **EN-1.2**

Project Name:	Sage Commons - NonRes	NRCC-PRF-01-E	Page 1 of 22
Project Address:	80 College Avenue Santa Rosa 95401	Calculation Date/Time:	18:07, Thu, Apr 02, 2020
Input File Name:	Sage Commons - NonRes.cibd19x		

A. GENERAL INFORMATION

1.	Project Location (city)	Santa Rosa	8.	Standards Version	Compliance2019
2.	CA Zip Code	95401	9.	Compliance Software (version)	EnergyPro 8.1
3.	Climate Zone	2	10.	Weather File	SANTA-ROSA_724957_CZ2010.epw
4.	Total Conditioned Floor Area in Scope	6,301 ft²	11.	Building Orientation (deg)	(N) 0 deg
5.	Total Unconditioned Floor Area	10,891 ft²	12.	Permitted Scope of Work	NewComplete
6.	Total # of Stories (Habitable Above Grade)	3	13	Building Type(s)	Nonresidential
7.	Total # of dwelling units	0	14	Gas Type	Propane

B. PROJECT SUMMARY

Table Instructions: Table B shows which building components are included in the performance calculation. If indicated as not included, the project must show compliance prescriptively if within permit application.

Building Components Complying via Performance				Building Components Complying Prescriptively	
Envelope	☒ Performance ☐ Not Included	Covered Process: Commercial Kitchens	☐ Performance ☒ Not Included	*The following building components are ONLY eligible for prescriptive compliance and should be documented on the NRCC form listed if within the scope of the permit application (i.e. compliance will not be shown on the NRCC-PRF-E).*	
Mechanical	☒ Performance ☐ Not Included	Covered Process: Computer Rooms	☐ Performance ☒ Not Included	Indoor Lighting (Unconditioned)§140.6 Outdoor Lighting §140.7	*NRCC-LTI -E is required* *NRCC-LTO-E is required*
Domestic Hot Water	☒ Performance ☐ Not Included	Covered Process: Laboratory Exhaust	☐ Performance ☒ Not Included	Sign Lighting §140.8 Mandatory Measures	*NRCC -LTS-E is required*
Lighting (Indoor Conditioned)	☒ Performance ☐ Not Included			*Electrical power systems, commissioning and solar ready requirements are mandatory and should be documented on the NRCC form listed if applicable (i.e. compliance will not be shown on the NRCC-PRF-E.)* Electrical Power Distribution §110.11	 *NRCC-ELC-E is required*
Solar Thermal Water Heating	☐ Performance ☒ Not Included			Commissioning §120.8 Solar Ready §110.10	*NRCC-CXR-E is required* *NRCC-SRA-E is required*

Project Name:	Sage Commons - NonRes	NRCC-PRF-01-E	Page 2 of 22
Project Address:	80 College Avenue Santa Rosa 95401	Calculation Date/Time:	18:07, Thu, Apr 02, 2020
Input File Name:	Sage Commons - NonRes.cibd19x		

C1. COMPLIANCE RESULTS FOR PERFORMANCE COMPONENTS (Annual TDV Energy Use, kBtu/ft ^{2}-yr)

COMPLIES

Energy Component	Standard Design (TDV)	Proposed Design (TDV)	Compliance Margin (TDV)[1]
Space Heating	206.42	46.33	160.09
Space Cooling	101.95	110.27	-8.32
Indoor Fans	333.76	507.03	-173.27
Heat Rejection	--	--	--
Pumps & Misc.	--	--	--
Domestic Hot Water	60.30	24.12	36.18
Indoor Lighting	48.69	35.22	13.47
ENERGY STANDARDS COMPLIANCE TOTAL	**751.12**	**722.97**	**28.15 (3.7%)**

[1] Notes: The number in parenthesis following the Compliance Margin in column 4. represents the Percent Better than Standard.

C2. RESULTS FOR 'ABOVE CODE' QUALIFICATIONS[1]

☐ This project is pursuing CalGreen Tier 1 ☐ This project is pursuing CalGreen Tier 2

Miscellaneous Energy Component	Standard Design (TDV)	Proposed Design (TDV)	Compliance Margin (TDV)[1]
Receptacle	229.06	229.06	0.0
Process	--	--	--
Other Ltg	95.70	95.70	0.0
Process Motors	--	--	--
COMPLIANCE TOTAL PLUS MISCELLANEOUS COMPONENTS	**1,075.88**	**1,047.73**	**28.2 (2.6%)**

[1] Notes: This table is used to document compliance with programs OTHER THAN Title 24 Part 6, if applicable.

D. EXCEPTIONAL CONDITIONS

The aged solar reflectance and aged thermal emittance must be listed in the Cool Roof Rating Council database of certified products. For projects where initial reflectance is used, the initial reflectance must be listed, and the aged reflectance is calculated by the software program and used in the compliance model.

This project uses the Simplified Geometry Performance Modeling Approach which is not capable of modeling daylighting controls and assumes the prescriptive Secondary Daylit Control requirements are met. PRESCRIPTIVE COMPLIANCE documentation (form NRCC-LTI-02-E) for the requirements of section 140.6(d) Automatic Daylighting Controls in Secondary Daylit Zones is required.

Project Name:	Sage Commons - NonRes	NRCC-PRF-01-E	Page 3 of 22
Project Address:	80 College Avenue Santa Rosa 95401	Calculation Date/Time:	18:07, Thu, Apr 02, 2020
Input File Name:	Sage Commons - NonRes.cibd19x		

E. HERS VERIFICATION

This Section Does Not Apply

F. ADDITIONAL REMARKS

This Section Does Not Apply

G. ENVELOPE GENERAL INFORMATION

1 Opaque Surfaces & Orientation	2 Total Gross Surface Area (ft²)	3 Total Fenestration Area (ft²)	4 Window to Wall Ratio (%)
North-Facing[1]	2,677 ft²	734 ft²	27.4%
East-Facing[2]	251 ft²	0 ft²	00.0%
South-Facing[3]	2,565 ft²	803 ft²	31.3%
West-Facing[4]	905 ft²	288 ft²	31.8%
Total	**6,398 ft²**	**1,824 ft²**	**28.5%**
Roof	1,090 ft²	0 ft²	00.0%

Notes:
[1] North-Facing is oriented to within 45 degrees of true north, including 45°00'00" east of north (NE), but excluding 45°00'00" west of north (NW).
[2] East-Facing is oriented to within 45 degrees of true east, including 45°00'00" south of east (SE), but excluding 45°00'00" north of east (NE).
[3] South-Facing is oriented to within 45 degrees of true south, including 45°00'00" west of south (SW), but excluding 45°00'00" east of south (SE).
[4] West-Facing is oriented to within 45 degrees of true west, including 45°00'00" north of due west (NW), but excluding 45°00'00" south of west (SW).

H. FENESTRATION ASSEMBLY SUMMARY §110.6

1. Fenestration Assembly Name / Tag or I.D.	2. Fenestration Type / Product Type / Frame Type	3. Certification Method[1]	4. Assembly Method	5. Area ft²	6. Overall U-factor	7. Overall SHGC	8. Overall VT	9. Status[2]
Residential Prescriptive	VerticalFenestration FixedWindow N/A	NFRC Rated	Manufactured	1824	0.30	0.23	0.50	N

[1] Newly installed fenestration shall have a certified NFRC Label Certificate or use the CEC default tables found in Table 110.6-A and Table 110.6-B. Center of Glass (COG) values are for the glass-only, determined by the manufacturer, and are shown for ease of verification. Site-built fenestration values are calculated per Nonresidential Appendix NA6 and are used in the analysis.
[2] Status: N - New, A – Altered, E – Existing

Project Name:	Sage Commons - NonRes	NRCC-PRF-01-E	Page 4 of 22
Project Address:	80 College Avenue Santa Rosa 95401	Calculation Date/Time:	18:07, Thu, Apr 02, 2020
Input File Name:	Sage Commons - NonRes.cibd19x		

I. ENVELOPE DETAILS §120.7 & §140.3

I1. OPAQUE SURFACE ASSEMBLY SUMMARY

1 Surface Name	2 Surface Type	3 Description of Assembly Layers	4 Area (ft²)	5 Framing Type	6 Cavity R-Value	7 Continuous R-Value	8 U-Factor / F-Factor / C-Factor	9 Status[1]
2x6 ExtWall-Stucco16	ExteriorWall	Stucco - 7/8 in. Vapor permeable felt - 1/8 in. Wood framed wall, 16in. OC, 5.5in., R-21 Gypsum Board - 1/2 in.	6855	Wood	21	NA	U-Factor: 0.069	N
Slab On Grade19	UndergroundFloor	Slab Type = UnheatedSlabOnGrade Insulation Orientation = None Insulation R-Value = R0	7611	NA	0	NA	F-Factor: 0.730	N
Party Wall21	InteriorWall	Gypsum Board - 1/2 in. Wood framed wall, 16in. OC, 3.5in., R-13 Gypsum Board - 1/2 in.	3324	Wood	13	NA	U-Factor: 0.093	N
Interior Floor161	InteriorFloor	Gypsum Board - 1/2 in. Wood framed floor, 16in. OC, 11.25in., R-19 Plywood - 1/2 in. Carpet - 3/4 in.	2917	Wood	19	NA	U-Factor: 0.044	N
R-22 Cathedral | R-10 Abo176	Roof	Single Ply Roofing - 1/4 in. Compliance Insulation R10.00 Vapor permeable felt - 1/8 in. Plywood - 1/2 in. Air - Ceiling - 3/4 in. Wood framed roof, 24in. OC, 9.25in., R-22 Gypsum Board - 1/2 in.	1164	Wood	22	10	U-Factor: 0.030	N
Floor284	ExteriorFloor	Stucco - 7/8 in. Vapor permeable felt - 1/8 in. Plywood - 1/2 in. Wood framed floor, 16in. OC, 9.25in., R-0 Plywood - 1/2 in. Single Ply Roofing - 1/4 in.	6664	Wood	0	NA	U-Factor: 0.356	N

[1] Status: N - New, A – Altered, E – Existing

Project Name:	Sage Commons - NonRes	NRCC-PRF-01-E	Page 5 of 22
Project Address:	80 College Avenue Santa Rosa 95401	Calculation Date/Time:	18:07, Thu, Apr 02, 2020
Input File Name:	Sage Commons - NonRes.cibd19x		

I2. OVERHANG DETAILS

This Section Does Not Apply

I3. OPAQUE DOOR SUMMARY

1 Assembly Name	2 Overall U-factor	3 Status[1]
Metal Door75	0.500	N

J. CRRC ROOFING PRODUCT SUMMARY §140.3

1 Assembly Name	2 Roof Pitch	3 Aged Solar Reflectance	4 Thermal Emittance	5 SRI
R-22 Cathedral | R-10 Abo176	Low-Slope	0.65	0.85	Not Provided

K. HVAC SYSTEM SUMMARY §110.1 & §110.2

K1. Dry System Equipment (furnaces, air handling units, heat pumps, VRF, etc.)

Dry System Equipment[1] (Fan & Economizer info included below in Table N)

1 Equipment Name	2 Equipment Type	3 Qty	4 Heating: Total Heating Output (kBtu/h)	5 Supp Heat Source (Y/N)	6 Supp Heat Output (kBtuh)	7 Efficiency	8 Cooling: Total Cooling Output (kBtu/h)	9 Efficiency	10 Status[5]
FCU-101 / HP-401	SZHP (Split1Phase)	1	5	No	0	HSPF-8.200	40	SEER-14.000 / EER-11.500	N
ACU-102AB / HP-402	SZHP (Split1Phase)	1	23	No	0	HSPF-8.200	19	SEER-14.000 / EER-11.500	N
ACU-103AB / HP-403	SZHP (Split1Phase)	1	87	No	0	COP-3.30	92	EER-11.5	N
PTAC-102	PTHP (NA)	1	10	No	0	COP-3.4	16	EER-9.5	N
PTAC-103	PTHP (NA)	1	7	No	0	COP-3.4	8	EER-11.8	N
ACU-201	PTHP (NA)	1	10	No	0	COP-3.4	34	EER-12.1	N
ACU-301	PTHP (NA)	1	6	No	0	COP-3.4	7	EER-12.1	N

Project Name:	Sage Commons - NonRes	NRCC-PRF-01-E	Page 6 of 22
Project Address:	80 College Avenue Santa Rosa 95401	Calculation Date/Time:	18:07, Thu, Apr 02, 2020
Input File Name:	Sage Commons - NonRes.cibd19x		

K1. Dry System Equipment (furnaces, air handling units, heat pumps, VRF, etc.)

Dry System Equipment[1] (Fan & Economizer info included below in Table N)

1 Equipment Name	2 Equipment Type	3 Qty	4 Heating: Total Heating Output (kBtu/h)	5 Supp Heat Source (Y/N)	6 Supp Heat Output (kBtuh)	7 Efficiency	8 Cooling: Total Cooling Output (kBtu/h)	9 Efficiency	10 Status[5]
PTAC-L 105	PTHP (NA)	1	11	No	0	COP-3.4	12	EER-10.4	N
PTAC-L 205	PTHP (NA)	1	11	No	0	COP-3.4	12	EER-10.4	N
PTAC-L 305	PTHP (NA)	1	11	No	0	COP-3.4	12	EER-10.4	N
PTAC-G 203	PTAC (NA)	1	0	No	0	Elec. Res.	12	EER-10.4	N
PTAC-G 303	PTAC (NA)	1	0	No	0	Elec. Res.	12	EER-10.4	N

[1] Status: N - New, A – Altered, E – Existing

K2. ECONOMIZER & FAN SYSTEMS SUMMARY §140.4[1]

1 Name or Item Tag	2 System Type packaged, DOAS, etc.	3 Design OA CFM	4 Supply Fan CFM	5 BHP	6 Watts	7 Control	8 Return Fan CFM	9 BHP	10 Watts	11 Control	12 Economizer Type (if present)	13 Status[5]
FCU-101 / HP-401	SZHP	260	1200	0.500	436.0	ConstantVolume	NA	NA	NA	NA	NoEconomizer	N
ACU-102AB / HP-402	SZHP	190	700	0.040	34.9	ConstantVolume	NA	NA	NA	NA	NoEconomizer	N
ACU-103AB / HP-403	SZHP	564	3200	1.250	1077.5	ConstantVolume	NA	NA	NA	NA	NoEconomizer	N
PTAC-102	PTHP	38	600	5.704	4973.8	ConstantVolume	NA	NA	NA	NA	NA	N
PTAC-103	PTHP	17	240	0.734	639.7	ConstantVolume	NA	NA	NA	NA	NA	N
ACU-201	PTHP	0	900	0.160	139.5	ConstantVolume	NA	NA	NA	NA	NA	N
ACU-301	PTHP	0	300	0.100	87.2	ConstantVolume	NA	NA	NA	NA	NA	N
PTAC-L 105	PTHP	0	400	1.333	1162.8	ConstantVolume	NA	NA	NA	NA	NA	N
PTAC-L 205	PTHP	0	400	1.333	1162.8	ConstantVolume	NA	NA	NA	NA	NA	N
PTAC-L 305	PTHP	0	400	1.333	1162.8	ConstantVolume	NA	NA	NA	NA	NA	N
PTAC-G 203	PTAC	0	400	1.333	1162.8	ConstantVolume	NA	NA	NA	NA	NA	N

Project Name:	Sage Commons - NonRes	NRCC-PRF-01-E	Page 7 of 22
Project Address:	80 College Avenue Santa Rosa 95401	Calculation Date/Time:	18:07, Thu, Apr 02, 2020
Input File Name:	Sage Commons - NonRes.cibd19x		

K2. ECONOMIZER & FAN SYSTEMS SUMMARY §140.4[1]

1 Name or Item Tag	2 System Type packaged, DOAS, etc.	3 Design OA CFM	4 Supply Fan CFM	5 BHP	6 Watts	7 Control	8 Return Fan CFM	9 BHP	10 Watts	11 Control	12 Economizer Type (if present)	13 Status[5]
PTAC-G 303	PTAC	0	400	1.333	1162.8	ConstantVolume	NA	NA	NA	NA	NA	N

[1] Status: N - New, A – Altered, E – Existing

K3. EXHAUST FAN SUMMARY

1 System ID	2 Zone Name	3 Qty	4 CFM	5 Motor BHP	6 Motor Watts	7 Total Static Pressure (in H20)
117 Meeting Room87	3-117 Meeting Room	1	350	0.730	636.7	8.60
110 - MULTI PURP101	4-110 - MULTI PURP	1	950	1.461	1274.1	6.34
202 - LOUNGE148	7-202 - LOUNGE	1	100	0.092	80.0	3.78
302 - LOUNGE164	8-302 - LOUNGE	1	100	0.092	80.0	3.78
105 - LAUNDRY179	9-105 - LAUNDRY	1	550	0.756	659.6	5.67
205 - LAUNDRY198	10-205 - LAUNDRY	1	550	0.756	659.6	5.67
305 - LAUNDRY213	11-305 - LAUNDRY	1	550	0.756	659.6	5.67
203 - GYM230	12-203 - GYM	1	600	0.730	636.7	5.02
303 - GYM249	13-303 - GYM	1	600	0.730	636.7	5.02

K4. Wet System Equipment (boilers, chillers, cooling towers, etc.)

1 Name or Item Tag	2 Equipment Type	3 Qty	4 Vol (gal)	5 Rated Capacity (kBtu/h)	6 Efficiency	7 Standby Loss	8 Pumps: Qty	9 GPM	10 HP	11 VSD (Y/N)	12 Status[1]

[1] Status: N - New, A – Altered, E – Existing

Project Name:	Sage Commons - NonRes	NRCC-PRF-01-E	Page 8 of 22
Project Address:	80 College Avenue Santa Rosa 95401	Calculation Date/Time:	18:07, Thu, Apr 02, 2020
Input File Name:	Sage Commons - NonRes.cibd19x		

K5. SYSTEM FEATURES §120.2

1 System Name	2 Optimum Start	3 Window Interlocks per §140.4(n)	4 Evaporative Cooling	5 Heat Recovery	6 Other Controls
FCU-101 / HP-401	No Optimum Start	NA	No Evaporative Cooler	No Heat Recovery	No DCV Controls, No DDC No Economizer No Supply Air Temp. Control
ACU-102AB / HP-402	No Optimum Start	NA	No Evaporative Cooler	No Heat Recovery	No DCV Controls, No DDC No Economizer No Supply Air Temp. Control
ACU-103AB / HP-403	No Optimum Start	NA	No Evaporative Cooler	No Heat Recovery	No DCV Controls, No DDC No Economizer No Supply Air Temp. Control
DHW1 - SHW	NA	NA	NA	NA	Fixed Temperature Control, No DDC

Notes: This table includes controls related to the performance path only. For projects using the prescriptive path, mandatory and prescriptive controls requirements are documented on the NRCC-MCH-E.

K6. MECHANICAL VENTILATION AND REHEAT §120.1

1 Zone Name	2 Ventilation Function	3 # hotel rooms	4 # of people	5 # of bedrooms	6 Supply OA CFM	7 Exhaust CFM	8 Conditioned Area (sf)	9 DCV or Occupant Sensor Controls, or Both
1-OFFICES	Office - Office space	0	4.77	0	143	0	954	Occupant Sensor
2-1st Flr Support	General - Corridors	0	3.90	0	117	0	779	Occupant Sensor
3-117 Meeting Room	General - Conference/meeting	0	12.67	0	190	350	380	Occupant Sensor
4-110 - MULTI PURP	Lodging - Multipurpose assembly	0	37.60	0	564	950	1128	NA
5-102 - SECURITY	Office - Office space	0	1.25	0	38	0	251	Occupant Sensor
6-103 - DIR	Office - Office space	0	0.58	0	17	0	116	Occupant Sensor
7-202 - LOUNGE	Misc - All others	0	12.67	0	57	100	380	NA
8-302 - LOUNGE	Misc - All others	0	12.67	0	57	100	380	NA
9-105 - LAUNDRY	Lodging - Laundry rooms, central	0	1.93	0	58	550	385	NA

Project Name:	Sage Commons - NonRes	NRCC-PRF-01-E	Page 9 of 22
Project Address:	80 College Avenue Santa Rosa 95401	Calculation Date/Time:	18:07, Thu, Apr 02, 2020
Input File Name:	Sage Commons - NonRes.cibd19x		

K6. MECHANICAL VENTILATION AND REHEAT §120.1

1 Zone Name	2 Ventilation Function	3 # hotel rooms	4 # of people	5 # of bedrooms	6 Supply OA CFM	7 Exhaust CFM	8 Conditioned Area (sf)	9 DCV or Occupant Sensor Controls, or Both
10-205 - LAUNDRY	Lodging - Laundry rooms, central	0	1.93	0	58	550	385	NA
11-305 - LAUNDRY	Lodging - Laundry rooms, central	0	1.93	0	58	550	385	NA
12-203 - GYM	Sports/Entertainment - Health club/weight rooms	0	3.89	0	58	600	389	NA
13-303 - GYM	Sports/Entertainment - Health club/aerobics room	0	3.89	0	58	600	389	NA

K7. DISTRIBUTION SUMMARY §120.4/140.4(l)

This Section Does Not Apply

Multifamily or Hotel/Motel Occupancy? (If "Yes", see DOMESTIC/SERVICE HOT WATER SYSTEM SUMMARY)	No
Does the Project include Zonal Systems?	Yes

K8. ZONAL SYSTEM AND TERMINAL UNIT SUMMARY § 140.4

1 System ID	2 Zone Name	3 System Type	4 Rated Capacity (kBtuh): Heating	5 Cooling	6 Airflow (cfm): Design	7 Min.	8 Min. Ratio	9 Fan: BHP	10 Watts	11 Cycles	12 ECM Motor
PTAC-102	5-102 - SECURITY	PTHP	10.00	16.00	600	NA	NA	5.704	4973.8	☐	☐
PTAC-103	6-103 - DIR	PTHP	7.00	8.00	240	NA	NA	0.734	639.7	☐	☐
ACU-201	7-202 - LOUNGE	PTHP	10.00	34.00	900	NA	NA	0.160	139.5	☐	☐
ACU-301	8-302 - LOUNGE	PTHP	6.00	7.00	300	NA	NA	0.100	87.2	☐	☐
PTAC-L 105	9-105 - LAUNDRY	PTHP	11.00	12.00	400	NA	NA	1.333	1162.8	☐	☐

Project Name:	Sage Commons - NonRes	NRCC-PRF-01-E	Page 10 of 22
Project Address:	80 College Avenue Santa Rosa 95401	Calculation Date/Time:	18:07, Thu, Apr 02, 2020
Input File Name:	Sage Commons - NonRes.cibd19x		

K8. ZONAL SYSTEM AND TERMINAL UNIT SUMMARY § 140.4

1 System ID	2 Zone Name	3 System Type	4 Rated Capacity (kBtuh): Heating	5 Cooling	6 Airflow (cfm): Design	7 Min.	8 Min. Ratio	9 Fan: BHP	10 Watts	11 Cycles	12 ECM Motor
PTAC-L 205	10-205 - LAUNDRY	PTHP	11.00	12.00	400	NA	NA	1.333	1162.8	☐	☐
PTAC-L 305	11-305 - LAUNDRY	PTHP	11.00	12.00	400	NA	NA	1.333	1162.8	☐	☐
PTAC-G 203	12-203 - GYM	PTAC	NA	12.00	400	NA	NA	1.333	1162.8	☐	☐
PTAC-G 303	13-303 - GYM	PTAC	NA	12.00	400	NA	NA	1.333	1162.8	☐	☐
2-1st Flr Support-Trm	2-1st Flr Support	Uncontrolled	NA	NA	539	NA	0.00	NA	NA	NA	☐
1-OFFICES-Trm	1-OFFICES	Uncontrolled	NA	NA	661	NA	0.00	NA	NA	NA	☐
3-117 Meeting Room-Trm	3-117 Meeting Room	Uncontrolled	NA	NA	700	NA	0.00	NA	NA	NA	☐
4-110 - MULTI PURP-Trm	4-110 - MULTI PURP	Uncontrolled	NA	NA	3200	NA	0.00	NA	NA	NA	☐

K9. EVAPORATIVE COOLER SUMMARY

This Section Does Not Apply

L. DOMESTIC/SERVICE HOT WATER SYSTEM SUMMARY

L1. DHW EQUIPMENT SUMMARY

1 DHW Name	2 Heater Element Type	3 Tank Type	4 Qty	5 Tank Vol (gal)	6 Rated Input (kBtu/h)	7 Efficiency	8 Tank Insulation R-value (Int/Ext)	9 Standby Loss Fraction	10 Heat Pump Type	11 Tank Location or Ambient Condition
Rheem PROPH80 T2 RH350 DC2	Electricity	NA	1	80.00	4.5 (kW)	UEF: 3.40	NA	NA	Heat-Pump Split	Outdoor

L2. MULTI-FAMILY CENTRAL DHW SYSTEM DETAILS

This Section Does Not Apply

Project Name:	Sage Commons - NonRes	NRCC-PRF-01-E	Page 11 of 22
Project Address:	80 College Avenue Santa Rosa 95401	Calculation Date/Time:	18:07, Thu, Apr 02, 2020
Input File Name:	Sage Commons - NonRes.cibd19x		

L3. SOLAR HOT WATER HEATING SUMMARY

This Section Does Not Apply

M. COVERED PROCESS SUMMARY §140.9

This Section Does Not Apply

N. INDOOR LIGHTING SUMMARY §140.6

N1. INDOOR CONDITIONED LIGHTING GENERAL INFO § 140.6[1]

1 Occupancy Type[1]	2 Conditioned Floor Area[2] (ft²)	3 Installed Lighting Power (Watts)	4 Lighting Control Credits (Watts)	5 Additional (Custom) Allowance: Area Category Footnotes (Watts)	Tailored Method (Watts)	Confirmed: Pass	Fail
Office Area (<250 square feet)	1,321	628	0	0	0	☐	☐
Corridor Area	779	439	0	0	0	☐	☐
Convention, Conference, Multipurpose and Meeting Area	1,508	622	0	0	0	☐	☐
Laundry Area	1,155	504	0	0	0	☐	☐
Lounge, Breakroom, or Waiting Area	760	282	0	0	0	☐	☐
Exercise/Fitness Center and Gymnasium Areas	778	398	0	0	0	☐	☐
Building Totals:	**6,301**	**2,873**	**0**	**0**	**0**		

[1] See Table 140.6-C
[2] See NRCC-LTI-01-E for unconditioned spaces
[3] Lighting information for existing spaces modeled is not included in the table

Project Name:	Sage Commons - NonRes	NRCC-PRF-01-E	Page 12 of 22
Project Address:	80 College Avenue Santa Rosa 95401	Calculation Date/Time:	18:07, Thu, Apr 02, 2020
Input File Name:	Sage Commons - NonRes.cibd19x		

N2. INDOOR CONDITIONED LIGHTING SCHEDULE § 130.0[1]

Luminaire Schedule (includes all permanent installed lighting in conditioned space, and portable lighting over 0.3 w/ft² in offices) — Installed Watts (Conditioned)

Name or Item Tag	Complete Luminaire Description (i.e., 3-lamp fluorescent troffer, F32T8, one dimmable electronic ballast)	Watts per luminaire	How Wattage is Determined: CEC Default from NA8	According to §130.0(c)	Total Number Luminaires	Installed Watts	Confirmed: Pass	Fail
L1	L1 - LINEAR RECESSED LED	19	No	Yes	50	950	☐	☐
L2	L2 - LED LINEAR	42	No	Yes	11	462	☐	☐
L5	L5 - DOWNLIGHT	16	No	Yes	93	1,460	☐	☐

[1] If lighting power densities were used in the compliance model Building Departments will need to check prescriptive forms for Luminaire Schedule details.

N3. INDOOR CONDITIONED LIGHTING CONTROL CREDITS § 140.6

Lighting Control Credits Schedule (includes all lighting controls installed in conditioned space for compliance credit per §140.6(a)2 and Table 140.6-A) — Control Credit Calculation

Location in Building	Occupancy Type (must meet requirements of Table 140.6-A)	Type/Description of Lighting Control (i.e., partial on occupancy sensor, manual dimming, etc.)	# of Units	Watts of Controlled Lighting	Power Adjustment Factor	Control Credit Watts	√ If Acceptance Test Required	Confirmed: Pass	Fail
S-1-OFFICES	Office Area (<250 square feet)	- none specified -- none specified -- none specified -- none specified -- none specified -	0		0.000.000.000.000.00	0		☐	☐
S-1-OFFICES	Office Area (<250 square feet)	- none specified -- none specified -- none specified -- none specified -- none specified -	0		0.000.000.000.000.00	0		☐	☐
S-1-OFFICES	Office Area (<250 square feet)	- none specified -- none specified -- none specified -- none specified -- none specified -	0		0.000.000.000.000.00	0		☐	☐
S-1-OFFICES	Office Area (<250 square feet)	- none specified -- none specified -- none specified -- none specified -- none specified -	0		0.000.000.000.000.00	0		☐	☐
S-1-OFFICES	Office Area (<250 square feet)	- none specified -- none specified -- none specified -- none specified -- none specified -	0		0.000.000.000.000.00	0		☐	☐
S-1-OFFICES	Office Area (<250 square feet)	- none specified -- none specified -- none specified -- none specified -- none specified -	0		0.000.000.000.000.00	0		☐	☐

Project Name:	Sage Commons - NonRes	NRCC-PRF-01-E	Page 13 of 22
Project Address:	80 College Avenue Santa Rosa 95401	Calculation Date/Time:	18:07, Thu, Apr 02, 2020
Input File Name:	Sage Commons - NonRes.cibd19x		

N3. INDOOR CONDITIONED LIGHTING CONTROL CREDITS § 140.6

Lighting Control Credits Schedule (includes all lighting controls installed in conditioned space for compliance credit per §140.6(a)2 and Table 140.6-A) — Control Credit Calculation

Location in Building	Occupancy Type (must meet requirements of Table 140.6-A)	Type/Description of Lighting Control (i.e., partial on occupancy sensor, manual dimming, etc.)	# of Units	Watts of Controlled Lighting	Power Adjustment Factor	Control Credit Watts	√ If Acceptance Test Required	Confirmed: Pass	Fail
S-1-OFFICES	Office Area (<250 square feet)	- none specified -- none specified -- none specified -- none specified -- none specified -	0		0.000.000.000.000.00	0		☐	☐
S-1-OFFICES	Office Area (<250 square feet)	- none specified -- none specified -- none specified -- none specified -- none specified -	0		0.000.000.000.000.00	0		☐	☐
S-2-1st Flr Support	Corridor Area	- none specified -- none specified -- none specified -- none specified -- none specified -	0		0.000.000.000.000.00	0		☐	☐
S-2-1st Flr Support	Corridor Area	- none specified -- none specified -- none specified -- none specified -- none specified -	0		0.000.000.000.000.00	0		☐	☐
S-2-1st Flr Support	Corridor Area	- none specified -- none specified -- none specified -- none specified -- none specified -	0		0.000.000.000.000.00	0		☐	☐
S-2-1st Flr Support	Corridor Area	- none specified -- none specified -- none specified -- none specified -- none specified -	0		0.000.000.000.000.00	0		☐	☐
S-2-1st Flr Support	Corridor Area	- none specified -- none specified -- none specified -- none specified -- none specified -	0		0.000.000.000.000.00	0		☐	☐
S-2-1st Flr Support	Corridor Area	- none specified -- none specified -- none specified -- none specified -- none specified -	0		0.000.000.000.000.00	0		☐	☐
S-2-1st Flr Support	Corridor Area	- none specified -- none specified -- none specified -- none specified -- none specified -	0		0.000.000.000.000.00	0		☐	☐
S-3-117 Meeting Room	Convention, Conference, Multipurpose and Meeting Area	- none specified -- none specified -- none specified -- none specified -- none specified -	0		0.000.000.000.000.00	0		☐	☐

Project Name:	Sage Commons - NonRes	NRCC-PRF-01-E	Page 14 of 22
Project Address:	80 College Avenue Santa Rosa 95401	Calculation Date/Time:	18:07, Thu, Apr 02, 2020
Input File Name:	Sage Commons - NonRes.cibd19x		

N3. INDOOR CONDITIONED LIGHTING CONTROL CREDITS § 140.6

Lighting Control Credits Schedule (includes all lighting controls installed in conditioned space for compliance credit per §140.6(a)2 and Table 140.6-A) — Control Credit Calculation

Location in Building	Occupancy Type (must meet requirements of Table 140.6-A)	Type/Description of Lighting Control (i.e., partial on occupancy sensor, manual dimming, etc.)	# of Units	Watts of Controlled Lighting	Power Adjustment Factor	Control Credit Watts	√ If Acceptance Test Required	Confirmed: Pass	Fail
S-4-110 - MULTI PURP	Convention, Conference, Multipurpose and Meeting Area	- none specified -- none specified -- none specified -- none specified -- none specified -	0		0.000.000.000.000.00	0		☐	☐
S-4-110 - MULTI PURP	Convention, Conference, Multipurpose and Meeting Area	- none specified -- none specified -- none specified -- none specified -- none specified -	0		0.000.000.000.000.00	0		☐	☐
S-4-110 - MULTI PURP	Convention, Conference, Multipurpose and Meeting Area	- none specified -- none specified -- none specified -- none specified -- none specified -	0		0.000.000.000.000.00	0		☐	☐
S-4-110 - MULTI PURP	Convention, Conference, Multipurpose and Meeting Area	- none specified -- none specified -- none specified -- none specified -- none specified -	0		0.000.000.000.000.00	0		☐	☐
S-5-102 - SECURITY	Office Area (<250 square feet)	- none specified -- none specified -- none specified -- none specified -- none specified -	0		0.000.000.000.000.00	0		☐	☐
S-5-102 - SECURITY	Office Area (<250 square feet)	- none specified -- none specified -- none specified -- none specified -- none specified -	0		0.000.000.000.000.00	0		☐	☐
S-5-102 - SECURITY	Office Area (<250 square feet)	- none specified -- none specified -- none specified -- none specified -- none specified -	0		0.000.000.000.000.00	0		☐	☐
S-6-103 - DIR	Office Area (<250 square feet)	- none specified -- none specified -- none specified -- none specified -- none specified -	0		0.000.000.000.000.00	0		☐	☐
S-9-105 - LAUNDRY	Laundry Area	- none specified -- none specified -- none specified -- none specified -- none specified -	0		0.000.000.000.000.00	0		☐	☐
S-9-105 - LAUNDRY	Laundry Area	- none specified -- none specified -- none specified -- none specified -- none specified -	0		0.000.000.000.000.00	0		☐	☐

Project Name:	Sage Commons - NonRes	NRCC-PRF-01-E	Page 15 of 22
Project Address:	80 College Avenue Santa Rosa 95401	Calculation Date/Time:	18:07, Thu, Apr 02, 2020
Input File Name:	Sage Commons - NonRes.cibd19x		

N3. INDOOR CONDITIONED LIGHTING CONTROL CREDITS § 140.6

Lighting Control Credits Schedule (includes all lighting controls installed in conditioned space for compliance credit per §140.6(a)2 and Table 140.6-A) — Control Credit Calculation

Location in Building	Occupancy Type (must meet requirements of Table 140.6-A)	Type/Description of Lighting Control (i.e., partial on occupancy sensor, manual dimming, etc.)	# of Units	Watts of Controlled Lighting	Power Adjustment Factor	Control Credit Watts	√ If Acceptance Test Required	Confirmed: Pass	Fail
S-7-202 - LOUNGE	Lounge, Breakroom, or Waiting Area	- none specified -- none specified -- none specified -- none specified -- none specified -	0		0.000.000.000.000.00	0		☐	☐
S-10-205 - LAUNDRY	Laundry Area	- none specified -- none specified -- none specified -- none specified -- none specified -	0		0.000.000.000.000.00	0		☐	☐
S-10-205 - LAUNDRY	Laundry Area	- none specified -- none specified -- none specified -- none specified -- none specified -	0		0.000.000.000.000.00	0		☐	☐
S-12-203 - GYM	Exercise/Fitness Center and Gymnasium Areas	- none specified -- none specified -- none specified -- none specified -- none specified -	0		0.000.000.000.000.00	0		☐	☐
S-12-203 - GYM	Exercise/Fitness Center and Gymnasium Areas	- none specified -- none specified -- none specified -- none specified -- none specified -	0		0.000.000.000.000.00	0		☐	☐
S-8-302 - LOUNGE	Lounge, Breakroom, or Waiting Area	- none specified -- none specified -- none specified -- none specified -- none specified -	0		0.000.000.000.000.00	0		☐	☐
S-11-305 - LAUNDRY	Laundry Area	- none specified -- none specified -- none specified -- none specified -- none specified -	0		0.000.000.000.000.00	0		☐	☐
S-11-305 - LAUNDRY	Laundry Area	- none specified -- none specified -- none specified -- none specified -- none specified -	0		0.000.000.000.000.00	0		☐	☐
S-13-303 - GYM	Exercise/Fitness Center and Gymnasium Areas	- none specified -- none specified -- none specified -- none specified -- none specified -	0		0.000.000.000.000.00	0		☐	☐
S-13-303 - GYM	Exercise/Fitness Center and Gymnasium Areas	- none specified -- none specified -- none specified -- none specified -- none specified -	0		0.000.000.000.000.00	0		☐	☐

Project Name:	Sage Commons - NonRes	NRCC-PRF-01-E	Page 16 of 22
Project Address:	80 College Avenue Santa Rosa 95401	Calculation Date/Time:	18:07, Thu, Apr 02, 2020
Input File Name:	Sage Commons - NonRes.cibd19x		

N4: INDOOR CONDITIONED LIGHTING MANDATORY LIGHTING CONTROLS § 130.1

This Section Does Not Apply

§130.1(a) = Manual area controls; §130.0(b) = Multi Level; §130.1(c) = Auto Shut-Off; §130.1(d) = Mandatory Daylight; §130.1(e) = Demand Responsive

N5. TAILORED METHOD CONDITIONED LIGHTING POWER ALLOWANCE SUMMARY AND CHECKLIST § 140.6

General lighting power (see Table D)	0
General lighting power from special function areas (see Table E)	NA
Additional "use it or lose it" (See Table G)	0
Total watts	0

N6. GENERAL LIGHTING POWER § 140.6-D

This Section Does Not Apply

N7. GENERAL LIGHTING FROM SPECIAL FUNCTION AREAS § 140.6(c) 3H

Room Number	Primary Function Area	Illuminance Value (LUX)	Room Cavity Ratio (Table G)	Allowed LPD	Floor Area (ft²)	Allowed Watts	Confirmed: Pass	Fail
NA	NA	NA	NA	NA	NA	NA	☐	☐

Note: Tailored Method for Special Function Areas is not currently implemented

N8. ROOM CAVITY RATIO

Rectangular Spaces

Room Number	Task/Activity Description	Room Length (ft)	Room Width (ft)	Room Cavity Height (ft)	RCR	Confirmed: Pass	Fail
NA	NA	NA	NA	NA	NA	☐	☐

Non-Rectangular Spaces

This Section Does Not Apply

Note: All applicable spaces are listed under the Non-Rectangular Spaces table

Project Name:	Sage Commons - NonRes	NRCC-PRF-01-E	Page 17 of 22
Project Address:	80 College Avenue Santa Rosa 95401	Calculation Date/Time:	18:07, Thu, Apr 02, 2020
Input File Name:	Sage Commons - NonRes.cibd19x		

N9. ADDITIONAL "USE IT OR LOSE IT"

1. Wall Display	2. Combined Floor Display and Task Lighting	3. Combined Ornamental and Special Effects Lighting	4. Very Valuable Merchandise	Allowed Watts	Confirmed: Pass	Fail
0	0	0	0	**0**	☐	☐

N10. Wall Display

This Section Does Not Apply

N11. Floor Display and Task Lighting

This Section Does Not Apply

N12. Combined Ornamental and Special Effects Lighting

This Section Does Not Apply

N13. Very Valuable Merchandise

This Section Does Not Apply

N14. INDOOR & OUTDOOR LIGHTING ACCEPTANCE TESTS & FORMS § 130.4

Declaration of Required Acceptance Certificates (NRCA) –Acceptance Certificates that must be verified in the field. (Retain copies and verify forms are completed and signed to post in field for Field Inspector to verify).

Test Description: Equipment Requiring Testing or Verification	# of units	Indoor: NRCA-LTI-02-A Occ Sensors / Auto Time Switch	NRCA-LTI-03-A Auto Daylight	NRCA-LTI-04-A Demand Responsive	Outdoor: NRCA-LTO-02-A Outdoor Controls	Confirmed: Pass	Fail
Occupant Sensors	0	☒	☐	☐	☐	☐	☐
Automatic Time Switch	0	☒	☐	☐	☐	☐	☐
Automatic Daylighting	0	☐	☐	☐	☐	☐	☐
Demand Responsive	0	☐	☐	☐	☐	☐	☐
Outdoor Controls	0	☐	☐	☐	☐	☐	☐

Project Name:	Sage Commons - NonRes	NRCC-PRF-01-E	Page 18 of 22
Project Address:	80 College Avenue Santa Rosa 95401	Calculation Date/Time:	18:07, Thu, Apr 02, 2020
Input File Name:	Sage Commons - NonRes.cibd19x		

O. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Table Instructions: Selections shall be made by Documentation Author to indicate which Certificates of Installation must be submitted for the features to be recognized for compliance. These documents bust be retained and provided to the building inspector during construction and can be found online at: https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCI/

Building Component	YES	NO	Form/Title	Field Inspector: Pass	Fail
Envelope	☒	☐	NRCI-ENV-01-E - Must be submitted for all buildings	☐	☐
Mechanical	☒	☐	NRCI-MCH-01-E - Must be submitted for all buildings	☐	☐
Plumbing	☒	☐	NRCI-PLB-01-E - Must be submitted for all buildings	☐	☐
	☐	☒	NRCI-PLB-02-E - Must be submitted for high-rise residential and hotel/ motel central hot water distribution systems to be recognized for compliance	☐	☐
	☐	☒	NRCI-PLB-03-E - Must be submitted for high-rise residential and hotel/motel single dwelling unit hot water system distribution systems to be recognized for compliance	☐	☐
	☐	☒	NRCI-PLB-21-E - Must be HERS verified for central systems in high-rise residential hotel/ motel application	☐	☐
	☐	☒	NRCI-PLB-22-E - Must be HERS verified for single dwelling unit systems in high-rise residential, hotel/motel application	☐	☐
	☐	☒	NRCI-STH-01-E - Must be submitted for solar hot water heating systems	☐	☐
Indoor Lighting	☒	☐	NRCI-LTI-01-E - Must be submitted for all buildings	☐	☐
	☐	☒	NRCI-LTI-02-E - Must be submitted for a lighting control system, or for an Energy Management Control System (EMCS) to be recognized for compliance	☐	☐
	☐	☒	NRCI-LTI-04-E - Must be submitted for two interlocked systems serving an auditorium, a convention center, a conference room, a multipurpose room, or a theater to be recognized for compliance	☐	☐
	☐	☒	NRCI-LTI-05-E - Must be submitted for a Power Adjustment Factor (PAF) to be recognized for compliance	☐	☐
	☐	☒	NRCI-LTI-06-E - Must be submitted for additional wattage installed in a video conferencing studio to be recognized for compliance	☐	☐
Covered Process	☐	☒	NRCI-PRC-01-E - Must be submitted for all Covered Processes	☐	☐

Project Name:	Sage Commons - NonRes	NRCC-PRF-01-E	Page 19 of 22
Project Address:	80 College Avenue Santa Rosa 95401	Calculation Date/Time:	18:07, Thu, Apr 02, 2020
Input File Name:	Sage Commons - NonRes.cibd19x		

P. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Table Instructions: Selections shall be made by Documentation Author to indicate which Certificates of Acceptance must be submitted for the features to be recognized for compliance. These documents must be provided to the building inspector during construction and must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit:https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCA/

Building Component	YES	NO	Form/Title	Field Inspector: Pass	Fail
Envelope	☒	☐	NRCA-ENV-02-F - NRFC label verification for fenestration	☐	☐
	☐	☐	NRCA-ENV-03-F - Daylighting Design PAFs	☐	☐
Indoor Lighting	☒	☐	NRCA-LTI-02-A - Occupancy Sensors and Automatic Time Switch Controls	☐	☐
	☐	☒	NRCA-LTI-03-A - Automatic Daylight Controls	☐	☐
	☐	☒	NRCA-LTI-04-A - Demand Responsive Lighting Controls	☐	☐
	☐	☒	NRCA-LTI-05-A - Institutional Tuning Power Adjustment Factor (PAF)	☐	☐
Covered Process	☐	☐	NRCA-PRC-02-F - Kitchen Exhaust	☐	☐
	☐	☒	NRCA-PRC-03-F - Garage Exhaust	☐	☐
	☐	☒	NRCA-PRC-12-F – Elevator Lighting and Ventilation Controls	☐	☐
	☐	☒	NRCA-PRC-13-F –Escalator and Moving Walkways Speed Control	☐	☐
	☐	☒	NRCA-PRC-14-F – Lab Exhaust Ventilation System	☐	☐
	☐	☒	NRCA-PRC-15-F - Fume Hood Automatic Sash Closures System	☐	☐

Project Name:	Sage Commons - NonRes	NRCC-PRF-01-E	Page 20 of 22
Project Address:	80 College Avenue Santa Rosa 95401	Calculation Date/Time:	18:07, Thu, Apr 02, 2020
Input File Name:	Sage Commons - NonRes.cibd19x		

P. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Table Instructions: Selections shall be made by Documentation Author to indicate which Certificates of Acceptance must be submitted for the features to be recognized for compliance. These documents must be provided to the building inspector during construction and must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit:https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCA/

Building Component	YES	NO	Form/Title	Field Inspector: Pass	Fail
Mechanical	☒	☐	NRCA-MCH-02-A Outdoor Air must be submitted for all newly installed HVAC units. Note: MCH02-A can be performed in conjunction with MCH-07-A Supply Fan VFD Acceptance (if applicable) since testing activities overlap	☐	☐
	☒	☐	NRCA-MCH-03-A Constant Volume Single Zone HVAC	☐	☐
	☒	☐	NRCA-MCH-04(a)-H Air Distribution Duct Leakage - HERS Verification required	☐	☐
	☐	☐	NRCA-MCH-04(b)-A Air Distribution Duct Leakage - ATT only	☐	☐
	☐	☒	NRCA-MCH-05-A Air Economizer Controls	☐	☐
	☐	☒	NRCA-MCH-06-A Demand Control Ventilation Systems Acceptance must be submitted for all systems required to employ demand controlled ventilation (refer to §120.1(c)3) can vary outside ventilation flow rates based on maintaining interior carbon dioxide (CO2) concentration setpoints	☐	☐
	☐	☒	NRCA-MCH-07-A Supply Fan Variable Flow Controls	☐	☐
	☐	☒	NRCA-MCH-08-A Valve Leakage Test	☐	☐
	☐	☒	NRCA-MCH-09-A Supply Water Temperature Reset Controls	☐	☐
	☐	☒	NRCA-MCH-10-A Hydronic System Variable Flow Controls	☐	☐
	☐	☒	NRCA-MCH-11-A Automatic Demand Shed Controls	☐	☐
	☐	☒	NRCA-MCH-12-A FDD for Packaged Direct Expansion Units	☐	☐
	☐	☒	NRCA-MCH-13-A Automatic FDD for Air Handling Units and Zone Terminal Units Acceptance	☐	☐
	☐	☒	NRCA-MCH-14-A Distributed Energy Storage DX AC Systems Acceptance	☐	☐
	☐	☒	NRCA-MCH-15-A Thermal Energy Storage (TES) System Acceptance	☐	☐
	☐	☒	NRCA-MCH-16-A Supply Air Temperature Reset Controls	☐	☐
	☐	☒	NRCA-MCH-17-A Condenser Water Temperature Reset Controls	☐	☐
	☐	☒	NRCA-MCH-18 Energy Management Control Systems	☐	☐
	☒	☐	NRCA-MCH-19 Occupancy Sensor Controls	☐	☐

REVIEWED FOR CODE COMPLIANCE BY COASTLAND CIVIL ENGINEERING, INC. IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

No.	REVISION	DATE
1	PLAN CHECK	04/02/2020

DANCO COMMUNITIES
5251 ERICSON WAY
ARCATA, CA 95532

SAGE COMMONS
80 COLLEGE AVENEUE
SANTA ROSA, CA

NONRESIDENTIAL

ENERGY FORMS

TITLE-24 COMPLIANCE DOCUMENTS

336 W. Main Street
Ripon, CA 95366
(209) 579-5000
(209) 522-5001

DuctTesters

DATE CREATED
01/27/2020

SHEET
EN-2.0

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
Project Name:	Sage Commons - NonRes	**Report Page:**	(Page 4 of 8)
Project Address:	80 College Avenue	**Date Prepared:**	4/2/2020

G. CUTOFF REQUIREMENTS (BUG)
This section does not apply to this project.

H. OUTDOOR LIGHTING CONTROLS
This table demonstrates compliance with controls requirements for all new or altered luminaires installed as part of the permit application. For alteration projects, luminaires which are existing to remain (ie untouched) and luminaires which are removed and reinstalled (wiring only) do not need to be included in this table even if they are within the spaces covered by the permit application.
*When an option having a * is selected, the notes section of this table must be completed. The lighting controls section of the Compliance Summary Table on the first page will show "DOES NOT COMPLY" if the notes are left blank.*

Mandatory Controls

01	02	03	04	05	
Area Description	Shut-Off §130.2(c)1	Auto-Schedule §130.2(c)2	Motion Sensor §130.2(c)3	Field Inspector	
				Pass	Fail

** NOTES: Controls with a * require a note in the space below explaining how compliance is achieved.*
EX: Not permitted by health & safety to be turned off; EXCEPTION 1 to §130.2(c)

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTI-E
Project Name:	Sage Commons - NonRes	**Report Page:**	(Page 7 of 7)
Project Address:	80 College Avenue	**Date Prepared:**	4/2/2020

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT
I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Derrick Yeung	Documentation Author Signature:
Company: DuctTesters, Inc	Signature Date:
Address: 336 W. Main Street	CEA/ HERS Certification Identification (if applicable): R16-15-20052 | NR16-19-20063
City/State/Zip: Ripon CA 95366	Phone: 209.579.5000

RESPONSIBLE PERSON'S DECLARATION STATEMENT
I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. 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.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name:	Responsible Designer Signature:
Company: PAE ENGINEERS	Date Signed: 2020-04-02
Address: 44 WEST BROADWAY, SUITE 430	License:
City/State/Zip: EUGENE OR 97401	Phone: 541.735.6222

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTI-E
Project Name:	Sage Commons - NonRes	**Report Page:**	(Page 3 of 7)
Project Address:	80 College Avenue	**Date Prepared:**	4/2/2020

F. INDOOR LIGHTING FIXTURE SCHEDULE

L4	L4 - Downlight	No	No	20	Mfr. Spec	12	No	240	☐	☐
L5	L5 - DOWNLIGHT	No	No	15.7	Mfr. Spec	120	No	1,884	☐	☐
L8	L8 - WALL SCONCE	No	No	20	Mfr. Spec	42	No	840	☐	☐
							Total Designed Watts: UNCONDITIONED SPACES	3,684		

[1] FOOTNOTE: Design Watts for small aperture and color changing luminaires which qualify per §140.6(a)4B is adjusted to be 75% of their rated wattage. Table F automatically makes this adjustment, the permit applicant should enter full rated wattage in column 05.
[2] Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per §130.0(c) Wattage used must be the maximum rated for the luminaire, not the lamp.

G. MODULAR LIGHTING SYSTEMS
This section does not apply to this project.

H. INDOOR LIGHTING CONTROLS (Not including PAFs)
*This table includes lighting controls for conditioned and unconditioned spaces. When a control having a * is shown, the notes section of this table provides more detail on how compliance is achieved. The lighting controls section of the Compliance Summary Table on the first page will show "DOES NOT COMPLY" if the notes are left blank.*

Building Level Controls

01	02	03	
Mandatory Demand Response §110.12(c)	Shut-off controls §130.1(c)	Field Inspector	
		Pass	Fail
Not Required <= 10,000 SF	Whole Building Other	☐	☐

Area Level Controls

04	05	06	07	08	09	10	11	12	
Area Description	Complete Building or Area Category Primary Function Area	Area Controls §130.1(a)	Multi-Level Controls §130.1(b)	Shut-Off Controls §130.1(c)	Primary/Skylit Daylighting §130.1(d)	Secondary Daylighting §140.6(d)	Interlocked Systems §140.6(a)1	Field Inspector	
								Pass	Fail

Project Name:	Sage Commons - NonRes	NRCC-PRF-01-E	Page 21 of 22
Project Address:	80 College Avenue Santa Rosa 95401	Calculation Date/Time:	18:07, Thu, Apr 02, 2020
Input File Name:	Sage Commons - NonRes.cibd19x		

Q. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICATION
Table Instructions: Selections shall be made by Documentation Author to indicate which Certificates of Verification must be submitted for the features to be recognized for compliance. These documents bust be retained and provided to the building inspector during construction and can be found online at: https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCV/

Building Component	YES	NO	Form/Title	Field Inspector Pass	Fail
Mechanical	☒	☐	NRCV-MCH-04-H Duct Leakage Test	☐	☐
	☐	☒	NRCV-MCH-24-H Enclosure Air Leakage	☐	☐
	☐	☒	NRCV-MCH-27 Indoor Air Quality & Mechanical Ventilation	☐	☐
	☐	☒	NRCV-MCH-32-H Local Mechanical Exhaust	☐	☐
Plumbing	☐	☒	NRCV-PLB-21-H - HERS verified central systems in high-rise residential, hotel/motel application	☐	☐
	☐	☒	NRCV-PLB-22-H - HERS verified single dwelling unit systems in high-rise residential, hotel/motel application	☐	☐

R. UNMET LOAD HOURS

Thermal Zone Name	Cooling Unmet Load Hour Limit for Thermal Zone	Proposed Cooling Unmet Load Hours	Heating Unmet Load Hour Limit for Thermal Zone	Proposed Heating Unmet Load Hours
1-OFFICES	150	0	150	3853.5
5-102 - SECURITY	150	3199.75	150	0
8-302 - LOUNGE	150	893.25	150	224
12-203 - GYM	150	408.75	150	2439
13-303 - GYM	150	431	150	2453.25

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
Project Name:	Sage Commons - NonRes	**Report Page:**	(Page 5 of 8)
Project Address:	80 College Avenue	**Date Prepared:**	4/2/2020

I. LIGHTING POWER ALLOWANCE (per §140.7)
This table includes areas using allowance calculations per §140.7. General Hardscape Allowance is per Table 140.7-A while "Use it or lose it" Allowances are per Table 140.7-B . Indicate which allowances are being used to expand sections for user input. Luminaires that qualify for one of the "Use it or lose it" allowances shall not qualify for another "Use it or lose it" allowance.

01: ☒ General Hardscape Allowance Table I (below) | "Use it or lose it" Allowance (select all that apply) (select all that apply): ☐ Per Application Table J | ☐ Sales Frontage Table K | ☐ Ornamental Table L | ☒ Per Specific Area Table M

Calculated General Hardscape Lighting Power Allowance per Table 140.7-A (LZ 0, 1 & 4)
This section does not apply to this project.
Calculated General Hardscape Lighting Power Allowance per Table 140.7-A (LZ 2 & 3)

02	03	04	05	06	07	08	9	10
		Area Wattage Allowance (AWA)			Area Wattage Allowance (AWA)			
Area Description	Surface Type	Illuminated Area (ft^2)	Allowed Density (W/ft^2)	Area Allowance (Watts)	Perimeter Length (lf)	Allowed Density (W/lf)	Linear Allowance (Watts)	Total General AWA + LWA (Watts)
Pedestrian Hardscape	Asphalt	13700	0.03	342.5	877	0.4	219.25	561.75
Automotive Hardscape	Asphalt	8340	0.03	208.5	330	0.4	82.5	291
							Initial Wattage Allowance for Entire Site (Watts):	350
							Total General Hardscape Allowance (Watts):	1202.75

J. LIGHTING ALLOWANCE: PER APPLICATION
This section does not apply to this project.

K. LIGHTING ALLOWANCE: SALES FRONTAGE
This section does not apply to this project.

L. LIGHTING ALLOWANCE: ORNAMENTAL
This section does not apply to this project.

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
Project Name:	Sage Commons - NonRes	**Report Page:**	(Page 1 of 8)
Project Address:	80 College Avenue	**Date Prepared:**	4/2/2020

A. GENERAL INFORMATION

01	Project Location (city)	Santa Rosa	04	Total Illuminated Hardscape Area (ft^2)	22040
02	Climate Zone	2			
03	Outdoor Lighting Zone per Title 24 Part 1 §10.114 or as designated by Authority Having Jurisdiction (AHJ):				
☐	LZ-0: Very Low - Undeveloped Parkland	☐	LZ-2: Moderate - Rural Areas	☐	LZ-4: High - Must be reviewed by CA Energy Commission for Approval
☐	LZ-1: Low - Developed Parkland	☒	LZ-3: Moderately High - Urban Areas		

B. PROJECT SCOPE
This table includes outdoor lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.7 or §141.0(b)2L for alterations.

My Project Consists of:

01	02
☒ New Lighting System	Must Comply with Allowances from §140.7
☐ Altered Lighting System	Is your alteration increasing the connected lighting load (Watts)? ○ Yes ○ No

03	04	05
% of Existing Luminaires Being Altered[1]	Sum Total of Luminaires Being Added or Altered	Calculation Method
☐ < 10% ☐ >= 10% and < 50% ☐ >= 50%		

Please proceed to Table F. Outdoor Lighting Fixture Schedule to define the project's luminaires.

[1] FOOTNOTES: % of Existing Luminaires Being Altered = (Sum Total of Luminaires Being Added or Altered / Existing Luminaires within the Scope of the Permit Application) x 100.

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTI-E
Project Name:	Sage Commons - NonRes	**Report Page:**	(Page 4 of 7)
Project Address:	80 College Avenue	**Date Prepared:**	4/2/2020

H. INDOOR LIGHTING CONTROLS (Not including PAFs)
*NOTES: Controls with a * require a note in the space below explaining how compliance is achieved.
EX: Conference 1: Primary/Skylight Daylighting: Exempt because less than 120 watts of general lighting; EXCEPTION 1 to §130.1(d)2

13
Plan Sheet Showing Daylit Zones:

I. LIGHTING POWER ALLOWANCE: COMPLETE BUILDING OR AREA CATEGORY METHODS
Each area complying using the Complete Building or Area Category Methods per §140.6(b) are included in this table. Column 06 indicates if additional lighting power allowances per §140.6(c) or adjustments per §140.6(a) are being used .

Unconditioned Spaces

01	02	03	04	05	06	
Area Description	Complete Building or Area Category Primary Function Area	Allowed Density (W/ft^2)	Area (ft^2)	Allowed Wattage (Watts)	Additional Allowance / Adjustment	
					Area Category	PAF
TRASH / Mech Room	Electrical Mechancial Telephone Room	0.4	330	132	No	No
TRASH / Mech Room	Electrical Mechancial Telephone Room	0.4	331	132.4	No	No
TRASH / Mech Room	Electrical Mechancial Telephone Room	0.4	331	132.4	No	No
Corridors	Concourse and Atria	0.9	9,899	8,909.1	No	No
		TOTALS:	10,891	9,305.9	See Tables J, or P for detail	

J. ADDITIONAL ALLOWANCE: AREA CATEGORY METHOD QUALIFYING LIGHTING SYSTEM
This section does not apply to this project.

K. TAILORED METHOD GENERAL LIGHTING POWER ALLOWANCE
This section does not apply to this project.

L. ADDITIONAL LIGHTING ALLOWANCE: TAILORED WALL DISPLAY
This section does not apply to this project.

M. ADDITIONAL LIGHTING ALLOWANCE: TAILORED FLOOR AND TASK LIGHTING
This section does not apply to this project.

Project Name:	Sage Commons - NonRes	NRCC-PRF-01-E	Page 22 of 22
Project Address:	80 College Avenue Santa Rosa 95401	Calculation Date/Time:	18:07, Thu, Apr 02, 2020
Input File Name:	Sage Commons - NonRes.cibd19x		

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT
I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Derrick Yeung	Signature:
Company: DuctTesters, Inc	
Address: 336 W. Main Street	Signature Date: 2020-04-02
City/State/Zip: Ripon CA 95366	CEA/ HERS Certification Identification (if applicable): R16-15-20052 | NR16-19-20063
Phone: 209.579.5000	

RESPONSIBLE PERSON'S DECLARATION STATEMENT
I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. 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.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Envelope Designer Name:	Signature:	
Company: ROWELL BROKAW ARCHITECTS		
Address: 1203 WILLAMETTE STREET, SUITE 210	Date Signed:	
City/State/Zip: EUGENE OR 97401		
Phone: 541.485.1003	Title:	License #:
Responsible Lighting Designer Name:	Signature:	
Company: PAE ENGINEERS		
Address: 44 WEST BROADWAY, SUITE 430	Date Signed:	
City/State/Zip: EUGENE OR 97401		
Phone: 541.735.6222	Title:	License #:
Responsible Mechanical Designer Name: - specify -	Signature:	
Company: PAE ENGINEERS		
Address: 44 WEST BROADWAY, SUITE 430	Date Signed:	
City/State/Zip: EUGENE OR 97401		
Phone: 541.735.6222	Title:	License #:

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
Project Name:	Sage Commons - NonRes	**Report Page:**	(Page 6 of 8)
Project Address:	80 College Avenue	**Date Prepared:**	4/2/2020

M. LIGHTING ALLOWANCE: PER SPECIFIC AREA
This table includes areas using the wattage allowance per specific area from Table 140.7-B . More than one specific area allowance may be taken in a single project, if applicable. However, multiple specific area allowances may not be taken for the exact same area on the site.

01	02	03	04	05	06	07	08	09	10
		CALCULATED ALLOWANCE (Watts)			DESIGN WATTS				
Area Description	Specific Area Type per Table 140.7-B	Specific Area (ft^2)[1]	Allowed Density (W/ft^2)	Extra Allowance (Watts)	Luminaire Name or Item Tag	Watts per Luminaire	# of Luminaires	Design Watts	Additional Allowance (Watts)
Building Facade	BuildingFacade	630	0.17	107.1	L11	26	4	104	104
							Total Design Watts for this Area:	104	
								Total Allowance (Watts) All Areas:	104

[1] FOOTNOTES: See Table 140.7-B for rules for calculating the specific areas (ft^2 for these additional lighting allowances.
[2] For luminaires indicated in Table F as linear, wattage in column 07 is W/lf instead of Watts/luminaire. Total linear feet should be indicated in column 08 instead of number of luminaires.

N. EXISTING CONDITIONS POWER ALLOWANCE (alterations only)
This section does not apply to this project.

O. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION
Selections have been made based on information provided in this document. If any selection have been changed by permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCI/

Yes	No	Form/Title	Field Inspector Pass	Fail
●	○	NRCI-LTO-01-E - Must be submitted for all buildings	☐	☐
○	●	NRCI-LTO-02-E- Must be submitted for a lighting control system, or for an Energy Management Control System (EMCS), to be recognized for compliance.	☐	☐

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
Project Name:	Sage Commons - NonRes	**Report Page:**	(Page 2 of 8)
Project Address:	80 College Avenue	**Date Prepared:**	4/2/2020

C. COMPLIANCE RESULTS
Results in this table are automatically calculated from data input and calculations in Tables F through I. Note: If any cell on this table says "COMPLIES with Exceptional Conditions" refer to Table D. Exceptional Conditions for guidance or see applicable Table referenced below.

Calculations of Total Allowed Lighting Power (Watts) §140.7 or §141.0(b)2L / **Compliance Results**

01		02		03		04		05		06		07		08	09
General Hardscape Allowance §140.7(d)1 (See Table I)	+	Per Application §140.7(d)2 (See Table J)	+	Sales Frontage §140.7(d)2 (See Table K)	+	Ornamental §140.7(d)2 (See Table L)	+	Per Specific Area §140.7(d)2 (See Table M)	OR	Existing Power Allowance §141.0(b)2L (See Table N)	=	**Total Allowed (Watts)**	≥	**Total Actual (Watts)**	**07 must be >= 08**
1,202.75	+	---	+	---	+	---	+	104	OR	---	=	1,306.75	≥	672	COMPLIES
														Cutoff Compliance (See Table G for Details)	N/A
														Controls Compliance (See Table H for Details)	COMPLIES

D. EXCEPTIONAL CONDITIONS
This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

E. ADDITIONAL REMARKS
This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTI-E
Project Name:	Sage Commons - NonRes	**Report Page:**	(Page 5 of 7)
Project Address:	80 College Avenue	**Date Prepared:**	4/2/2020

N. ADDITIONAL LIGHTING ALLOWANCE: TAILORED ORNAMENTAL/SPECIAL EFFECTS
This section does not apply to this project.

O. ADDITIONAL LIGHTING ALLOWANCE: TAILORED VERY VALUABLE MERCHANDISE
This section does not apply to this project.

P.POWER ADJUSTMENT: LIGHTING CONTROL CREDIT (POWER ADJUSTMENT FACTOR (PAF))
This section does not apply to this project.

Q. RATED POWER REDUCTION COMPLIANCE FOR ALTERATIONS
This section does not apply to this project.

R. 80% LIGHTING POWER FOR ALLALTERATIONS - CONTROLS EXCEPTIONS
This section does not apply to this project.

S. DAYLIGHT DESIGN POWER ADJUSTMENT FACTOR (PAF)
This section does not apply to this project.

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTI-E
This document is used to demonstrate compliance with requirements in §110.9, §110.12(c), §130.0, §130.1, §140.6 and §141.0(b)2 for indoor lighting scopes using the prescriptive path.			
Project Name:	Sage Commons - NonRes	**Report Page:**	(Page 1 of 7)
Project Address:	80 College Avenue	**Date Prepared:**	4/2/2020

A. GENERAL INFORMATION

01	Project Location (city)	Santa Rosa	04	Total Conditioned Floor Area (ft^2)	0
02	Climate Zone	2	05	Total Unconditioned Floor Area (ft^2)	10,891
03	Occupancy Types Within Project (select all that apply):		06	# of Stories (Habitable Above Grade)	3

☒ Office	☐ Retail	☐ Warehouse	☐ Hotel/Motel	☐ School	☒ Support Areas
☐ Parking Garage	☐ High-Rise Residential	☐ Relocatable	☐ Healthcare	☒ Other (Write in)	See Table I

B. PROJECT SCOPE
This table includes any lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.6 or §141.0(b)2 for alterations.

Scope of Work	Conditioned Spaces		Unconditioned Spaces	
01	02	03	04	05
My Project Consists of (check all that apply):	Calculation Method	Area (ft^2)	Calculation Method	Area (ft^2)
☒ New Lighting System	Area Category Method	0	Area Category Method	10891
☐ New Lighting System - Parking Garage				
Total Area of Work (ft^2)	0		10891	

REVIEWED FOR CODE COMPLIANCE BY COASTLAND CIVIL ENGINEERING, INC. IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
Project Name:	Sage Commons - NonRes	**Report Page:**	(Page 7 of 8)
Project Address:	80 College Avenue	**Date Prepared:**	4/2/2020

P. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE
Selections have been made based on information provided in this document. If any selection have been changed by permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit: http://www.energy.ca.gov/title24/attcp/providers.html

Yes	No	Form/Title	Field Inspector Pass	Fail
○	●	NRCA-LTO-02-A - Must be submitted for all outdoor lighting controls except for alterations where controls are added to <= 20 luminaires.	☐	☐

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
Project Name:	Sage Commons - NonRes	**Report Page:**	(Page 3 of 8)
Project Address:	80 College Avenue	**Date Prepared:**	4/2/2020

F. OUTDOOR LIGHTING FIXTURE SCHEDULE
For new or altered lighting systems demonstrating compliance with §140.7 all new luminaires being installed and any existing luminaires remaining or being moved within the spaces covered by the permit application are included in the Table Below. For altered lighting systems using the Existing Power method per §141.0(b)2L only new luminaires being installed and replacement luminaires being installed as part of the project scope are included (ie, existing luminaires remaining or existing luminaires being moved are not included).

Designed Wattage:

01	02		03	04	05	06	07	08	09	10	
Name or Item Tag	Complete Luminaire Description		Watts per luminaire[1, 2]	How is Wattage determined	Total number luminaires[2]	Luminaire Status[3]	Excluded per §140.7(a)	Design Watts	Cutoff Req. > 6,200 initial lumen output §130.2(b)[4]	Field Inspector Pass	Fail
L11	L11 - LED WALL PACK	☐ Linear	26	Mfr. Spec	4	New	☐	104	NA: < 6200 lumens	☐	☐
S1	S1 - BOLLARD	☐ Linear	7.8	Mfr. Spec	12	New	☐	93.6	NA: < 6200 lumens	☐	☐
S2	S2 - PARKING LOT POLE	☐ Linear	20	Mfr. Spec	5	New	☐	100	NA: < 6200 lumens	☐	☐
S3	S3 - PEDESTRIAL POLE	☐ Linear	16	Mfr. Spec	1	New	☐	16	NA: < 6200 lumens	☐	☐
S4	S4 - SURFACE LINEAR	☐ Linear	30	Mfr. Spec	3	New	☐	90	NA: < 6200 lumens	☐	☐
S5	S5 - PATHWAY LIGHT	☐ Linear	24.4	Mfr. Spec	11	New	☐	268.4	NA: < 6200 lumens	☐	☐
							Total Design Watts:	672.0			

* NOTES: Selections with a * require a note in the space below explaining how compliance is achieved.
EX: Luminaire is lighting a statue; EXCEPTION 2 to §130.2(b)

[1] FOOTNOTES: Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per §130.0(c)
[2] For linear luminaires, wattage should be indicated as W/lf instead of Watts/luminaire. Total linear feet should be indicated in column 05 instead of number of luminaires.
[3] Select "New" for new luminaires in a new outdoor lighting project, or for added luminaires in an alteration. Select "Altered" for replacement luminaires in an alteration. Select "Existing to Remain" for existing luminaires within the project scope that are not being altered and are remaining. Select "Existing Reinstalled" for existing luminaires which are being removed and reinstalled as part of the project scope.
[4] Compliance with mandatory cutoff requirements is required for luminaires with initial lumen output >= 6,200 unless exempted by §130.2(b)

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTI-E
Project Name:	Sage Commons - NonRes	**Report Page:**	(Page 6 of 7)
Project Address:	80 College Avenue	**Date Prepared:**	4/2/2020

T. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION
Selections have been made based on information provided in this document. If any selection have been changed by permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCI/

Yes	No	Form/Title	Field Inspector Pass	Fail
●	○	NRCI-LTI-01-E - Must be submitted for all buildings	☐	☐
○	●	NRCI-LTI-02-E- Must be submitted for a lighting control system, or for an Energy Management Control System (EMCS), to be recognized for compliance.	☐	☐
○	●	NRCI-LTI-04-E - Must be submitted for two interlocked systems serving an auditorium, a convention center, a conference room, a multipurpose room or a theater to be recognized for compliance.	☐	☐
○	●	NRCI-LTI-05-E- Must be submitted for a Power Adjustment Factor (PAF) to be recognized for compliance.	☐	☐
○	●	NRCI-LTI-06-E- Must be submitted for additional wattage installed in a video conferencing studio to be recognized for compliance.	☐	☐

U. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE
Selections have been made based on information provided in this document. If any selection have been changed by the permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and any with "-A" in the form name must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit: http://www.energy.ca.gov/title24/attcp/providers.html

Yes	No	Form/Title	Field Inspector Pass	Fail
●	○	NRCA-LTI-02-A - Must be submitted for occupancy sensors and automatic time switch controls.	☐	☐
○	●	NRCA-LTI-03-A - Must be submitted for automatic daylight controls.	☐	☐
○	●	NRCA-LTI-04-A - Must be submitted for demand responsive lighting controls.	☐	☐
○	●	NRCA-LTI-05-A. - Must be submitted for institutional tuning power adjustment factor (PAF)	☐	☐

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTI-E
Project Name:	Sage Commons - NonRes	**Report Page:**	(Page 2 of 7)
Project Address:	80 College Avenue	**Date Prepared:**	4/2/2020

C. COMPLIANCE RESULTS
If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.

Allowed Lighting Power per §140.6(b) (Watts) / **Adjusted Lighting Power per §140.6(a) (Watts)** / **Compliance Results**

Lighting in conditioned and unconditioned spaces must not be combined for compliance per §140.6(b)1	01	02	03	04		05		06	07		08	09
	Complete Building §140.6(c)1 (See Table I)	Area Category §140.6(c)2 (See Table I)	Area Category Additional §140.6(c)2G (+) (See Table J)	Tailored §140.6(c)3 (+) (See Table K)	=	**Total Allowed (Watts)**	≥	Total Designed (Watts) (See Table F)	Adjustments: PAF Lighting Control Credits §140.6(a)2 (-) (See Table P)	=	**Total Adjusted** (Watts) *Includes Adjustments	**05 must be >= 08 §140.6**
Conditioned					=		≥			=		
Unconditioned		9,305.9	0		=	9,305.9	≥	3,684	0	=	3684	COMPLIES
											Controls Compliance (See Table H for Details)	COMPLIES
											Rated Power Reduction Compliance (See Table Q for Details)	

D. EXCEPTIONAL CONDITIONS
This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

E. ADDITIONAL REMARKS
This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

F. INDOOR LIGHTING FIXTURE SCHEDULE
This table includes all permanent designed lighting and all portable lighting in offices.

Designed Wattage: Unconditioned Spaces

01	02	03	04	05	06	07	08	09	10	
Name or Item Tag	Complete Luminaire Description	Modular (Track) Fixture	Small Aperture & Color Change[1]	Watts per luminaire[2]	How is Wattage determined	Total Number of Luminaires	Excluded per §140.6(a)3	Design Watts	Field Inspector Pass	Fail
L11	L11 - LED WALL PACK	No	No	26	Mfr. Spec	18	No	468	☐	☐
L2	L2 - LED LINEAR	No	No	42	Mfr. Spec	6	No	252	☐	☐

No.	REVISION	DATE
1	PLAN CHECK	04/02/2020

DANCO COMMUNITIES
5251 ERICSON WAY
ARCATA, CA 95532

SAGE COMMONS
80 COLLEGE AVENEUE
SANTA ROSA, CA
NONRESIDENTIAL

ENERGY FORMS
TITLE-24 COMPLIANCE DOCUMENTS

336 W. Main Street
Ripon, CA 95366
(209) 579-5000
(209) 522-5001
DuctTesters

DATE CREATED 01/27/2020

SHEET **EN-2.1**

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
Project Name:	Sage Commons - Nonres	**Report Page:**	**Page 8 of 10**
Project Address:	80 College Avenue	**Date Prepared:**	4/2/2020

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name: Derrick Yeung	Documentation Author Signature:
Company: DuctTesters, Inc	Signature Date:
Address: 336 W. Main Street	CEA / HERS Certification Identification (if applicable): R16-15-20052 | NR16-19-20063
City/State/Zip: Ripon CA 95366	Phone: 209.579.5000

RESPONSIBLE PERSON'S DECLARATION STATEMENT

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

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. 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.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name:	Responsible Designer Signature:
Company: PAE ENGINEERS	Date Signed: 2020-04-02
Address: 44 WEST BROADWAY, SUITE 430	License:
City/State/Zip: EUGENE OR 97401	Phone: 541.735.6222

Registration Number:

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance

Registration Date/Time:

Report Version: 2019.0.001
Schema Version: rev 20190401

Registration Provider: Energy

Report Generated: 2020-04-02 18:17:1

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

No.	REVISION	DATE
1	PLAN CHECK	04/02/2020

DANCO COMMUNITIES
5251 ERICSON WAY
ARCATA, CA 95532

SAGE COMMONS
80 COLLEGE AVENEUE
SANTA ROSA, CA

NONRESIDENTIAL

ENERGY FORMS

TITLE-24 COMPLIANCE DOCUMENTS

336 W. Main Street
Ripon, CA 95366
(209) 579-5000
(209) 522-5001

DuctTesters

DATE CREATED
01/27/2020

SHEET
EN-2.2