GOVERNING CODES:

- Part 2, **2019 California Building Code** (CBC), which is based on the 2018 International Building Code (IBC) published by the International Code Council (ICC).
- Part 2.5, **2019 California Residential Code** (CRC), which is based on the 2018 International Residential Code (IRC) published by the International Code Council (ICC).
- Part 3, **2019 California Electrical Code** (CEC), which is based on the 2017 National Electrical Code (NEC) published by the National Fire Protection Association (NFPA).
- Part 4, **2019 California Mechanical Code** (CMC), which is based on the 2018 Uniform Mechanical Code (UMC) published by the International Association of Plumbing and Mechanical Officials (IAPMO).
- Part 5, **2019 California Plumbing Code** (CPC), which is based on the 2018 Uniform Plumbing Code (UPC) published by the International Association of Plumbing and Mechanical Officials (IAPMO).
- Part 6, **2019 California Energy Code** (CEC), which is written by the California Energy Commission (CEC), and published by the California Building Standards Commission.
- Part 9, **2019 California Fire Code** (CFC), which is based on the 2018 International Fire Code (IFC) published by the International Code Council (ICC).
- Part 11, **2019 California Green Building Standards Code** (CGBSC), which is published by the California Building Standards Commission.

COVER SHEET NOTES:

1.) Fire sprinklers are required per section R313 of the 2016 CRC

2.) project required a grading permit are required by Riverside County to provide a grading report after completion of rough grading. Structural engineer must be made aware of the finding within the final grading report. Engineer on record should fill out the "Foundation Design Verification Certificate" to certify that he/she has evaluated the findings within the approved Final Grading Report

3.) Work shall be installed in accordance with the approved construction documents, and any changes made during construction that are not in compliance with the approved construction documents shall be resubmitted for approval as an amended set of construction documents. CRC R106.4.

4.) deferred submittal item:
Prior to installation, a minimum of two copies of truss calculations will be provided with the truss plan layout to be stamped and signed by the architect or civil/structural engineer licensed in the State of California. Likewise, every truss detail shall bear the signature of an architect or civil/structural engineer licensed in the State of California.

5.) deferred submittal items:
Truss plan layout shall be stamped and signed by an architect or civil/structural engineer licensed in the State of California.

6.) The Foundation Design Verification Certificate shall be completed and signed by the engineer of record.

7.) Photovoltaic Systems
The plan needs to show compliance with the 2019 CEC, 2019 CBC, and 2019 CRC. [§107.2 CBC]
The plans shall be signed by the contractor who will perform the work. [§5536.1, 6735 California Business and Profession Code] (see energy documentation for sizing requirements)

PV wiring, systems and interconnections shall only be installed by qualified persons. CEC 690.4(C) A C10 or C46 license is required

Project Design Team:

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ELECTRICAL
American Best Electrical Services
Aram Lepedjian
818-631-3166

Project Information:

OWNER:

LEGAL:

Zoning Occupancy group: LDR
Number of stories: Single
Type of construction: Masonry non-combustible = ISO Class 4, IBC Type IIA
Building OCC. Groups: Single Family

Area Calculations

TOTAL CALCULATED LOT AREA	=	27,308 s.f.
RESIDENCE COND. FLR. AREA	=	5,651.6 s.f.
GARAGE 1 & 2 FLR. AREA	=	1,184.0 s.f.
TOTAL BUILDING FOOT PRINT	=	6,835.6 s.f.

LOT COVERAGE = 25.0 %
MAXIMUM LOT COVERAGE = 35%

WEBSITE / PROMOTIONAL DOCUMENT DISTRIBUTION:

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UPDATED TO 2019 CODES

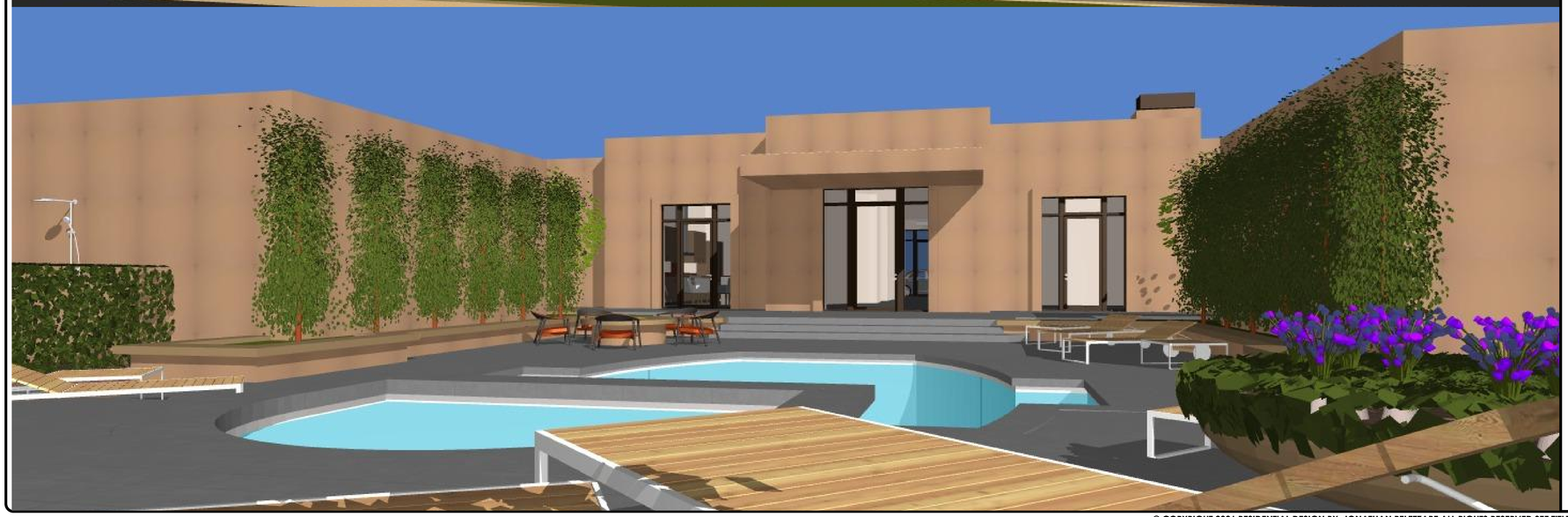
A CUSTOM RESIDENCE FOR:

Torchia

Palm Springs, CA

UPDATED TO 2019 CODES

Project Title Sheet Renderings (front & rear yard pool area views respectively)



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REVISIONS
1 5/12/2022
2
3
4

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TITLE SHEET: VICINITY MAP, MUNICIPAL CODE, DESIGN TEAM, PROJECT INFORMATION, INDEX OF DRAWINGS

UPDATED TO 2019 CODES
A CUSTOM RESIDENCE FOR:
Torchia
Palm Springs, California
UPDATED TO 2019 CODES

DRAWN:
CHECKED:
PLOT DATE: 6/28/2026
SCALE: 1/4" = 1'-0" (UNO)
JOB #: 081115
SHEET NO.: A.1
OF 55 SHEETS

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1. CONTRACTOR SHALL PICK UP ALL PERMITS.

2. CONTRACTOR SHALL PROVIDE WORK COMPLETELY AND IN ACCORDANCE WITH CURRENT APPLICABLE CODES.

3. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE INCURRED THROUGH ANY ERRORS OR OMISSIONS WITHIN HIS WORK TO THIS PROPERTY OR TO THE ADJACENT AND PUBLICLY OWNED PROPERTIES.

4. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALE. DO NOT SCALE THE DRAWINGS.

5. CONTRACTOR TO VERIFY ALL FIELD CONDITIONS AND MEASUREMENTS BEFORE STARTING CONSTRUCTION.

6. CONTRACTOR TO REVIEW ALL DESIGN CHANGES OR SUBSTITUTIONS WITH THE ARCHITECT AND RECEIVE APPROVAL FOR ALL CHANGES.

7. ELECTRICAL, MECHANICAL, AND PLUMBING SYSTEMS ARE "DESIGN/BUILD." PERFORMANCE SPECIFICATIONS ARE TO BE DETERMINED BY THE BUILDER/OWNER BEFORE COMMENCEMENT OF THE WORK, I.E., FURNACE SIZE AND TYPE, ELECTRICAL PANEL SIZES, ETC.

8. INSTALL ALL EQUIPMENT, FIXTURES, AND MATERIALS AS PER MANUFACTURER'S RECOMMENDATIONS.

9. DO NOT WASH THE WINDOWS OR REMOVE LABELS PRIOR TO INSPECTION AND VERIFICATION OF U AND SHCG PROPERTIES BY INSPECTOR.

10. SEE DOOR SCHEDULE FOR DOOR SIZE AND TYPE. AT OUTSWINGING EXTERIOR DOORS, OUTSIDE LANDING MUST BE AT SAME LEVEL AS INSIDE LANDING PER CBC SEC. 1008.1.4. THRESHOLDS @ OUTSWINGING EXTERIOR DOORS SHALL NOT EXCEED 0.5" IN HEIGHT, 0.75" @ SLIDING DOORS IN DWELLINGS. RAISED THRESHOLDS GREATER THAN 0.25" SHALL BE BEVELED WITH A SLOPE NOT GREATER THAN 1:2 PER CBC SEC. 1008.1.6. ALL LANDINGS OR FLOORS AT REQUIRED EGRESS DOORS SHALL BE AS WIDE AS THE DOOR SERVED AND 36" MINIMUM DEPTH IN THE DIRECTION OF TRAVEL PER R311.3. ALL LANDINGS TO HAVE A MAXIMUM STEP HEIGHT OF 7-3/4" (TYP.).

11. ALL DIMENSIONS SHOWN ARE TO F.O.S.

12. ALL GYPSUM BOARD TO RECEIVE SMOOTH(LEVEL 4 FINISH) TEXTURE AND PRIME PAINT COAT PRIOR TO APPLICATION OF TWO COATS OF NEW INTERIOR LATEX PAINT.

13. AN AUTOMATIC RESIDENTIAL FIRE SPRINKLER SYSTEM SHALL BE INSTALLED. SECTION R313.2

14. OPERABLE WINDOWS SHALL BE LOCATED A MINIMUM 10' FROM ANY PLUMBING VENTS, CHIMNEYS, ETC. SECTION R303.5

15. BUILDER IS TO PROVIDE AN OPERATION MANUAL (CONTAINING INFORMATION FOR MAINTAINING APPLIANCE, ETC.) FOR THE OWNER AT THE TIME OF FINAL INSPECTION. CGC 4.410.1

GENERAL NOTES 1

&	AND	H.B.	HOSE BIBB
∠	ANGLE	H.C.	HOLLOW CORE
@	AT	HR.	HOUR
℄	CENTERLINE	HGT	HEIGHT
#	POUND OR NUMBER	HWD	HARDWOOD
(E)	EXISTING	INSUL.	INSULATION
(N)	NEW	INT.	INTERIOR
ACOUS.	ACOUSTICAL	KIT.	KITCHEN
ADJ.	ADJUSTABLE	LAM.	LAMINATE
AGGR.	AGGREGATE	LAV.	LAVATORY
ALUM.	ALUMINUM	MAX	MAXIMUM
APPROX.	APPROXIMATE	MECH.	MECHANICAL
ARCH.	ARCHITECTURAL	MIN.	MINIMUM
ASPH.	ASPHALT	M.O.	MASONRY OPENING
BD.	BOARD	N.I.C.	NOT IN CONTRACT
BITUM.	BITUMINOUS	NO.	NUMBER
BLDG.	BUILDING	N.T.S.	NOT TO SCALE
BLKG.	BLOCKING	O.C.	ON CENTER
BM.	BEAM	OPNG.	OPENING
CER.	CERAMIC	OPP.	OPPOSITE
CLG.	CEILING	PL.	PLATE
CL.	CLOSET	PLYWD.	PLYWOOD
CLMN.	COLUMN	PR.	PAIR
CONC.	CONCRETE	PT.	POINT
CONT.	CONTINOUS	PART.	PARTITION
CORR.	CORRIDOR	P.B.O.	PROVIDED BY OWNER
CPT	CARPET	R.	RADIUS
DET.	DETAIL	R.D.	ROOF DRAIN
DIA.	DIAMETER	REF.	REFRIGERATOR
DIM.	DIMENSION	REINF.	REINFORCED
DN	DOWN	REQ.	REQUIRED
DR.	DOOR	RM.	ROOM
DRWG.	DRAWING	R.O.	ROUGH OPENING
EA.	EACH	R.W.L.	RAIN WATER LEADER
E.J.	EXPANSION JOINT	S.C.	SOLID CORE
ELEV.	ELEVATION	SHT.	SHEET
ELEC.	ELECTRICAL	SIM.	SIMILAR
EQ.	EQUAL	SPEC.	SPECIFICATION
EXT.	EXTERIOR	SQ.	SQUARE
F.D.	FLOOR DRAIN	S.O.G.	SLAB ON GRADE
FIN.	FINISH	S.S	STAINLESS STEEL
FLR.	FLOOR	STOR.	STORAGE
FLUOR.	FLUORESCENT	SUSP.	SUSPENDED
F.O.C.	FACE OF CONCRETE	SYM.	SYMBOL
F.O.F.	FACE OF FINISH	T.O.C.	TOP OF CURB
F.O.S.	FACE OF STUDS	TEL.	TELEPHONE
FT.	FOOT OR FEET	T.&G.	TONGUE AND GROOVE
FTG.	FOOTING	T.O.W.	TOP OF WALL
FURR.	FURRING	TYP.	TYPICAL
GA.	GAUGE	U/C	UNDER CABINET or COUNTER
GALV.	GALVANIZED	U.O.N. & UNO	UNLESS OTHERWISE NOTED
GL.	GLASS	VEST.	VESTIBULE
GYP.	GYPSUM	W/	WITH
		W.C.	WATER CLOSET
		WD.	WOOD
		W/O	WITHOUT

A2 / A8.0 — SECTION

16 / A9.0, 12 / A9.0, 8 / A9.0 — DETAIL

T.W. 60 — TOP OF WALL
T.C. 50 — TOP OF CURB
T.P. 52 — TOP OF PAVEMENT

PROPERTY LINE

450 — NEW OR FINISHED CONTOURS

450 — EXISTING CONTOURS

— WINDOW SYMBOL

— DOOR SYMBOL

ABBREVIATIONS AND SYMBOLS 2

1. LIGHTING IN BATHROOMS, GARAGES, LAUNDRY ROOMS AND UTILITY ROOMS - ALL ILLUMINATION SHALL EITHER BE HIGH EFFICACY OR SHALL BE CONTROLLED BY ONE OCCUPANT SENSOR

2. OTHER ROOMS - ALL LUMINAIRES SHALL BE EITHER HIGH EFFICACY OR SHALL BE CONTROLLED BY AN OCCUPANCY SENSOR OR DIMMER. CLOSETS THAT ARE LESS THAN 70 SQ FT ARE EXEMPT FROM THESE REQUIREMENTS.

3. OUTDOOR LIGHTING - ALL LUMINAIRES MOUNTED TO THE BUILDING OR TO OTHER BUILDINGS ON THE SAME LOT SHALL BE HIGH EFFICACY OR SHALL BE CONTROLLED BY A PHOTOCONTROL / MOTION SENSOR

4. SERVICE PANEL SHALL COMPLY WITH NEC ARTICLE 240-24.

5. CLOSET LIGHT FIXTURES SHALL COMPLY WITH NEC ARTICLE 410-8.

6. PROVIDE UL LISTED FIXTURES IN DAMP LOCATIONS.

7. CEILING FANS OR CHANDELIERS ARE TO BE SUPPORTED PER NEC 370-27(C) AND SHALL NOT USE OUTLET BOXES AS THE SOLE MEANS OF SUPPORT.

8. ELECTRICIAN TO REVIEW FIXTURE, SWITCH, DIMMER, AND OUTLET LOCATIONS WITH OWNER PRIOR TO INSTALLATION.

9. ALL ROOMS CONTAINING BATH TUBS, SHOWERS, SPAS, AND SIMILAR BATHING FIXTURES MUST HAVE MECHANICAL EXHAUST FANS PER CBC SEC. 1203.4.2.1. BATHROOM CEILING FANS SHOULD BE CENTERED OVER TOILET (U.N.O.).

10. ALL BRANCH CIRCUITS THAT SUPPLY 125 VOLT SINGLE PHASE 15 AND 20 AMPERE RECEPTACLE OUTLETS IN BEDROOMS SHALL BE PROTECTED BY AN ARC-FAULT CIRCUIT INTERRUPTER LISTED TO PROVIDE PROTECTION OF THE ENTIRE BRANCH CIRCUIT.

11. LAUNDRY RECEPTACLE OUTLET TO BE A DEDICATED 20-AMP BRANCH CIRCUIT PER CEC 210.11(C)(2) & 210.52(F)

12. DEDICATED 20-AMP CIRCUIT REQUIRED TO SERVE BATHROOM OUTLETS.THIS CIRCUIT CANNOT SUPPLY ANY OTHER RECEPTACLES, LIGHTS, FANS, ETC. (EXCEPTION-WHERE THE CIRCUIT SUPPLIES A SINGLE BATHROOM, OUTLETS FOR OTHER EQUIPMENT WITHIN THE SAME BATHROOM SHALL BE PERMITTED TO BE SUPPLIED.) CEC 210.11(C)(3) & 210.52(D)

13. PLACE RECEPTACLES @ 12 FEET O.C. MAXIMUM AND WITHIN 6 FEET OF END WALLS. WALL SPACES INCLUDE FIXED PANELS IN EXTERIOR WALLS, EXCLUDING SLIDING PANELS AND ALSO FIXED ROOM DIVIDERS SUCH AS BAR TYPE COUNTERS OR RAILINGS. CEC 210.52(A)(1) & 210.52(A)(2)(2) & (3)

14. RECEPTACLE MOUNTING HEIGHT: 48" ABOVE FINISH FLOOR, OR U.N.O.

15. PROVIDE SMOKE/CARBON MONOXIDE DETECTORS IN EACH BEDROOM AND IN HALL OUTSIDE BEDROOMS AS SHOWN ON PLANS PER 2010 CBC

16. WHERE MORE THAN ONE SMOKE ALARM IS REQUIRED TO BE INSTALLED WITHIN AN INDIVIDUAL DWELLING OR SLEEPING UNIT, THE SMOKE ALARM IS REQUIRED TO BE INTERCONNECTED. (R314.5)

17. CARBON MONOXIDE ALARMS REQUIRED BY R315.1 SHALL BE INSTALLED IN THE FOLLOWING LOCATIONS; OUTSIDE OF EACH SLEEPING AREA IN THE IMMEDIATE VICINITY OF BEDROOMS, AND ON EVERY LEVEL OF A DWELLING UNIT, INCLUDING BASEMENTS. (R314.3)

18. ALL SMOKE ALARMS SHALL BE DUAL SENSOR (PHOTO/ION), EXCEPT WHEN WITHIN 20 FEET OF A KITCHEN, ROOM WITH A WOOD BURNING STOVE, OR FIREPLACE. SMOKE DETECTORS OR SMOKE ALARMS LOCATED WITHIN 20 FEET OF A KITCHEN OR A ROOM CONTAINING A WOOD-BURNING STOVE OR FIREPLACE SHALL BE PHOTOELECTRIC DETECTORS OR ALARMS.

19. MECHANICAL EXHAUST FANS WHICH EXHAUST DIRECTLY FROM BATHROOMS SHALL COMPLY WITH ASHRAE 62.2, SECTION 5; EXHAUST FANS SHALL BE ENERGY COMPLIANT; EXHAUST FANS SHALL TERMINATE OUTSIDE THE BUILDING.

20. ALL EXTERIOR RECEPTACLES SHALL BE GROUND FAULT PROTECTED AND WATER PROOF. ALL RECEPTACLES IN GARAGE SHALL BE GROUND FAULT PROTECTED AND 42" ABOVE SLAB.

21. RECEPTACLES IN KITCHEN AND BATHROOMS AND WITHIN 6" OF SINKS TO HAVE GROUND FAULT CIRCUIT PROTECTION. PROVIDE DESIGNATED 20AMP CIRCUITS FOR A MINIMUM TWO SMALL APPLIANCE BRANCH CIRCUITS IN KITCHEN PER CEC 210.11(C)(1). 20AMP SMALL-APPLIANCE BRANCH CIRCUITS WHICH DO NOT SERVE ANY: OUTSIDE PLUGS, RANGE HOOD, DISPOSAL, DISHWASHER OR MICROWAVE. SMALL APPLIANCE OUTLETS SHALL BE NOT MORE THAN 4'-0" O.C. AND 2'-0" FROM COUNTER EDGE AND NOT MORE THAN 20" ABOVE COUNTER SURFACES PER CEC 210.52.

22. AT LEAST 50% OF PERMANENTLY INSTALLED LIGHTING IN KITCHEN MUST BE HIGH EFFICACY, TYPICALLY FLUORESCENT. (CEnC 150(K)8))

23. ALL LOW EFFICACY LUMINARIES IN THE KITCHEN MUST BE CONTROLLED BY AN OCCUPANT SENSOR, DIMMER, ENERGY MANAGEMENT CONTROL SYSTEM, OR A MULTISCENE PROGRAMMABLE CONTROL SYSTEM (CEnC 150(K)8.1))

24. TRACK LIGHTING OR OTHER LIGHTING SYSTEMS WHICH ALLOW THE ADDITION OR RELOCATION OF LUMINARIES ARE CONSIDERED A LOW EFFICACY LUMINARY. (CEnC 150(K)2.C))

25. TAMPER RESISTANT RECEPTACLES FOR ALL LOCATIONS. NEC 210.52.

26. ALL OUTLETS LOCATED IN FAMILY, LIVING, BEDROOMS, DINING, HALLWAYS, ETC. TO BE ARC-FAULT PROTECTED. NEC 210.8(A)

27. ALL RECEPTACLE OUTLET LOCATIONS TO COMPLY WITH CEC ARTICLE 210.52.

28. SPRINKLER WATER FLOW SWITCH AND SMOKE ALARMS. ON NON-COMBINATION SYSTEMS, A WATER FLOW SWITCH SHALL BE INSTALLED IN EVERY DWELLING UNIT FIRE SPRINKLER SYSTEMS. THE SYSTEM SHALL INCLUDE:
-- AN APPROVED AUDIBLE SPRINKLER FLOW ALARM (WHEELOCK HORN/STROBE #MT4-115-WH-VFR WITH WBB BACK BOX OR EQ.) SHALL BE PROVIDED ON THE EXTERIOR OF THE BUILDING IN AN APPROVED LOCATION
-- RESIDENTIAL SMOKE ALARM OR EQ. FIRE SPRINKLER FLOW SWITCH SHALL BE INTERCONNECTED SO THAT OPERATION OF ANY SMOKE ALARM OR FIRE SPRINKLER FLOW SWITCH CAUSES ALL SMOKE ALARMS WITHIN THE DWELLING TO SOUND AND ACTIVATE THE EXTERIOR HORN/STROBE. THE WIRING OF THIS SYSTEM SHALL BE IN ACCORDANCE WITH KIDDE SM120X RELAY POWER SUPPLY MODUAL MANUAL. THE 120VOLT DEVICE WIRED TO TURN ON WHEN THE ALARM SOUNDS INS THE HORN STROBE. THE PULL FOR FIRE DEVICE IS THE FIRE SPRINKLER FOR SWITCH. PSMC APP L 6.17

ELECTRICAL GENERAL NOTES 3

1. FAUCETS WITH ATTACHED HOSE SPRAYS SHALL VENT TO ATMOSPHERE UNDER BACK SIPHONAGE CONDITIONS (UPC SECTION 603.3.15). ALL SHOWERS SHALL HAVE ANTI-SCALD VALVE.

2. ALL BUILDING SUPPLY WATER SYSTEMS IN WHICH QUICK ACTING VALVES ARE INSTALLED SHALL BE PROVIDED WITH DEVICES TO ABSORB THE HAMMER CAUSED BY HIGH PRESSURES RESULTING FROM THE QUICK CLOSING OF THESE VALVES. WATER HAMMERS SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO THESE VALVES.

3. DOORS AND PANELS OF SHOWER AND BATHTUB ENCLOSURES SHALL BE FULLY TEMPERED, LAMINATED SAFETY GLASS OR APPROVED PLASTIC. CBC 2406.3

4. PLUMBING AND EQUIPMENT VENTING: WHERE FEASIBLE, VENT ALL PLUMBING FIXTURES, EXHAUST VENTS, FURNACE, AND WATER HEATER TO ROOF.

5. SHOWER DOORS SHALL HAVE A 22" MINIMUM UNOBSTRUCTED OPENING.

6. SHOWERS AND WALLS ABOVE BATHTUBS SHALL HAVE A SMOOTH NON-ABSORBANT HARD SURFACE. SHOWERS MUST HAVE WATERPROOF WALL FINISH UP AT LEAST 6' ABOVE THE FLOOR. (R307.2) WATER RESISTANT HARDI BOARD TO BE USED IN BATHTUBS AND SHOWERS WHERE THERE WILL BE DIRECT EXPOSURE TO WATER PER CRC SECTION 702.3.8.1.

7. TUB AND SHOWER VALVES SHALL BE APPROVED PRESSURE - BALANCED OR THERMOSTATIC MIXING TYPE ADJUSTED TO A MAX OF 120 DEGREES.

8. SINGLE FLUSH WATER CLOSEST SHALL HAVE AN EFFECTIVE FLUSH VOLUME NOT TO EXCEED 1.28 GALLONS. SHOWER HEADS SHALL BE DESIGNED AND INSTALLED SO THAT THEY WILL NOT DELIVER MORE THAN 2 GALLONS PER MINUTE MEASURED AT 80 PSI. (CPC 402.1.1) FAUCETS AT KITCHENS, SHALL BE DESIGNED FOR A MAXIMUM FLOW RATE OF 1.8 GALLONS PER MINUTE MEASURED AT 60 PSI. (CPC 402.1.2) FAUCETS AT LAVATORY, SHALL BE DESIGNED FOR A MAXIMUM FLOW RATE OF 1.5 GALLONS PER MINUTE MEASURED AT 60 PSI. (CPC 402.1.2) METERING FAUCETS TO HAVE MAXIMUM FLOW RATE OF 0.25 GALLONS PER CYCLE.

9. WATER HEATER SHALL BE INSTALLED SO THAT ALL BURNERS AND BURNER-IGNITION DEVICES ARE LOCATED NOT LESS THAN 18" ABOVE THE FLOOR AND PROTECTED FROM AUTO IMPACT. (CPC 508.14 & CMC 308.1) WATER HEATER SEISMIC ANCHORAGE TO INCLUDE ANCHORS AND/OR STRAPS AT POINTS WITHIN THE UPPER AND LOWER ONE-THIRD OF ITS VERTICAL DIMENSION, THE LOWER ANCHOR/STRAP LOCATED TO MAINTAIN A MINIMUM DISTANCE OF 4 INCHES ABOVE THE CONTROLS. (CPC 508.2)

10. WHEN A SHOWER IS PROVIDED WITH MULTIPLE SHOWER HEADS, THE SUM OF THE FLOW TO ALL THE HEADS SHALL NOT EXCEED 2.0GM @ 80PSI, OR THE SHOWER SHALL BE DESIGNED SO THAT ONLY ONE HEAD IS ON AT A TIME. CGC 4.303.1.3.2

11. BATHROOM FANS SHALL BE ENERGY STAR RATED, VENTED DIRECTLY TO THE OUTSIDE AND CONTROLLED BY A HUMIDISTAT. CGC 4.505.3

12. CIVIL CODE SECTION 1101 PLUMBING REQUIREMENTS FOR HOMES CONSTRUCTED PRIOR TO JANUARY 1, 1994:
PRIOR TO FINAL INSPECTION IT IS THE APPLICANT'S RESPONSIBILITY TO REPLACE ALL NON-CONFORMING PLUMBING FIXTURES WITH WATER CONSERVING PLUMBING FIXTURES. NON-COMPLIANT PLUMBING FIXTURES MEAN ANY OF THE FOLLOWING:

- ANY TOILET MANUFACTURED TO HAVE A FLOW CAPACITY OF MORE THAN 1.6 GALLONS OF WATER PER FLUSH
- ANY SHOWERHEAD MANUFACTURED TO HAVE A FLOW CAPACITY OF MORE THAN 2.5 GALLONS OF WATER PER MINUTE
- ANY INTERIOR FAUCET THAT EMITS MORE THAN 2.2 GALLONS OF WATER PER MINUTE.

13. when a shower is provided with **multiple shower heads**, the sum of flow to all the heads shall not exceed 2.0 gpm @ 80 psi, or the shower shall be designed so that only one head is on at a time. CGC 4.303.1.3.2.

PLUMBING/BATHROOM GENERAL NOTES 4

1. MECHANICAL CONTRACTOR/PLUMBING CONTRACTOR TO SHOW THE TERMINATION LOCATION OF FLUES AND PLUMBING VENTS IN RELATION TO OPENINGS IN THE STRUCTURE (ESPECIALLY OPERABLE SKYLIGHTS) ON THEIR RESPECTIVE DESIGN DRAWINGS. ALL ENVIRONMENTAL AIR DUCTS SHALL BE A MIN. OF 3 FEET FROM ANY OPENINGS INTO THE BUILDING (I.E. DRYERS, BATH AND UTILITY FANS, ETC., MUST BE 3 FEET AWAY FROM DOORS, WINDOWS, OPENING SKYLIGHTS OR ATTIC VENTS.) PER CMC SEC. 504.5

2. ALL ROOMS CONTAINING BATH TUBS, SHOWERS, SPAS, AND SIMILAR BATHING FIXTURES MUST HAVE MECHANICAL EXHAUST FANS PER CBC SEC. 1203.4.2.1

3. ENDS OF DUCT OPENINGS ARE TO BE SEALED, AND MECHANICAL EQUIPMENT COVERED DURING CONSTRUCTION

4. GAS FIREPLACE(S) SHALL BE A DIRECT-VENT SEALED-COMBUSTION TYPE. WOODSTOVE OR PELLET STOVES MUST BE US EPA PHASE II RATED APPLIANCES. CGC 4.503.1

MECHANICAL GENERAL NOTES 5

1. PROJECTS WHICH DISTURB LESS THAN ONE ACRE OF SOIL SHALL MANAGE STORM WATER DRAINAGE DURING CONSTRUCTION BY ONE OF THE FOLLOWING: RETENTION BASINS, WHERE STORM WATER IS CONVEYED TO A PUBLIC DRAINAGE SYSTEM, WATER SHALL BE FILTERED BY USE OF BARRIER SYSTEM, WATTLE OR OTHER APPROVED METHOD. CGC 4.106.2

2. SITE GRADING OR DRAINAGE SYSTEM WILL MANAGE ALL SURFACE WATER FLOWS TO KEEP WATER FROM ENTERING BUILDINGS (SWALES, WATER COLLECTION, FRENCH DRAINS, ETC. EXCEPTION: ADDITIONS NOT ALTERING THE DRAINAGE PATH. CGC 4.106.3

3. MINIMUM 50% OF CONSTRUCTION WASTE IS TO BE RECYCLED. CGC 4.408.1

4. CONTRACTOR SHALL SUBMIT A CONSTRUCTION WASTE MANAGEMENT PLAN TO THE JURISDICTION AGENCY THAT REGULATES WASTE MANAGEMENT, PER CGC 4.408.2

5. CONCRETE SLABS SHALL BE PROVIDED WITH A CAPILLARY BREAK. CGC 4.505.2.1

6. VOC'S MUST COMPLY WITH THE LIMITATIONS LISTED IN SECTION 4.504.3 AND TABLES 4.504.1, 5.504.2, 4.504.3 AND 4.504.5 FOR: ADHESIVES, PAINTS AND COATINGS, CARPET AND COMPOSITION WOOD PRODUCTS. CGC 4.504.2

7. MOISTURE CONTENT OF WOOD SHALL NOT EXCEED 19 % BEFORE IT;S ENCLOSED IN CONSTRUCTION. THE MOISTURE CONTENT NEEDS TO BE CERTIFIED BY ONE OF 3 METHODS SPECIFIED IN SECTION 4.505.3. BUILDING MATERIALS WITH VISIBLE SIGNS OF WATER DAMAGE SHOULD NOT BE USED IN CONSTRUCTION. THE MOISTURE CONTENT MUST BE DETERMINED BY THE CONTRACTOR BY ONE OF THE METHODS LISTED IN CGC 4.505.3.

8. PRIOR TO FINAL INSPECTION THE LICENSED CONTRACTOR, ARCHITECT OR ENGINEER IN RESPONSIBLE CHARGE OF THE OVERALL CONSTRUCTION MUST PROVIDE TO THE BUILDING DEPARTMENT OFFICIAL **WRITTEN VERIFICATION** THAT ALL APPLICABLE PROVISIONS FROM THE GREEN BUILDING STANDARDS CODE HAVE BEEN IMPLEMENTED AS PART OF THE CONSTRUCTION. CGC 102.3.

9. AUTOMATIC IRRIGATION SYSTEM CONTROLLERS INSTALLED AT THE TIME OF FINAL INSPECTION SHALL BE PROVIDED WITH INTEGRAL RAIN SENSORS OR SOIL MOISTURE SENSORS THAT ADJUST IRRIGATION IN RESPONSE TO CHANGES IN PLANTS' NEEDS AS WEATHER CONDITIONS CHANGES. (GBC SECTION 4.304.1)

10. ANNULAR SPACES AROUND PIPES, ELECTRIC CABLES, CONDUITS OR OTHER OPENINGS IN PLATES AT EXTERIOR WALLS SHALL BE PROTECTED AGAINST THE PASSAGE OF RODENTS BY CLOSING SUCH OPENINGS WITH CEMENT MORTAR, CONCRETE MASONRY OR SIMILAR ACCEPTABLE METHOD. (GBC SECTION 4.406)

11. DUCT AND VENT OPENINGS SHALL BE COVERED DURING CONSTRUCTION. (GBC SECTION 4.504.1)

12. ADHESIVES, SEALANTS AND CAULKS SHALL BE COMPLIANT WITH VOC AND OTHER TOXIC COMPOUND LIMITS. (GBC SECTION 4.504.2.1)

13. PAINTS, STAINS, AND OTHER COATINGS SHALL BE COMPLIANT WITH VOC LIMITS. (GBC SECTION 4.504.2.2)

14. AEROSOL PAINTS AND COATING SHALL BE COMPLIANT WITH PRODUCT WEIGHTED MIR LIMITS FOR ROC AND OTHER TOXIC COMPOUNDS. (GBC SECTION 4.504.2.3)

15. 80 PERCENT OF FLOOR AREA RECEIVING RESILIENT FLOORING SHALL COMPLY WITH THE VOC-EMISSION LIMITS DEFINED IN THE COLLABORATIVE FOR HIGH PERFORMANCE SCHOOLS (CHPS) HIGH PERFORMANCE PRODUCTS DATABASE OR COMPLIANT WITH CHPS CRITERIA CERTIFIED UNDER THE GREEN GUARD CHILDREN & SCHOOLS PROGRAM OR BE CERTIFIED UNDER THE RESILIENT FLOOR COVERING INSTITUTE (RFCI) FLOOR SCORE PROGRAM OR MEET CALIFORNIA DEPARTMENT OF PUBLIC HEALTH, "STANDARD METHOD FOR TESTING AND EVALUATION OF VOLATILE ORGANIC CHEMICAL EMISSIONS FORM INDOOR SOURCES USING ENVIRONMENTAL CHAMBERS". (GBC SECTION 4.504.5)

16. PARTICLEBOARD, MEDIUM DENSITY FIBERBOARD (MDF) AND HARDWOOD PLYWOOD USED IN INTERIOR FINISH SYSTEMS SHALL COMPLY WITH LOW FORMALDEHYDE EMISSION STANDARDS. (GBC SECTION 4.504.5)

17. HVAC SYSTEM INSTALLERS ARE TRAINED AND CERTIFIED IN THE PROPER INSTALLATION OF HVAC SYSTEMS. (GBC SECTION 702.1)

18. Note on the plans that for new residential construction where **landscape irrigation water** is planned a water budget shall be developed that conforms to local landscape ordinance or the California Department of Water Resources Model Water Efficient Landscape Ordinance (MWELO), which ever is more stringent. To view the MWELO:
http://www.water.ca.gov/wateruseefficiency/docs/MWELO_TbContent_Law.pdf
For the local landscape ordinance check with City/County Planning Department.

GREEN BUILDING STANDARDS NOTES 6

BUILDERS SET GENERAL NOTES

1. THESE PLANS AND OR DESIGNS ARE PREPARED EXCLUSIVELY FOR: (SEE JOB TITLE ON TITLE SHEET OF THIS SET OF PLANS) AND ARE NOT TO BE GIVEN OR ASSIGNED TO ANY THIRD PARTY, OR REUSED ON ANOTHER SITE WITHOUT THE WRITTEN APPROVAL OF JONATHAN PELEZZARE.

2. ANY ERRORS OR DISCREPANCIES FOUND IN THESE PLANS ARE TO BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE DESIGNER (JONATHAN PELEZZARE)

3. ALL SUB-CONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH THESE PLANS AND THE SITE CONDITIONS PRIOR TO COMMENCING ANY WORK.

4. DIMENSIONS ARE FOR CONSTRUCTION PURPOSES. DO NOT SCALE DRAWINGS.

5. ALL WORK TO COMPLY WITH CITY OF JURISDICTION REQUIREMENTS AND ORDINANCES.

6. AGENCY APPROVED PLANS SHALL BE KEPT AT THE JOB SITE AND SHALL NOT BE USED BY WORKMEN.

7. ALL DEBRIS SHALL BE REMOVED FROM PREMISES AND ALL AREAS SHALL BE LEFT IN A CLEAN CONDITION AT ALL TIMES. ALL DEMOLITION MATERIALS SHALL BE DISPOSED OF AS PER CITY RECYCLING REQUIREMENTS.

8. UNLESS OTHERWISE INDICATED, ALL WORK SHALL BE ACCOMPLISHED IN STRICT ACCORDANCE WITH MANUFACTURER'S OR SUPPLIER'S INSTRUCTIONS AND SPECIFICATIONS.

9. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE AND PROTECT FROM DAMAGE ALL EXISTING AND NEW UTILITIES.

10. THE ELECTRICAL, STRUCTURAL, AND STEEL SHOP DRAWINGS ARE SUPPLEMENTARY TO THE ARCHITECTURAL DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CHECK THE ARCHITECTURAL DRAWINGS PRIOR TO THE INSTALLATION OF ALL SUPPLEMENTARY WORK. UPON THE OCCURRENCE OF ANY DISCREPANCIES BETWEEN THE SUPPLEMENTAL DRAWINGS AND THE ARCHITECTURAL DRAWINGS THAT WOULD ENCUMBER OR CAUSE AN AWKWARD INSTALLATION, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY JONATHAN PELEZZARE AT ONCE, FOR REVIEW AND CLARIFICATION. WORK SHALL COMMENCE UPON WRITTEN APPROVAL BY JONATHAN PELEZZARE.

11. WORK INSTALLED IN CONFLICT WITH THE ARCHITECTURAL DRAWINGS SHALL BE CORRECTED AT THE EXPENSE OF THE CONTRACTOR. REQUIRED CORRECTIVE WORK SHALL BE PERFORMED IN SUCH A MANNER THAT IT WILL NOT INTERFERE WITH OCCUPANCY OF THE PROJECT ON A TIMELY BASIS.

12. NO STRUCTURAL MEMBER SHALL BE SERIOUSLY WEAKENED OR IMPAIRED BY CUTTING, NOTCHING, OR OTHERWISE. ALL BEAMS, GUIDES, JOISTS, STUDS AND SIMILAR CONSTRUCTION SHALL BE BORED WITH HOLES APPROXIMATELY THE SAME DIAMETER AS THE PIPES PASSING THROUGH THEM

13. UNLESS THE DESIGNER IS RETAINED TO PROVIDE ON SITE REPORTS DURING CONSTRUCTION THE OWNER AND/OR HIS CONTRACTOR ASSUME COMPLETE RESPONSIBILITY FOR THE PROPER USE AND EXECUTION OF THE PLANS. ANY CHANGES OR DEVIATIONS FROM THESE PLANS WITHOUT THE WRITTEN CONSENT OF JONATHAN PELEZZARE RELEASES JONATHAN PELEZZARE FROM ANY LIABILITY FOR THE ENTIRE PROJECT.

14. THIS SET OF PLANS, PER THE CONTRACT WITH JONATHAN PELEZZARE, IS A BUILDER'S SET OF PLANS. THIS MEANS THAT NOT ALL DETAILS AND SPECIFICATIONS ARE PROVIDED AND THE GENERAL AND SUB-CONTRACTORS WILL BE REQUIRED TO HAVE GENERAL CONSTRUCTION KNOWLEDGE AND MAY REQUIRE SHOP OR INSTALLATION DRAWINGS FOR MANUFACTURED OR OTHER SPECIAL ITEMS TO COMPLETE THE STRUCTURE.

15. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW ALL DRAWINGS AND SPECIFICATIONS PRIOR TO SUBMITTING BIDS FOR THIS PROJECT. SHOULD THE CONTRACTOR REQUIRE CLARIFICATION OF ANY DETAIL, ASSEMBLY, SPECIFICATION, DESIGN INTENT, ETC., SUCH CLARIFICATION SHALL BE REQUESTED PRIOR TO THE SUBMITTAL OF ANY BIDS. FURTHER, THE CONTRACTOR SHALL HOLD ALL SUB-CONTRACTORS RESPONSIBLE FOR REQUESTING SUCH CLARIFICATION OF ANY PORTION OF THE WORK PERTAINING TO THEIR BIDS.

16. THIS SET OF PLANS SHALL BE USED ONLY IN CONJUNCTION WITH THE DESIGNERS SPECIFICATIONS INCLUDED HEREIN & ALL DOCUMENTATION PERTAINING TO THE CIVIL, STRUCTURAL, ELECTRICAL, & MECHANICAL (INCLUDING TITLE 24 SPECIFICATIONS) & ANY OTHER ,ENGINEERS WORK. ALL DRAWINGS, DETAILS, SPECIFICATIONS, & DOCUMENTATION SHALL CONSTITUTE "THE COMPLETE SET OF PLANS".

REVISIONS
1 5/12/2022
2
3
4

RESIDENTIAL DESIGN BY:
JONATHAN PELEZZARE
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GENERAL NOTES

UPDATED TO 2019 CODES

A CUSTOM RESIDENCE FOR:
Torchia
Palm Springs, California

UPDATED TO 2019 CODES

DRAWN:
CHECKED:
PRINT DATE: 6/28/2026
SCALE 1/4" = 1'-0" (UNO)
JOB # 081115
SHEET NO.
A.2
OF 55 SHEETS

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SOLATUBE SKYLIGHT MODEL #'s 160 DS & 290 DS (FIRST 5 PAGES OF 18 PAGE CCRR-0131 REPORT PRINTED WITH RELAVANT ICC-ES REPORT NUMBERS LISTED)

intertek
Total Quality. Assured.

Code Compliance Research Report CCRR-0131

Issued: 10-27-2008
Renewal Due: 07-13-2018
Revised: 09-29-2017

DIVISION: 08 00 00 – OPENINGS
Section: 08 62 00 – Unit Skylights

REPORT HOLDER:
Solatube International, Inc.
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Vista, CA 92081
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REPORT SUBJECT:
Solatube Tubular Daylighting Devices

1.0 SCOPE OF EVALUATION

1.1 This Research Report addresses compliance with the following Codes:
- 2015 *International Building Code®* (IBC)
- 2015 *International Residential Code®* (IRC)
- 2014 *Florida Building Code* (FBC), *Including High Velocity Hurricane Zones for 160 DS, 290 DS, Smart LED and 750 DS models*

1.2 Solatube Tubular Daylighting Devices have been evaluated for the following properties:
- Structural Performance
- Durability (UV, Weathering)
- Burning

1.3 Solatube Tubular Daylighting Devices recognized in this report are plastic glazed unit skylights complying with IBC Sections 2405 and 2610 and IRC Section R308.6.

2.0 STATEMENT OF COMPLIANCE

Solatube Tubular Daylighting Devices comply with the Codes listed in Section1.1, for the properties stated in Section 1.2 and uses stated in Section 1.3, when installed as described in this report, including the Conditions of Use stated in Section 6.0.

3.0 DESCRIPTION

3.1 *Solatube Tubular Daylighting Device* (TDD) Models recognized by this report are:

The *Solatube Brighten Up® Series* Models 160 DS (10 inch Tube Dia.), 290 DS (14 inch Tube Dia.) daylighting systems.

The *Solatube SolaMaster® Series* Models 300 DS-C in a 14 inch tube diameter, and 330 DS-O, 330 DS-C, 750 DS-O and 750 DS-C are daylighting systems available in a 21 inch tube diameter. The "O" and "C" designation refers to Open (O) and Closed (C) ceiling configurations.

The *Solatube Smart LED System* consists of a 10 inch roof dome assembly and 10 inch reflective tube assembly with a luminaire housing that transitions from a 10 inch to a 14 inch diameter at the ceiling. The *Smart LED System* monitors natural light and utilizes LEDs that come on when daylight is insufficient. See Section 6.2 and Figure 5.

These TDD models consist of three primary assemblies; the roof dome assembly, reflective tube assembly and diffuser assembly. These assemblies are detailed in Figures 1 through 5.

3.1.1 Roof Dome Assembly.

Primary components of the dome assembly are the dome, dome ring or tube ring and flashing.

3.1.1.1 A single dome manufactured from impact-resistant acrylic polymer is utilized on Models 160 DS, 290 DS, Smart LED, 300 DS, 330 DS and 750 DS.

3.1.1.2 Models 160 DS, 290 DS, Smart LED and 750 DS utilize an additional inner dome manufactured from impact resistant acrylic polymer or polycarbonate (750 DS) when installation is within the High Velocity Hurricane Zone as defined by the FBC.

3.1.1.3 A dome ring (160 DS, 290 DS, 300 DS & Smart LED) manufactured from impact resistant Acrylic polymer or tube ring (330 DS & 750 DS) manufactured from PVC, connects the inner reflective tube, inner reflector, inner dome and outer dome to the flashing.

3.1.1.4 A corrosion resistant steel dome edge protection band is utilized to protect the dome edge on installations on roof assemblies with fire classifications of A, B or C.

3.1.1.5 Corrosion resistant metal flashings are available in self-mounting, curb-mounting, steep, and low slope roof configurations. For models 160 DS, 290 DS, 300 DS and Smart LED, the low slope configuration is available in both 4 and 6 inch heights. For models 330 DS and 750 DS, low slope configurations in 4, 8 and 11 inch heights and metal roof flashing are also available. Also, a curb-cap flashing for site built curb mounting is available for the 290 DS, 300 DS, 330 DS and 750 DS models.

3.1.2 Reflective Tubes

Reflective tubes and angle adapters have a high reflectance interior tube finish and are manufactured from .015" thick aluminum for 160 DS, 290 DS, 300 DS and Smart LED, and .018" for 330 DS and 750 DS. Two inch wide polymer or aluminum foil tape is utilized at all joints between tube sections and at vertical seams of each tube.

3.1.3 Daylight Dimmer Assembly

A switch operated, electrically driven Daylight Dimmer Assembly is available for installation above the bottom tube on 160 DS, 290 DS, 300 DS and Smart LED and above the round-to-square for 330 DS / 750 DS. The Dimmer Assembly is used to restrict natural light from entering the room. See Section 6.3 and Figure 7.

3.1.4 Light Kit Assembly

Switch operated, electric light kits are available for installation into the bottom tube for the 160 DS and 290 DS models only. The kits contain either an incandescent or fluorescent light bulb. See Section 6.3 and Figure 6.

3.1.5 Metal Transition Assembly

Metal transitions are used to transition the reflective tube assembly to the square diffuser assemblies. The 300 DS, 330 DS and 750 DS models utilize the transition assembly, manufactured from 0.015 inch thick aluminum. Two inch wide aluminum foil tape is utilized at all joints. See Figure 8.

3.1.6 Thermal Insulation Panel

The thermal insulation panel assembly includes two thermal disks that are of 0.06" plastic sheets complying with IBC Section 803.1 and IBC Section 2606.4, and are available for installation within the reflective tube assembly. Thermal insulation panels are available for installation above the round-to-square or between the top tube and extension tube for 330 DS and 750 DS models to fit within the building insulation level. The thermal insulation panel is used to add insulation to the tube assembly for increased thermal performance.

3.1.7 Diffuser and Decorative Fixture Assembly.

The Diffuser and Decorative Fixture assemblies are either single or dual glazed with acrylic or polycarbonate plastic Diffusers classified as a CC2 plastic material. Diffusers have a flame spread index not exceeding 200 and a smoke development index not exceeding 450 when tested in accordance with ASTM E 84. The Aurora Glo lens is comprised of glass.

A dress (trim) ring is mounted over the assembly edge for aesthetic purposes.

For models 160 DS, 290 DS and Smart LED the standard diffuser and decorative fixtures (JustFrost, OptiView and Tier Drop) employ a ceiling ring that is manufactured from injection molded impact resistant acrylic and is used to connect the reflective tubing and diffusers or decorative fixtures to the interior room ceiling.

The Aurora Glo decorative fixtures employ a fixture mounting ring, in addition to the ceiling ring, that is manufactured from steel and is used to connect the decorative fixture to the interior room ceiling. The ceiling ring is also used to hold the reflective tubing in place.

4.0 PERFORMANCE CHARACTERISTICS

4.1 Models identified in this report have been tested for deflection and structural response under uniform loading in both the positive (inward) and negative (outward) directions in accordance with ICC-ES AC16. The maximum allowable positive and negative design loads for each model size combination, and associated anchoring, are indicated in Table 1.

4.2 Models identified in this report have met the air infiltration and water penetration acceptance criteria identified in ICC-ES AC16 when tested in accordance with Sections 5.3.2 and 5.3.3 of AAMA/WDMA/CSA 101/I.S.2/A440-11.

4.2.1 AAMA/WDMA/CSA101/I.S.2/A440-11 reviewed and deemed equivalent for compliance with IBC Section 2405.5.

4.2.2 Models 160 DS, 290 DS, and 300 DS have met the air leakage performance and water penetration resistance requirements of A440S1-09, the Canadian Supplement to AAMA/WDMA/CSA 101/I.S.2/A440.

5.0 INSTALLATION

Installation shall be in accordance with the manufacturer's installation instructions and this report. Where differences occur between this report and the manufacturer's installation instructions, this report shall govern.

5.1 The dome attachment for the 10" 160 DS, 14" 290 DS, 14" 300 DS, and Smart LED models is accomplished by attaching the dome ring to the flashing and top tube with four (4) #8x1" truss washer head screws and plastic spacers with a snap fit between the dome and dome ring. See Figures 1, 2 and 5.

5.2 Diffuser assemblies for the 10" 160 DS, 14" 290 DS and Smart LED models are comprised of an acrylic ceiling ring, an acrylic dress ring and dual glazed diffuser. The dress ring is snap fitted or twist secured onto the ceiling ring.

5.3 The Dome attachment for the 21" 330 DS and 750 DS models is accomplished with three (3) #8x1-5/8" washer head sheet metal screws passing through three (3) equally spaced plastic spacers, flashing and into the tube ring.

5.4 The Dome Assembly for the 21" 330 DS-O and 750 DS-O (Open Ceiling) models utilize a butyl putty seal (referred to as a glazing rope in installation instructions) between the flashing and tube ring. See Figure 2 and Figure 3.

5.5 For the 14" 300 DS-C, 21" 330 DS-C and 750 DS-C (Closed Ceiling) models, the tube ring should be sealed to the outer face of the top reflector tube with 2" wide polymer/foil tape.

5.6 Diffuser assembly for the 21" 330 DS-O and 750 DS-O (Open Ceiling) models is comprised of an acrylic dress ring and a single glazed diffuser. The assembly is snapped into the four (4) equally spaced slots provided in the end of the extension tube.

5.7 The 21" 330 DS-C and 750 DS-C (Closed Ceiling) models consist of a square diffuser assembly that connects to the round reflective tube through a square to round transition section.

5.8 Installation for compliance with the IBC and IRC shall be in accordance with IBC Section 2405 and 2610 and, IRC Section R308.6.

5.9 Installation for compliance with the FBC shall be in accordance with FBC Section 2405 and 2610.

5.10 The installation on roof assemblies with fire classifications A, B, or C, metal dome edge protective rings shall be installed on the 160 DS, 290 DS, 300 DS, Smart LED, 330 DS and 750 DS models utilizing the 4" flashings. Other flashings noted in Section 3.1.1.5 may be needed in order to maintain the required minimum 4" distance from roof deck to dome edge.

6.0 CONDITIONS OF USE

The *Solatube Tubular Daylighting Devices* identified in this report are deemed to comply with the referenced building codes subject to the following conditions:

6.1 Installation shall comply with the manufacturer's installation instructions, this report, IBC and FBC Sections 2405 and 2610 and IRC Section R308.6The wind uplift rating recognized in this report (See Table 2) is based on attachment to S-P-F wood curbing (Specific Gravity, G=0.42), 5/8" Group 2 Plywood and 22 gauge 33 ksi minimum yield steel deck. Installation on a wood substrate with a lesser specific gravity or lesser thickness may result in a lower wind uplift rating.

6.2 The Smart LED assembly, daylight dimmer, incandescent light and fluorescent light assemblies were only evaluated for effects on performance when TDDs were tested in accordance with ICC-ES AC16. Evaluation of these assemblies for compliance to electrical codes is not part of this report.

6.3 Where required by the building official, engineering calculations and details shall be provided. The calculations shall verify that the anchorage complies with the building code for the type of framing and condition of the supporting construction.

6.4 Model 330 DS shall not be installed in High Velocity Hurricane Zones as defined by the Florida Building Code.

6.5 Models 160 DS, 290 DS, 300 DS, Smart LED and 750 DS shall utilize the additional inner dome for use in High Velocity Hurricane Zones as defined by the Florida Building Code.

6.6 All products are manufactured in accordance with the manufacturer's approved quality control system with inspections by Keystone Certifications, Inc. (IAS AA-714).

7.0 SUPPORTING EVIDENCE

7.1 Manufacturer's drawings and installation instructions.

7.2 Reports of testing and engineering analysis in accordance with ICC-ES AC16, *Acceptance Criteria for Plastic Glazed Skylights*, revised August 2013.

7.3 Reports of testing to ASTM D 1929-12 *Test Method for determining Ignition Properties of Plastics*.

7.4 Reports of Testing to ASTM E84-2013A, *Test Method for Surface Burning Characteristics of Building Material* with equivalency to ASTM E84-09.

7.5 Reports of Testing to ASTM D635-10 *Test Method for Rate of Burning and/or Extent and Time of Burning of Self-Supporting Plastics in a Horizontal Position* with equivalency to ASTM D635-03.

7.6 Reports of Testing to ASTM G 155 *Practice for Operating Xenon Arc Light Apparatus for Exposure of Nonmetallic Materials* and ASTM D638 *Test Method for Tensile Properties of Plastics*.

7.7 Documentation of an Intertek approved quality control system for the manufacturing of products recognized in this report.

7.8 Reports of engineering and installation analysis for alternate anchorage signed and sealed by a Professional Engineer registered in the State of Florida.

7.9 Testing for Florida Building Code was performed by a Miami-Dade County approved testing facility (Architectural Testing, Inc. - Fresno, CA) with reports signed and sealed by a Professional Engineer registered in the State of Florida. These reports are:

7.9.1 Reports of testing in accordance with AAMA/WDMA/CSA101/I.S.2/A440-11, "*Standard/Specification for Windows, Doors, and Unit Skylights", American Architectural Manufacturers Association, Window and Door Manufacturers Association, and Canadian Standards Association.*

7.9.2 Reports of testing to Testing Application Standard (TAS) 201-94 *"Impact Test Procedures"* as required by Section 1626 of the Florida Building Code.

7.9.3 Reports of testing to Testing Application Standard (TAS) 202-94 *"Criteria for Testing Impact & Nonimpact Resistant Building Envelope Components Using Uniform Static Air Pressure"* as required by Section 1620 of the Florida Building Code.

7.9.4 Reports of testing to Testing Application Standard (TAS) 203-94 "*Criteria for Testing Products subject to Cyclic Wind Pressure Loading*" as required by Sections 1625, Table 1625.4 and Table 1626 of the Florida Building Code.

7.10 Reports of testing for 160 DS, 290 DS, and 300 DS models in accordance with A440S1-09, *"Canadian Supplement to AAMA/WDMA/CSA 101/I.S.2/A440-11, NAFS – North American Fenestration Standard/Specification for Windows, Doors, and Skylights."*

7.11 Reports of testing in accordance with ASTM E1886-05, "*Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials"*.

7.12 Reports of testing in accordance with ASTM E1996-2012a, "*Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Windborne Debris in Hurricanes"*.

7.13 ICC-ES Evaluation Report ESR-1407 for thermal insulation panel plastic sheet material compliance with IBC Section 803.1 and IBC Section 2606.4.

8.0 IDENTIFICATION

Solatube Tubular Daylighting devices produced in accordance with this report shall be identified with permanent labeling that includes the following information:

8.1 The manufacturers name and/or logo, address model number and allowable loads

8.2 The plastic dome glazing thickness and classification (CC2)

8.3 The Name or logo of the independent inspection agency, Keystone Certifications, Inc. (IAS AA-714)

8.4 The Intertek Code Compliance Research Report mark and report number (CCRR-0131) as follows:

CODE COMPLIANCE
Intertek
CCRR-0131

9.0 FLORIDA BUILDING CODE

9.1 Models 160 DS, 290 DS, 300 DS, Smart LED, 330 DS and 750 DS have been tested to show compliance with AAMA/WDMA/CSA 101/I.S.2/A440-11 *Standard Specification for Windows, Doors, and Unit Skylights*. Testing was performed by a Miami-Dade County approved testing facility and were signed and sealed by a Professional Engineer with current registration in the state of Florida.

9.2 Light Transmitting Plastics forming part of the models identified in this report have been shown to have a self-ignition temperature greater than 650°F when tested in accordance with ASTM D 1929-12, A smoke development index less than 450 when tested in accordance with ASTM E 84-2013A, and a combustibility classification of CC2 when tested in accordance with ASTM D 635-10.

9.3 High Velocity Hurricane Zones (HVHZ)

Models 160 DS, 290 DS, 300 DS, Smart LED and 750 DS have been additionally tested to show compliance with the requirements of the 2014 Florida Building Code for use in locations designated as High Velocity Hurricane Zones. Testing has shown;

9.3.1 Sufficient resistance to windborne debris, as stated in Section 1626 of the Florida Building Code when tested to FBC Test Protocol 4.TAS 201-94.

9.3.2 Sufficient resistance to wind forces as determined by Section 1620 of the Florida Building Code when tested to FBC Test Protocol TAS 202-94.

9.3.3 Sufficient resistance to cyclic wind pressure loading as determined by Sections 1625, Table 1625.4 and Table 1626 of the Florida Building Code when tested to FBC Test Protocol TAS 203-94.

9.3.4 Sufficient weathering resistance of plastics with outdoor exposure when tested to ASTM G 155 for a period of 4500 hours and subsequent testing to ASTM D 638.

9.4 Conclusion:

The Solatube Tubular Daylighting Devices 160 DS, 290 DS, Smart LED and 750 DS models described in Sections 2.0 through 7.0 of this Research Report, comply with the 2014 *Florida Building Code for High Velocity Hurricane Zones.*

ClarkDietrich BUILDING SYSTEMS

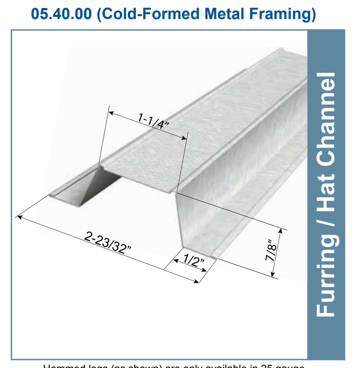
Product Submittal Sheet

Tech Support: 888-437-3244 | Sales: 800-543-7140
Engineering Services: 877-832-3206 | clarkdietrich.com

Furring / Hat Channel

05.40.00 (Cold-Formed Metal Framing)

Product Category: 7/8" Furring / Hat Channel - 18 gauge
Product Name: 087F125-43 (33 ksi, CP60)
43 mils (18 gauge) Coating: CP60 (G90 available)



Hemmed legs (as shown) are only available in 25 gauge.

Geometric Properties

Depth	0.875 in	Design thickness	0.0451 in
Width	1.250 in	Min. steel thickness	0.0428 in
Yield stress, Fy	33 ksi	Ultimate, Fu	45 ksi

Gross Section Properties of Full Section, Strong Axis

Cross sectional area (A)	0.168	in^2
Member weight per foot of length	0.572	lb/ft
Moment of inertia (Ix)	0.020	in^4
Radius of gyration (Rx)	0.345	in
Gross moment of inertia (Iy)	0.079	in^4
Gross radius of gyration (Ry)	0.684	in

Effective Section Properties, Strong Axis

Moment of inertia for deflection (Ix)	0.020	in^4
Section modulus (Sx)	0.043	in^3
Allowable bending moment (Ma)	71.00	ft-lb
Allowable shear force (Va)	599	lb

Used in framing applications:
- **Furring for walls & ceilings**
- **Furring out masonry walls**
- **Framing for drop ceilings assemblies**

Ordering Information:
Stock Length: 10'-0" & 12'-0" long pieces
Packaging: (10) pieces per bundle – (440) pieces per pallet
Packaging weight: 60 lbs./bundle

ASTM & Code Standards:
- AISI North American Specification [NASPEC] S-100-2007 with 2010 Supplement
- Structural framing is produced to meet or exceed ASTM C955
- Galvanized sheet steel meets or exceeds requirements of ASTM A1003
- For installation & storage information refer to ASTM C1007
- MSDS & Product Certification Information available at www.clarkdietrich.com

Furring / Hat Channel Allowable Ceiling Spans (Deflection: L/360):

Spans	Applied Load								
	4 psf Hat Spacing (in) o.c.			6 psf Hat Spacing (in) o.c.			13 psf Hat Spacing (in) o.c.		
	12	16	24	12	16	24	12	16	24
Single	6'-0"	5'-6"	4'-9"	5'-3"	4'-9"	4'-2"	4'-1"	3'-8"	3'-3"
Multiple	7'-5"	6'-9"	5'-11"	6'-6"	5'-11"	5'-2"	5'-0"	4'-7"	4'-0"

Sustainability Credits:
For more details and LEED letters contact Technical Services at 888-437-3244 or visit www.clarkdietrich.com/LEED
LEED v4 MR Credit -- Building Product Disclosure and Optimization: EPD (up to 2 points) - Sourcing of Raw Materials (1 point) - Material Ingredients (1 point) - Construction and Demolition Waste Management (up to 2 points) - Innovation Credit (up to 2 points).
LEED 2009 Credit MR 2 & MR 4 -- ClarkDietrich's steel products are 100% recyclable and have a minimum recycled content of 34.2% (19.8% post-consumer and 14.4% pre-consumer). If seeking a higher number to meet Credit MR 5, please contact us at (info@clarkdietrich.com / 888-437-3244)

CD-087F125-43 © 12/17/13 ClarkDietrich Building Systems

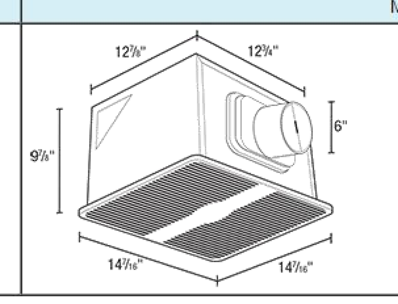
Project Information	Contractor Information	Architect Information
Name:	Name:	Name:
Address:	Contact:	Contact:
	Phone:	Phone:
	Fax:	Fax:

ENERGY STAR

Deluxe Humidity Sensing Series

Model
AK150DH: 150/80 CFM @ 0.6/0.3 sones

Details | Specifications | Downloads/ Videos | 360° View | What's Included

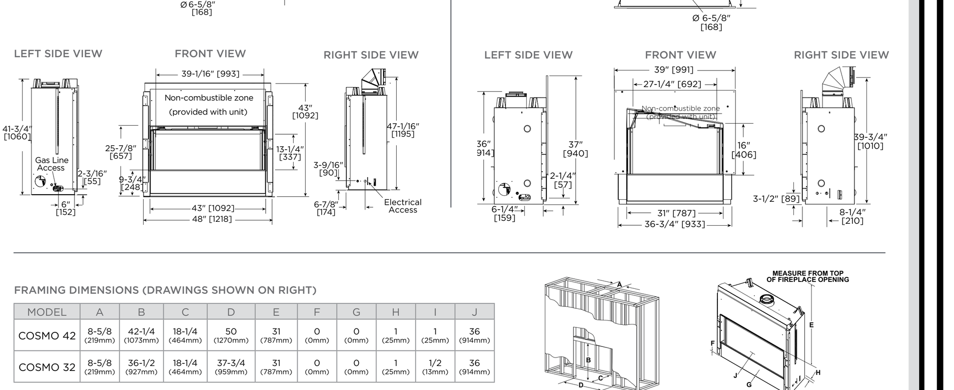
Models	AK150DH
Specification Sheet Download	AK150DH
CFM @ .1 SP	150/80
CFM @ .25 SP (High-speed)	113
Sones @ .1 SP	0.6/0.3
Sound Level	Very Quiet
Maximum Power Watts	37.0
Effective Ventilation Area	150 to 185 sq. ft.
ASHRAE 62.2 Ventilation	Whole House/ Local
ENERGY STAR® certified	YES
Can be used to Comply with California Title 24 requirements	YES
CALGreen	Compliant for use in bathrooms or whole building ventilation
Duct Size	6" round
Collar / Damper	Metal
Mounting	Hanger Bars
Housing	Metal
Dimensions	

COSMO TECHNOLOGIES

INTELLIFIRE™ IGNITION SYSTEM
The IntelliFire™ Ignition System (IPI) is an advanced intermittent pilot ignition system. IPI constantly monitors ignition, ensures safe functioning and conserves up to $10/month in energy costs.

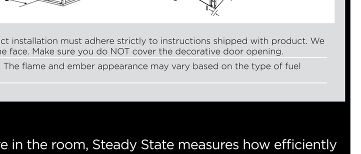
DIRECT VENT TECHNOLOGY
Direct Vent fireplaces remove 100% of combustion exhaust and odors outside of the home. These sealed fireplaces provide optimal heat, conserve energy and ensure clean, safe indoor air quality.

MODEL	FRONT WIDTH UNIT	FRONT WIDTH FRAMING	BACK WIDTH UNIT	BACK WIDTH FRAMING	HEIGHT UNIT	HEIGHT FRAMING	DEPTH UNIT	DEPTH FRAMING	GLASS SIZE[2]	BTU/HOUR INPUT
COSMO 42	48 [1219]	50 [1270]	37-3/4 [959]	50 [1270]	41-3/4 [1061]	42-1/4 [1073]	18-1/4 [464]	18-1/4 [464]	39-1/16 x 13-1/4 [993 x 337]	26,000 (NG) 25,000 (LP)
COSMO 32	36-3/4 [933]	37-3/4 [959]	25-3/4 [654]	37-3/4 [959]	37 [940]	36-1/2 [927]	18-1/4 [464]	18-1/4 [464]	27-1/4 x 13-1/4 [692 x 337]	20,000 (NG) 17,500 (LP)



FRAMING DIMENSIONS (DRAWINGS SHOWN ON RIGHT)

MODEL	A	B	C	D	E	F	G	H	I	J
COSMO 42	8-5/8 (219mm)	42-1/4 (1073mm)	18-1/4 (464mm)	50 (1270mm)	31 (787mm)	0 (0mm)	0 (0mm)	1 (25mm)	1 (25mm)	36 (914mm)
COSMO 32	8-5/8 (219mm)	36-1/2 (927mm)	18-1/4 (464mm)	37-3/4 (959mm)	31 (787mm)	0 (0mm)	0 (0mm)	1 (25mm)	1/2 (13mm)	36 (914mm)



Dimensions in diagrams are in inches and millimeters. Product information is not complete and is subject to change without notice. Product installation must adhere strictly to instructions shipped with product. We recommend measuring individual units at installation. Assumes the use of 1/2" sheetrock. NOTE: Combustible material should not cover the face. Make sure you do NOT cover the decorative door opening.
Refer to installation manual for detailed specifications on installing this product. Heat & Glo reserves the right to update units periodically. The flame and ember appearance may vary based on the type of fuel burned and the venting configuration used. Actual product appearance, including flame, may differ from product images.

U.S. EFFICIENCIES
Steady State - Since most homeowners use their fireplaces for an extended time while they are in the room, Steady State measures how efficiently your fireplace converts fuel to heat once it is warmed up and running in a "steady state".
AFUE - AFUE rating is more typically used with appliances, like your furnace, that continually cycle on and off to maintain a constant temperature.

RATING	COSMO 42	COSMO 32
STEADY STATE	72.7% (NG)	68.3% (NG)
AFUE	55.5% (NG)	57.4% (NG)

CANADA EFFICIENCIES
EnerGuide (CSA P.4.1-02) - EnerGuide is a rating used in Canada to measure annual fireplace efficiency.

RATING	COSMO 42	COSMO 32
ENERGUIDE (CSA P.4.1-02)	57.0% (NG)	57.4% (NG)

For complete information on this model, please contact us at:

HEAT & GLO
No one builds a better fire

Web: heatnglo.com
Phone: (888) 427-3973 (952) 985-6000
E-mail: info@heatnglo.com
facebook.com/HeatandGlo
twitter.com/HeatandGlo
youtube.com/HeatandGlo

HNG-1092U-0415

LIMITED LIFETIME WARRANTY[3]
The strongest in the industry, Heat & Glo provides a limited lifetime warranty on the most important aspects: firebox and heat exchanger.

1: Not all finishes available on each front, see dealer for details.
2: Dimensions shown in diagram are opening size, not glass size.
3: For full warranty details see heatnglo.com
Fireplace glass and other surfaces get extremely HOT and can cause severe burns if touched. Do not remove the protective safety screen from the front of the glass. Keep a safe distance away. To learn more visit www.heatnglo.com/fireplace safety

Canada ENERGUIDE Look for the EnerGuide Gas Fireplace Energy Efficiency Rating in this brochure. Based on CSA P.4.1-02

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REVISIONS
1 5/12/2022
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4

RESIDENTIAL DESIGN BY:
JONATHAN PELEZZARE
64550 Pierson Blvd., SPC 14
Desert Hot Springs, CA 92240
Phone: (760) 391-2748 Email: info@jonathanpelezzaredesign.com

SPECIAL SYSTEMS & MANUFACTURERS SPECIFICATION SHEETS

UPDATED TO 2019 CODES

A CUSTOM RESIDENCE FOR:
Torchia
Palm Springs, California

UPDATED TO 2019 CODES

DRAWN:
CHECKED:
PRINT DATE: 6/28/2026
SCALE 1/4" = 1'-0" (UNO)
JOB # 081115
SHEET NO.
A2.1
OF 55 SHEETS

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2019 CALIFORNIA GREEN BUILDING STANDARDS CODE

RESIDENTIAL MANDATORY MEASURES, SHEET 1 (July 2021, Includes July 2021 Supplement)

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

CHAPTER 3
GREEN BUILDING
SECTION 301 GENERAL

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

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

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

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

SECTION 302 MIXED OCCUPANCY BUILDINGS

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

Exceptions:

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

DIVISION 4.1 PLANNING AND DESIGN

ABBREVIATION DEFINITIONS:

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

CHAPTER 4
RESIDENTIAL MANDATORY MEASURES

SECTION 4.102 DEFINITIONS

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

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

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

4.106 SITE DEVELOPMENT

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

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

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

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

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

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

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

Exception: Additions and alterations not altering the drainage path.

4.106.4 Electric vehicle (EV) charging for new construction. New construction shall comply with Sections 4.106.4.1, 4.106.4.2, or 4.106.4.3 to facilitate future installation and use of EV chargers. Electric vehicle supply equipment (EVSE) shall be installed in accordance with the *California Electrical Code*, Article 625.

Exceptions:

1. On a case-by-case basis, where the local enforcing agency has determined EV charging and infrastructure are not feasible based upon one or more of the following conditions:
   1.1 Where there is no commercial power supply.
   1.2 Where there is evidence substantiating that meeting the requirements will alter the local utility infrastructure design requirements on the utility side of the meter so as to increase the utility side cost to the homeowner or the developer by more than $400.00 per dwelling unit.
2. Accessory Dwelling Units (ADU) and Junior Accessory Dwelling Units (JADU) without additional parking facilities.

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

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

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

4.106.4.2 New multifamily dwellings. If residential parking is available, ten (10) percent of the total number of parking spaces on a building site, provided for all types of parking facilities, shall be electric vehicle charging spaces (EV spaces) capable of supporting future EVSE. Calculations for the required number of EV spaces shall be rounded up to the nearest whole number.

Notes:

1. Construction documents are intended to demonstrate the project's capability and capacity for facilitating future EV charging.
2. There is no requirement for EV spaces to be constructed or available until EV chargers are installed for use.
3. A parking space served by electric vehicle supply equipment or designated as a future EV charging space shall count as at least one standard automobile parking space for the purpose of complying with any applicable minimum parking space requirements established by a local jurisdiction. See *Vehicle Code* Section 22511.2 for further details.

4.106.4.2.1 Electric vehicle charging space (EV space) locations. Construction documents shall indicate the location of proposed EV spaces. Where common use parking is provided at least one EV space shall be located in the common use parking area and shall be available for use by all residents.

4.106.4.2.1.1 Electric Vehicle Charging Stations (EVCS). When EV chargers are installed, EV spaces required by Section 4.106.2.2, Item 3, shall comply with at least one of the following options:

1. The EV space shall be located adjacent to an accessible parking space meeting the requirements of the *California Building Code*, Chapter 11A, to allow use of the EV charger from the accessible parking space.
2. The EV space shall be located on an accessible route, as defined in the *California Building Code*, Chapter 2, to the building.

Exception: Electric vehicle charging stations designed and constructed in compliance with the *California Building Code*, Chapter 11B, are not required to comply with Section 4.106.4.2.1.1 and Section 4.106.4.2.2, Item 3.

Note: Electric Vehicle charging stations serving public housing are required to comply with the *California Building Code*, Chapter 11B.

4.106.4.2.2 Electric vehicle charging space (EV space) dimensions. The EV space shall be designed to comply with the following:

1. The minimum length of each EV space shall be 18 feet (5486 mm).
2. The minimum width of each EV space shall be 9 feet (2743 mm).
3. One in every 25 EV spaces, but not less than one EV space, shall have an 8-foot (2438 mm) wide minimum aisle. A 5-foot (1524 mm) wide minimum aisle shall be permitted provided the minimum width of the EV space is 12 feet (3658 mm).
   a. Surface slope for this EV space and the aisle shall not exceed 1 unit vertical in 48 units horizontal (2.083 percent slope) in any direction.

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

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

4.106.4.2.4 Multiple EV spaces required. Construction documents shall indicate the raceway termination point and proposed location of future EV spaces and EV chargers. Construction documents shall also provide information on amperage of future EVSE, raceway method(s), wiring schematics and electrical load calculations to verify that the electrical panel service capacity and electrical system, including any on-site distribution transformer(s), have sufficient capacity to simultaneously charge all EVs at all required EV spaces at the full rated amperage of the EVSE. Plan design shall be based upon a 40-ampere minimum branch circuit. Required raceways and related components that are planned to be installed underground, enclosed, inaccessible or in concealed areas and spaces shall be installed at the time of original construction.

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

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

4.106.4.3 New hotels and motels. All newly constructed hotels and motels shall provide EV spaces capable of supporting future installation of EVSE. The construction documents shall identify the location of the EV spaces.

Notes:

1. Construction documents are intended to demonstrate the project's capability and capacity or facilitating future EV charging.
2. There is no requirement for EV spaces to be constructed or available until EV chargers are installed for use.
3. A parking space served by electrical vehicle supple equipment or designed as a future EV charging space shall count as at least one standard automobile parking space for the purpose of complying with any applicable minimum parking space requirements established by a local jurisdiction. See *Vehicle Code* Section 22511.2 for further details.

4.106.4.3.1 Number of required EV spaces. The number of required EV spaces shall be based on the total number of parking spaces provided for all types of parking facilities in accordance with Table 4.106.4.3.1. Calculations for the required number of EV spaces shall be rounded up to the nearest whole number.

TABLE 4.106.4.3.1

TOTAL NUMBER OF PARKING SPACES	NUMBER OF REQUIRED EV SPACES
0-9	0
10-25	1
26-50	2
51-75	4
76-100	5
101-150	7
151-200	10
201 and over	6 percent of total

4.106.4.3.2 Electric vehicle charging space (EV space) dimensions. The EV spaces shall be designed to comply with the following:

1. The minimum length of each EV space shall be 18 feet (5486mm).
2. The minimum width of each EV space shall be 9 feet (2743mm)

4.106.4.3.3 Single EV space required. When a single EV space is required, the EV space shall be designed in accordance with Section 4.106.4.2.3.

4.106.4.3.4 Multiple EV spaces required. When multiple EV spaces are required, the EV spaces shall be designed in accordance with Section 4.106.4.2.4.

4.106.4.3.5 Identification. The service panels or sub-panels shall be identified in accordance with Section 4.106.4.2.5.

4.106.4.3.6 Accessible EV spaces. In addition to the requirements in Section 4.106.4.3, EV spaces for hotels/motels and all EVSE, when installed, shall comply with the accessibility provisions for the EV charging stations in the *California Building Code*, Chapter 11B.

DIVISION 4.2 ENERGY EFFICIENCY

4.201 GENERAL

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

DIVISION 4.3 WATER EFFICIENCY AND CONSERVATION

4.303 INDOOR WATER USE

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

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

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

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

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

4.303.1.3 Showerheads.

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

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

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

4.303.1.4 Faucets.

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

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

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

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

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

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

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

TABLE H-2

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

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

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

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

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

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

TABLE - MAXIMUM FIXTURE WATER USE

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

4.304 OUTDOOR WATER USE

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

NOTES:

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

DIVISION 4.4 MATERIAL CONSERVATION AND RESOURCE EFFICIENCY

4.406 ENHANCED DURABILITY AND REDUCED MAINTENANCE

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

4.408 CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING

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

Exceptions:

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

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

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

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

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

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

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

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

Notes:

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

4.410 BUILDING MAINTENANCE AND OPERATION

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

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

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

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

DIVISION 4.5 ENVIRONMENTAL QUALITY

SECTION 4.501 GENERAL

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

SECTION 4.502 DEFINITIONS

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

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

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

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

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2019 CalGreen BSC Residential Mandatory Measures, Sheet 1

UPDATED TO 2019 CODES

A CUSTOM RESIDENCE FOR:
Torchia
Palm Springs, California

UPDATED TO 2019 CODES

DRAWN:
CHECKED:
PERMIT DATE
6/28/2026
SCALE
1/4" = 1'-0" (UNO)
JOB #
081115
SHEET NO.
A2.2
OF 55 SHEETS

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2019 CALIFORNIA GREEN BUILDING STANDARDS CODE
RESIDENTIAL MANDATORY MEASURES, SHEET 2 (July 2021, Includes July 2021 Supplement)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

TABLE 4.504.1 - ADHESIVE VOC LIMIT[1,2]
(Less Water and Less Exempt Compounds in Grams per Liter)

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

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

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

TABLE 4.504.2 - SEALANT VOC LIMIT
(Less Water and Less Exempt Compounds in Grams per Liter)

SEALANTS	VOC LIMIT
ARCHITECTURAL	250
MARINE DECK	760
NONMEMBRANE ROOF	300
ROADWAY	250
SINGLE-PLY ROOF MEMBRANE	450
OTHER	420
SEALANT PRIMERS	
ARCHITECTURAL	
NON-POROUS	250
POROUS	775
MODIFIED BITUMINOUS	500
MARINE DECK	760
OTHER	750

TABLE 4.504.3 - VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS[1,2,3]
GRAMS OF VOC PER LITER OF COATING, LESS WATER & LESS EXEMPT COMPOUNDS

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

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

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

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

TABLE 4.504.5 - FORMALDEHYDE LIMITS[1]
MAXIMUM FORMALDEHYDE EMISSIONS IN PARTS PER MILLION

PRODUCT	CURRENT LIMIT
HARDWOOD PLYWOOD VENEER CORE	0.05
HARDWOOD PLYWOOD COMPOSITE CORE	0.05
PARTICLE BOARD	0.09
MEDIUM DENSITY FIBERBOARD	0.11
THIN MEDIUM DENSITY FIBERBOARD[2]	0.13

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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2019 CalGreen BSC Residential Mandatory Measures, Sheet 2

UPDATED TO 2019 CODES

A CUSTOM RESIDENCE FOR:
Torchia
Palm Springs, California

UPDATED TO 2019 CODES

DRAWN:
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SHEET NO: A2.3
OF 16 SHEETS

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Project Information:

OWNER:

LEGAL:

Zoning Occupancy group: LDR
Number of stories: Single
Type of construction: Masonry non-combustible = ISO Class 4, IBC Type IIA
Building OCC. Groups: Single Family

Area Calculations

TOTAL CALCULATED LOT AREA	=	27,308 s.f.
RESIDENCE COND. FLR. AREA	=	5,651.6 s.f.
GARAGE 1 & 2 FLR. AREA	=	1,184.0 s.f.
TOTAL BUILDING FOOT PRINT	=	6,835.6 s.f.

LOT COVERAGE = 25.0 %
MAXIMUM LOT COVERAGE = 35%

NOTE:

"Lots shall be graded to drain surface water away from the foundation walls. The grade shall fall a minimum of 6" within the first 10 ft (5% slope). Where lot lines, walls, slopes or other physical barrier prohibit 6" of fall within 10 ft, drains or swales shall be constructed to ensure drainage away from the structure. [CRC R401.3]. For Impervious surfaces within 10 ft of the building foundation shall be sloped a minimum of 2% away from the building". []

PALM SPRINGS FIRE DEPT

Hydrant Flow Test By Hydrant

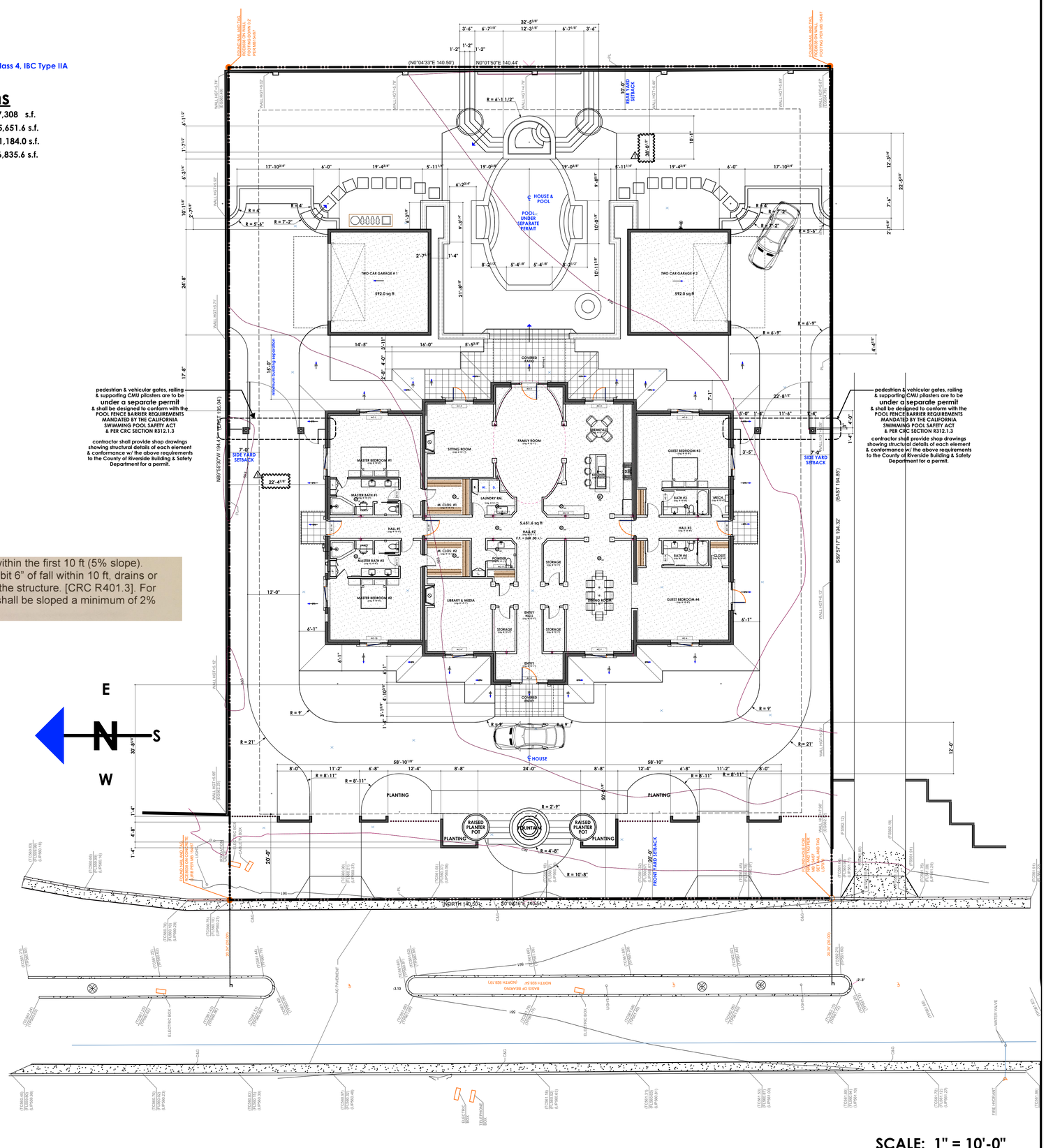
Hydrant Number = "2351 "

2351

Date	Static	Residual	Pitot	Pitot 2	GPM	20 PSI	10 PSI	0 PSI
04/11/2019	140	0	0.00	0.00	0	0	0	0
16173	Otero, Stephen							
Subtotal Flow Tests:	1			Min:	0	0	0	0
				Max:	0	0	0	0
				Avg:	0	0	0	0
Total Flow Tests:	1							

04/15/2019 15:54 Page 1

* Scheduled Flow Test



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REVISIONS
1 5/12/2022
2
3
4

COMBINATION SITE AND FLOOR PLANS

UPDATED TO 2019 CODES

A CUSTOM RESIDENCE FOR:
Torchia
Palm Springs, California

UPDATED TO 2019 CODES

DRAWN:
CHECKED:
PRINT DATE: 6/28/2026
SCALE: 1/4" = 1'-0" (UNO)
JOB NO. 081115
SHEET NO. A3.0
OF XX SHEETS

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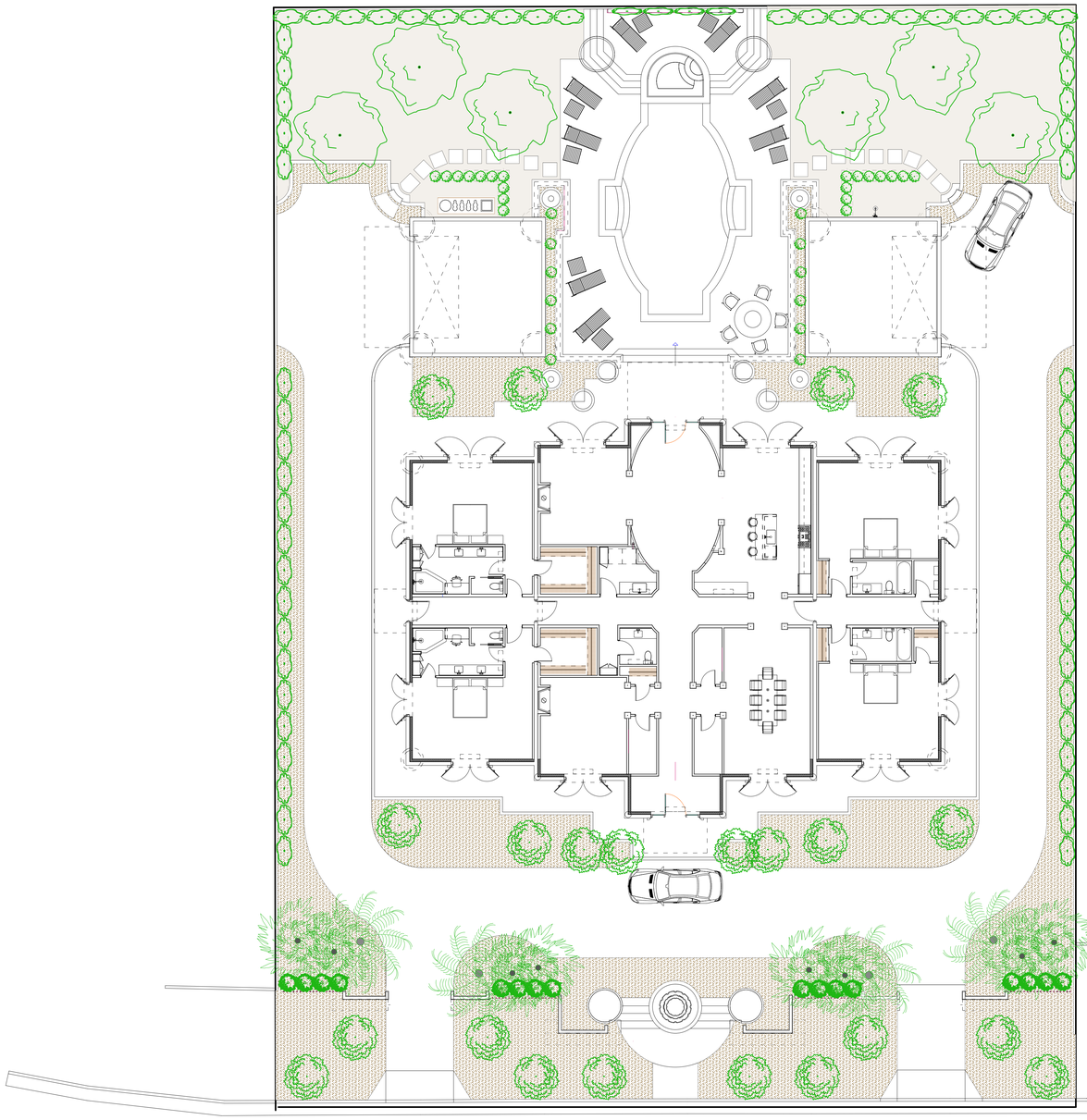

Key:

- Citrus, lemon, blood orange and grapefruit varieties, twenty-two, 24" box, moderate but deep watering.
- *Washingtonia robusta*, Mexican Fan Palm, eight, 8-10' brown trunk feet, moderate but deep watering.
- *Phoenix dactylifera*, Date Palm, four, 10-12' brown trunk feet, moderate but deep watering.
- *Olea europaea*, Olive, six, 24" box, low but deep watering.
- *Bouganvillea,* Bougainvillea, sixty-two, 5 gal., moderate watering, maintained at width of 30", length of 60" and height of 72".
- *Bouganvillea,* Bougainvillea, four, 5 gal., moderate watering, maintained at width of 15", length of 60" and height of 54".
- *Ficus microcarpa*, Ficus, sixteen, 15 gal., regular watering, maintained at width of 36" and height of 72".
- *Ficus microcarpa*, Ficus, thirty-two, 15 gal., regular watering, maintained at width of 24" and height of 60".
- 'Palm Springs Gold' decomposed granite, approx. 3,100 square feet.
- 'Palm Springs Gold' 3/8" crushed rock, approx. 5,500 square feet.

Notes:

1/Pots to be planted with annuals and/or low desert perennials and set up with adjustable microbubbler irrigation.
2/All trees and palms to be set up with deep water irrigation.
3/All ficus and bougainvillea to be set up with adjustable bubbler irrigation.

Prepared by Paul Ortega , 760-409-4833

revised 6-26-17

N — LANDSCAPE PLAN

1" = 10'-0"

This document is intended as a conceptual design plan only and is not intended in any way as a contruction drawing or document, nor should it be construed as such.

Landscape contractors and installers should always verify quantities and measurements when preparing bids.

REVISIONS
5/12/2022

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LANDSCAPE PLAN

UPDATED TO 2019 CODES

A CUSTOM RESIDENCE FOR:
Torchia
Palm Springs, California

UPDATED TO 2019 CODES

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PLANTING

RAISED TERRACE

SPA

down (3) 5" risers

POOL

POOL EQUIP.

RAISED PLANTING

RAISED PLANTING

down (2) 6" risers

TWO CAR GARAGE # 1

TWO CAR GARAGE # 2

FIRE PIT

PLANTING

PLANTING

COVERED PATIO

169.0 sq ft

down (3) 5" risers

AC-1

AC-2

AC-3

AC-4

AC-5

AC-12

AC-13

AC-14

AC-15

AC-16

AC-18

AC-19

AC-20

SITTING ROOM
(clg. @ 12'-1")

FAMILY ROOM
(clg. @ 12'-1")

BREAKFAST
(clg. @ 12'-1")

KITCHEN
(clg. @ 12'-1")

MASTER BEDROOM #1
(clg. @ 10'-8")

MASTER BATH #1
(clg. @ 10'-8")

L.

VANITY

M. CLOS. #1
(clg. @ 12'-1")

B. W. D.

LAUNDRY RM.
(clg. @ 12'-1")

GUEST BEDROOM #3
(clg. @ 10'-8")

BATH #3
(clg. @ 10'-8")

MECH.
(clg. @ 10'-8")

HALL #1
(clg. @ 10'-8")

HALL #2
(clg. @ 12'-1")
F.F. = 564.00 +/-

HALL #3
(clg. @ 10'-8")

VANITY

M. CLOS. #2
(clg. @ 12'-1")

2%

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EAST FLOOR PLAN (SECTION CUTS)

UPDATED TO 2019 CODES

A CUSTOM RESIDENCE FOR:
Torchia
Palm Springs, California

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OF 16 SHEETS

MASTER BEDROOM #1
(clg. @ 10'-8")

MASTER BATH #1
(clg. @ 10'-8")

VANITY

L.

AC-12

SITTING ROOM
(clg. @ 12'-1")

M. CLOS. #1
(clg. @ 12'-1")

B. W. D.

LAUNDRY RM.
(clg. @ 12'-1")

AC-13

AC-14

KITCHEN
(clg. @ 12'-1")

GUEST BEDROOM #3
(clg. @ 10'-8")

BATH #3
(clg. @ 10'-8")

MECH.
(clg. @ 10'-8")

AC-15

HALL #1
(clg. @ 10'-8")

AC-19

AC-20

HALL #2
(clg. @ 12'-1")

F.F. = 564 .00 +/-

HALL #3
(clg. @ 10'-8")

AC-18

VANITY

MASTER BATH #2
(clg. @ 10'-8")

AC-11

M. CLOS. #2
(clg. @ 12'-1")

POWDER
(clg. @ 12'-1")

AC-17

STORAGE
(clg. @ 12'-1")

BATH #4
(clg. @ 10'-8")

CLOSET
(clg. @ 10'-8")

AC-16

MASTER BEDROOM #2
(clg. @ 10'-8")

LIBRARY & MEDIA
(clg. @ 12'-1")

DINING ROOM
(clg. @ 12'-1")

GUEST BEDROOM #4
(clg. @ 10'-8")

ENTRY HALL
(clg. @ 12'-1")

STORAGE
(clg. @ 12'-1")

STORAGE
(clg. @ 12'-1")

AC-10

AC-9

AC-7

AC-6

ENTRY
(clg. @ 12'-1")

AC-8

COVERED ENTRY

PLANTING

PLANTING

PLANTING

PLANTING

PLANTING

PLANTING

PLANTING

PLANTING

2%

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WEST FLOOR PLAN (SECTION CUTS)

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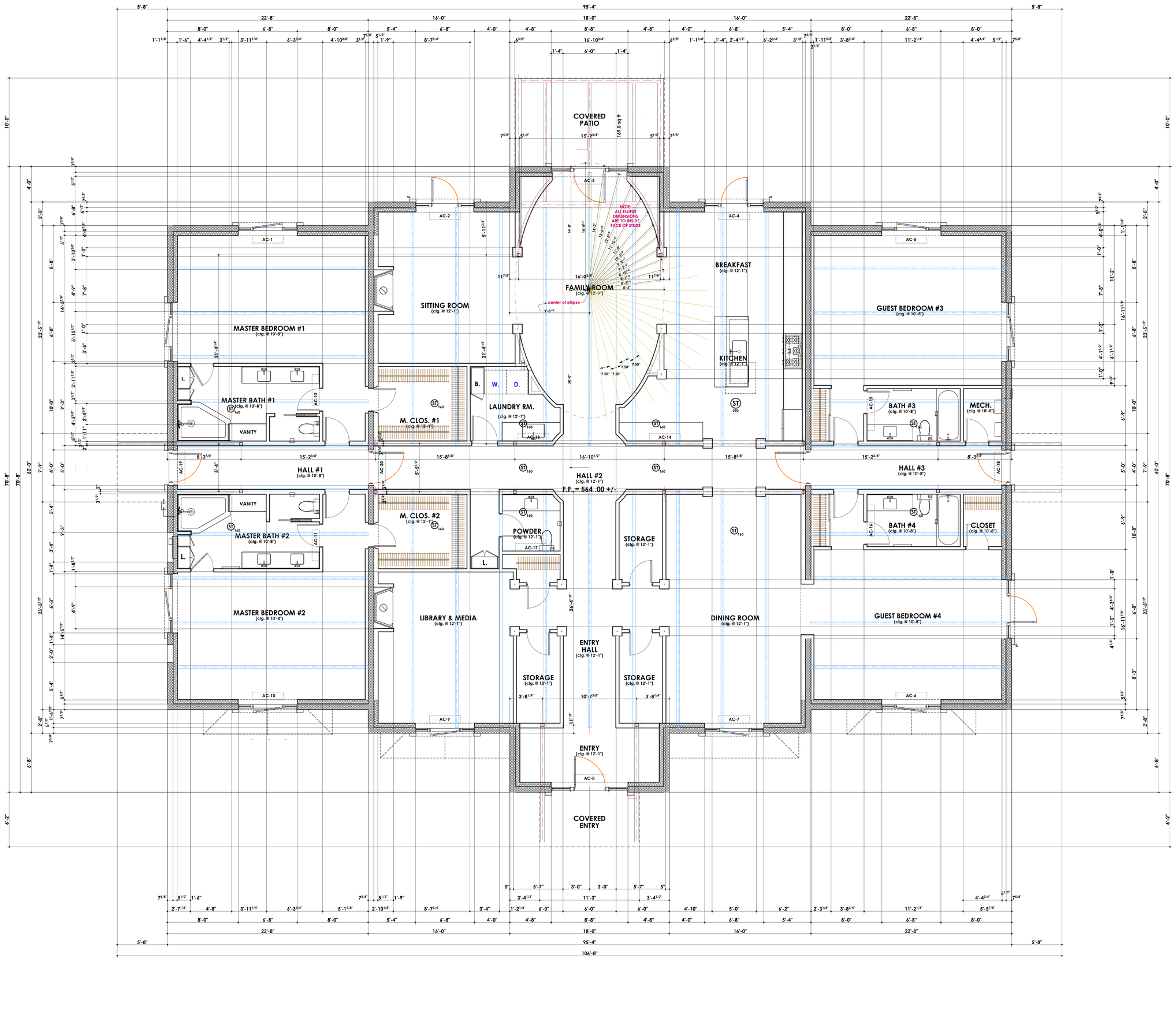

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FLOOR PLAN (DIMENSIONED)

UPDATED TO 2019 CODES

A CUSTOM RESIDENCE FOR:
Torchia
Palm Springs, California

UPDATED TO 2019 CODES

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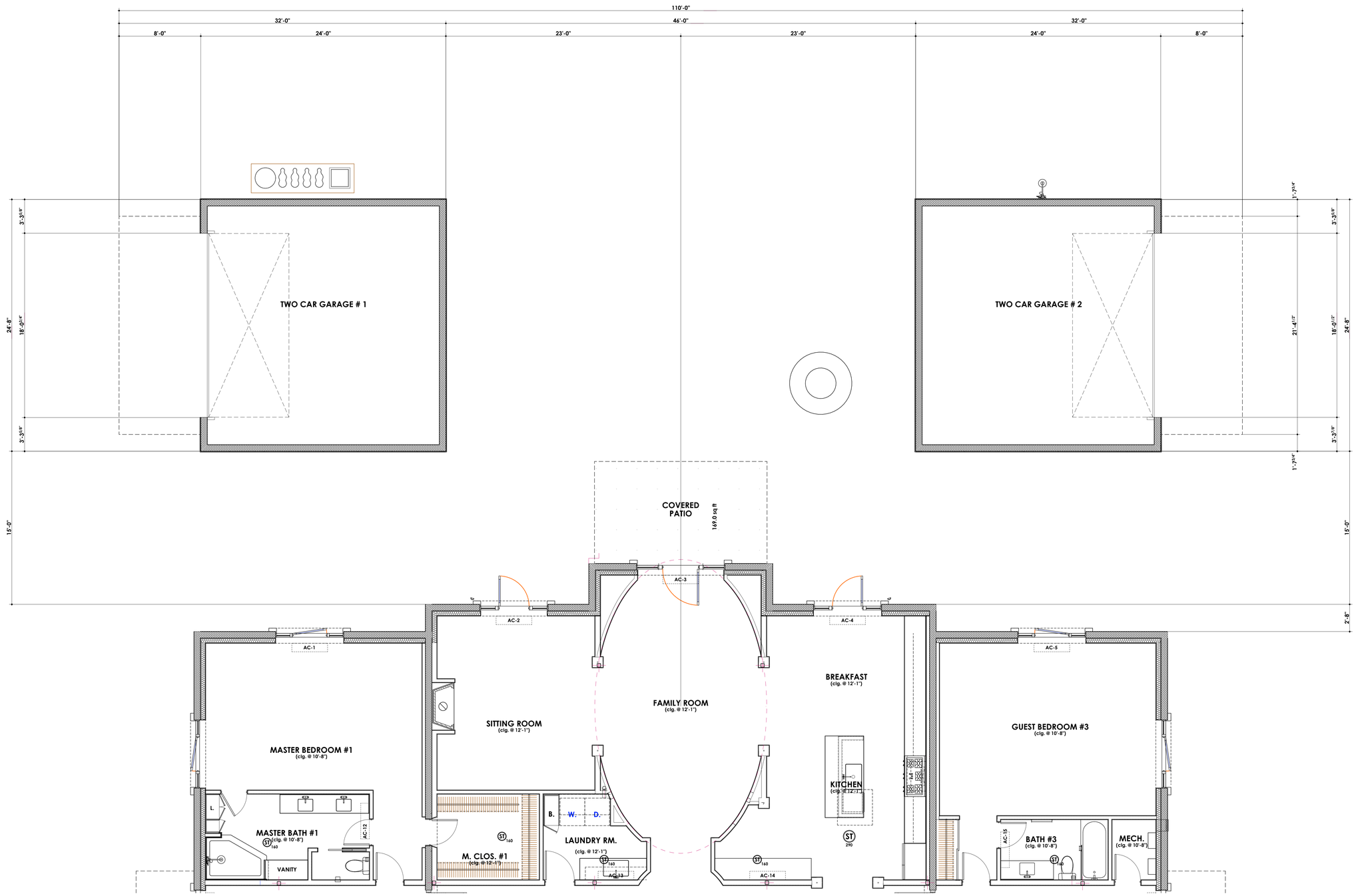

REVISIONS

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FLOOR PLAN (DIMENSIONED) EAST

UPDATED TO 2019 CODES

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Palm Springs, California

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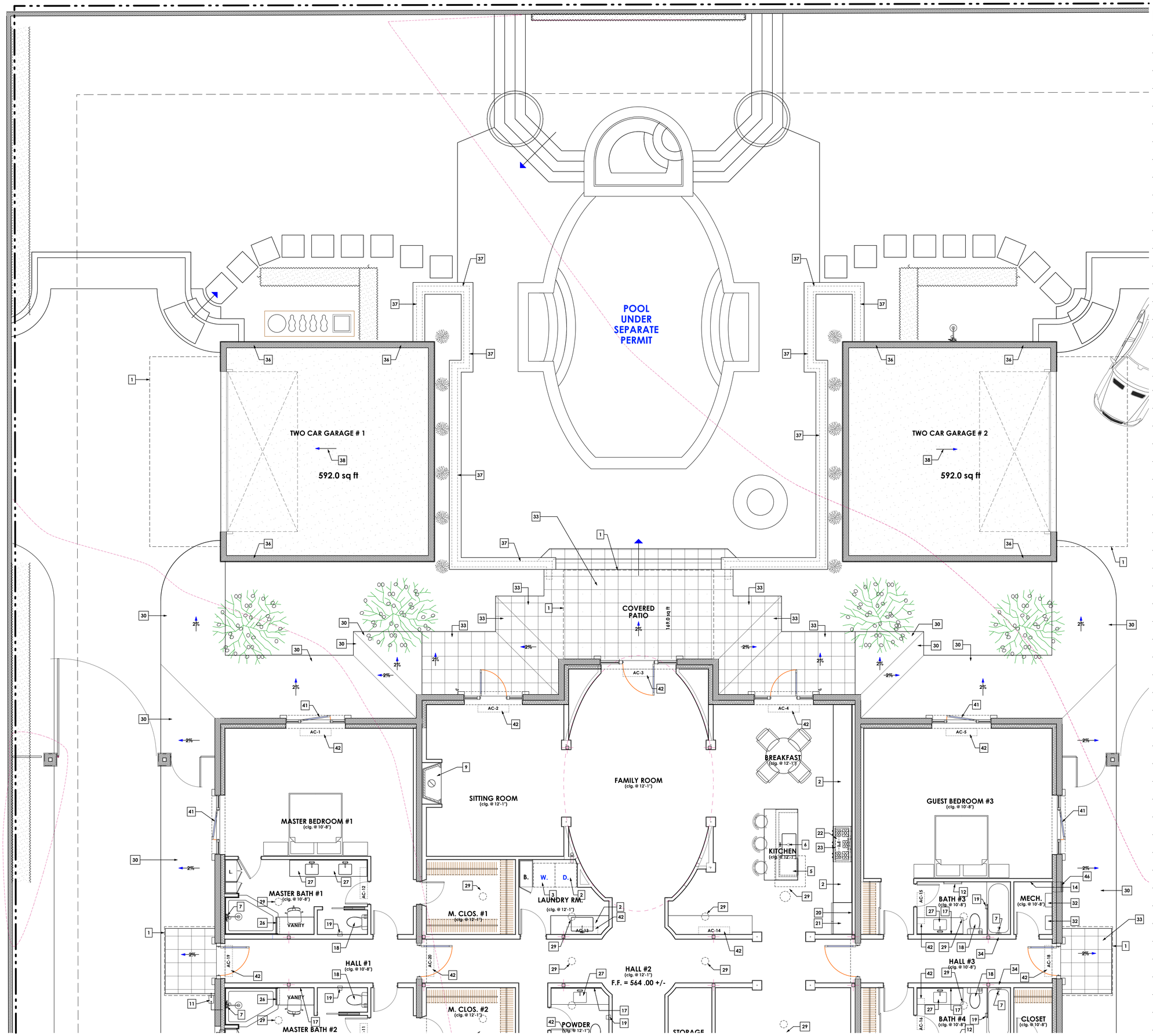

KEY NOTES:

1. line of roof overhang or opening surround above see building sections & exterior elevations for more info.
2. line of upper cabinets - see building sections for more info.
3. clothes washer - provide recessed box in wall behind washing machine for hot & cold water supply & drain - verify requirements with manufacturer's specifications
4. Pole & shell - configuration & materials to be approved by owner
5. Dishwasher - Bosch Ascenta - Stainless steel SHX4AT55UCC
6. Garbage disposal w/ in counter air switch - see electrical plan
7. Mixing valve w/ scald guard technology - mounting height to valve center @ tub +26" above top of residence F.F. - verify w/ manuf. specifications
8. shower seat - top of finish surface to be 16" above top of residence concrete floor slab
9. prefabricated gas appliance fireplace - heat & glo Cosmo 32 or 42 (ANSI report # Z21.88/2014) BTU/Hour Input: 26,000 Efficiency: Steady State 73%, AFUE 56%
10. 200 Amp main electrical service panel & meter - see electrical plans
11. gas meter
12. towel bar @ +48" - provide solid blocking during construction
13. U-Line 1000 series Model 1215WC (15" wine cooler)
14. At mechanical room -provide 5/8" type "X" gyp bd. at ceiling and all walls from bottom of sill track to top of top track
15. cable T.V. & phone panel
16. Telephone & TV cable service entrance box
17. 1/4" ultra clear polished mirror - see building sections for more info.
18. water closet
19. recessed or flush mount (see plan) toilet paper holder - center of unit to be located 24" above finish floor & 9" forward of front edge of bowl rim
20. provide 1/4" copper water line for ice maker
21. Refrigerator - Bosch B36IT800NP
22. Cook top - Bosch NGM8655UC
23. Exhaust fan & hood - Best CP35 series
24. Oven - Bosch HBLP451RUC (below cook top)
25. Microwave oven - Bosch HMB5051
26. custom fit 3/8" thick laminated saftey glass shower enclosure set in 11/14" wide x 1/2" deep stainless steel "C" channel recessed into countertop 3/8" & flush mounted to ceiling or tub rim
27. lavatory sink - to be selected by owner
28. granite or non-porous porcelain or ceramic tile shower walls & floor - see shower details sheet A9.0
29. solatube skylight - see electrical plan for more info.
30. 4" thk. concrete walkway slab w/ thickened edges - smooth sand finish w/ tooled exposed edges (sloped down 2% in direction of arrow to drain (see plan) - see grading & drainage plans)
31. indicates A/C compressor location on roof curb - see M sheets & roof plan
32. Rinnai R98LSi tankless water heater (9.8 GPM)- see plumbing plans & notes
33. 3/8" thk. "thinset" stone or ceramic tile with non-slip surface texture over 4" thk. concrete walkway/patio slab w/ thickened edges - finish tile surface to be flush with top of adjacent concrete walk way surfaces - inlay tile at side entry doors into 4.5" thick concrete slab (1/2" recess in slab for "thinset" tile)
34. provide 12" x 12" tub access panel
35. fire suppression system riser location
36. provide 8" x 16" screened garage vent @ first full course above garage floor (3 vents @ each garage - see plan)
37. indicates 8" x 8" x 16" CMU raised planter wall w/ 4" thk. colored concrete (smooth sand finish w/ tooled exposed edges) seat/cap
38. slope garage floor slab down to door to drain 1% minimum
39. water closet
40. line of soffit above
41. indicates casement window meeting all requirements for emergency exit @ sleeping rooms R310.2.1 & R310.2.2 - see sheets A6.0, A6.1 & M4 for more info.
42. wall mounted mini-split heat pump unit above - see HVAC plan for more info.
43. HVAC heat pump unit in wall cavity - see HVAC plan for more info.
44. 3/4" finish grade ply wd. pantry shelves w/ hardwood edgebanding see building sections for more info.
45. clothes dryer vent (through roof) with back draft damper - mechanical plans
46. Sunvent Industries (Model FL 157) - 8" x 16" nominal CMU screened & louvered combustion air vents (1) high @ 6'-8" A.F.F. & (1) low at 8" A.F.F. - bone white baked enamel finish - see plumbing plans
47.
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REVISIONS
1 5/12/2022
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EAST FLOOR PLAN (KEYED NOTES)

UPDATED TO 2019 CODES

A CUSTOM RESIDENCE FOR:
Torchia
Palm Springs, California

UPDATED TO 2019 CODES

DRAWN:
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JOB NO.: 081115
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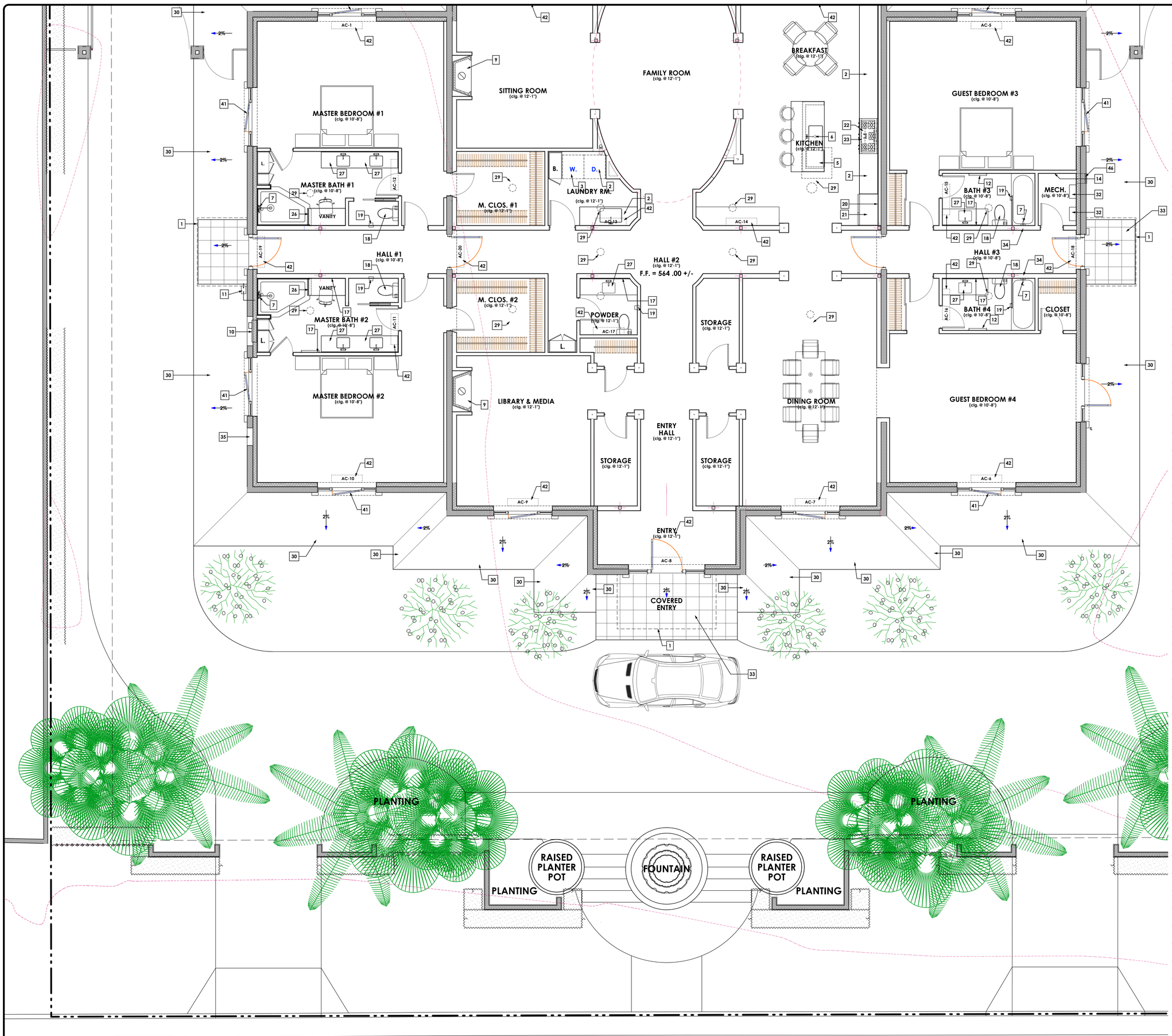

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WEST FLOOR PLAN (KEYED NOTES)

UPDATED TO 2019 CODES

A CUSTOM RESIDENCE FOR:
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ESR-2355
Issued 03/2016
This report is subject to renewal 03/2017.

DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
SECTION: 07 57 00—COATED FOAM ROOFING

REPORT HOLDER:

PRO-TECH PRODUCTS, INC.

3003 NORTH 73RD STREET
SCOTTSDALE, ARIZONA 85251

EVALUATION SUBJECT:

PRO-TECH EC-100 COATED FOAM ROOFING SYSTEM

Look for the trusted marks of Conformity!

"2014 Recipient of Prestigious Western States Seismic Policy Council (WSSPC) Award in Excellence"

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ICC-ES Evaluation Report — **ESR-2355**
Issued March 2016
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DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
Section: 07 57 00—Coated Foam Roofing

REPORT HOLDER:

PRO-TECH PRODUCTS, INC.
3003 NORTH 73RD STREET
SCOTTSDALE, ARIZONA 85251
(800) 538-7303
www.pro-techproducts.com

EVALUATION SUBJECT:

PRO-TECH EC-100 COATED FOAM ROOFING SYSTEM

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2012 and 2009 *International Building Code®* (IBC)
- 2012 and 2009 *International Residential Code®* (IRC)

Properties evaluated:

- Physical properties
- Impact resistance
- Wind resistance
- Fire classification
- Elimination of thermal barrier

2.0 USES

The Pro-Tech EC-100 Coated Foam Roofing System described in this evaluation report is used in the construction of classified roof coverings as noted in Table 1. The roof covering systems recognized in this report may be used on buildings of any type of construction.

3.0 DESCRIPTION

3.1 General:

The Pro-Tech EC-100 Coated Foam Roofing System consists of Pro-Tech 10-011 spray polyurethane foam (SPF) plastic insulation covered with Pro-Tech EC-100 acrylic elastomeric coating. When installed as described in this report, these systems have roof classifications as set forth in Table 1.

3.2 Spray Polyurethane Foam Plastic Insulation:

3.2.1 General: Pro-Tech 10-011 is a two-component spray-applied, foam plastic insulation complying with ASTM C1029 Type III and is produced in densities of between 2.5 and 3.0 pcf (40 and 43 kg/m³). The liquid components (designated as component A and component R) are available in 55-gallon (208 L) containers and 275-gallon (1041 L) totes. The liquid components must be stored at temperatures between 70°F (21°C) and 90°F (32°C) for several days before application and must not be exposed to direct sunlight. The shelf life of Pro-Tech 10-011 liquid components is six months in unopened containers.

3.2.2 Surface-burning Characteristics: Pro-Tech 10-011 foam plastic insulation has a flame-spread index of 25 or less for densities up to 3.0 pcf (43 kg/m³) when tested in accordance with UL 723 (ASTM E84) at a maximum thickness of 4 inches (102 mm). The classified roof assemblies noted in Table 1 are recognized for use without a thermal barrier based on testing in accordance with UL 1256, which is specified in IBC Section 2603.4.1.5.

3.3 Coatings:

3.3.1 Pro-Tech EC-100 Acrylic Elastomeric Coatings: Pro-Tech EC-100 acrylic elastomeric coating is single-component, liquid-applied, 100 percent acrylic coatings complying with ASTM D6083. The coatings are available in 5-gallon (19 L), 55-gallon (208 L) and 275-gallon (1041 L) totes, and have a shelf life of 12 months when stored in factory-sealed containers at temperatures between 60°F (15.5°C) and 110°F (44°C).

3.4 Impact and Foot Traffic Resistance:

The coated foam roof coverings described in this report meet requirements of the Resistance to Foot Traffic Test described in Section 5.5 of FM 4470, as referenced in IBC Section 1504.7.

4.0 INSTALLATION

4.1 Preparation of Substrate:

The substrates to be covered must be free of grease, oil, loose particles, moisture and other foreign materials that would impair adhesion of the foam to the substrate. Gravel-surfaced roofs must be cleaned by vacuuming or other suitable means to remove any loose gravel and dirt before application of the insulation. Areas not receiving an application of insulation must be masked off or otherwise protected from overspray.

4.2 Substrates:

4.2.1 Wood Substrates: Wood substrates must be minimum 15/32-inch-thick (11.9 mm), code-complying, exterior grade or Exposure 1 wood structural panels. All wood structural panel substrate edges must be supported by blocking or have tongue-and-groove joints as required

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by IBC Section 2603.4.1.5 or IRC Section R314.5.2, as applicable. The wood surface must be primed, when specifically required, in accordance with the Pro-Tech Products installation instructions.

4.2.2 Noncombustible Substrates:

4.2.2.1 Concrete Substrates: Structural concrete must have a minimum compressive strength of 2500 psi (17.2 MPa). The concrete substrate must be thoroughly cured and primed or otherwise treated in accordance with Pro-Tech Products installation instructions to ensure adequate adhesion.

4.2.2.2 Metal Substrates: Metal substrates must be a minimum of No. 22 gage [0.03 inch thick (0.76 mm)] galvanized steel deck. Metal decks must be cleaned of any adhesion inhibitors. If free of rust or loose scale, the steel surface may be cleaned by use of an air jet, vacuum equipment, or hand or power broom to remove loose dirt. Grease, oil or other obvious contaminants must be removed by a suitable detergent or cleaner. Application of a primer before application of the insulation must be in accordance with the Pro-Tech Products installation instructions.

4.3 Roof Slope:

The insulation is spray-applied to roofs that have a minimum slope of 1/4:12 (2 percent) and a maximum slope as specified in Table 1.

4.4 Foam Plastic Insulation Application:

Pro-Tech 10-011 liquid components must be dispensed at a 1:1 ratio at the temperature and pressure specified in the manufacturer's installation instructions. The liquid components must be applied to the prepared substrate in passes that have thicknesses between 1/2 inch and 1 1/2 inches (12.7 mm to 38 mm). Application of the foam plastic insulation must be performed in accordance with ambient-temperature, humidity and wind-speed requirements noted in the manufacturer's published installation instructions. The foam insulation must not be applied to wet or damp substrates, or when dew, condensation, precipitation, or freezing temperatures are expected prior to completion of application of the foam and coating. The finished foam surfaces must be smooth and free of voids, pinholes and crevices.

4.5 Coating Application:

The coating is applied to the foam substrate at the application rate specified in Table 1, in multiple passes of contrasting colors up to the thickness prescribed in Pro-Tech Products' Installation Guide Specifications. The coating must be applied no less than two hours nor more than 72 hours following the application of the spray foam insulation. The insulation must be dry and free of dirt and foreign material when the coating is applied. The base coat must be applied the same day as the insulation unless a deviation from this requirement is specifically approved by Pro-Tech Products. The coating must be cured for a sufficient time as specified in Pro-Tech Products' installation instructions before subsequent layers are applied. The ambient temperature must be greater than 50ºF (10ºC) during application and above 32ºF (0ºC) for at least a 24-hour period after application.

4.6 Wind Resistance:

The allowable wind uplift pressure for the coated foam plastic roof covering is limited to that permitted by the code for the roof deck and structural framing.

4.7 Reroofing:

Prior to installation of new roof coverings, inspection in accordance with IBC Section 1510 or IRC Section R907, and approval from the code official having jurisdiction, are required. Installation must be over uninsulated systems only. Prior to installation of the spray-applied foam plastic insulation, the roof surface must be prepared to assure adequate adhesion. All loose rock, cementitious coatings, peeling paint, dirt and debris must be removed by brooming, power vacuuming or wire brushing. Where the existing roof covering is removed to the substrate, the deck is prepared as set forth in Section 4.2.1, 4.2.2.1 or 4.2.2.2.

5.0 CONDITIONS OF USE

The Pro-Tech EC-100 Coated Foam Roofing System described in this report complies with, or is a suitable alternative to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 The installation and application of the Pro-Tech EC-100 Coated Foam Roofing System must comply with the applicable code, the report holder's published application instructions and this evaluation report. If there are any conflicts between the report holder's application instructions and this evaluation report, this report governs.

5.2 All materials must be applied by installers approved by Pro-Tech Products.

5.3 Where moderate or heavy foot traffic occurs, such as for maintenance of equipment, the roof covering must be adequately protected to prevent rupture or wearing of the surface.

5.4 The deck and supporting structure to which the Pro-Tech EC-100 Coated Foam Roofing System is applied must be designed to withstand the applicable wind pressures determined in accordance with ASCE 7.

5.5 Flashing must be installed in accordance with IBC Section 1503.2 or IRC Section R903.2, as applicable.

5.6 The Pro-Tech 10-011 plastic insulation is manufactured in Mount Airy, North Carolina, and Clearfield, Utah, under a quality control program with inspections by ICC-Evaluation Services.

Pro-Tech EC-100 acrylic elastomeric coating is manufactured in Scottsdale, Arizona, under a quality control program with inspections by ICC-Evaluation Services, LLC.

6.0 EVIDENCE SUBMITTED

6.1 Data in accordance with the ICC-ES Acceptance Criteria for Spray-applied Foam Plastic Insulation (AC377), dated May 2015.

6.2 Reports of testing in accordance with ASTM D6083.

6.3 Reports of "Resistance to Foot Traffic" testing in accordance with Section 5.5 of FM 4470.

6.4 Reports of testing in accordance with UL 723.

6.5 Reports of testing in accordance with UL 790.

6.6 Reports of testing in accordance with UL 1256.

7.0 IDENTIFICATION

Containers of Pro-Tech 10-011 liquid components are labeled with the Pro-Tech Products company name and address, the product name (Pro-Tech 10-011), the component type (A or R), the date of manufacturer, the shelf life, the lot numbers, the flame spread index, and the evaluation report number (ESR-2355).

Containers of Pro-Tech EC-100 acrylic elastomeric coating are labeled with the Pro-Tech Products name and address, the product name, the lot number, the manufacturing date, the shelf life, and the evaluation report number (ESR-2355).

TABLE 1—PRO-TECH EC-100 COATED FOAM ROOFING SYSTEM FIRE CLASSIFICATION

SYSTEM NO.[1]	ROOF DECK TYPE	FOAM PLASTIC INSULATION: Product Designation	FOAM PLASTIC INSULATION: Minimum Thickness (inches)	COATING: Type	COATING: Application Rate	TOP SURFACING	MAXIMUM ROOF SLOPE	ROOF CLASSIFICATION
1	Noncombustible	10-011	1	Pro-Tech EC-100 acrylic elastomeric coating	Two applications at 1.75–1.85 gal/sq./coat	None	1:12	A
2	Noncombustible	10-011	1	Pro-Tech EC-100 acrylic elastomeric coating	3.7 gal/sq., maximum	Roofing granules at 50 lbs/sq.	4:12	A
3	Minimum 15/32-thick plywood	10-011	1.5	Pro-Tech EC-100 acrylic elastomeric coating	3.7 gal/sq., maximum	Roofing granules at 50 lbs/sq.	1/2:12	B

For **SI:** 1 inch = 25.4 mm.
[1]Roof covering systems may be applied over an existing uninsulated roof covering without changing the existing roof covering's fire classification.

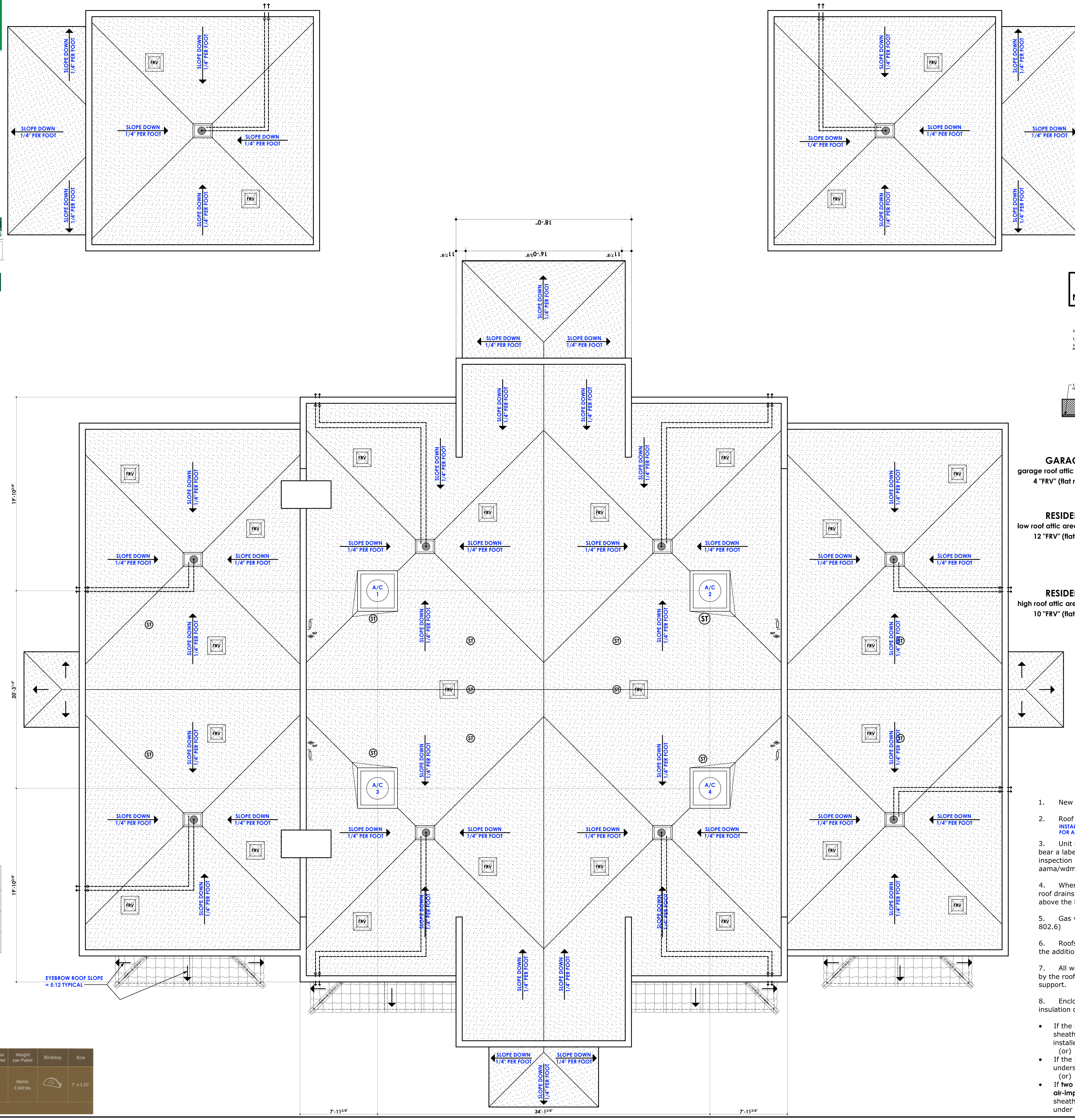
provide 26-gauge (minimum) galvanized flashing & counter flashing at all roof to wall intersections per. (CRC sections R903 & R904)

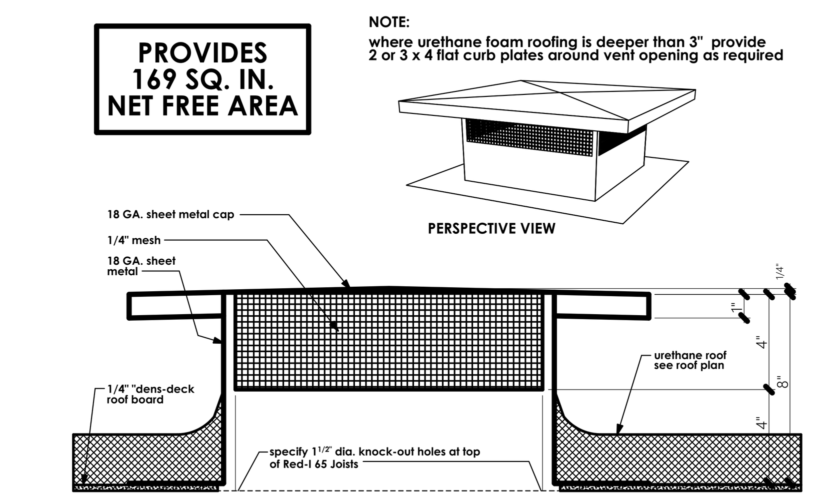
indicates new "U.S. TILE" clay 1-piece "S" tile roof with birdstops ICC-ES report # ESR1017 over 2 layers 15# felt over 5/8" cdx ply wd. roof sht'g.
Note: new roof to meet min. standards for class "A" roof
Installation of all roof components shall be in strict accordance with manufacturer's specifications, installation instructions & recommendations

Technical Specifications

Profile	Size	Coverage	Installed Weight per Square	Pieces per Pallet	Squares per Pallet	Weight per Pallet	Birdstop	Size
1-Piece "S" Tile	18" x 13"	At 3" minimum headlap, 88 field tiles will cover approx. 100 square feet of roof area.	Approx. 800 lbs.	252	2.86	Approx. 2,400 lbs.		7" x 3.25"

NOTE: 1-Piece "S" Tile meets Grade 1 standards per ASTM C1167 and is a Hail Rated product per FM4473 standards.





GARAGE ROOF ATTIC VENTILATION CALCULATION

garage roof attic area = 1,064 s.f./300 = 3.54 s.f. x 144 in² = 511 in² net free vent area required
4 "FRV" (flat roof vents) provided @ 169 in² net free area each = 676 in² vent area

RESIDENCE LOW ROOF ATTIC VENTILATION CALCULATION

low roof attic area = 3,552 s.f./300 = 11.84 s.f. x 144 in² = 1,705 in² net free vent area required
12 "FRV" (flat roof vents) provided @ 169 in² net free area each = 2,028 in² vent area

RESIDENCE HIGH ROOF ATTIC VENTILATION CALCULATION

high roof attic area = 3,040 s.f./300 = 10.13 s.f. x 144 in² = 1,459 in² net free vent area required
10 "FRV" (flat roof vents) provided @ 169 in² net free area each = 1,690 in² vent area

1. New roofing shall be class A rated minimum, R-19.

2. Roof ICC Report ESR-2355 PRO-TECH EC-100 COATED FOAM ROOFING SYSTEM
INSTALL IN STRICT ACCORD WITH MANUFACTURES INSTRUCTIONS & SUGGESTIONS
FOR ALL COMPONENTS OF THE ROOFING SYSTEM - SEE REPORT BELOW

3. Unit skylights shall be tested by an approved independent laboratory, and bear a label identifying manufacturer, performance grade rating and approved inspection agency to indicate compliance with the requirements of aama/wdmn/csa 101/I.S.2/A440.

4. Where roof drains are required, overflow drains having the same size as the roof drains shall be installed with the inlet flow line located 2 inches (51mm) above the low point of the roof. (R903.4.1)

5. Gas vents must extend above the roof a minimum 1ft. (figure 8-2, CMC 802.6)

6. Roofs on which equipment is to be installed shall be capable of supporting the additional load.

7. All wood sleepers at the roof to be pressure treated, flashed, and protected by the roof membrane. Alternately, replace with plastic,trex, or standoff support.

8. Enclosed rafter spaces do not require venting if the following specific insulation design is used, per Section R806.5/EM3.9.6:

- If the insulation is air-**permeable** and it is installed directly below the roof sheathing with rigid board or sheet insulation with a minimum R-4 value installed above the roof sheathing.
  (or)
- If the insulation is air-**impermeable** and it is in direct contact with the underside of the roof sheathing.
  (or)
- If **two layers** of insulation are installed below the roof sheathing: An **air-impermeable** layer in direct contact with the underside of the roof sheathing and an additional layer **of air permeable** insulation installed directly under the air-impermeable insulation.

ROOF PLAN

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

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ROOF PLAN

UPDATED TO 2019 CODES

A CUSTOM RESIDENCE FOR:
Torchia
Palm Springs, California

UPDATED TO 2019 CODES

DRAWN:
CHECKED:
PRINT DATE: 6/28/2026
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JOB # 081115
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Issued 03/2016
This report is subject to renewal 03/2017.

DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
SECTION: 07 57 00—COATED FOAM ROOFING

REPORT HOLDER:

PRO-TECH PRODUCTS, INC.

3003 NORTH 73RD STREET
SCOTTSDALE, ARIZONA 85251

EVALUATION SUBJECT:

PRO-TECH EC-100 COATED FOAM ROOFING SYSTEM

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DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
Section: 07 57 00—Coated Foam Roofing

REPORT HOLDER:

PRO-TECH PRODUCTS, INC.
3003 NORTH 73RD STREET
SCOTTSDALE, ARIZONA 85251
(800) 538-7303
www.pro-techproducts.com

EVALUATION SUBJECT:

PRO-TECH EC-100 COATED FOAM ROOFING SYSTEM

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2012 and 2009 *International Building Code*® (IBC)
- 2012 and 2009 *International Residential Code*® (IRC)

Properties evaluated:

- Physical properties
- Impact resistance
- Wind resistance
- Fire classification
- Elimination of thermal barrier

2.0 USES

The Pro-Tech EC-100 Coated Foam Roofing System described in this evaluation report is used in the construction of classified roof coverings as noted in Table 1. The roof covering systems recognized in this report may be used on buildings of any type of construction.

3.0 DESCRIPTION

3.1 General:

The Pro-Tech EC-100 Coated Foam Roofing System consists of Pro-Tech 10-011 spray polyurethane foam (SPF) plastic insulation covered with Pro-Tech EC-100 acrylic elastomeric coating. When installed as described in this report, these systems have roof classifications as set forth in Table 1.

3.2 Spray Polyurethane Foam Plastic Insulation:

3.2.1 General: Pro-Tech 10-011 is a two-component spray-applied, foam plastic insulation complying with ASTM C1029 Type III and is produced in densities of between 2.5 and 3.0 pcf (40 and 43 kg/m³). The liquid components (designated as component A and component R) are available in 55-gallon (208 L) containers and 275-gallon (1041 L) totes. The liquid components must be stored at temperatures between 70°F (21°C) and 90°F (32°C) for several days before application and must not be exposed to direct sunlight. The shelf life of Pro-Tech 10-011 liquid components is six months in unopened containers.

3.2.2 Surface-burning Characteristics: Pro-Tech 10-011 foam plastic insulation has a flame-spread index of 25 or less for densities up to 3.0 pcf (43 kg/m³) when tested in accordance with UL 723 (ASTM E84) at a maximum thickness of 4 inches (102 mm). The classified roof assemblies noted in Table 1 are recognized for use without a thermal barrier based on testing in accordance with UL 1256, which is specified in IBC Section 2603.4.1.5.

3.3 Coatings:

3.3.1 Pro-Tech EC-100 Acrylic Elastomeric Coatings: Pro-Tech EC-100 acrylic elastomeric coating is single-component, liquid-applied, 100 percent acrylic coatings complying with ASTM D6083. The coatings are available in 5-gallon (19 L), 55-gallon (208 L) and 275-gallon (1041 L) totes, and have a shelf life of 12 months when stored in factory-sealed containers at temperatures between 60°F (15.5°C) and 110°F (44°C).

3.4 Impact and Foot Traffic Resistance:

The coated foam roof coverings described in this report meet requirements of the Resistance to Foot Traffic Test described in Section 5.5 of FM 4470, as referenced in IBC Section 1504.7.

4.0 INSTALLATION

4.1 Preparation of Substrate:

The substrates to be covered must be free of grease, oil, loose particles, moisture and other foreign materials that would impair adhesion of the foam to the substrate. Gravel-surfaced roofs must be cleaned by vacuuming or other suitable means to remove any loose gravel and dirt before application of the insulation. Areas not receiving an application of insulation must be masked off or otherwise protected from overspray.

4.2 Substrates:

4.2.1 Wood Substrates: Wood substrates must be minimum $^{15}/_{32}$-inch-thick (11.9 mm), code-complying, exterior grade or Exposure 1 wood structural panels. All wood structural panel substrate edges must be supported by blocking or have tongue-and-groove joints as required

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by IBC Section 2603.4.1.5 or IRC Section R314.5.2, as applicable. The wood surface must be primed, when specifically required, in accordance with the Pro-Tech Products installation instructions.

4.2.2 Noncombustible Substrates:

4.2.2.1 Concrete Substrates: Structural concrete must have a minimum compressive strength of 2500 psi (17.2 MPa). The concrete substrate must be thoroughly cured and primed or otherwise treated in accordance with Pro-Tech Products installation instructions to ensure adequate adhesion.

4.2.2.2 Metal Substrates: Metal substrates must be a minimum of No. 22 gage [0.03 inch thick (0.76 mm)] galvanized steel deck. Metal decks must be cleaned of any adhesion inhibitors. If free of rust or loose scale, the steel surface may be cleaned by use of an air jet, vacuum equipment, or hand or power broom to remove loose dirt. Grease, oil or other obvious contaminants must be removed by a suitable detergent or cleaner. Application of a primer before application of the insulation must be in accordance with the Pro-Tech Products installation instructions.

4.3 Roof Slope:

The insulation is spray-applied to roofs that have a minimum slope of $^{1}/_{4}$:12 (2 percent) and a maximum slope as specified in Table 1.

4.4 Foam Plastic Insulation Application:

Pro-Tech 10-011 liquid components must be dispensed at a 1:1 ratio at the temperature and pressure specified in the manufacturer's installation instructions. The liquid components must be applied to the prepared substrate in passes that have thicknesses between $^{1}/_{2}$ inch and $1^{1}/_{2}$ inches (12.7 mm to 38 mm). Application of the foam plastic insulation must be performed in accordance with ambient-temperature, humidity and wind-speed requirements noted in the manufacturer's published installation instructions. The foam insulation must not be applied to wet or damp substrates, or when dew, condensation, precipitation, or freezing temperatures are expected prior to completion of application of the foam and coating. The finished foam surfaces must be smooth and free of voids, pinholes and crevices.

4.5 Coating Application:

The coating is applied to the foam substrate at the application rate specified in Table 1, in multiple passes of contrasting colors up to the thickness prescribed in Pro-Tech Products' Installation Guide Specifications. The coating must be applied no less than two hours nor more than 72 hours following the application of the spray foam insulation. The insulation must be dry and free of dirt and foreign material when the coating is applied. The base coat must be applied the same day as the insulation unless a deviation from this requirement is specifically approved by Pro-Tech Products. The coating must be cured for a sufficient time as specified in Pro-Tech Products' installation instructions before subsequent layers are applied. The ambient temperature must be greater than 50ºF (10ºC) during application and above 32ºF (0ºC) for at least a 24-hour period after application.

4.6 Wind Resistance:

The allowable wind uplift pressure for the coated foam plastic roof covering is limited to that permitted by the code for the roof deck and structural framing.

4.7 Reroofing:

Prior to installation of new roof coverings, inspection in accordance with IBC Section 1510 or IRC Section R907, and approval from the code official having jurisdiction, are required. Installation must be over uninsulated systems only. Prior to installation of the spray-applied foam plastic insulation, the roof surface must be prepared to assure adequate adhesion. All loose rock, cementitious coatings, peeling paint, dirt and debris must be removed by brooming, power vacuuming or wire brushing. Where the existing roof covering is removed to the substrate, the deck is prepared as set forth in Section 4.2.1, 4.2.2.1 or 4.2.2.2.

5.0 CONDITIONS OF USE

The Pro-Tech EC-100 Coated Foam Roofing System described in this report complies with, or is a suitable alternative to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 The installation and application of the Pro-Tech EC-100 Coated Foam Roofing System must comply with the applicable code, the report holder's published application instructions and this evaluation report. If there are any conflicts between the report holder's application instructions and this evaluation report, this report governs.

5.2 All materials must be applied by installers approved by Pro-Tech Products.

5.3 Where moderate or heavy foot traffic occurs, such as for maintenance of equipment, the roof covering must be adequately protected to prevent rupture or wearing of the surface.

5.4 The deck and supporting structure to which the Pro-Tech EC-100 Coated Foam Roofing System is applied must be designed to withstand the applicable wind pressures determined in accordance with ASCE 7.

5.5 Flashing must be installed in accordance with IBC Section 1503.2 or IRC Section R903.2, as applicable.

5.6 The Pro-Tech 10-011 plastic insulation is manufactured in Mount Airy, North Carolina, and Clearfield, Utah, under a quality control program with inspections by ICC-Evaluation Services.

Pro-Tech EC-100 acrylic elastomeric coating is manufactured in Scottsdale, Arizona, under a quality control program with inspections by ICC-Evaluation Services, LLC.

6.0 EVIDENCE SUBMITTED

6.1 Data in accordance with the ICC-ES Acceptance Criteria for Spray-applied Foam Plastic Insulation (AC377), dated May 2015.

6.2 Reports of testing in accordance with ASTM D6083.

6.3 Reports of "Resistance to Foot Traffic" testing in accordance with Section 5.5 of FM 4470.

6.4 Reports of testing in accordance with UL 723.

6.5 Reports of testing in accordance with UL 790.

6.6 Reports of testing in accordance with UL 1256.

7.0 IDENTIFICATION

Containers of Pro-Tech 10-011 liquid components are labeled with the Pro-Tech Products company name and address, the product name (Pro-Tech 10-011), the component type (A or R), the date of manufacturer, the shelf life, the lot numbers, the flame spread index, and the evaluation report number (ESR-2355).

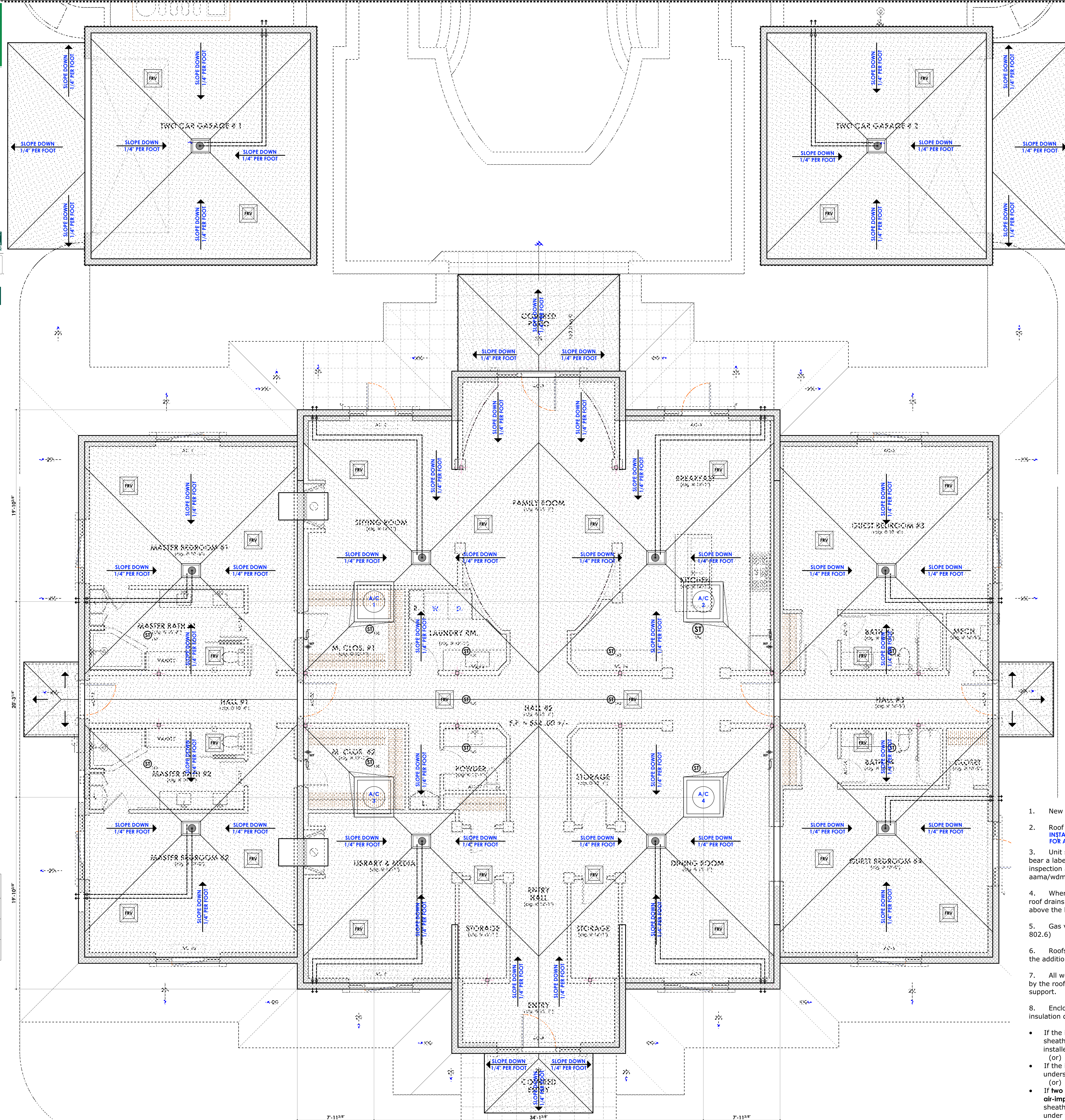
Containers of Pro-Tech EC-100 acrylic elastomeric coating are labeled with the Pro-Tech Products name and address, the product name, the lot number, the manufacturing date, the shelf life, and the evaluation report number (ESR-2355).

TABLE 1—PRO-TECH EC-100 COATED FOAM ROOFING SYSTEM FIRE CLASSIFICATION

SYSTEM NO.[1]	ROOF DECK TYPE	FOAM PLASTIC INSULATION: Product Designation	FOAM PLASTIC INSULATION: Minimum Thickness (inches)	COATING: Type	COATING: Application Rate	TOP SURFACING	MAXIMUM ROOF SLOPE	ROOF CLASSIFICATION
1	Noncombustible	10-011	1	Pro-Tech EC-100 acrylic elastomeric coating	Two applications at 1.75–1.85 gal/sq./coat	None	1:12	A
2	Noncombustible	10-011	1	Pro-Tech EC-100 acrylic elastomeric coating	3.7 gal/sq., maximum	Roofing granules at 50 lbs/sq.	4:12	A
3	Minimum $^{15}/_{32}$-thick plywood	10-011	1.5	Pro-Tech EC-100 acrylic elastomeric coating	3.7 gal/sq., maximum	Roofing granules at 50 lbs/sq.	$^{1}/_{2}$:12	B

For **SI:** 1 inch = 25.4 mm.

[1]Roof covering systems may be applied over an existing uninsulated roof covering without changing the existing roof covering's fire classification.



1. New roofing shall be class A rated minimum, R-19.

2. Roof ICC Report **ESR-2355 PRO-TECH EC-100 COATED FOAM ROOFING SYSTEM INSTALL IN STRICT ACCORD WITH MANUFACTURES INSTRUCTIONS & SUGGESTIONS FOR ALL COMPONENTS OF THE ROOFING SYSTEM - SEE REPORT ON THIS SHEET**

3. Unit skylights shall be tested by an approved independent laboratory, and bear a label identifying manufacturer, performance grade rating and approved inspection agency to indicate compliance with the requirements of aama/wdmn/csa 101/I.S.2/A440.

4. Where roof drains are required, overflow drains having the same size as the roof drains shall be installed with the inlet flow line located 2 inches (51mm) above the low point of the roof. (R903.4.1)

5. Gas vents must extend above the roof a minimum 1ft. (figure 8-2, CMC 802.6)

6. Roofs on which equipment is to be installed shall be capable of supporting the additional load.

7. All wood sleepers at the roof to be pressure treated, flashed, and protected by the roof membrane. Alternately, replace with plastic,trex, or standoff support.

8. Enclosed rafter spaces do not require venting if the following specific insulation design is used, per Section R806.5/EM3.9.6:

- If the insulation is air-**permeable** and it is installed directly below the roof sheathing with rigid board or sheet insulation with a minimum R-4 value installed above the roof sheathing.
  (or)
- If the insulation is air-**impermeable** and it is in direct contact with the underside of the roof sheathing.
  (or)
- If **two layers** of insulation are installed below the roof sheathing: An **air-impermeable** layer in direct contact with the underside of the roof sheathing and an additional layer **of air permeable** insulation installed directly under the air-impermeable insulation.

ROOF PLAN

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

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RESIDENTIAL DESIGN BY:
JONATHAN PELEZZARE
64550 Pierson Blvd., SPC 14
Desert Hot Springs, CA 92240
Phone: (760) 391-2748 Email: info@jonathanpelezzaredesign.com

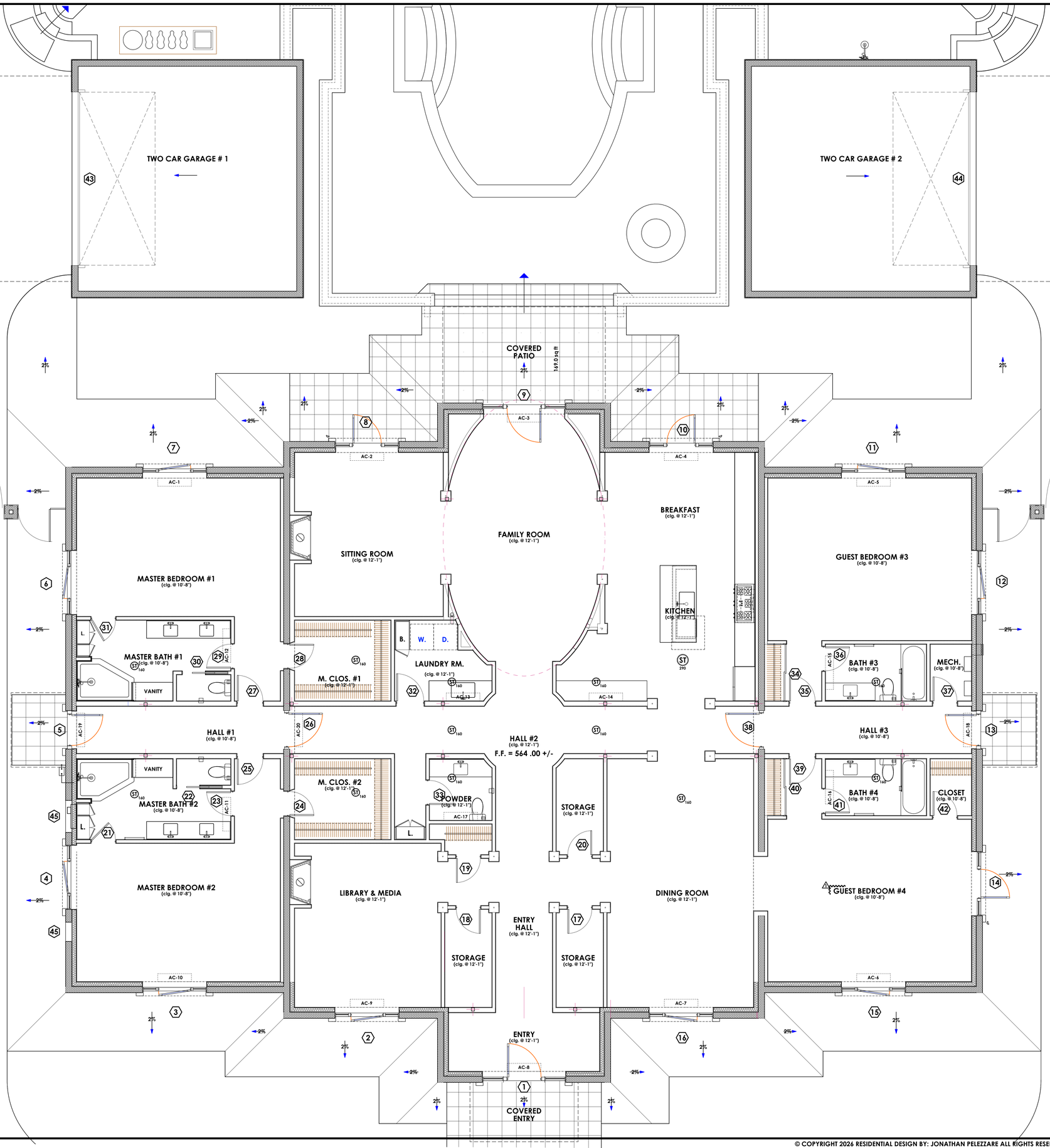
ROOF PLAN WITH FLOOR PLAN SCREEN OVERLAY (FOR REFERENCE)

UPDATED TO 2019 CODES

A CUSTOM RESIDENCE FOR:
Torchia
Palm Springs, California

UPDATED TO 2019 CODES

DRAWN:
CHECKED:
PRINT DATE: 6/28/2026
SCALE: 1/4" = 1'-0" (UNO)
JOB #: 081115
SHEET NO.
A5.1



DOOR SCHEDULE			NOTE: verify all rough opening sizes on job site prior to ordering units			
DOOR # ON PLAN	DOOR W	DOOR HT	Glazing	Unit Surface Area	Unit Dimensions	Remarks
17	2'-6"	8'-0"	None	20.00	2'-7 1/2"×8'-0 1/4"	1 3/8" thick solid core slab door - provide latching lever knob set - hrdwr. to be selected by owner
18	2'-6"	8'-0"	None	20.00	2'-7 1/2"×8'-0 1/4"	1 3/8" thick solid core slab door - provide latching lever knob set - hrdwr. to be selected by owner
19	2'-6"	8'-0"	None	20.00	2'-7 1/2"×8'-0 1/4"	1 3/8" thick solid core slab door - provide latching lever knob set - hrdwr. to be selected by owner
20	2'-6"	8'-0"	None	20.00	2'-7 1/2"×8'-0 1/4"	1 3/8" thick solid core slab door - provide latching lever knob set - hrdwr. to be selected by owner
21	2'-6"	8'-0"	None	20.00	2'-7 1/2"×8'-0 1/4"	1 3/8" thick solid core slab door - provide latching leverknob set w/ privacy lock
22	2'-4"	8'-0"	NONE	18.67	4'-9 1/2"×8'-0 1/4"	NEW 1 3/8" thick, solid core, pocket sliding door
23	2'-6"	8'-0"	None	20.00	2'-7 1/2"×8'-0 1/4"	1 3/8" thick solid core slab door - provide latching lever knob set w/ privacy lock
24	2'-6"	8'-0"	None	20.00	2'-7 1/2"×8'-0 1/4"	1 3/8" thick solid core slab door - provide latching lever knob set
25	2'-8"	8'-0"	None	21.33	2'-9 1/2"×8'-0 1/4"	1 3/8" thick solid core slab door - provide latching lever knob set w/ privacy lock
26	3'-6"	8'-0"	tempered, insulated	28.00	3'-7 1/2"×8'-0 1/4"	narrow stile & rail full lite French door - provide latching lever knob set w/ privacy lock on bedrooms side - acid etched both sides ?
27	2'-8"	8'-0"	None	21.33	2'-9 1/2"×8'-0 1/4"	1 3/8" thick solid core slab door - provide latching lever knob set w/ privacy lock
28	2'-6"	8'-0"	None	20.00	2'-7 1/2"×8'-0 1/4"	1 3/8" thick solid core slab door - provide latching lever knob set
29	2'-6"	8'-0"	None	20.00	2'-7 1/2"×8'-0 1/4"	1 3/8" thick solid core slab door - provide latching lever knob set w/ privacy lock
30	2'-4"	8'-0"	NONE	18.67	4'-9 1/2"×8'-0 1/4"	NEW 1 3/8" thick, solid core, pocket sliding door
31	2'-6"	8'-0"	None	20.00	2'-7 1/2"×8'-0 1/4"	1 3/8" thick solid core slab door - provide latching leverknob set w/ privacy lock
32	2'-10"	8'-0"	None	22.67	2'-11 1/2"×8'-0 1/4"	1 3/8" thick full louvered door providing 100 square inches net free opening (minimum) for dryer make up air per CMC 504.4.1 - provide latching lever knob set
33	2'-6"	8'-0"	None	20.00	2'-7 1/2"×8'-0 1/4"	1 3/8" thick solid core slab door - provide latching lever knob set w/ privacy lock
34	5'-10"	8'-0"	None	46.67	5'-11 1/2"×8'-0 1/4"	pair 2'-6" x 8'-0" x 1 3/8" thick solid core slab sliding wardrobe doors to be selected by owner.
35	2'-8"	8'-0"	None	21.33	2'-9 1/2"×8'-0 1/4"	1 3/8" thick solid core slab door - provide latching lever knob set w/ privacy lock
36	2'-6"	8'-0"	None	20.00	2'-7 1/2"×8'-0 1/4"	1 3/8" thick solid core slab door - provide latching lever knob set w/ privacy lock
37	2'-6"	8'-0"	None	20.00	2'-7 1/2"×8'-0 1/4"	1 3/4" thick tight fitting solid core slab door w/ threshold & weather stripping -self closing & latching door - provide latching lever knob set
38	3'-6"	8'-0"	tempered, insulated	28.00	3'-7 1/2"×8'-0 1/4"	narrow stile & rail full lite French door - provide latching lever knob set w/ privacy lock on bedrooms side - acid etched both sides ?
39	2'-8"	8'-0"	None	21.33	2'-9 1/2"×8'-0 1/4"	1 3/8" thick solid core slab door - provide latching lever knob set w/ privacy lock
40	5'-10"	8'-0"	None	46.67	5'-11 1/2"×8'-0 1/4"	pair 3'-0" x 8'-0" x 1 3/8" thick solid core slab sliding wardrobe doors - to be selected by owner.
41	2'-6"	8'-0"	None	20.00	2'-7 1/2"×8'-0 1/4"	1 3/8" thick solid core slab door - provide latching lever knob set w/ privacy lock
42	2'-6"	8'-0"	None	20.00	2'-7 1/2"×8'-0 1/4"	1 3/8" thick solid core slab door - provide latching lever knob set
43	18'-0"	8'-0"	None	144.00	18'-6"×8'-3"	insulated sectional overhead garage door, tracks and electrically operated opener w/ automatic safety opener - to be selected by owner
44	18'-0"	8'-0"	None	144.00	18'-6"×8'-3"	insulated sectional overhead garage door, tracks and electrically operated opener w/ automatic safety opener - to be selected by owner
45	2'-0"	2'-0"	---	4.00	2'-0"×2'-0"	---

NOTE:

ALL RESIDENCE EXTERIOR OPENINGS (1) THROUGH (16) ARE PREFABRICATED UNITS WITH EITHER A DOOR OR A CASEMENT WINDOW EXCEEDING ALL REQUIREMENTS FOR EMERGENCY EXIT AT SLEEPING ROOMS

(SEE SHEET A6.1 FOR EACH OPENING TYPE & ELEVATION - SEE SHEET M4 FOR "U" & "SHGC" VALUES)

SYMBOL ON PLAN

DOORS ARE SHOWN ON PLAN WITH DOOR LEAF SWUNG OPEN 45 DEGREES OR MORE
CASEMENT WINDOWS ARE SHOWN WITH OPERABLE CASEMENT WINDOW LEAF SWUNG OPEN 15 DEGREES OR LESS

DOORS (17) THROUGH (42) BELOW ARE ALL INTERIOR DOORS

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REVISIONS
1 5/12/2022
2
3
4

RESIDENTIAL DESIGN BY:
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Palm Desert, CA 92260
Phone: (760) 391-2748
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DOOR AND WINDOW MARKERS, SCHEDULES & DETAIL BUBBLES

UPDATED TO 2019 CODES

A CUSTOM RESIDENCE FOR:
Torchia
Palm Springs, California

UPDATED TO 2019 CODES

DRAWN:
CHECKED:
PRINT DATE: 6/28/2026
SCALE: 1/4" = 1'-0" (UNO)
JOB NO.: 081115
SHEET NO.: A6.0
OF 55 SHEETS

Drawing Request

Window Visions, Inc
777 S. Hwy 101 #100
Solana Beach, CA 92075
858-345-1076

Project #:	000110
Job #:	
Project Name:	Torchia, Angel rev 3
Purchase Order #:	

Date: Wed Nov 15 2017

Drawing not to scale. Please use drawing for representation purposes only.
Exterior View.

Item #: 0001 **Location:** 9: REAR ENTRY

Product: custom PS1 0707 (Direct Set) - custom AW1 1207 A (Awning) - custom PS1 0707 (Direct Set) over custom PS1 0724 (Direct Set) - 4" Spread Mull - 4" Spread Mull - custom PS1 0724 (Direct Set) over standard TD1 1024 L (Terrace Door)

Qty: 1

Wood Species: Douglas Fir

terrace door is 3'-7 29/32" wide & all glazing in this unit is tempered

Unit Dimension: Frame = 103 29/32 x 121 1/16"
RO = 104 21/32 x 121 21/32"

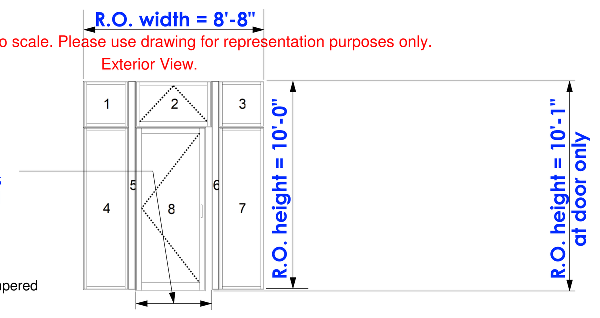
Jamb: 116 4 9/16"
VG:
Glazing: Heat-Smart D 366 (HB1)

Midrail:
Tint: Clear - Tempered
Tempered: Yes
Cap Tubes:

Finish: Aluminum Clad Exterior Architectural Palette Steel Matte Black

Sash Finish:

Frame Type:



Screen Color: Not Applicable
Hardware Finish:
Operator Style:

Grilles:

Top:

Bottom:

Grille Alignment:

of

Sub-Unit OSM:

1 custom PS1 0707 (Direct Set) 26" x 26 9/16"
2 custom AW1 1207 A (Awning) 43 29/32" x 26 9/16"
3 custom PS1 0707 (Direct Set) 26" x 26 9/16"
4 custom PS1 0724 (Direct Set) 26" x 93 1/2"
5 4" Spread Mull 4" x 120 1/16"
6 4" Spread Mull 4" x 120 1/16"
7 custom PS1 0724 (Direct Set) 26" x 93 1/2"
8 standard TD1 1124 L (Terrace Door) 43 29/32" x 94 1/2"

Serial Number : 3928-3117-4040-0107 **Version :** 6.18 **Date :** Wed Nov 15 2017 **Page :** 1 Of 8

OPENING # 9

Drawing Request

Window Visions, Inc
777 S. Hwy 101 #100
Solana Beach, CA 92075
858-345-1076

Project #:	000110
Job #:	
Project Name:	Torchia, Angel rev 3
Purchase Order #:	

Date: Wed Nov 15 2017

Drawing not to scale. Please use drawing for representation purposes only.
Exterior View.

Item #: 0002 **Location:** 1: ENTRY

Product: custom PS1 0709 (Direct Set) - custom AW1 1209 A (Awning) - custom PS1 0709 (Direct Set) over custom PS1 0724 (Direct Set) - 4" Spread Mull - standard TD1 1024 R (Terrace Door) - 4" Spread Mull - custom PS1 0724 (Direct Set)

Qty: 1 T

Wood Species: Douglas Fir

terrace door is 3'-7 29/32" wide all glazing in this unit is tempered

Unit Dimension: Frame = 103 29/32 x 126 1/4"
RO = 104 21/32" x 126 27/32"

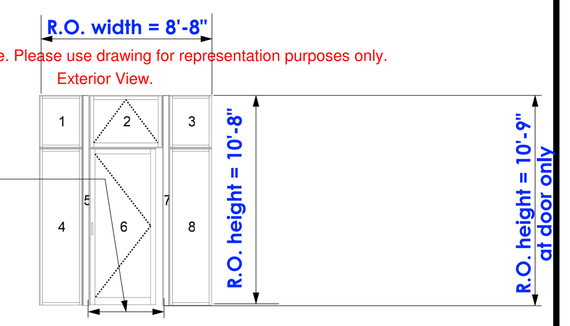
Jamb: 116 4 9/16"
VG:
Glazing: Heat-Smart D 366 (HB1)

Midrail:
Tint: Clear - Tempered
Tempered: Yes
Cap Tubes:

Finish: Aluminum Clad Exterior Architectural Palette Steel Matte Black

Sash Finish:

Frame Type:



Screen Color: Not Applicable
Hardware Finish:
Operator Style:

Grilles:

Top:

Bottom:

Grille Alignment:

Sub-Unit OSM:

1 custom PS1 0709 (Direct Set) 26" x 31 3/4"
2 custom AW1 1209 A (Awning) 43 23/32" x 31 3/4"
3 custom PS1 0709 (Direct Set) 26" x 31 3/4"
4 custom PS1 0724 (Direct Set) 26" x 94 1/2"
5 4" Spread Mull 4" x 126 1/4"
6 standard TD1 1124 R (Terrace Door) 43 29/32 " x 94 1/2"
7 4" Spread Mull 4" x 126 1/4"
8 custom PS1 0724 (Direct Set) 26" x 94 1/2"

Serial Number : 3928-3117-4040-0107 **Version :** 6.18 **Date :** Wed Nov 15 2017 **Page :** 2 Of 8

OPENING # 1

Drawing Request

Window Visions, Inc
777 S. Hwy 101 #100
Solana Beach, CA 92075
858-345-1076

Project #:	000110
Job #:	
Project Name:	Torchia, Angel rev 3
Purchase Order #:	

Date: Mon Oct 23 2017

Drawing not to scale. Please use drawing for representation purposes only.
Exterior View.

Item #: 0003 **Location:** 2,3,4,7,12: Bedroom Egress window

Product: custom AW1 1204 A (Awning) - custom PS1 0504 (Direct Set) over custom PS1 0504 (Direct Set) over custom PS1 0524 (Direct Set) - 1" Spread Mull - custom CA1 1224 R (Casement) - 1" Spread Mull - custom PS1 0524 (Direct Set)

Qty: 5
Total Net Price - $ 40770.00

Wood Species: Douglas Fir

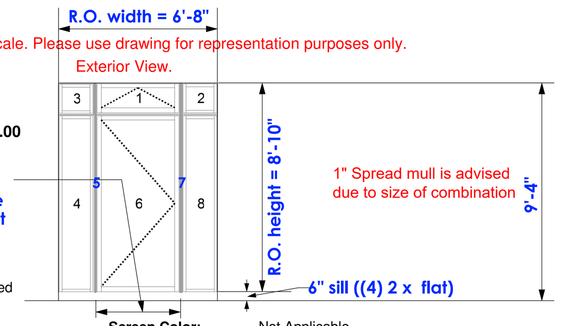
emergency egress casement window is 3'-6" wide all glazing in this unit is tempered

Unit Dimension: Frame = 79 31/32" x 105 1/2"
RO = 80 23/32" x 106 1/4"

Jamb: 116 4 9/16"
VG:
Glazing: Not Applicable

Midrail:
Tint: Clear - Tempered
Tempered: Not Applicable
Cap Tubes:
Frame Type:

Finish: Aluminum Clad Exterior Linen Not Applicable
Sash Finish:



Screen Color: Not Applicable
Hardware Finish:
Operator Style:

Grilles:

Top:

Bottom:

Grille Alignment:

Sub-Unit OSM:

1 custom AW1 1204 A (Awning) 42" x 15 3/4"
2 custom PS1 0504 (Direct Set) 18" x 15 3/4"
3 custom PS1 0504 (Direct Set) 18" x 15 3/4"
4 custom PS1 0524 (Direct Set) 18" x 89 1/2"
5 1" Spread Mull 1" x 105 1/2"
6 custom CA1 1224 R (Casement) 42" x 89 1/2"
7 1" Spread Mull 1" x 105 1/2"
8 custom PS1 0524 (Direct Set) 18" x 89 1/2"

Serial Number : 3928-3117-4040-0107 **Version :** 6.18 **Date :** Mon Oct 23 2017 **Page :** 3 Of 8

OPENING #'s 2, 3, 4, 7 & 12

Drawing Request

Window Visions, Inc
777 S. Hwy 101 #100
Solana Beach, CA 92075
858-345-1076

Project #:	000110
Job #:	
Project Name:	Torchia, Angel rev 3
Purchase Order #:	

Date: Mon Oct 23 2017

Drawing not to scale. Please use drawing for representation purposes only.
Exterior View.

Item #: 0004 **Location:** 6,11,15+16: bed rooms

Product: custom AW1 1204 A (Awning)-custom PS1 0504 (Direct Set)/custom PS1 0504 (Direct Set)/custom PS1 0524 (Direct Set)-1" Spread Mull-custom CA1 1224 L (Casement)-1" Spread Mull-custom PS1 0524 (Direct Set)

Qty: 4
Total Net Price - $ 32616.00

Wood Species: Douglas Fir

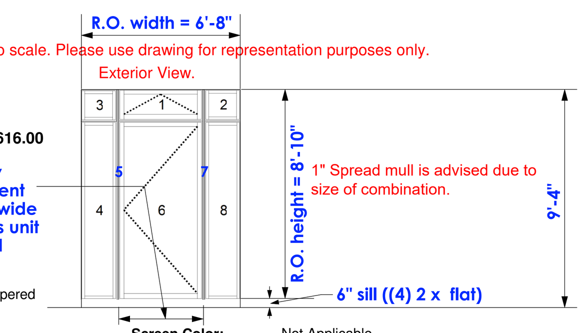
emergency egress casement window is 3'-6" wide all glazing in this unit is tempered

Unit Dimension: Frame = 79 31/32" x 105 1/2"
RO = 80 23/32" x 106 1/4"

Jamb: 116 4 9/16"
VG:
Glazing: Not Applicable

Midrail:
Tint: Clear - Tempered
Tempered:
Cap Tubes:
Frame Type:

Finish: Aluminum Clad Exterior Linen Not Applicable
Sash Finish:



Screen Color: Not Applicable
Hardware Finish:
Operator Style:

Grilles:

Top:

Bottom:

Grille Alignment:

Sub-Unit OSM:

1 custom AW1 1204 A (Awning) 42" x 15 3/4"
2 custom PS1 0504 (Direct Set) 18" x 15 3/4"
3 custom PS1 0504 (Direct Set) 18" x 15 3/4"
4 custom PS1 0524 (Direct Set) 18" x 89 1/2"
5 1" Spread Mull 1" x 105 1/2"
6 custom CA1 1224 L (Casement) 42" x 89 1/2"
7 1" Spread Mull 1" x 105 1/2"
8 custom PS1 0524 (Direct Set) 18" x 89 1/2"

Serial Number : 3928-3117-4040-0107 **Version :** 6.18 **Date :** Mon Oct 23 2017 **Page :** 4 Of 8

OPENING #'s 6, 11, 15, & 16

Drawing Request

Window Visions, Inc
777 S. Hwy 101 #100
Solana Beach, CA 92075
858-345-1076

Project #:	000110
Job #:	
Project Name:	Torchia, Angel rev 3
Purchase Order #:	

Date: Mon Oct 23 2017

Drawing not to scale. Please use drawing for representation purposes only.
Exterior View.

Item #: 0005 **Location:** 5: HALL1

Product: custom AW1 1105 A (Awning) over standard TD1 1024 L (Terrace Door)

Qty: 1
Total Net Price - $ 5253.00

Wood Species: Douglas Fir

terrace door is 3'-4 5/16" wide all glazing in this unit is tempered

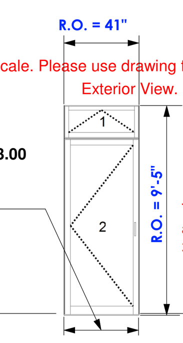
Unit Dimension: Frame = 40 5/16" x 112 1/4"
RO = 41 1/16" x 112 27/32"

Jamb: 116 4 9/16"
VG:
Glazing: Heat-Smart D 366 (HB1)

Midrail:
Tint:

Finish: Aluminum Clad Exterior Linen Not Applicable
Sash Finish:

Tempered:
Cap Tubes:
Frame Type:



This is max height of door with contemporary stile and rail. for this reason the awning can not be 15 3/4"

Screen Color: Linen
Hardware Finish:
Operator Style:

Grilles:

Top:

Bottom:

Grille Alignment:

Sub-Unit OSM:

1 custom AW1 1105 A (Awning) 40 3/16" x 17 3/4"
2 standard TD1 1024 L (Terrace Door) 40 5/16" x 94 1/2"

Serial Number : 3928-3117-4040-0107 **Version :** 6.18 **Date :** Mon Oct 23 2017 **Page :** 5 Of 8

OPENING # 5

Drawing Request

Window Visions, Inc
777 S. Hwy 101 #100
Solana Beach, CA 92075
858-345-1076

Project #:	000110
Job #:	
Project Name:	Torchia, Angel rev 3
Purchase Order #:	

Date: Mon Oct 23 2017

Drawing not to scale. Please use drawing for representation purposes only.
Exterior View.

Item #: 0006 **Location:** 13: HALL 3

Product: custom AW1 1105 A (Awning)/standard TD1 1024 R (Terrace Door)

Qty: 1
Total Net Price - $ 5193.00

Wood Species: Douglas Fir

terrace door is 3'-4 5/16" wide all glazing in this unit is tempered

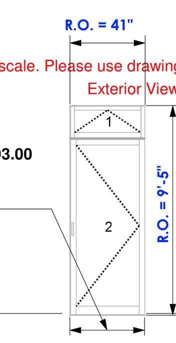
Unit Dimension: Frame = 40 5/16" x 112 1/4"
RO = 41 1/16" x 112 27/32"

Jamb: 116 4 9/16"
VG:
Glazing: Heat-Smart D 366 (HB1)

Midrail:
Tint:

Finish: Aluminum Clad Exterior Linen Not Applicable
Sash Finish:

Tempered:
Cap Tubes:
Frame Type:



This is max height of door with contemporary stile and rail. for this reason the awning can not be 15 3/4"

Screen Color: Linen
Hardware Finish:
Operator Style:

Grilles:

Top:

Bottom:

Grille Alignment:

Sub-Unit OSM:

1 custom AW1 1105 A (Awning) 40 3/16" x 17 3/4"
2 standard TD1 1024 R (Terrace Door) 40 5/16" x 94 1/2"

Serial Number : 3928-3117-4040-0107 **Version :** 6.18 **Date :** Mon Oct 23 2017 **Page :** 6 Of 8

OPENING # 13

Drawing Request

Window Visions, Inc
777 S. Hwy 101 #100
Solana Beach, CA 92075
858-345-1076

Project #:	000110
Job #:	
Project Name:	Torchia, Angel rev 3
Purchase Order #:	

Date: Mon Oct 23 2017

Drawing not to scale. Please use drawing for representation purposes only.
Exterior View.

Item #: 0007 **Location:** 8: SITTING

Product: custom PS1 0505 (Direct Set) over custom PS1 0505 (Direct Set) - custom AW1 1005 A (Awning) over 2" Spread Mull - custom PS1 0524 (Direct Set) over custom PS1 0524 (Direct Set) - 2" Spread Mull over custom TD1 1024 R (Terrace Door)

Qty: 1
Total Net Price - $ 10639.00

Wood Species: Douglas Fir

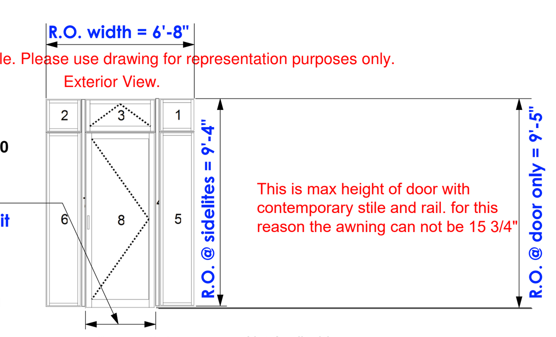
terrace door is 3'-1 1/2" wide all glazing in this unit is tempered

Unit Dimension: Frame = 79 9/16" x 112 1/4"
RO = 80 5/16" x 112 27/32"

Jamb: 116 4 9/16"
VG:
Glazing: Heat-Smart D 366 (HB1)

Midrail:
Tint: Clear - Tempered
Tempered: Yes
Cap Tubes:
Frame Type:

Finish: Aluminum Clad Exterior Linen Not Applicable
Sash Finish:



This is max height of door with contemporary stile and rail. for this reason the awning can not be 15 3/4"

Screen Color: Not Applicable
Hardware Finish:
Operator Style:

Grilles:

Top:

Bottom:

Grille Alignment:

Sub-Unit OSM:

1 custom PS1 0505 (Direct Set) 19" x 17 3/4"
2 custom PS1 0505 (Direct Set) 19" x 17 3/4"
3 custom AW1 1005 A (Awning) 37 1/2" x 17 3/4"
4 2" Spread Mull 2" x 111 1/2"
5 custom PS1 0524 (Direct Set) 19" x 93 1/2"
6 custom PS1 0524 (Direct Set) 19" x 93 1/2"
7 2" Spread Mull 2" x 111 1/4"
8 custom TD1 1024 R (Terrace Door) 37 1/2" x 94 1/2"

Serial Number : 3928-3117-4040-0107 **Version :** 6.18 **Date :** Mon Oct 23 2017 **Page :** 7 Of 8

OPENING # 8

Drawing Request

Window Visions, Inc
777 S. Hwy 101 #100
Solana Beach, CA 92075
858-345-1076

Project #:	000110
Job #:	
Project Name:	Torchia, Angel rev 3
Purchase Order #:	

Date: Mon Oct 23 2017

Drawing not to scale. Please use drawing for representation purposes only.
Exterior View.

Item #: 0009 **Location:** 10+14: NOOK+ DINING SITTING

Product: custom PS1 0505 (Direct Set) - custom AW1 1005 A (Awning) - custom PS1 0505 (Direct Set) over custom PS1 0524 (Direct Set) - 2" Spread Mull over 2" Spread Mull - custom PS1 0524 (Direct Set) over custom TD1 1024 L (Terrace Door)

Qty: 2
Total Net Price - $ 20778.00

Wood Species: Douglas Fir

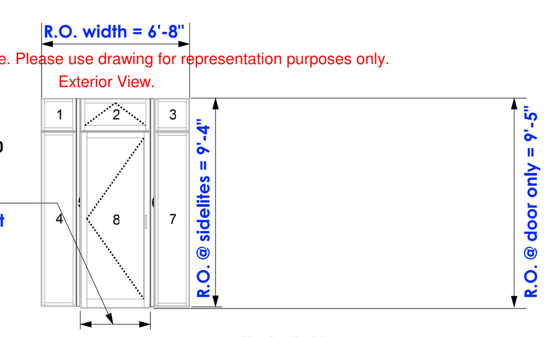
terrace door is 3'-1 1/2" wide all glazing in this unit is tempered

Unit Dimension: Frame = 79 9/16" x 112 1/4"
RO = 80 5/16" x 112 27/32"

Jamb: 116 4 9/16"
VG:
Glazing: Heat-Smart D 366 (HB1)

Midrail:
Tint: Clear - Tempered
Tempered: Yes
Cap Tubes:
Frame Type:

Finish: Aluminum Clad Exterior Linen Not Applicable
Sash Finish:



Screen Color: Not Applicable
Hardware Finish:
Operator Style:

Grilles:

Top:

Bottom:

Grille Alignment:

Sub-Unit OSM:

1 custom PS1 0505 (Direct Set) 19" x 17 3/4"
2 custom AW1 1005 A (Awning) 37 1/2" x 17 3/4"
3 custom PS1 0505 (Direct Set) 19" x 17 3/4"
4 custom PS1 0524 (Direct Set) 19" x 93 1/2"
5 2" Spread Mull 2" x 111 1/4"
6 2" Spread Mull 2" x 111 1/2"
7 custom PS1 0524 (Direct Set) 19" x 93 1/2"
8 custom TD1 1024 L (Terrace Door) 37 1/2" x 94 1/2"

Serial Number : 3928-3117-4040-0107 **Version :** 6.18 **Date :** Mon Oct 23 2017 **Page :** 8 Of 8

OPENING #'s 10 & 14

REVISIONS
1 5/12/2022
2
3
4

RESIDENTIAL DESIGN BY:
JONATHAN PELEZZARE
64550 Pierson Blvd., SPC 14
Desert Hot Springs, CA 92240
Email: info@jonathanpelezzaredesign.com
Phone: (760) 391-2748

DOOR & WINDOW UNIT TYPES (SCHEDULE & ELEVATIONS)

UPDATED TO 2019 CODES

A CUSTOM RESIDENCE FOR:
Torchia
Palm Springs, California

UPDATED TO 2019 CODES

DRAWN:
CHECKED:
PRINT DATE: 6/28/2026
SCALE 1/4" = 1'-0" (UNO)
JOB # 081115
SHEET NO.
A6.1
OF 55 SHEETS

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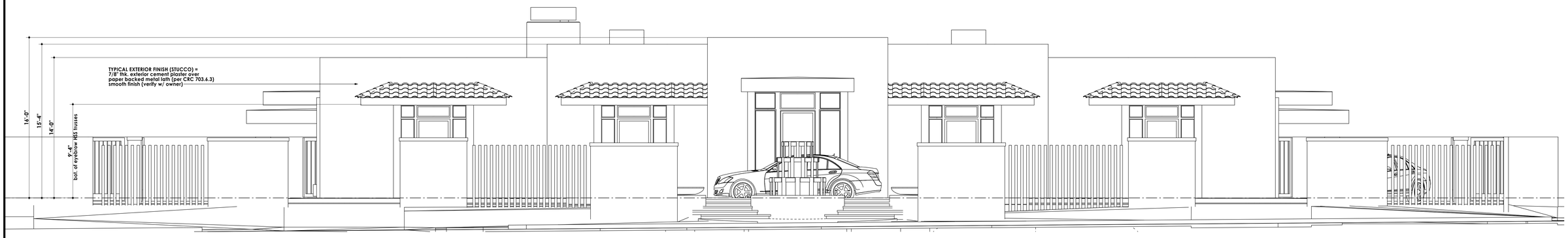
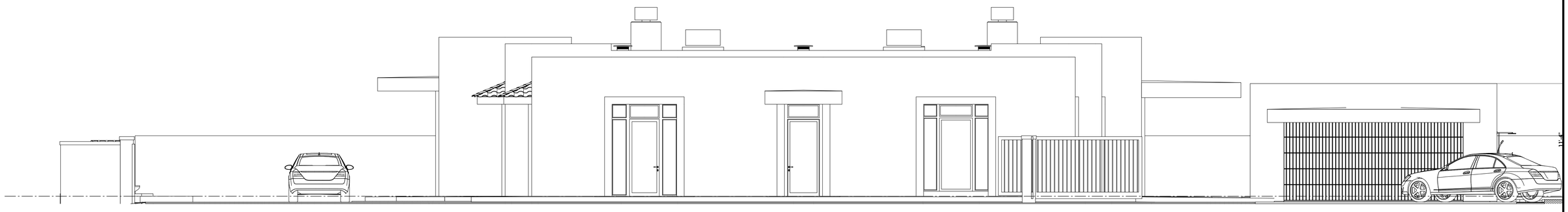


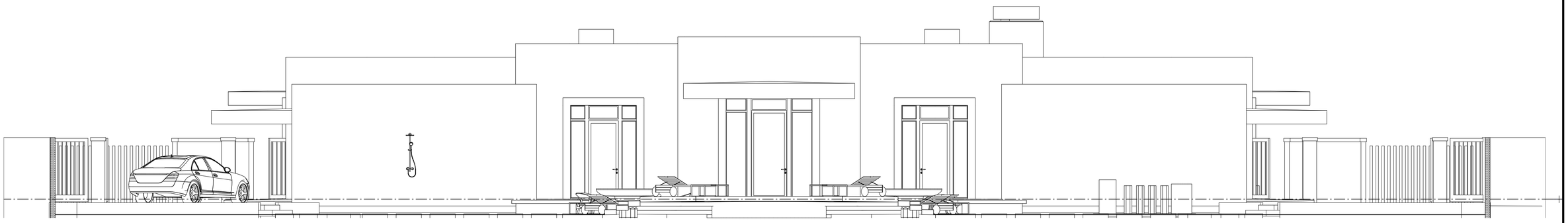
FRONT - (WEST) EXTERIOR ELEVATION

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



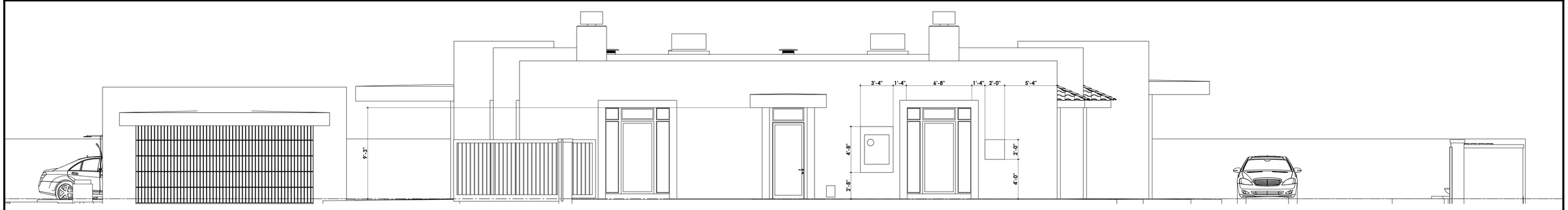
RIGHT SIDE (SOUTH) EXTERIOR ELEVATION

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



REAR (EAST) EXTERIOR ELEVATION

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



LEFT SIDE - (NORTH) EXTERIOR ELEVATION

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

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Email: info@jonathanpelezzaredesign.com

EXTERIOR ELEVATIONS

A CUSTOM RESIDENCE FOR:
Torchia
Palm Springs, California

UPDATED TO 2019 CODES

UPDATED TO 2019 CODES

DRAWN:
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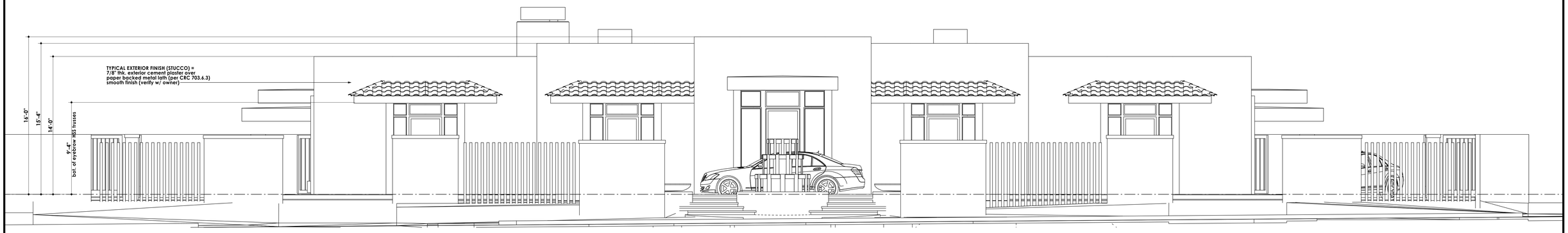
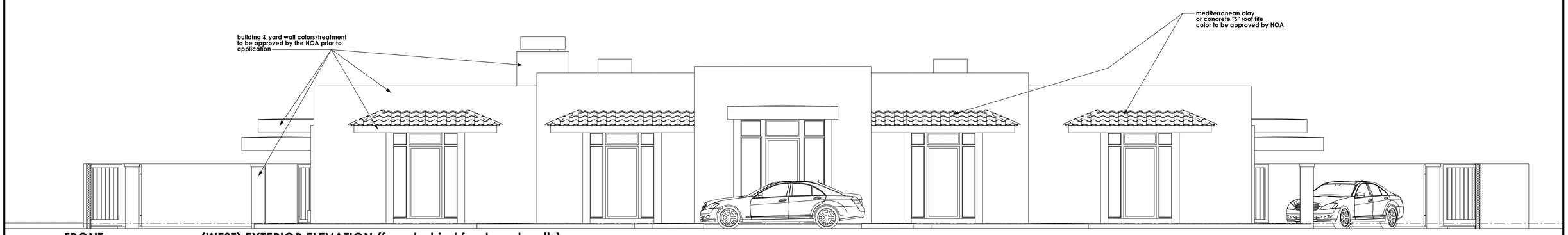
JOB NO: 081115
SHEET NO: A7.0
OF 24 SHEETS



FRONT - **(WEST) EXTERIOR ELEVATION** SCALE: 1/4" = 1'-0"



FRONT - **(WEST) EXTERIOR ELEVATION (from behind front yard walls)** SCALE: 1/4" = 1'-0"

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front elevation

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Torchia
Palm Springs, California

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SHEET NO.	A7.1
PROJECT NO.	081115
SCALE	1/4" = 1'-0"
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DATE	6/28/2026
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A CUSTOM RESIDENCE FOR:
Torchia
Palm Springs, California

UPDATED TO 2019 CODES

RENDERINGS 1

RESIDENTIAL DESIGN BY:
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45550 Pierson Blvd., Ste. 14
Desert Hot Springs, CA 92240
Phone: (760) 391-2748 Email: Mail@JonathanPelezzaredesign.com

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Desert Hot Springs, CA 92240
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RENDERINGS 2

A CUSTOM RESIDENCE FOR:
Torchia
Palm Springs, California

UPDATED TO 2019 CODES

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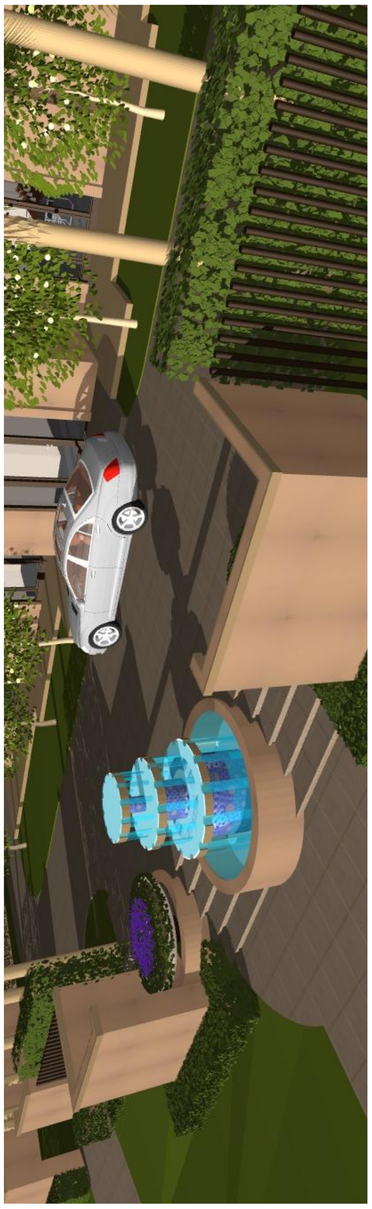
SCALE:	1/4" = 1'-0"
JOB NO.	08115
SHEET NO.	A7.2

REVISIONS	6/12/2022



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Torchia Residence

Palm Springs, California

NOTE:
ROOF TILE, BUILDING WALLS & YARD WALL COLORS
TO BE APPROVED BY THE HOA

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RENDERINGS 3 (rev 3 for HOA)

UPDATED TO 2019 CODES

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Palm Springs, California

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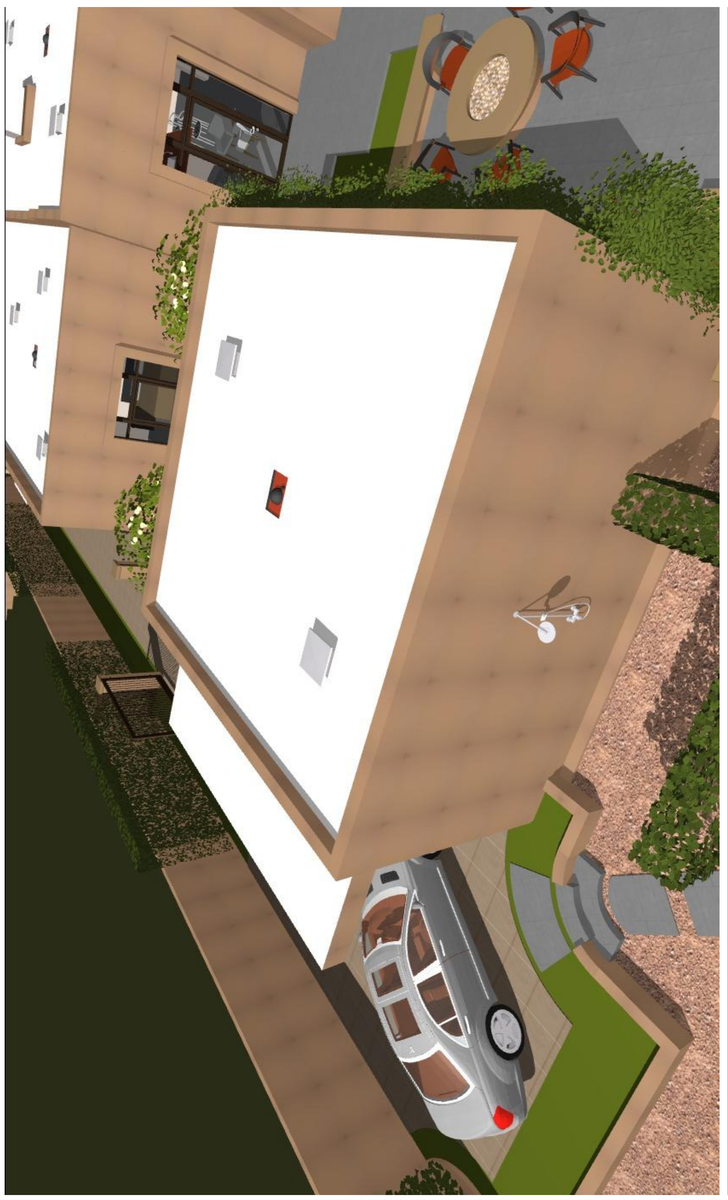
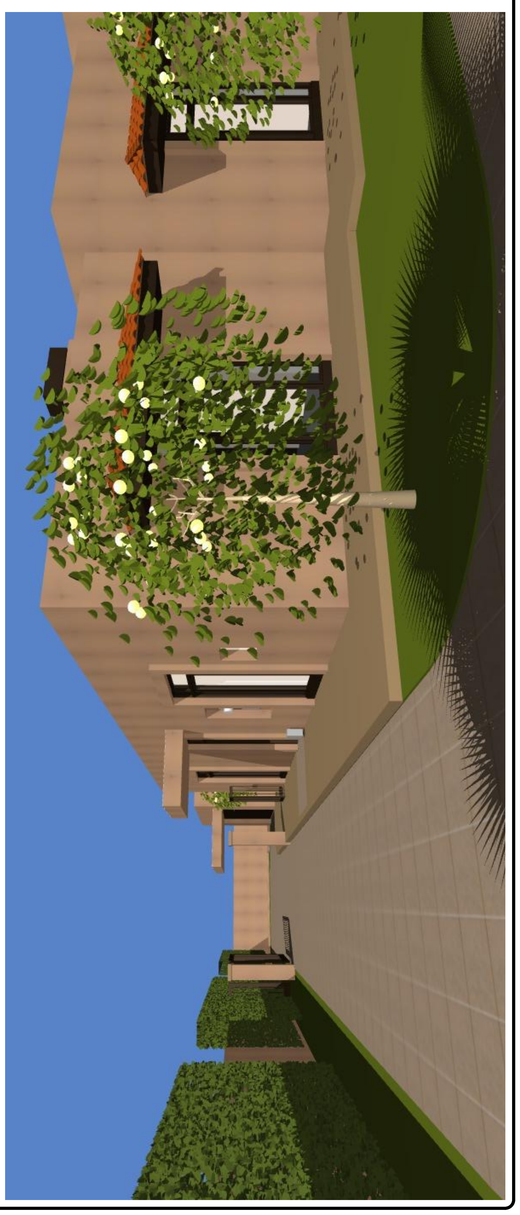
JOB #: 081115
SHEET NO.: A7.3
OF 55 SHEETS





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RENDERINGS 4

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UPDATED TO 2019 CODES

UPDATED TO 2019 CODES

ISSUE DATE	DESCRIPTION
6/20/2026	

SCALE: 1/4" = 1'-0"
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SHEET NO. 08115
SHEET TITLE
A7.4
OF 33 SHEETS

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2		
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RENDERINGS 5

A CUSTOM RESIDENCE FOR:
Torchia
Palm Springs, California

UPDATED TO 2019 CODES

UPDATED TO 2019 CODES

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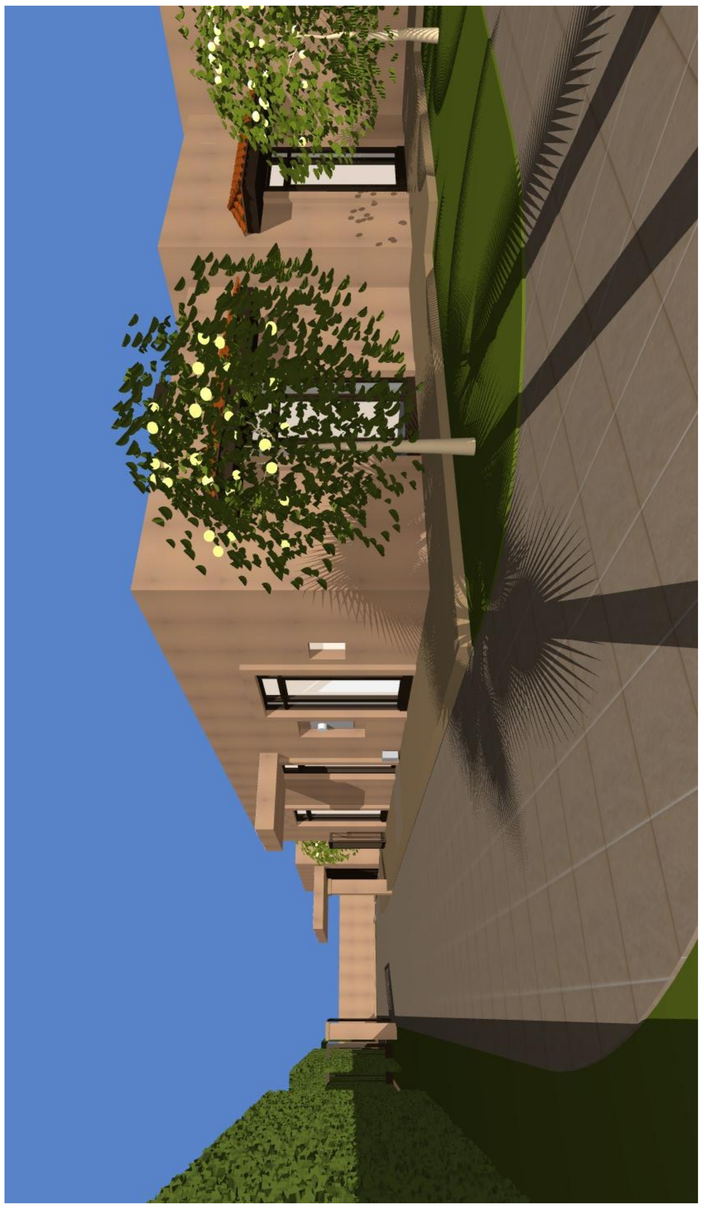
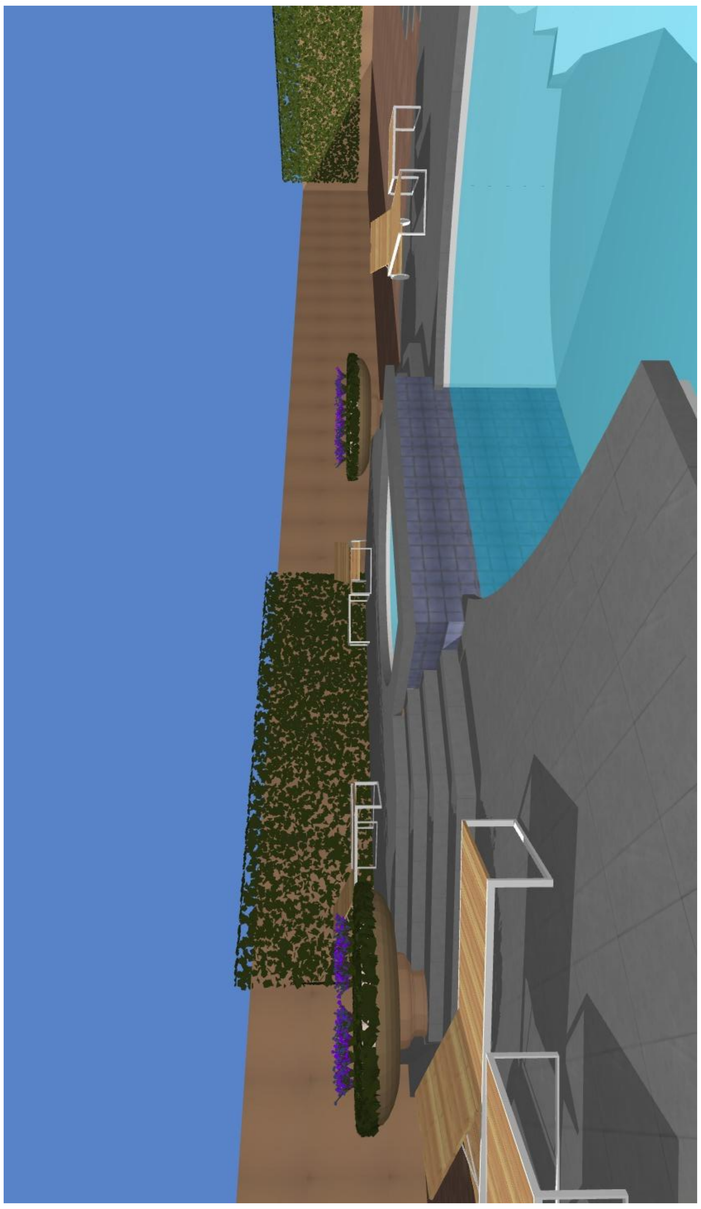
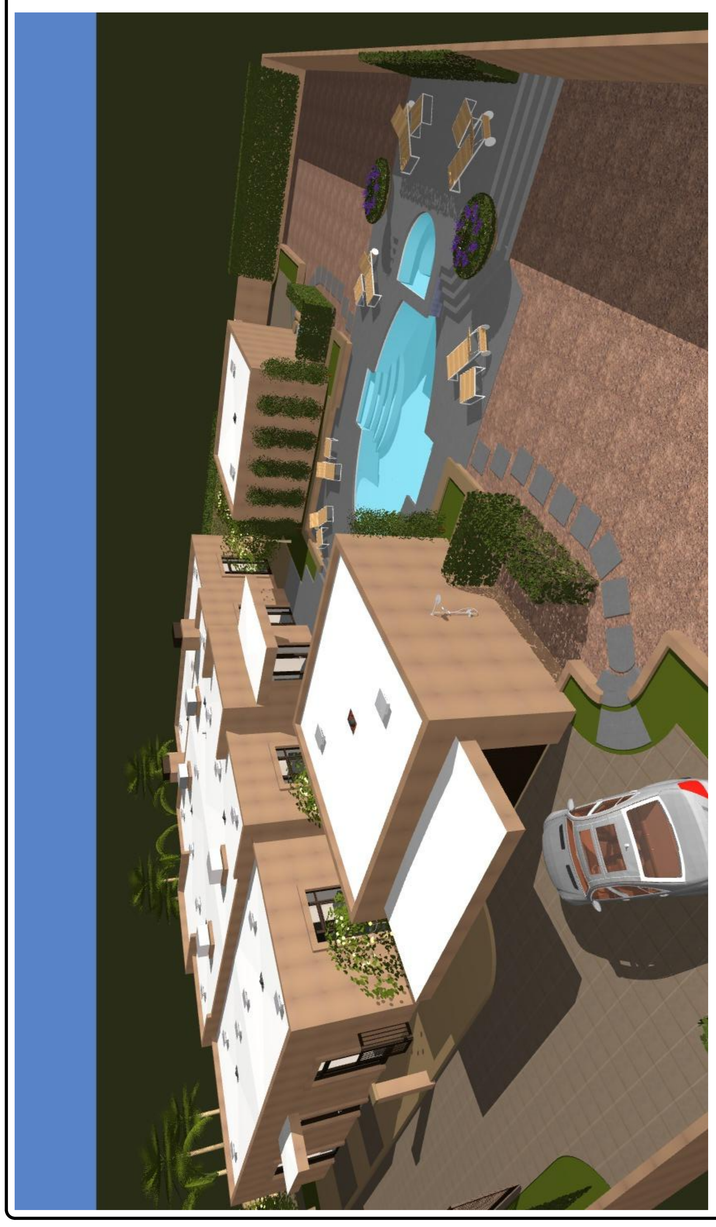
DATE: 6/28/2026	
SCALE: 1/4" = 1'-0"	
JOB NO. 081115	
SHEET NO. **A7.5**	OF 24 SHEETS







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RENDERINGS 6

A CUSTOM RESIDENCE FOR:
Torchia
Palm Springs, California

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SHEET NO.	A7.6

NO.	DESCRIPTION	DATE
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RENDERINGS 7

A CUSTOM RESIDENCE FOR:
Torchia
Palm Springs, California

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SCALE	1/4" = 1'-0"
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SHEET NO.	A7.7

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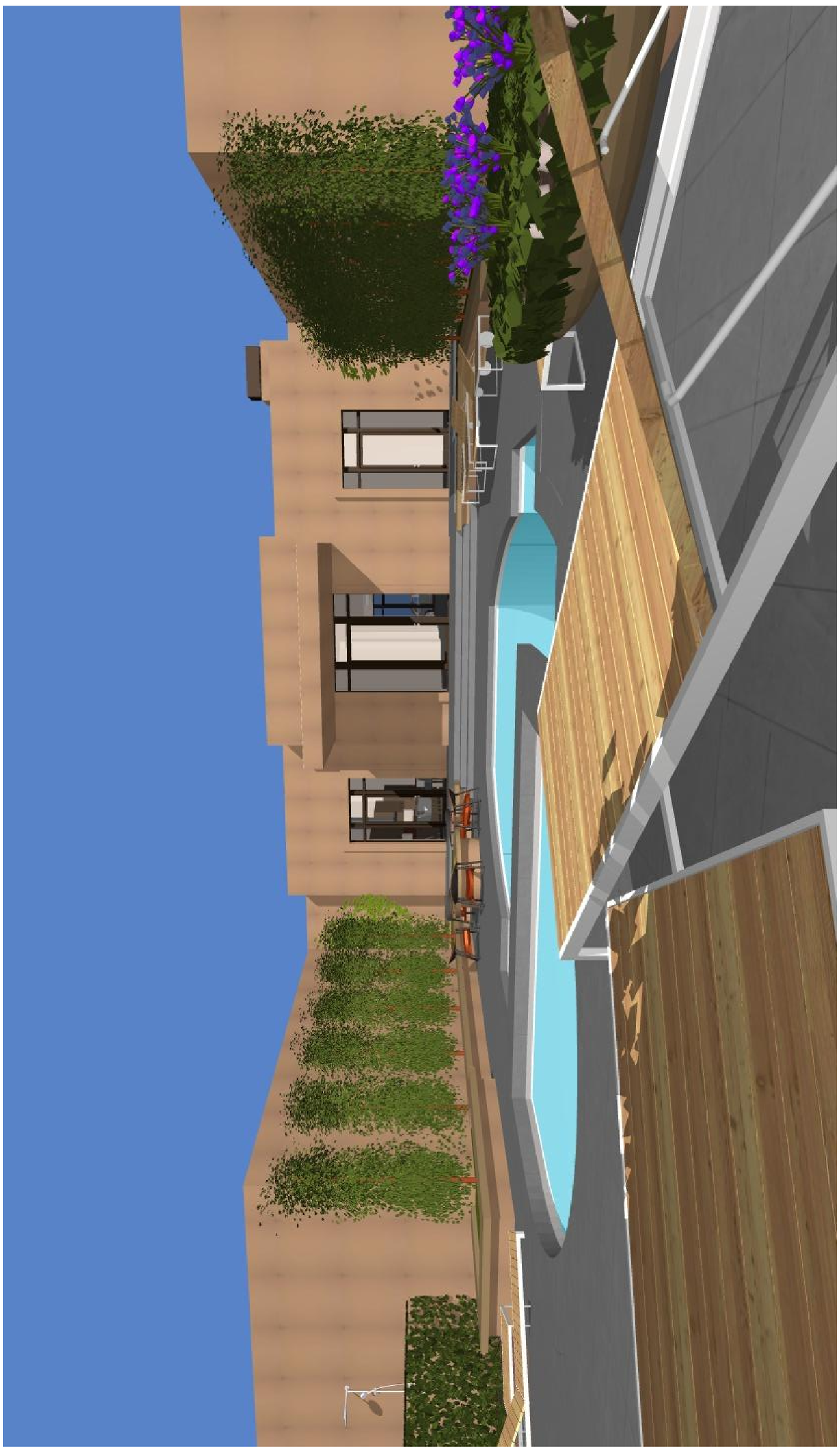
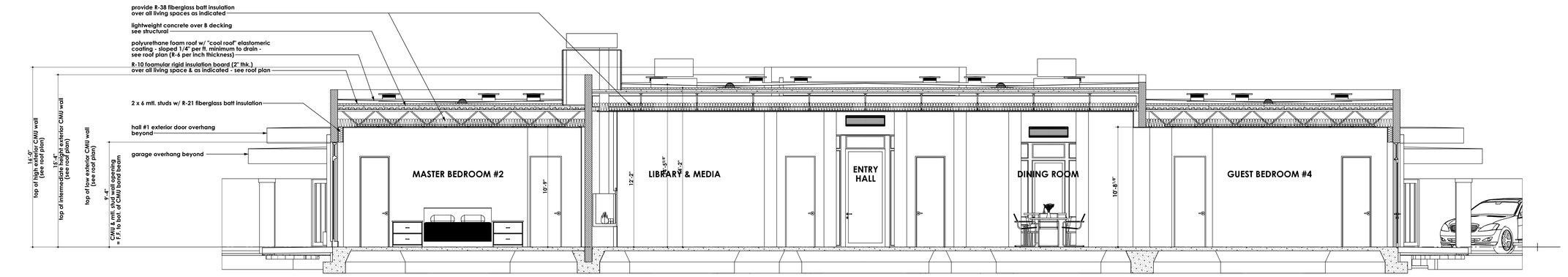
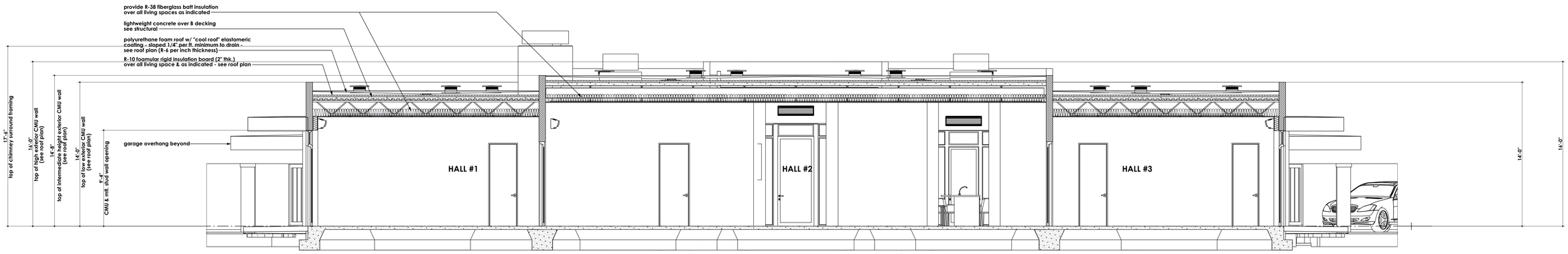


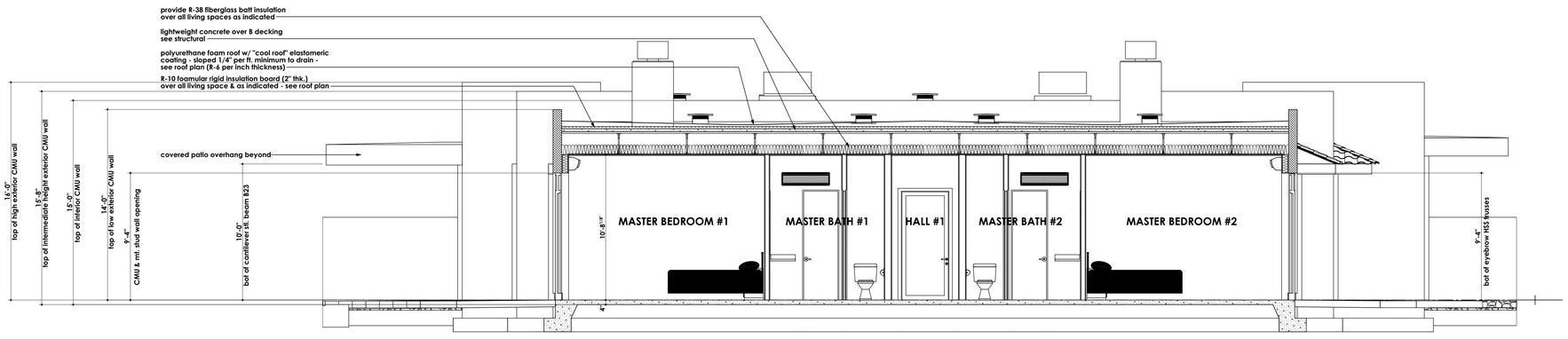


BUILDING SECTION A/A8.0



BUILDING SECTION B/A8.0

BUILDING SECTION C/A8.0



BUILDING SECTION D/A8.0

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44550 Pierson Blvd., SPC.146
Palm Desert, California 92260
Phone: (760) 391-2748
Email: info@jonathanpelezzaredesign.com

BUILDING SECTIONS A THRU D

UPDATED TO 2019 CODES

A CUSTOM RESIDENCE FOR:
Torchia
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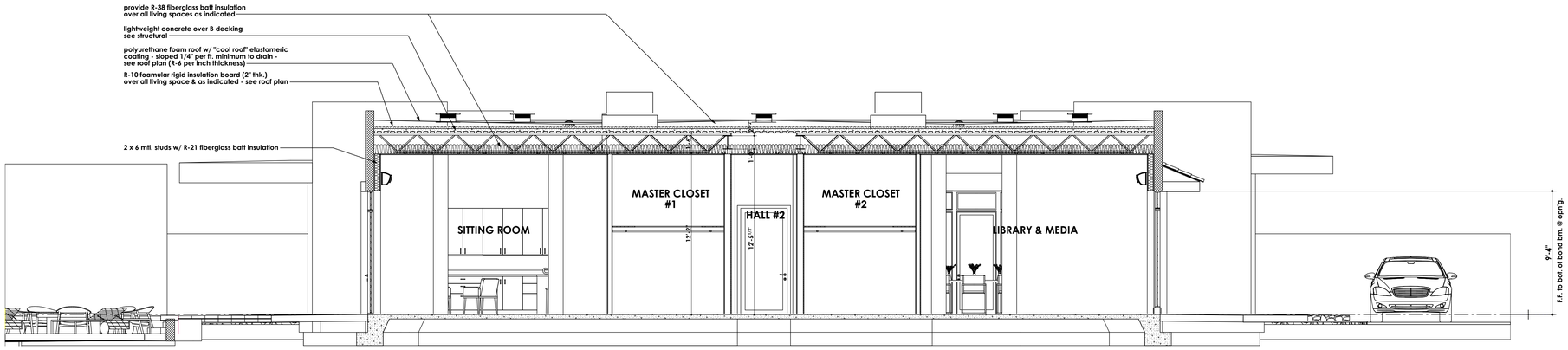

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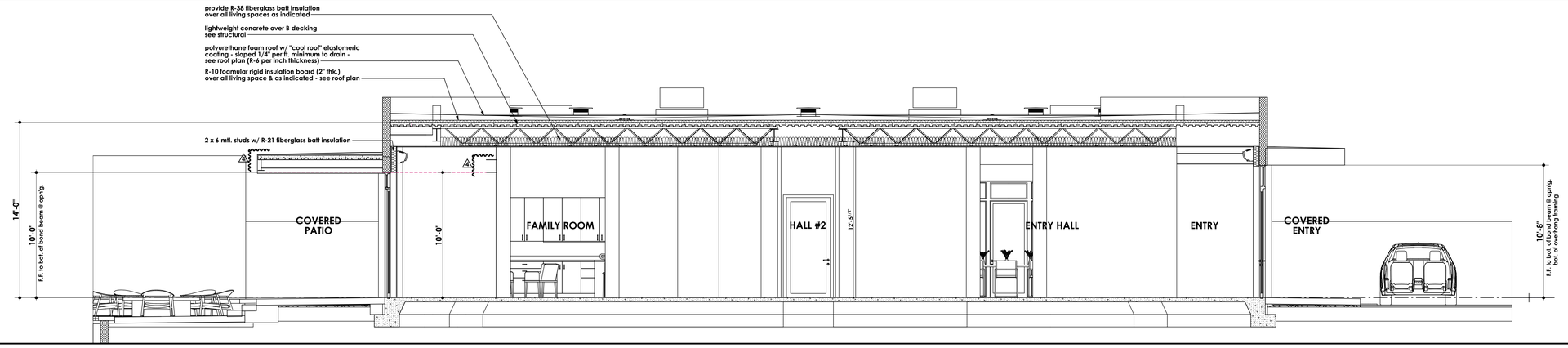
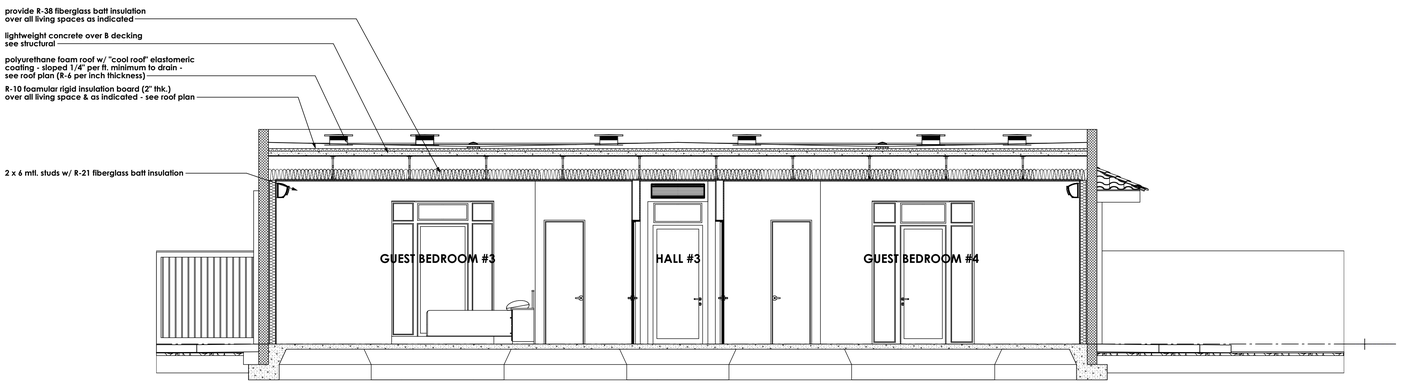


BUILDING SECTION F/A8.1

BUILDING SECTION G/A8.1



BUILDING SECTION H/A8.1

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BUILDING SECTIONS E THRU H

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A CUSTOM RESIDENCE FOR:
Torchia
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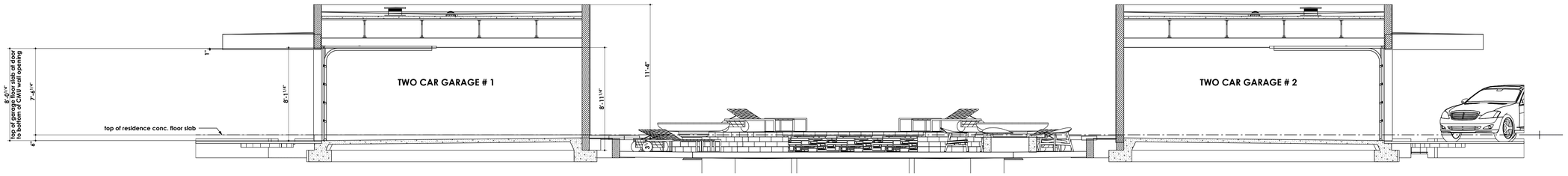
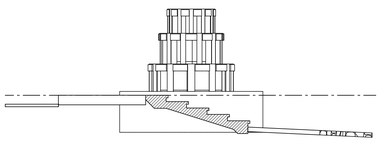
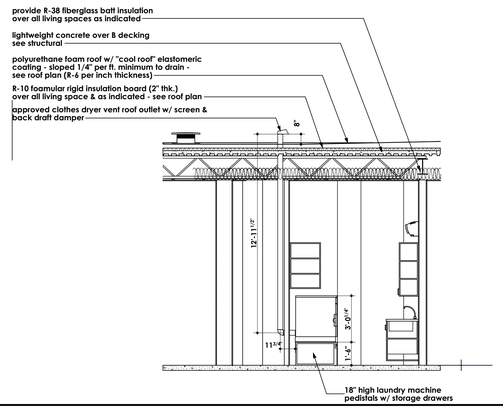


BUILDING SECTION J/A8.2

BUILDING SECTION K/A8.2



BUILDING SECTION L/A8.2



BUILDING SECTION M/A8.2 (dryer vent thru roof detail)

BUILDING SECTION M/A8.2

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BUILDING SECTIONS J THRU M

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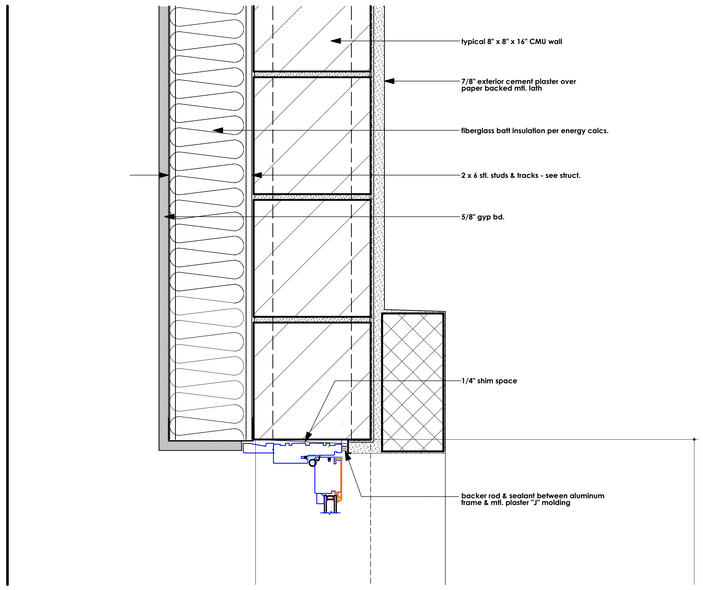
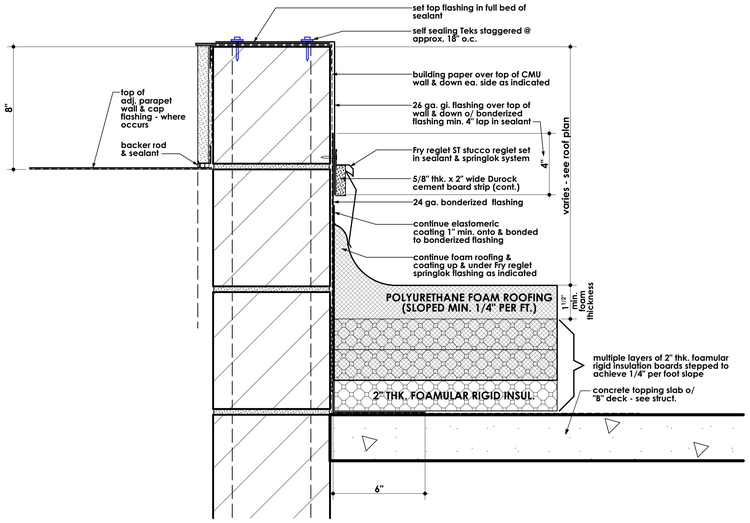
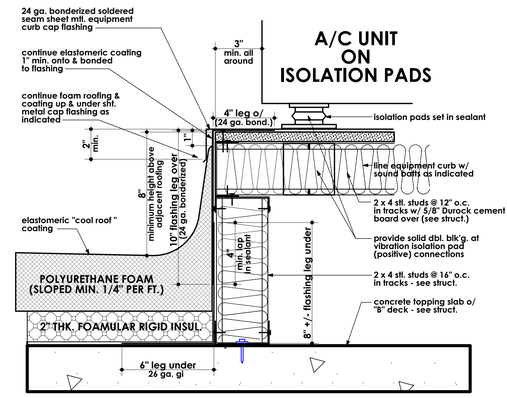


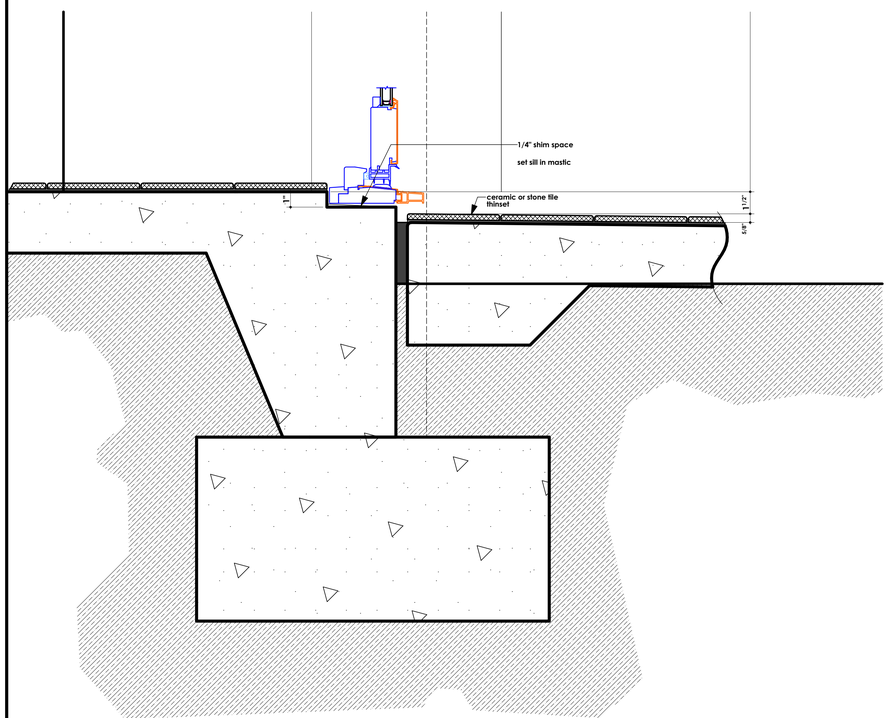
TYPICAL HEAD DETAIL AT UNCOVERED OPENINGS **3" = 1'-0"**



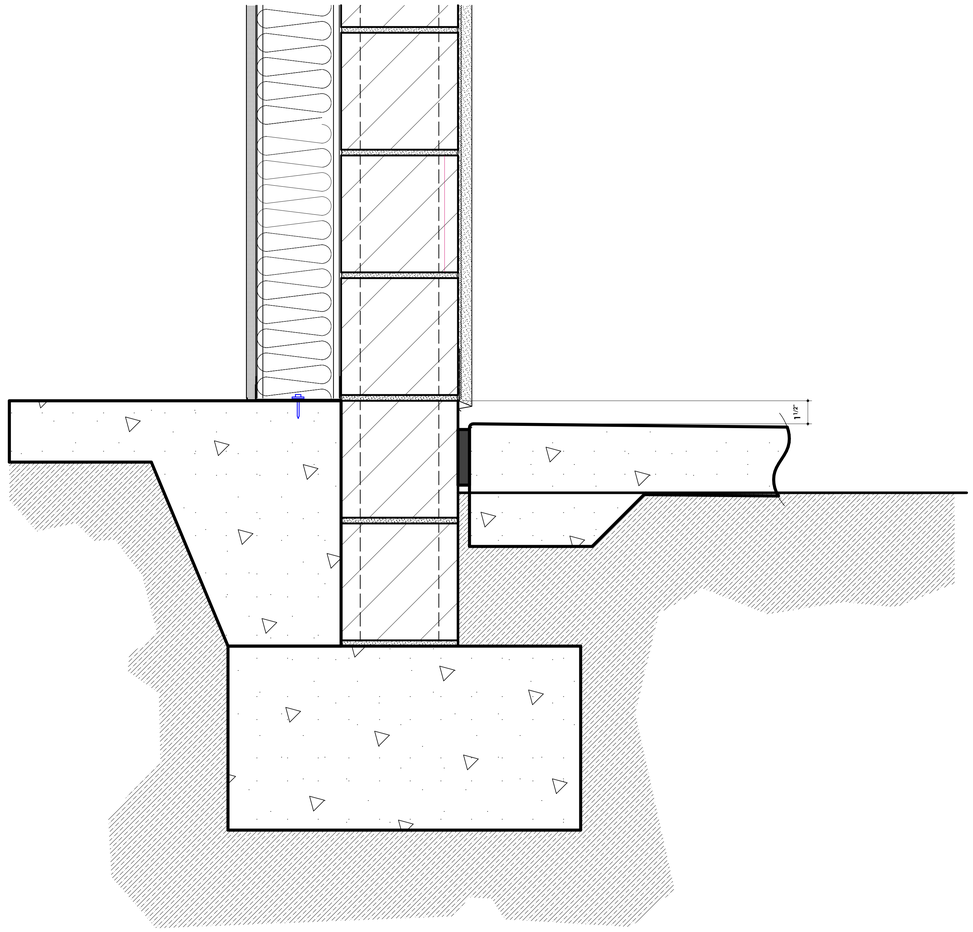
HIGH TO MEDIUM HEIGHT PARAPET DETAIL **3" = 1'-0"**



MECHANICAL PAD **3" = 1'-0"**



TYPICAL OUTSWING TERRACE DOOR **3" = 1'-0"**



TYPICAL EXTERIOR WALL TO WALKWAY SLAB **3" = 1'-0"**

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ARCHITECTURAL DETAILS

UPDATED TO 2019 CODES

A CUSTOM RESIDENCE FOR:
Torchia
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UPDATED TO 2019 CODES

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1/4" = 1'-0" (UNO)
JOB #
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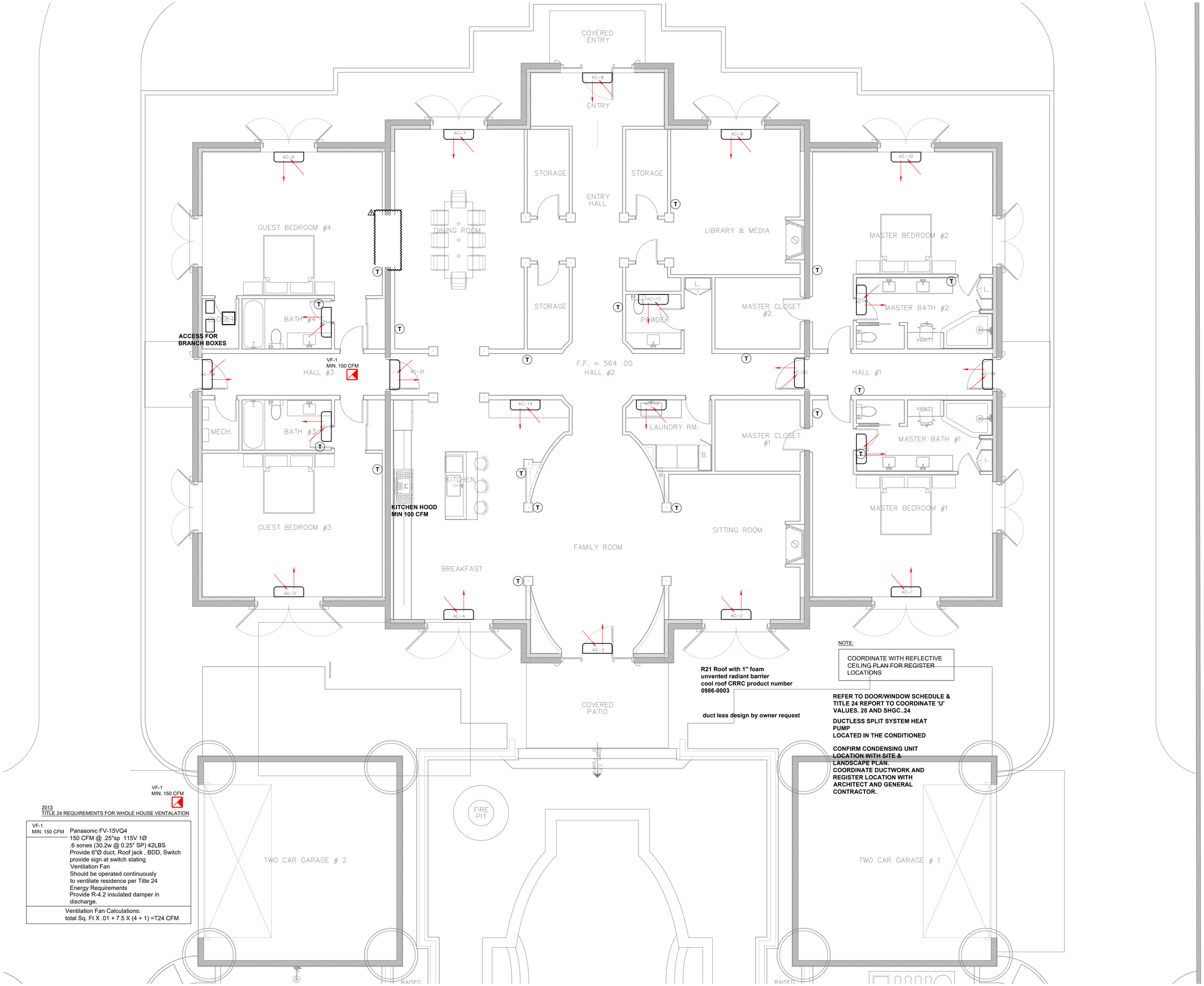

VF-1
MIN. 150 CFM

2013
TITLE 24 REQUIREMENTS FOR WHOLE HOUSE VENTALATION

VF-1 MIN. 150 CFM	Panasonic FV-15VQ4 150 CFM @ .25"sp 115V 1Ø .6 sones (30.2w @ 0.25" SP) 42LBS Provide 6"Ø duct, Roof jack , BDD, Switch provide sign at switch stating Ventilation Fan Should be operated continuously to ventilate residence per Title 24 Energy Requirements Provide R-4.2 insulated damper in discharge.
	Ventilation Fan Calculations: total Sq. Ft X .01 + 7.5 X (4 + 1) =T24 CFM

TORCHIA

PALM SPRINGS CA 92262
JONATHAN PELEZZARE
(760) 391-2748

HVAC DESIGN AND LAYOUT

12-19-17

1 BRS1800639A 5-16-18

Scott
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5-19-17

Project Name and Address

TORCHIA

PALM SPRINGS, CA 92262

Project TORCHIA	Sheet HVAC LAYOUT
Date 4-5-2022	M1.0
Scale 1/4"=1'0"	

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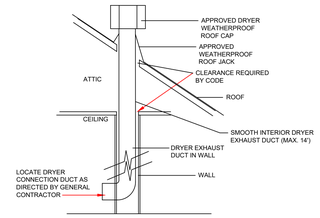
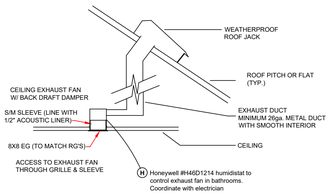
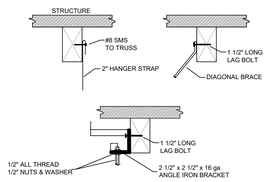


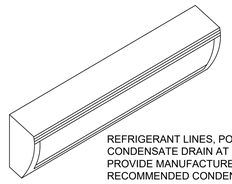
DRYER VENT UP THROUGH ROOF NTS



BATH EXHAUST FAN THRU ROOF NTS



CONNECTIONS TO STRUCTURE NTS

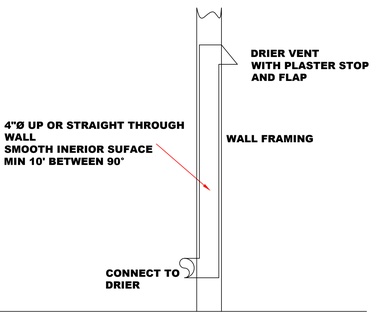


REFRIGERANT LINES, POWER & CONDENSATE DRAIN AT REAR OF UNIT. PROVIDE MANUFACTURER'S RECOMMENDED CONDENSATE PUMP IF REQUIRED.

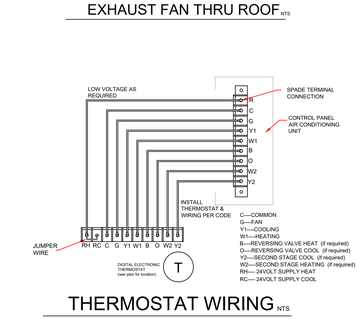
WALL MOUNTED INDOOR UNIT NTS

(TYP.)

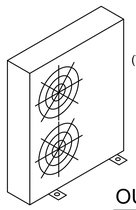
BRANCH BOX NTS



DRIER VENT DETAIL nts



THERMOSTAT WIRING NTS



(TYP.)

PROVIDE SERVICE ACCESS 18" MIN CLEAR 36" IN THE CLEAR ON SERVICE SIDE OF CONDENSING UNIT

OUTDOOR CONDENSING UNIT NTS

EXHAUST FAN THRU ROOF NTS

ALL EQUIPMENT EQUAL TO OR GREATER THAN

FUJITSU EQUIPMENT	1-21
INDOOR UNIT	ASO12RLS1
BTUH OUT (heat)	13600
HSPF	9.6
HP @ 115V- 1PH	.23 FLA .50 FLA INDOOR OUTDOOR
C.F.M.	940
BTUH OUT (cool)	3400_13300
CONDENCING	AQO48RLXFZ1
MCA @ 208/230V- 1PH	33.0
SEER	15.4
LBS.	87IN 278OUT
REFRIGERANT	R410A
THERMOSTAT	W/UNIT
BRANCH BOX	UTPPU03A UTPPU03B UTPSX248A

HVAC NOTES:

- Verify at the job site the exact location of the structural members such as beams, columns, etc., prior to location equipment, ductwork and grilles. Coordinate with related contractors prior to installation.
- Verify all dimmensions at job site prior to fabrication and installation of material.
- The drawings are diagrammatic and do not release the contractor from the responsibility of installing the HVAC systems per code requirements, free from defects and in excellent working condition. Installation shall be done by skilled workman, trained for the work performed.
- Establish with Architect's approval final location of all equipment, ductwork, etc. Units shall be installed in equipment area as indicated on the plans. Coordinate with general contractor.
- Equipment shall be installed per code requirements and per manufacturer's recommendations.
- Duct sizes are net inside dimensions. Increase duct size where internal duct insulation is required.
- All work shall conform to the state and local code requirements.
- All thermostats shall be electronic programmable type 7 day. Install low voltage wiring as required.
- Locate thermostats per code and as directed by the architect for best system efficiency.
- The HVAC contractor shall provide refrigerant piping and low voltage wiring as required for each remote system. Pipe sizing and install shal be per manufacturer's recommendations.
- Seal all ductwork as required to comply with Title 24 requirements. The ductwork shall be installed per manufacturer's recommendations.
- Flex ductwork and fasteners shall be U.L. 181 approved and be installed without shape bends or crimps to meet code requirements. 'R' value is indicated by the Title 24 Energy Calculations. Use minimum 2" wide hanger material. (602.3)
- Only approved material meeting the requirements of U.L. 181 shall be installed within ducts or plenum. (605.3)
- Duct liner shall be fastened with both approved adhesive and mechanical fasteners, exposed edges shall be treated as not to cause deterioration of the liner. (605.0)
- External duct insulation shall be labeled with manufacturer's name, the 'R' value, the flame spread index and the smoke development index. (604.4)
- Metal fittings plenums and boxes shall be sealed and insulated properly.
- Ductwork shall be constructed in accordance with the chapter 6 of the CMC or applicable SMACNA standards.
- All mechanical equipment shall operate free of any objectionable noise or vibration.
- Duct joints shall be sealed with material to meet Title 24 requirements and current building codes.
- Registers and grills shall be Metal-Aire series 2000 (or equal). Suppies shall have OBD.
- The equipment installed outside the building shall be listed for outdoor installations or be approved weatherproof enclosure per CMC.
- Upon completion of the project, the mechanical contractor shall balance the air flow at each register and grille, test operation of the equipment and install new filters.
- Coordinate location of the condensate drain with plumbing contractor. Pipe primary condensate to an approved receptacle. (309.3 & 1105.10)
- Coordinate high voltage wiring with the electrical contractor. The electrical contractor shall provide line voltage wiring, high and low voltage conduit, disconnect switches, fuses, etc. for HVAC equipment.
- The general contractor shall provide framing required for the installation of the HVAC system. It is the responsibility of the mechanical contractor to lay out the openings, platforms, curbs, etc. for the framer.
- When more then one HVAC unit is installed in a building, each unit shall be permanently labeled to indicate the area or space served by each unit (CMC 304.5)
- Equipment in a fixed position shall be securely fastened in place. (303.4)
- Disconnect switches shall be provided for all HVAC units (CMC 308). Show required working clearance to disconnect per (CEC 110-26a) (see electrical drawings).
- All HVAC equipment shall be approved prior to installation by nationally recognized standards and evidenced by the listing and labeling of an approved agency (CMC 302.1).
- Provide service receptacle within 25' for service and maintenance (CMC 308).
- Balance the HVAC systems to the air quantities as indicated on the plans and per owner's satisfaction.
- Thermostatic expansion valve and system efficiency check are required on this project and must be inspected by a third party. (as required by the Title 24 Energy calculations)
- Ducts used for kitchen range ventilation shall be metal and have a smooth interior.
- Dryer exhaust ducts, not less than 4"Ø, shall have a smooth interior surface, and shall terminate outside the building (CMC 504.1, 504.3.2, 504.3.2.1). Dryer ducts shall not exceed a total of combined horizontal and veritical length of 14', including two 90 degree elbows. Two feet shall be deducted for each 90 degree elbow in exess of two (CMC 105.1). Provide a detail demonstrating compliance, otherwise, provide a design by a licenced engineer for consideration as an alternate method installation (CMC 105.1).
- Provide min. 30" clearance above range or cooktop to unprotected combustible material, or 24" clearance to metal ventilation hood or noncombustionible material (CMC 916.1B, 916.2(B)).
- Provide adequate high and low combustion air louvers for FAU,s (as required). Provide combustion air for water heater and fireplaces to the outside per manufacturer's recommendations and per code requirements.
- When more then one HVAC unit is installed in a building, each unit shall be permanently labeled to indicate the area or space served by each unit (CMC 304.5)
- The equipment installed outside the building shall be listed for outdoor installations or be in an approved weatherproof enclosure. (304.3)
- Insulation inspection and approval shall be done by an approved HERS tester (as required). The inspection shall coincide with insulation installation completion and prior to dry wallinstallation (as required by thr Title 24 Energy calculations).
- Duct leak testing must be performed by a third party certified to do such a test. (as required by the Title 24 Energy calculations)
- Exhaust fans shall be provided for all bathrooms, kitchen and utility rooms. The fans for the bathrooms and utility room shall be a minimum of 50 CFM @ .25" SP. the fan for the kitchen shall be a minimum of 100 CFM @ .25" SP. The maximum sone value will not be greater than 1.0. Vent all fans through roof to weatherproof jack, per code.
- Exhaust fans located in bath and shower areas shall be controlled by a humidistat. The humidistat shall be accessable.
- A ventilation fan shall be furnished per Title 24 energy code to run continuous. The capacity of the fan shall be calculated per Title 24. A sign should state that the fan should run continuously for proper residence ventilation.
- All ducts penetrating the wall or ceiling separating the dwelling unit from the garage shall be minimum 26 gauge sheet metal.
- Not more than one appliance shall be connected to a single vent unless calculations showing conformance to CMC Chapter 8 are first submitted to and approved by the Building and Safety Department.
- Mechanical equipment supported directly by the ground shall be isolated from the ground by a level concrete slab extending not less than 3 inches above the adjoining ground level (CMC 1106.2).
- Combustion air intake grilles shall have a corrosion resistant screen not smaller than 1/4" mesh (CMC 701.9(B)).
- Provide minimum 30" clearance above the range or cooktop to unprotected combustible material, or 24" clearance to metal ventilating hood (CMC 916.0(B), 916.2(B)).
- Provide refrigerant service ports with required locking type, tamper proof refrigerant caps (CMC 1106.3.1)
- At the time of rough installation or during storage on the construction site and until the final startup of the heating and air conditioning equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheetmetal or other material acceptable to the enforcement agency to reduce the amount of dust or debris which may collect in the system (CALGreen #4.504.1)
- Mechanical exhaust fans which exhaust directly from bathrooms shall be ENERGY STAR, ducted to terminate outside the building and unless functing as a component of a whole house ventilation system be controlled be a readily accessible humidistat. Humidistat shall maintain humidity between 50-80% RH (2016 CGBSC 4.507.1).
- Hating and air conditioning system design shall be sized, designed and have their equipment selected using the following method: (2019 CGBSC 4.507.2) -Heat loss and heat gain is established according to ACCA Manual J, ASHRAE handbooks or other equivalent design software or methods. -Duct systems are sized accoeding to ACCA 29-D Manual D, ASHRAE handbooks or other equivalent design software or methods. -Select heating and cooling equipment according to ACCA 36-SManual S or or equivalent design software or methods.
- HVAC installers shall be trained and certified. Approval by enforcement agency.

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TORCHIA

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HVAC NOTES AND DETAILS

12-19-17

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Project Name and Address

TORCHIA

PALM SPRINGS, CA 92262

Project	TORCHIA	Sheet	HVAC LAYOUT
Date	4-5-2022		M2.0
Scale	1/4"=1'0"		

GENERAL INFORMATION

01	Project Name	Torchia Res			
02	Run Title	Title 24 Analysis			
03	Project Location				
04	City	Palm Springs	05	Standards Version	2019
06	Zip code	92262	07	Software Version	EnergyPro 8.3
08	Climate Zone	15	09	Front Orientation (deg/ Cardinal)	270
10	Building Type	Single family	11	Number of Dwelling Units	1
12	Project Scope	NewConstruction	13	Number of Bedrooms	3
14	Addition Cond. Floor Area (ft²)	0	15	Number of Stories	1
16	Existing Cond. Floor Area (ft²)	n/a	17	Fenestration Average U factor	0.36
18	Total Cond. Floor Area (ft²)	5651	19	Glazing Percentage (%)	17.24%
20	ADU Bedroom Count	n/a	21	ADU Conditioned Floor Area	n/a
22	Is Natural Gas Available?	Yes			

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

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ENERGY DESIGN RATING

	Energy Design Ratings		Compliance Margins	
	Efficiency[1] (EDR)	Total[2] (EDR)	Efficiency[1] (EDR)	Total[2] (EDR)
Standard Design	42.8	22.2		
Proposed Design	39.2	18	3.6	4.2

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: 8.25 kWdc
- Proposed PV system downsized to 8.05 kWdc (a factor of 0.805) due to cap of 1 x proposed design electricity use

ENERGY USE SUMMARY

Energy Use (kTDV/ft² yr)	Standard Design	Proposed Design	Compliance Margin	Percent Improvement
Space Heating	3.68	6.14	-2.46	-66.8
Space Cooling	76.78	65.93	10.85	14.1
IAQ Ventilation	2.79	2.79	0	0
Water Heating	3.55	2.79	0.76	21.4
Self Utilization/Flexibility Credit	n/a	0	0	n/a
Compliance Energy Total	**86.8**	**77.65**	**9.15**	**10.5**

REQUIRED PV SYSTEMS - SIMPLIFIED

01	02	03	04	05	06	07	08	09	10	11	12
DC System Size (kWdc)	Exception	Module Type	Array Type	Power Electronics	CFI	Azimuth (deg)	Tilt Input	Array Angle (deg)	Tilt: (x in 12)	Inverter Eff. (%)	Annual Solar Access (%)
8.05	NA	Standard	Fixed	none	false	180	Degrees	22	4.85	96	100

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REQUIRED SPECIAL FEATURES

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

- Cool roof
- Insulation below roof deck
- Window overhangs and/or fins
- Central parallel piping

HERS FEATURE SUMMARY

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

Building-level Verifications:
- Quality insulation installation (QII)
- Indoor air quality ventilation
- High R-value Spray Foam Insulation

Cooling System Verifications:
- Verified Refrigerant Charge

Heating System Verifications:
- Verified heat pump rated heating capacity

HVAC Distribution System Verifications:
- -- None --

Domestic Hot Water System Verifications:
- -- None --

BUILDING - FEATURES INFORMATION

01	02	03	04	05	06	07
Project Name	Conditioned Floor Area (ft²)	Number of Dwelling Units	Number of Bedrooms	Number of Zones	Number of Ventilation Cooling Systems	Number of Water Heating Systems
Torchia Res	5651	1	3	1	0	1

ZONE INFORMATION

01	02	03	04	05	06	07
Zone Name	Zone Type	HVAC System Name	Zone Floor Area (ft²)	Avg. Ceiling Height	Water Heating System 1	Water Heating System 2
Torchia Residence	Conditioned	HVAC1	5651	9	DHW Sys 1	N/A

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OPAQUE SURFACES

01	02	03	04	05	06	07	08
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft²)	Window and Door Area (ft2)	Tilt (deg)
N Wall	Torchia Residence	R-23 Wall (W.23.2x6.14)	0	Left	1050	158	90
E Wall	Torchia Residence	R-23 Wall (W.23.2x6.14)	90	Back	1395	329.046	90
S Wall	Torchia Residence	R-23 Wall (W.23.2x6.14)	180	Right	1050	153.338	90
W Wall	Torchia Residence	R-21 Wall (W.21.2x6.16)	270	Front	1395	329.166	90
Interior Surface	Torchia Residence	R-13 Wall	n/a	n/a	258	0	n/a
Roof 2	Torchia Residence	R38R19unvented	n/a	n/a	5646.8	n/a	n/a

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 Rlfc (x in 12)	Roof Reflectance	Roof Emittance	Cool Roof
Roof	Torchia Residence	R38R19unvented1	270	Front	4.3	4.2	3	0.62	0.85	Yes

ATTIC

01	02	03	04	05	06	07	08
Name	Construction	Type	Roof Rise (x in 12)	Roof Reflectance	Roof Emittance	Radiant Barrier	Cool Roof
Attic Torchia Residence	Attic RoofTorchia Residence	Unventilated	3	0.62	0.85	No	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
45	Window	N Wall	Left	0			1	4	0.36	NFRC	0.24	NFRC	Bug Screen
4	Window	N Wall	Left	0			1	59	0.36	NFRC	0.24	NFRC	Bug Screen

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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
45 2	Window	N Wall	Left	0			1	4	0.36	NFRC	0.24	NFRC	Bug Screen
5	Window	N Wall	Left	0			1	32	0.36	NFRC	0.24	NFRC	Bug Screen
6	Window	N Wall	Left	0			1	59	0.36	NFRC	0.24	NFRC	Bug Screen
7	Window	E Wall	Back	90	6.7	8.8	1	59.02	0.36	NFRC	0.24	NFRC	Bug Screen
8	Window	E Wall	Back	90	6.7	9.3	0	62	0.36	NFRC	0.24	NFRC	Bug Screen
9	Window	E Wall	Back	90	8.7	10	1	87	0.36	NFRC	0.24	NFRC	Bug Screen
10	Window	E Wall	Back	90	6.7	9.3	1	62.31	0.36	NFRC	0.24	NFRC	Bug Screen
11	Window	E Wall	Back	90	6.7	8.8	1	59.02	0.36	NFRC	0.24	NFRC	Bug Screen
12	Window	S Wall	Right	180	6.7	8.8	1	59.02	0.36	NFRC	0.24	NFRC	Bug Screen
13	Window	S Wall	Right	180	3.4	9.5	0	32.01	0.36	NFRC	0.24	NFRC	Bug Screen
14	Window	S Wall	Right	180	6.7	9.3	1	62.31	0.36	NFRC	0.24	NFRC	Bug Screen
3	Window	W Wall	Front	270	6.7	8.8	1	59.02	0.36	NFRC	0.24	NFRC	Bug Screen
2	Window	W Wall	Front	270	6.7	8.8	1	59.02	0.36	NFRC	0.24	NFRC	Bug Screen
1	Window	W Wall	Front	270	8.7	10.7	1	93.09	0.36	NFRC	0.24	NFRC	Bug Screen
16	Window	W Wall	Front	270	6.7	8.8	1	59.02	0.36	NFRC	0.24	NFRC	Bug Screen
15	Window	W Wall	Front	270	6.7	8.8	1	59.02	0.36	NFRC	0.24	NFRC	Bug Screen
Skylight	Skylight	Roof	Front	270			1	1.4	0.3	NFRC	0.3	NFRC	None
Skylight 2	Skylight	Roof	Front	270			1	1.4	0.3	NFRC	0.3	NFRC	None
Skylight 3	Skylight	Roof	Front	270			1	1.4	0.3	NFRC	0.3	NFRC	None

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OVERHANGS AND FINS

01	02	03	04	05	06	07	08	09	10	11	12	13	14
Window	Overhang					Left Fin				Right Fin			
	Depth	Dist Up	Left Extent	Right Extent	Flap Ht.	Depth	Top Up	Dist L	Bot Up	Depth	Top Up	Dist R	Bot Up
7	6	0.1	6	6	0	0	0	0	0	0	0	0	0
8	6	0.1	6	6	0	0	0	0	0	0	0	0	0
9	6	0.1	6	6	0	0	0	0	0	0	0	0	0
10	6	0.1	6	6	0	0	0	0	0	0	0	0	0
11	6	0.1	6	6	0	0	0	0	0	0	0	0	0
12	8	0.1	8	8	0	0	0	0	0	0	0	0	0
13	8	0.1	8	8	0	0	0	0	0	0	0	0	0
14	6	0.1	6	6	0	0	0	0	0	0	0	0	0
3	8	0.1	8	8	0	0	0	0	0	0	0	0	0
2	8	0.1	8	8	0	0	0	0	0	0	0	0	0
1	8	0.1	8	8	0	0	0	0	0	0	0	0	0
16	8	0.1	8	8	0	0	0	0	0	0	0	0	0
15	8	0.1	8	8	0	0	0	0	0	0	0	0	0

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SLAB FLOORS

01	02	03	04	05	06	07	08
Name	Zone	Area (ft²)	Perimeter (ft)	Edge Insul. R-value and Depth	Edge Insul. R-value and Depth	Carpeted Fraction	Heated
Covered Slab	Torchia Residence	5651	300	none	0	80%	No

OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07	08
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Interior / Exterior Continuous R-value	U-factor	Assembly Layers
R-23 Wall (W.23.2x6.14)	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O. C.	R-23	None / None	0.066	Inside Finish: Gypsum Board Cavity / Frame: R-23 / 2x6 Exterior Finish: 3 Coat Stucco
R-21 Wall (W.21.2x6.16)	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
R38R19unvented1	Cathedral Ceilings	Wood Framed Ceiling	2x4 @ 16 in. O. C.	R-38	R-19 / None	0.019	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: R-38 / 2x4 Sheathing / Insulation: R-19 Sheathing Inside Finish: Gypsum Board
R-13 Wall	Interior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-13	None / None	0.092	Inside Finish: Gypsum Board Cavity / Frame: R-13 / 2x4 Other Side Finish: Gypsum Board
Attic RoofTorchia Residence	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-19	None / None	0.059	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: R-13.0 / 2x4 Around Roof Joists: R-6.0 insul.

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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
R38R19unvented	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 16 in. O. C.	R-38	None / None	0.025	Over Ceiling Joists: R-28.9 insul. Cavity / Frame: R-9.1 / 2x4 Inside Finish: Gypsum Board

BUILDING ENVELOPE - HERS VERIFICATION

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

WATER HEATING SYSTEMS

01	02	03	04	05	06	07
Name	System Type	Distribution Type	Water Heater Name (#)	Solar Heating System	Compact Distribution	HERS Verification
DHW Sys 1	Domestic Hot Water (DHW)	Parallel Piping	DHW Heater 1 (1)	n/a	None	n/a

WATER HEATERS

01	02	03	04	05	06	07	08	09	10	11	12
Name	Heating Element Type	Tank Type	# of 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	Gas	Consumer Instantaneous	1	0	0.98-UEF	<= 200 kBtu/hr	0	n/a	n/a	n/a	n/a

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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
DHW Sys 1 - 1/1	Not 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
HVAC1	Heat pump heating cooling	Heat Pump System 1	Heat Pump System 1	n/a	n/a	Setback	New	NA	21	21

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/CEER			
Heat Pump System 1	Ductless MiniSplit HP	21	9.6	7050	5500	22	13.7	Zonally Controlled	Multi-speed	Heat Pump System 1-hers-htpump

HVAC HEAT PUMPS - HERS VERIFICATION

01	02	03	04	05	06	07	08	09
Name	Verified Airflow	Airflow Target	Verified EER	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	Yes	No	Yes	Yes

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TORCHIA

PALM SPRINGS CA 92262
JONATHAN PELEZZARE
(760) 391-2748

TITLE 24 ENERGY COMPLIANCE CALCULATIONS

12-19-17
1 BRS1800639A 5-16-18

Scott
Design and Title 24, Inc.
77-085 MICHIGAN DRIVE
PALM DESERT, CA 92211
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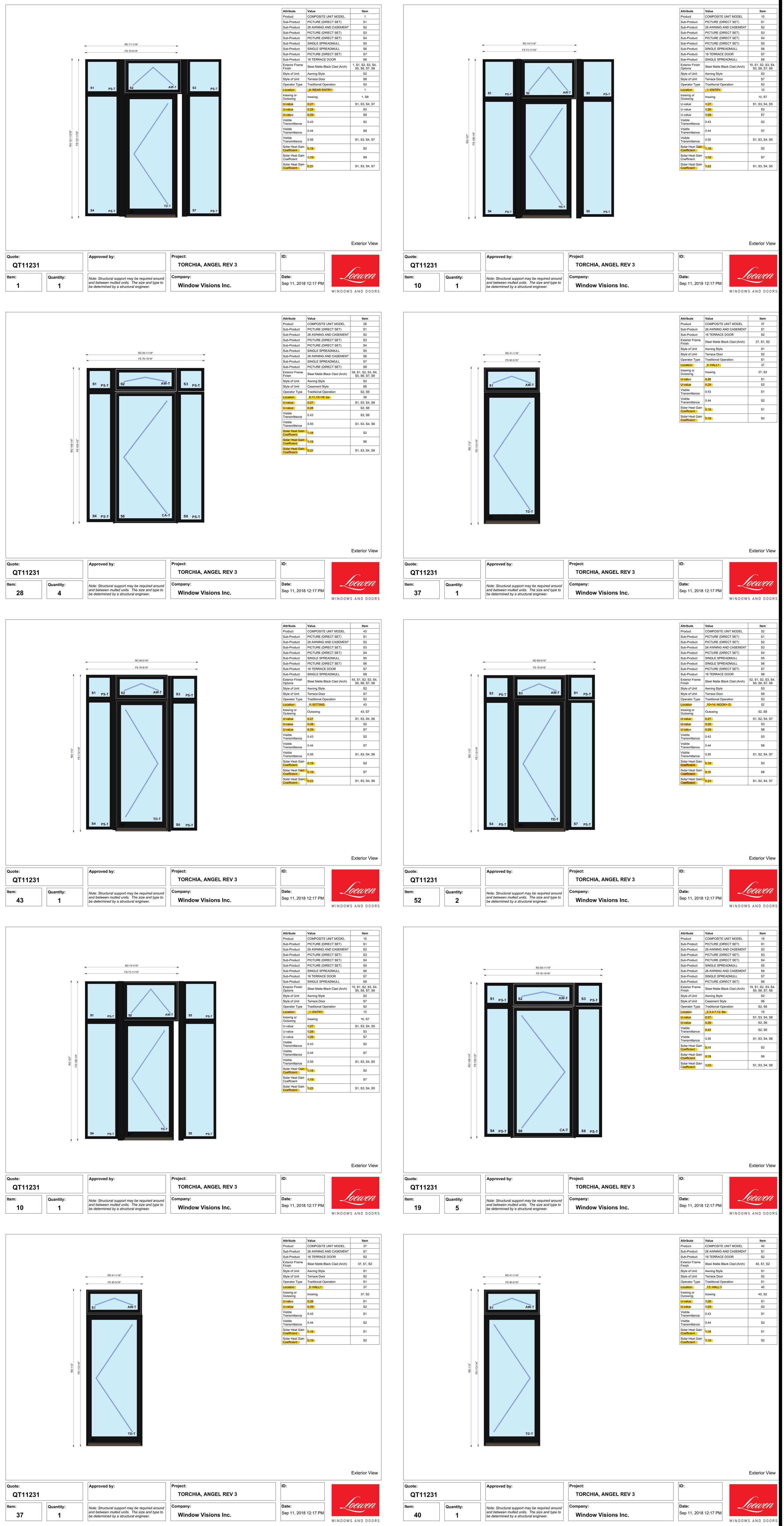
www.scottdesignandtitle24.com
5-19-17

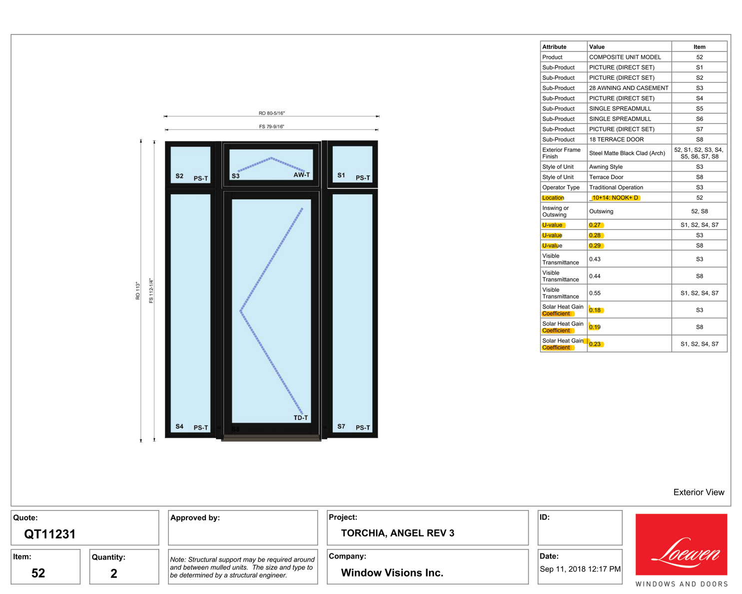
Project Name and Address

TORCHIA

PALM SPRINGS, CA 92262

Project TORCHIA
Date 4-7-22
Scale
Sheet M3.0





NOTE:
ALL "U" & "SHGC" VALUES OF ACTUAL UNITS
TO BE INSTALLED MEET OR EXCEED VALUES REQUIRED
BY THE ENERGY COMPLIANCE CALCULATIONS
SEE SHEET M3.0

CERTIFICATE OF COMPLIANCE CF1R-PRF-01E
Project Name: Torchia Res **Calculation Date/Time:** 2022-04-05T15:27:26-07:00 (Page 10 of 11)
Calculation Description: Title 24 Analysis **Input File Name:** Torchia update-Pelezzare-22.ribd19x

IAQ (INDOOR AIR QUALITY) FANS						
01	02	03	04	05	06	07
Dwelling Unit	IAQ CFM	IAQ Watts/CFM	IAQ Fan Type	IAQ Recovery Effectiveness - SRE	IAQ Recovery Effectiveness - ASRE	HERS Verification
SFam IAQVentRpt	191	0.35	Exhaust	n/a	n/a	Yes

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Registration Number: 422-P010048492A-000-000-0000000-0000 Registration Date/Time: 04/05/2022 15:30 HERS Provider: CHEERS
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CA Building Energy Efficiency Standards - 2019 Residential Compliance Report Version: 2019.2.000 Schema Version: rev 20200901 Report Generated: 2022-04-05 15:28:15

CERTIFICATE OF COMPLIANCE CF1R-PRF-01E
Project Name: Torchia Res **Calculation Date/Time:** 2022-04-05T15:27:26-07:00 (Page 11 of 11)
Calculation Description: Title 24 Analysis **Input File Name:** Torchia update-Pelezzare-22.ribd19x

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name: Jonathan Scott	Documentation Author Signature: Jonathan Scott
Company: Scott Design and Title 24, Inc.	Signature Date: 04/05/2022
Address: 74-818 Velie Way STE 8	CEA/ HERS Certification Identification (If applicable):
City/State/Zip: Palm desert, CA 92260	Phone: 7602004780

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: Jonathan Scott	Responsible Designer Signature: Jonathan Scott
Company: Scott Design and Title 24, Inc.	Date Signed: 04/05/2022
Address: 74-818 Velie Way STE 8	License:
City/State/Zip: Palm desert, CA 92260	Phone: 7602004780

Digitally signed by ConSol Home Energy Efficiency Rating System Services, Inc. (CHEERS). This digital signature is provided in order to secure the content of this registered document, and in no way implies Registration Provider responsibility for the accuracy of the information.

Registration Number: 422-P010048492A-000-000-0000000-0000 Registration Date/Time: 04/05/2022 15:30 HERS Provider: CHEERS
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RESIDENTIAL MEASURES SUMMARY — RMS-1

Project Name: Torchia Res | Building Type: ☑ Single Family ☐ Multi Family ☐ Addition Alone ☐ Existing+ Addition/Alteration | Date: 4/5/2022
Project Address | California Energy Climate Zone: CA Climate Zone 15 | Total Cond. Floor Area: 5,651 | Addition: n/a | # of Units: 1

INSULATION

Construction	Type	Cavity	Area (ft²)	Special Features	Status
Roof	Wood Framed Attic	R 38	5,647	Add=R-19.0 Cool Roof	New
Wall	Wood Framed	R 23	2,854		New
Wall	Wood Framed	R 20	1,066		New
Slab	Unheated Slab-on-Grade	- no insulation	5,651	Perim = 300'	New
Demising	Wood Framed	R 13	258		New

FENESTRATION Total Area: 974 Glazing Percentage: 17.2% New/Altered Average U-Factor: 0.36

Orientation	Area(ft²)	U-Fac	SHGC	Overhang	Sidefins	Exterior Shades	Status
Skylight	4.2	0.300	0.30	none	none	N/A	New
Left (N)	158.0	0.360	0.24	none	none	N/A	New
Rear (E)	329.3	0.360	0.24	6.0	none	N/A	New
Right (S)	91.0	0.360	0.24	8.0	none	N/A	New
Right (S)	62.3	0.360	0.24	6.0	none	N/A	New
Front (W)	329.1	0.360	0.24	8.0	none	N/A	New

HVAC SYSTEMS

Qty.	Heating	Min. Eff	Cooling	Min. Eff	Thermostat	Status
21	Split Heat Pump	9.60 HSPF	Split Heat Pump	22.0 SEER	Setback	New

HVAC DISTRIBUTION

Location	Heating	Cooling	Duct Location	Duct R-Value	Status
HVAC	Ductless / with Fan	Ductless	n/a	n/a	New

WATER HEATING

Qty.	Type	Gallons	Min. Eff	Distribution	Status
1	Small Instantaneous Gas	0	0.98	Parallel Piping	New

EnergyPro 8.3 by EnergySoft User Number: 6712 ID: Page 14 of 25

2019 Low-Rise Residential Mandatory Measures Summary

*NOTE: Low-rise residential buildings subject to the Energy Standards must comply with all applicable mandatory measures, regardless of the compliance approach used. Review the respective section for more information. *Exceptions may apply.* (01/2020)

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 § 10-111(a).
§ 110.6(b):	**Field fabricated exterior doors and fenestration products** must use U-factors and solar heat gain coefficient (SHGC) values from Tables 110.6-A, 110.6-B, or JA4.5 for exterior doors. They must be caulked and/or weather-stripped.*
§ 110.7:	**Air Leakage.** All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be caulked, gasketed, or weather stripped.
§ 110.8(a):	**Insulation Certification by Manufacturers.** Insulation must be certified by the Department of Consumer Affairs, Bureau of Household Goods and Services (BHGS).
§ 110.8(g):	**Insulation Requirements for Heated Slab Floors.** Heated slab floors must be insulated per the requirements of § 110.8(g).
§ 110.8(i):	**Roofing Products Solar Reflectance and Thermal Emittance.** The thermal emittance and aged solar reflectance values of the roofing material must meet the requirements of § 110.8(i) and be labeled per §10-113 when the installation of a cool roof is specified on the CF1R.
§ 110.8(j):	**Radiant Barrier.** When required, radiant barriers must have an emittance of 0.05 or less and be certified to the Department of Consumer Affairs.
§ 150.0(a):	**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. Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102. Masonry walls must meet Tables 150.1-A or B.*
§ 150.0(d):	**Raised-floor Insulation.** Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U-factor.*
§ 150.0(f):	**Slab Edge Insulation.** Slab edge insulation must meet all of the following: have a water absorption rate, for the insulation material alone without facings, no greater than 0.3 percent; have a water vapor permeance no greater than 2.0 perm per inch; be protected from physical damage and UV light deterioration; and, when installed as part of a heated slab floor, meet the requirements of § 110.8(g).
§ 150.0(g)1:	**Vapor Retarder.** In climate zones 1 through 16, the earth floor of unvented crawl space must be covered with a Class I or Class II vapor retarder. This requirement also applies to controlled ventilation crawl space for buildings complying with the exception to § 150.0(d).
§ 150.0(g)2:	**Vapor Retarder.** In climate zones 14 and 16, a Class I or Class II vapor retarder must be installed on the conditioned space side of all insulation in all exterior walls, vented attics, and unvented attics with air-permeable insulation.
§ 150.0(q):	**Fenestration Products.** Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a maximum U-factor of 0.58; 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 California 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 (except appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu per hour); and pool and spa heaters.*
§ 150.0(h)1:	**Building Cooling and Heating Loads.** Heating and/or cooling loads are calculated in accordance with the ASHRAE Handbook, Equipment Volume, Applications Volume, and Fundamentals Volume; the SMACNA Residential Comfort System Installation Standards Manual; or the ACCA Manual J using design conditions specified in § 150.0(h)2.

2019 Low-Rise Residential Mandatory Measures Summary

§ 150.0(h)3A:	**Clearances.** Air conditioner and heat pump outdoor condensing units must have a clearance of at least five feet from the outlet of any dryer
§ 150.0(h)3B:	**Liquid Line Drier.** Air conditioners and heat pump systems must be equipped with liquid line filter driers if required, as specified by the manufacturer's instructions.
§ 150.0(j)1:	**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 one inch or a minimum insulation R-value of 7.7: the first five 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 one 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 connected to the electric panel with a 120/240 volt 3 conductor, 10 AWG copper branch circuit, within three feet of 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 two 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 § 604.0 of the California Mechanical Code (CMC). If a contractor installs the insulation, the contractor must certify to the customer, in writing, that the insulation meets this requirement.
§ 150.0(m)1:	**CMC Compliance.** All air-distribution system ducts and plenums must meet the requirements of the CMC §§ 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 two inch depth or can be one 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.*

2019 Low-Rise Residential Mandatory Measures Summary

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 percent 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. A kitchen range hood 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 five 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.

2019 Low-Rise Residential Mandatory Measures Summary

§ 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 § 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 § 150.0(k)3B or § 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 10 or more single family residences and where the application for a tentative subdivision map for the residences has been deemed complete and approved by the enforcement agency, which do not have a photovoltaic system installed, must comply with the requirements of § 110.10(b) 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".

TORCHIA

PALM SPRINGS CA 92262
JONATHAN PELEZZARE
(760) 391-2748

TITLE 24 ENERGY COMPLIANCE CALCULATIONS

12-19-17

1 BRS1800639A 5-16-18

Scott Design and Title 24, Inc.
77-085 MICHIGAN DRIVE
PALM DESERT, CA 92211
(760) 200-4780
www.scottdesignandtitle24.com
5-19-17

Project Name and Address

TORCHIA

PALM SPRINGS, CA 92262

Project	TORCHIA	Sheet
Date	4-7-22	M4.0
Scale		

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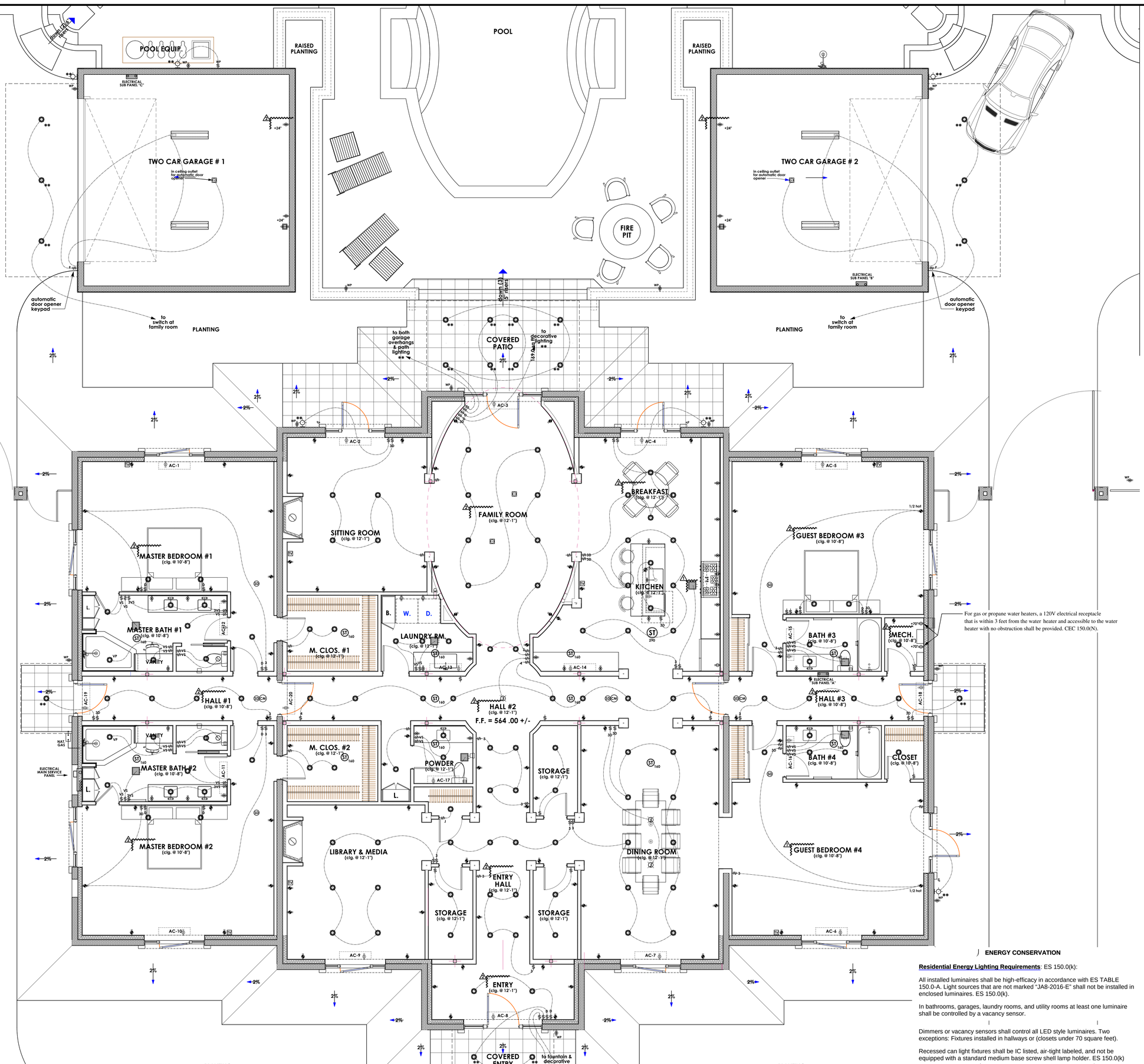
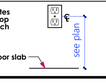


ELECTRICAL SYMBOLS

NOTE: all light fixtures (luminaires) are to be high efficacy. Either compact fluorescent luminaire as specified or its LED equal. (color, trim & finish to be selected by owner)

symbol	description
$	switch (single pole)
$^{3} & $^{4}	switch (multiple way)
$^{VS}	manual on occupancy sensor (30 minute) per title 24
$^{D}	dimmer switch
$^{P}	pilot light switch
$^{J}	door jamb light switch
	110v duplex convenience receptacle
	110v duplex convenience receptacle Ground-Fault Circuit - Interrupter
WP	waterproof convenience receptacle Ground-Fault Circuit - Interrupter
	duplex convenience receptacle Arc-Fault & tamper-resistant Circuit - Interrupter
	240v duplex receptacle - amperage as noted on plan
	Electric car charging station (Separate permit required prior to installation)
	recessed floor outlet U.N.O.
	110V electrical junction box - fixture to be selected by owner
	phone outlet
	one switch = suspended ceiling fan only (to be selected by owner)
	two switches = combination light & suspended ceiling fan (to be selected by owner)
	recessed mechanical exhaust fan (providing 5 air changes per hour (50 cfm min.) at bathrooms) - see sheet A2.2 Cal Green mandatory measures (4.506) & mechanical plans for more info. ***
	Air King model AK150DH recessed ceiling exhaust fan see sheet A2.1 for specification sheet (see M sheets for whole house fan & all fan outlet details) ***
	wall mounted light fixture to be selected by owner **
	HIGH EFFICACY recessed compact fluorescent fixture "CAPRI LIGHTING" MODEL & TRIM #CFRFIC62H26QDI-R6201 (52 watt, ICAT rated fixture) w/ electronic dimming ballast
	LOW EFFICACY (incandesent) recessed can down light "CAPRI LIGHTING" MODEL & TRIM #CR1-RB30 (ICAT rated fixture) Lamp Wattage IC (1) 90W Maximum Non IC (1) 150W Maximum
	recessed can down light (wall washer) HIGH OR LOW EFFICACY RESPECTIVE - SEE SYMBOLS ABOVE
$_{S}$	surface mounted light fixture (HIGH EFFICACY)
$_{VP}$	vapor proof recessed light fixture on separate class A ground-fault circuit interrupter (gfci)
$_{WP}$	Wet, or shower location rated recessed light fixture with gasketed etched glass lens & special shower rated trim ring - fixture to be on a separate dedicated class A ground-fault circuit interrupter (gfci)
GR11	12 volt © Pegasus Associates - Miniature MR11 Recessed Lighting Fixture with Gimbal Ring, PNM-245C (max lamp rating 35watt) FTF = 35 watt, 12 volts, MR11 Halogen Lamp, medium flood.
P	12 volt MR16 (35 watts max) pendant lighting to be selected by owner
GR16	12 volt MR16 (35 watts max) recessed gimbal ring lighting fixture to be selected by owner
VP	12 volt MR-16 (35 watt max.) "Arcadian" Nora lighting housing #NLR-405 damp or wet location shower trim # NL-422 (fixture housing to be kept 5" min. from insulation & 1/2" min. from framing) w/ (1) NET-60w (remote) electronic transformer per fixture transformers to be on separate class A ground-fault circuit interrupter (gfci)
14	high efficacy, electronic ballast, fluorescent strip lighting BRODWAX INC. (800 841-4666) T4 fluorescent strip Cove lighting (OR) "little inch light" equivalent
SG	Sea Gull LX Ambiance 12 volt strip light w/ 5 watt frosted xenon festoon bulbs @ 6" o.c.
	"ROBERTS" S-series 1.8W-24volt strip light @ interior where occurs - see plan "ROBERTS STEP-LITE SYSTEMS" RV-series @ exterior where occurs - see plan
LED	120v LED rope light (dimmable)
	track light fixture
	surface mounted multi-light bar
	surface mounted (ceiling) fluorescent fixture 2 lamp 35 watt each
OCF	"BRODWAX" SP 140 surface mounted fluorescent open channel fixture (1) 40 watt lamp per unit
	CAT 6 data connection
SP	security panel
	AC automatic disconnect
	main electrical service panel & meter - see electrical load calcs & single line diagram sheet E2
	indicates location of electrical sub panel - see electrical load calculations and single line diagram for more information - sht. E2
SD	110 v smoke detector w/ battery backup
CM	Carbon Monoxide Alarm - see electrical notes
	thermostat @ + 60"
TV	television cable outlet
ST	sola-tube skylight - model #160 or #290 as indicated on plan see sheet A2.1 for specifications & reports

NOTE: the subscript ('#') per an electrical symbol indicates a specific installation height (in inches) measured from top of concrete floor slab to the center line of the outlet, switch plate, or fixture mounting plate, etc.



For gas or propane water heaters, a 120V electrical receptacle that is within 3 feet from the water heater and accessible to the water heater with no obstruction shall be provided. CEC 150.0(N).

** SFD outdoor lighting fixtures that are attached to a building are required to be high efficacy, be manually on/off switch controlled, and have both motion sensor and photocell control. See ES 150.0(k) 3 for additional control options.

*** local ventilation exhaust is required in each bathroom, laundry/utility room & kitchen in the following capacities: 50 CFM in bathrooms, 100 CFM in kitchens, 50 CFM in laundry/utility rooms. Exhaust vents shall be SEPARATELY SWITCHED from the lighting. In addition, a whole building ventilation fan with the following requirements must be provided: 1.) Fan rated at less than one sone, 2.) Move the required amount of air from equation 4.1 at a minimum static pressure of 0.25 inches water column. 3.) Controlled by a standard on/off switch labeled to communicate the required function. 4.) Fan attached to the proper dia. & length of duct per equation 7.1. 5.) Equation 4.1: Qfan = 0.01 Afloor + 7.5 (Nbr + 1).

***Residential ventilation requirements: ES 150.0(o)/ASHRAE 62.2:

Kitchens require exhaust fans with a minimum 100 cfm ducted to the exterior. Detail compliance by including a complying exhaust fan or a ducted range hood to the exterior.

Bathrooms require exhaust fans (minimum 50 cfm) to be ducted to the exterior. *A bathroom is defined "as a room with a bathtub, shower, or spa or some similar source of moisture".*

Residential bathroom exhaust fans shall be energy star rated and shall be control by a humidistat capable of an adjustment between 50 and 80% humidity. CalGreen 4.506.1. Exception: Control by a humidistat *is not* required if the bathroom exhaust fan is also the dwelling whole house ventilation.

Mechanical whole house ventilation must be provided. Identify the fan providing the whole house ventilation (complete with CFM and Sone rating) on the floorplans:

a) *All fans installed to meet all of the preceding ventilation requirements must be specified at a noise rating of a maximum 1 "Sone" (continuous use) or 3 "Sone" (intermittent).*

ENERGY CONSERVATION

Residential Energy Lighting Requirements: ES 150.0(k):

All installed luminaires shall be high-efficacy in accordance with ES TABLE 150.0-A. Light sources that are not marked "JA8-2016-E" shall not be installed in enclosed luminaires. ES 150.0(k).

In bathrooms, garages, laundry rooms, and utility rooms at least one luminaire shall be controlled by a vacancy sensor.

Dimmers or vacancy sensors shall control all LED style luminaires. Two exceptions: Fixtures installed in hallways or (closets under 70 square feet).

Recessed can light fixtures shall be IC listed, air-tight labeled, and not be equipped with a standard medium base screw shell lamp holder. ES 150.0(k)

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REVISIONS
1 5/12/2022
2
3
4

RESIDENTIAL DESIGN BY:
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ELECTRICAL PLAN & SYMBOLS

A CUSTOM RESIDENCE FOR:
Torchia
Palm Springs, California

UPDATED TO 2019 CODES

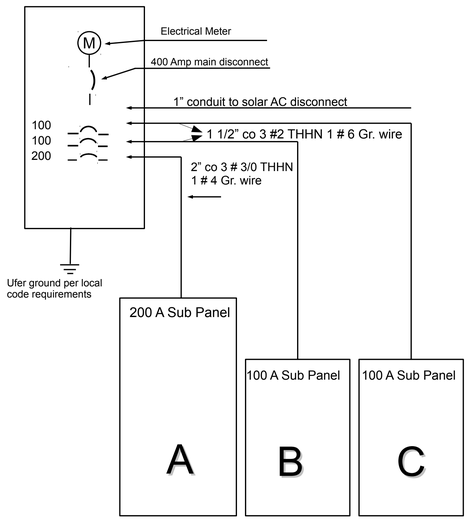
UPDATED TO 2019 CODES

DRAWN:
CHECKED:
PRINT DATE: 6/28/2026
SCALE: 1/4" = 1'-0" (UNO)
JOB NO. 081115
SHEET NO. E1
OF 55 SHEETS

A one-inch diameter electrical conduit shall be provided for installation of future solar PV energy systems on single family dwellings. The one-inch diameter electrical conduit shall extend from the exterior wall location adjacent to the main electrical service panel and terminate into the attic space. At each location, the conduit shall terminate at a two-gang, electric junction box. Three open spaces shall be provided at the bottom of the buss to accommodate future solar PV systems.

Where NM, NMC, NMS and other cables, conductors and wiring methods listed in Chapter 3 are installed in an attic that is exposed to outside temperatures, or in unconditioned spaces, the ambient temperature shall be considered to exceed 140°F.

SINGLE LINE DIAGRAMM FOR 400 A ELECTRICAL SERVICE



Electric Vehicle Charging. Note on the plans that electrical vehicle supply equipment (EVSE) is required in NEW one and two family dwellings and townhomes with attached garages. ***Show on the plans*** the location of the electrical vehicle supply equipment. The EVSE must consist of minimum 1" conduit extending from the main panel to a junction box where the EVSE receptacle will be provided. The main service panel must be sized to accommodate 208/240 Volt, 40 amp dedicated branch circuit. CGC 4.106.4.

SMOKE ALARMS

Smoke alarm locations shall comply with the following:
a) They shall be not less than 3' from the door opening of a bathroom.
b) They shall be at least 3' from supply registers of heating/cooling systems.

Smoke Alarms

i. Alterations, repairs and addition – When alterations, repairs, or additions requiring a permit occur or when one or more sleeping rooms are added or created in existing dwellings, the individual dwelling unit shall be equipped with smoke alarms located as required for new dwellings. *(CRC §R314.3.1)*

ii. Smoke alarms shall be installed in the following locations and to specific location requirements:

- **Locations *(CRC §R314.3):***
  1. *In each sleeping room.*
  2. *Outside each separate sleeping area in the immediate vicinity of the bedrooms.*
  3. *On each additional story of the dwelling, including basements and habitable attics.*
  4. *In dwellings with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided the lower level is less than one full story.*
- **Specific Location Requirements (*§R314.3 and 29.8.3.4*)**
  1. *Smoke alarms and Detectors shall not be located where ambient conditions, including humidity and temperature are outside the manufacturer's specifications.*
  2. *Smoke Alarms and Detectors shall not be located within an unfinished attic or garage, or other spaces where the temperature can fall below 40°F or exceed 100°F.*
  3. *Where the mounting surface could become considerably warmer or cooler than the room.*
  4. *Smoke Alarms and Detectors shall be installed a minimum of 20 feet horizontal distance from a permanently installed cooking appliance.*
  5. *Installation near bathrooms. Smoke Alarms shall be installed not less than 3 foot horizontal distance from the door or opening of a bathroom that contains a bathtub or shower unless this would prevent placement as required by other sections of the code.*
  6. *Smoke Alarms and Detectors shall not be installed within 36 inches horizontal path from the supply registers of a forced air heating or cooling system, and shall be installed outside the direct flow from those registers.*
  7. *Smoke Alarms and Detectors shall not be installed within 36 inches horizontal path from the tpoff the blade of a ceiling-suspended (Paddle) fan.*
  8. *Stairs leading to other occupancies, a Smoke Alarm and Detector shall be located so that smoke rising in a stairway cannot be prevented from reaching the smoke alarm or detector by intervening door or obstruction.*
  9. *For stairways leading up from a basement, smoke alarms or detectors shall be located on the basement ceiling near the entry to the stairs.*
  10. *For Tray-shaped ceilings (coffered), smoke alarms and detectors shall be installed on the highest portion or on the sloped portion within 12 inches vertically down from the highest point.*
  11. *Smoke alarms and detectors installed on rooms with joist and beams shall comply with NFPA 17.7.3.2.4.*
  12. *Heat alarms and detectors installed in rooms with joists and beams shall comply with NFPA 17.6.3.*

ii. **Power Sources** – Smoke Alarms shall receive their primary power from the building wiring provided that such wiring is served from a commercial source and shall be equipped with a battery back-up. *(CRC §R314.4)*

iii. **Interconnection –** Where more than one smoke is to be installed, the alarms shall be interconnected so the activation of one alarm will activate all the alarms in the individual dwelling unit. *(CRC §R314.5)*

iv. **Alteration/Additions** - For alterations, repairs or additions exceeding $1,000.00 in valuation show the location of all existing and required smoke alarms. *(CRC §R314.6.2)*

American Best
ElectrIcal ServIces
(760) 699-8707 (818) 631-3166
CA LIC.# 485368 americanbestelectric@gmail.com

Name: Torchia Date 05/03/2018
Address:
Palm Springs, CA

ELECTRICAL LOAD CALCULATION

Total building area 6,835.6 sq ft

1.	Lighting snd convenience outlets	6,835.6 x 3 watts/sq ft		20,507 VA
	First 3,000 VA @ 100%			3,000
	Remaining 17,507 VA @ 35%			6,127
2.	Two kitchen small appliance circuits	1,500 x 2		3,000
3.	Dishwasher	1,500		1,500
4.	Garbage disposer	980		980
5.	Laundry circuit	1,500		1,500
6.	Four A/C mini split condensers	7,920 x 4	@100%	31,680
7.	Two electric vehicle chargers	7,500 x 2		15,000
8.	Pool equipment	9,800		9,800
9.	Garage door openers	1,500 x 2		3,000
	Total			75,587 VA
	Total calculated load	75,587 VA @ 240 V 1 ph		328.6 Amp

Use 400 Amp Electrical Service

SMOKE ALARMS

Smoke Alarms

v. **Battery Operated** – Smoke Alarms are permitted to be solely battery operated in the following conditions: *(CRC §R314.4 – Power Source – Exceptions)*

1. *In buildings where no construction is taking place.*
2. *In building that are not served by a commercial power source.*
3. *In existing areas of buildings undergoing alterations do not result in the removal of interior wall or ceiling finishes unless there is an attic, basement or crawl space available for access.*
4. *Where repairs or alterations are limited to exterior surfaces of dwellings, such as roofing, siding, windows, doors, and decking.*
5. *When the work is limited to the installation, alteration, or repairs of the plumbing, mechanical, or electrical systems which do not result in the removal of interior wall or ceiling finishes.*

CARBON MONOXIDE ALARMS

Carbon Monoxide

i. Carbon monoxide alarms are required to installed in dwelling and sleeping units which fuel-burning appliances are installed and/or have an attached garage. The locations are: *(CRC §R315.1 and CRC §R315.1.4)*

1. *Outside of each separate dwelling unit sleeping area in the immediate vicinity of the bedroom(s).*
2. *On every level of a dwelling unit including basements.*

ii. **Power Source -** Carbon monoxide alarms shall receive their primary power from the building wiring provided that such wiring is served from a commercial source and shall be equipped with a battery back-up. *(CRC §R315.1.2)*

iii. **Interconnection -** Carbon monoxide alarms shall be interconnected so the activation of one alarm will activate all the alarms in the individual dwelling unit. *(CRC §R315.1.3)*

iv. **Alteration/Additions** - For alterations, repairs or additions exceeding $1,000.00 in valuation show the location of all existing and/or required carbon monoxide alarms. *(CRC §R315.2.2)*

v. Location – Carbon Monoxide shall be installed in the following locations: *(CRC §R315.1.4)*

1. *Outside of each separate dwelling unit sleeping area in the immediate vicinity of the bedroom(s).*
2. *On every level of a dwelling unit including basements.*

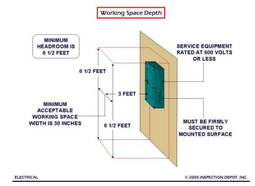
vi. **Battery Operated** – Carbon Monoxide Alarms are permitted to be the following conditions: *(CRC §R315.2.4)*

1. *In buildings where no commercial power supply – solely battery operated.*
2. *In existing areas dwelling units where repairs or alterations do not result in the removal of interior wall or ceiling finishes - Solely battery operated or "plug in" type with battery back-up.*
3. *Where repairs or alterations are limited to exterior surfaces of dwellings, such as roofing, siding, windows, doors, and decking - Solely battery operated or "plug in" type with battery back-up.*
4. *When the work is limited to the installation, alteration, or repairs of the plumbing, mechanical, or electrical systems which do not result in the removal of interior wall or ceiling finishes. Solely battery operated or "plug in" type with battery back-up.*

ELECTRICAL NOTES

Working Clearances

i. Demonstrate proper working clearances for all service panels, sub-panels, and equipment. See plan. *(CEC §110.26)*



Kitchens

i. **Kitchen Counters – Note on Plans**: Provide at least two 20-ampere small appliance branch circuits to serve all wall, floor, and countertop receptacles in kitchen, pantry, breakfast room, dining room, or similar area. Such circuits shall have no other outlets. *(CEC §210.11(C)(1) and 210.52(B)(1) through 210.52(B)(3))*

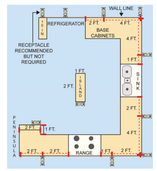
ii. Specify GFCI protection for receptacles serving the kitchen countertop. *(CEC §210.8(A)(6))*

ADDITIONAL ELECTRICAL REQUIREMENTS

GFCI required for *all* kitchen outlets
(including the dishwasher) and *all* laundry outlets. NEC 210.8(A)

AFCI protection required in kitchen and laundry.
NEC 210.12(A)

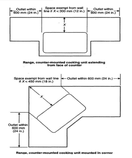
iii. Kitchen, pantries, breakfast rooms, dining rooms and similar areas of dwelling units, countertop receptacles shall comply with the following (CEC §210.52(C)(1) though (C)(5):



a) *Provide a receptacle outlet at each wall counter space 12 inches or wider. (CEC §210.52(C)(1))*

b) *Provide receptacle outlets at each wall counter so that no point along the wall line is more than 24 inches, measured horizontally from a receptacle outlet in that space. (CEC §210.52(C)(1)*

Exception: Receptacle outlets shall not be required on a wall directly behind a range, counter-mounted cooking unit, or sink. See Below:



c) *Provide at least one receptacle outlet at each island counter space with a long dimension of 24 inches or greater and a short dimension of 12 inches or greater. (CEC §210.52(C)(2))*

d) *Provide at least one receptacle outlet at each peninsular counter space with a long dimension of 24" or greater and a short dimension of 12" or greater. A peninsular countertop is measured from the connecting edge. (CEC §210.52 (C)(3))*

***Informational item**: Counter receptacle outlets shall be installed not more than 20 inches above, 12 inches below nor mounted more than 6 inches beyond its support base. Receptacle outlets rendered not readily accessible by appliances fastened in place or appliances occupying dedicated space shall not be considered as these required outlets.*

vi. Countertop – Separate Spaces. Countertops spaces separated by range tops, refrigerators, or sinks, shall be considered as separate counter spaces in applying §210.52(C) (1).

However, if a range, counter-mounted cooking unit, or sink is installed in an island or peninsular countertop and the depth of the countertop behind the range, counter-mounted cooking unit, or sink is less than 12 inches, the range, counter-mounted cooking unit, or sink shall be considered to divide the countertop space into two separate countertop spaces. Each separate countertop space shall comply with §210.52(C).

Bathrooms

i. Provide at least one 20-ampere branch circuit to serve bathroom receptacles. Such circuit(s) shall have no other outlets. *(CEC §210.11(C)(3), 210.52(D))*

Exception: Where the 20A circuit supplies a single bathroom, outlets for other equipment within the same bathroom shall be permitted to be supplied per §210.23(A) (1) and (A) (2).

ii. Provide at least one wall receptacle outlet to be installed within thirty-six (36) inches of the outside edge of each basin. *(CEC §210.52(D))*

(1) The receptacle(s) outlet(s) shall be located on the wall or partition that is adjacent to the basin, basin countertop, located on the countertop, or installed on the side or face of the basin cabinet not more than 12 inches below the countertop.

(2) Receptacles outlet assemblies listed for the application shall be permitted to be installed in the countertop.

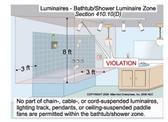
iii. Specify GFCI protection for receptacles in bathrooms. *(CEC §210.8(A)(1))*

iv. Receptacles shall not be installed within or directly over a bathtub or shower stall. *(CEC §406.9(C))*

v. Switches shall not be installed within wet locations in tub or shower spaces unless installed as part of a listed tub or shower assembly. *(CEC §404.4(C))*

ELECTRICAL NOTES

vi. **Bathtub and Shower Areas – Light Fixtures:** No part of a cord-conned, chain-, cable-, or cord suspended light fixture, lighting track, pendants, or ceiling-suspended, (paddle) fan shall be located within a zone measure 3 feet horizontally and 8 foot vertically from the top of the bathtub rim or shower stall threshold. *(CEC 410.10(D))*



vii. **Bathtub and Shower Light Fixtures** - Luminaires (light fixtures) located within the actual outside dimensions of the bathtub or shower enclosures shall be marked for damp locations, or marked for wet locations where subject to shower spray. *(CEC §410.10(D))*

viii. **Hydro-massage Bathtubs –** Hydro-massage bathtubs and their associated electrical components shall be require the following: *(CEC §680.71)*

(1) On an individual branch circuit(s) and protected by a readily accessible ground–fault circuit interrupter. (CEC §680.71)

(2) All 125v, single phase receptacles not exceeding 30A and located within 6 feet measured horizontally of the inside walls of the tub shall be protected by GFCI. (CEC §680.71)

(3) Light fixtures, switches, receptacles, and other electrical equipment located in the same room, and not directly associated with the tub shall be installed per Articles 1 through 4 in this Code covering the installation of equipment within a bathroom. (CEC §680.72)

(4) All Hydro-massage bathtub electrical equipment shall be accessible without damaging the building structure or building finish. Where the hydro-massage tub is a cord-and-plug connected with a supply receptacle accessible only through a service access opening, the receptacles shall be installed so that its face is within direct view and not more than 1 foot of the opening. (CEC §680.73)

(5) All metal piping systems and all grounded metal parts in contact with the circulating water shall be bonded together using a solid copper bonding jumper, insulated, covered, or bare, not smaller than 8AWG. (CEC §680.74)

ix. Provide U.L. or I.A.P.M.O. listing for hydro-massage bathtub.

Laundry

i. Provide at least one 20-ampere branch circuit to serve laundry appliances. Such circuit(s) shall have no other outlets. *(CEC §210.11(C)(3), 210.52(D))*

ii. Specify GFCI protection for receptacles serving laundry, utility, and wet bar sinks where the receptacle is located within 6 feet of the outside edge the sink. *(CEC §210.8(A)(7))*

iii. Appliance receptacle outlets installed in a dwelling unit for specific appliances, such as laundry equipment, shall be installed within 6 feet of the intended location. *(CEC § 210.50(C))*

iv. Provide at least one receptacle outlet for the laundry. *(CEC §210.52(F))*

Outdoors /Balcony

i. Provide at least one receptacle outlet accessible at grade level and not more than 6'-6" above grade at the front and back of the dwelling. *(CEC §210.52(E)(1))*

ii. Where a balcony, deck or porch is accessible from inside the dwelling; provide at least one weather proof GFI receptacle outlet installed within the perimeter of the balcony, deck, or porch. The receptacle shall not be located more than 6'-6" above the balcony, deck or porch surface. *(CEC §210.52(E)(3))*

iii. Specify GFCI protection for outdoor receptacles. *(CEC §210.8(A)(3))*

iv. Specify weather-proof "WP" protection @ receptacles installed in wet locations. *(CEC §406.9(B)(1))*

Informational item:

(1) A receptacle installed in a wet location, where the product intended to be plugged into it is not attended "while-in-use", shall have an enclosure that is weatherproof with the attachment plug cap inserted or removed. (CEC §406.9(B)(2)(a))

(2) A receptacle installed in a wet location where the product intended to be plugged into it will be attended while in use (e.g. portable tools) shall have an enclosure that is weatherproof when the attachment plug is removed. (CEC §406.9(B)(2)(b))

Overcurrent devices shall not be located in the vicinity of easily ignitable material such as in clothes closets, a bathroom or located over steps of a stairway. (CALIFORNIA ELECTRICAL CODE §240.24(D), (E) & (F)) See Plan for area(s) not in compliance.

Closets

i. Only Light fixtures of the following type shall be permitted in a closet *(CEC §410.16(A)*:

(1) Surfaced –mounted or recessed incandescent or LED fixtures.
(2) Surface-mounted or recessed fluorescent fixtures.
(3) Surface-mounted fluorescent or LED fixtures identified as suitable for closet storage space.

ii. Incandescent light fixtures with open or partially enclosed lamps, pendants, or lamp holders are not permitted within a closet. *(CEC §410.16(B))*

iii. Demonstrate clearances between luminaires (light fixtures) installed in clothes closets and the nearest point of storage space as follows: *(CEC §410.16(C))*

(1) Surface-mounted incandescent or LED fixtures with a completely enclosed light source installed on the wall above the door or on the ceiling.

(2) Surface-mounted fluorescent luminaires may be installed on the wall above the door or on the ceiling, provided there is a minimum clearance of 6 inches between the fixture and the nearest point of a storage space.

(3) Recessed incandescent or LED luminaires with a completely enclosed lamp may be installed in the wall or the ceiling, provided there is a minimum clearance of 6 inches between the fixture and the nearest point of a storage space.

(4) Recessed fluorescent luminaires may be installed in the wall or on the ceiling, provided there is a minimum clearance of 6 inches between the fixture and the nearest point of a storage space.

(5) Surface-mounted fluorescent or LED luminaires shall be permitted to be installed within the closet storage space where identified for this use.

Receptacles

i. Provide at least one receptacle outlet, in addition to any provided for laundry equipment, in the garage. *(CEC §210.52(F))*

ii. Specify GFCI protection for all receptacles within garage. *(CEC §210.8(A)(2))*

iii. **Tamper Resistant -** All 125-volt, 15- and 20- ampere receptacles shall be listed tamper-resistant receptacles in all areas specified in the California Electrical Code Section 210.52. *(CEC §406.12)*

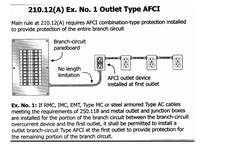
***Informational item:** Listed tamper-resistant 125-volt 15/20 amp receptacles are required in bedrooms, balconies, decks, porches, basements, bathrooms, breakfast rooms, countertop, dens, dining rooms, family rooms, garages, hallways, kitchens, laundry areas, libraries, living rooms, outdoors, pantries, parlors, recreation rooms, and sunrooms.*

ELECTRICAL NOTES

iv. **Arc-Fault -** Branch circuits that supply 125-volt, single phase, 15- and 20-ampere outlets installed in dwelling unit family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreation, closets, hallways, or similar rooms or areas shall be protected by an arc-fault circuit interrupter. *(CEC §210.12(A))*

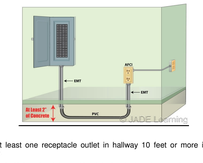
***Informational item**: This requires protection of the **entire** circuit, not just installed receptacles. Therefore, receptacles, lighting, fans, smoke alarms, et cetera located throughout a dwelling unit must be arc-fault protected as well. AFCI protection is not required in other areas such as kitchens, bathrooms, unfinished basements, garages and outdoors*

- ***Exception 1:** If RMC (Rigid Metal Conduit), EMT (Electrical Metal Tubing), Type MC (Metal Clad), or steel armored Type AC (Armor Clad) cables meeting the requirements of §250.118 and metal outlet and junction boxes are installed for the portion of the branch circuit between the branch-circuit overcurrent device and the first outlet, it shall be permitted to install an outlet branch-circuit type ACFI at the first outlet to provide protection for the remaining branch circuit.*



Ex. No. 1: If RMC, IMC, EMT, Type MC or steel armored Type AC cables meeting the requirements of 250.118 and metal outlet and junction boxes are installed for the portion of the branch circuit between the branch-circuit overcurrent device and the first outlet, it shall be permitted to install an outlet branch-circuit Type AFCI at the first outlet to provide protection for the remaining portion of the branch circuit.

- ***Exception 2** Where a listed metal or non-metallic conduit or tubing is encased in not less than 2 inches of concrete for the portion of the branch circuit between the branch-circuit overcurrent device and the first outlet, it shall be permitted to install an outlet branch-type AFCI at the first outlet to provide protection for the remaining portion of the branch circuit.*



v. Provide at least one receptacle outlet in hallway 10 feet or more in length. *(CEC §210.52(H))*

***Informational:** Hallway length is considered the length along the centerline of the hallway without passing through a doorway.*

*(1) **Foyers**: Foyers that are not part of a hallway in accordance with §210.52(H) and have an area that is greater than 60 square feet shall have a receptacle(s) located in each wall space 3 feet or more in width and unbroken by doorways, floor-to-ceiling windows, and similar openings.*

vi. **Required Receptacles** - Provide in every kitchen, family room, dining room, living room, parlor, library, den, sun room, bedroom, recreation room, or similar room or area of dwelling units, receptacle outlets so that: *(CEC §210.52(A)(1) and (2))*

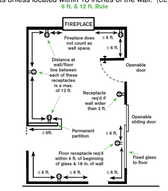
(1) No point measured along the floor line of any wall space is more than 6 feet from a receptacle outlet, and

(2) Any space 2 feet or more in width (Including space measured around corners) and unbroken along the floor line by doorways and similar openings, fireplaces, and fixed cabinets.

(3) The space occupied by fixed panels in exterior walls, but excluding sliding panels in exterior walls.

(4) The wall space afforded by fixed room dividers, such as freestanding bar-type counters or railings.

vii. Floor Receptacles – Receptacles outlets in floors shall not be counted as part of the required outlets unless located within 18 inches of the wall. *(CEC §210.52(A)(3))*
6 ft. & 12 ft. Rule



Switches

i. Provide at least one wall switch-controlled lighting outlet where required be CEC §210.70(A),(B), and (C):

(1) Dwelling Units, such as habitable rooms; and

(2) Other areas such as bathrooms, hallways, stairways, attached and detached garages with electric power;

(3) The exterior side of outdoor entrances or exits. (CEC §210.70(A)) See Plan for locations not in compliance.

(4) Storage and Equipment spaces, such as attics, underfloor spaces, utility rooms, and basements where these spaces are used for storage or contain equipment requiring servicing.

(5) Guest Rooms or Guest Suites.

(6) Other than Dwelling Units, such as attics and underfloor where these spaces containing equipment requiring servicing.

RESIDENTIAL DESIGN BY:
JONATHAN PELEZZARE
44550 Pierson Blvd., SPC 14
Palm Desert, CA 92260
Email: info@jonathanpelezzaredesign.com
Phone: (740) 391-2748

REVISIONS
1 5/12/2022
2
3
4

ELECTRICAL LOAD CALCULATIONS, SINGLE LINE DIAGRAMS & NOTES

UPDATED TO 2017 CODES

A CUSTOM RESIDENCE FOR:
Torchia
Palm Springs, California

UPDATED TO 2019 CODES

DRAWN
CHECKED
DATE PLOT 6/28/2026
SCALE 1/4" = 1'-0" (UNO)
JOB NO 081115
SHEET NO E2
OF 55 SHEETS

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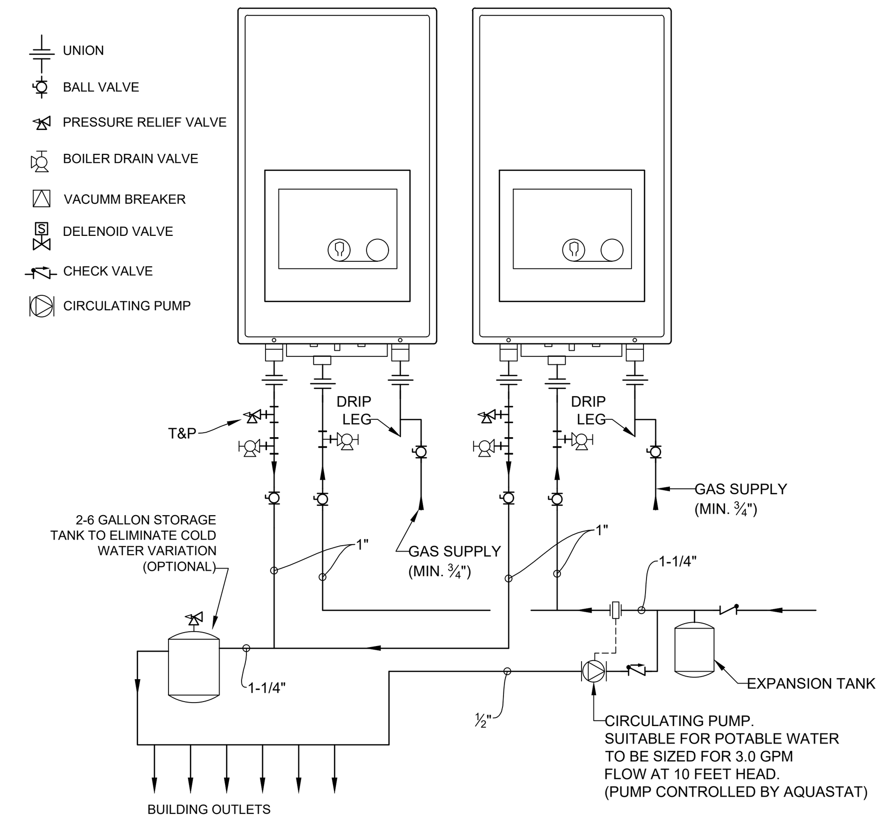
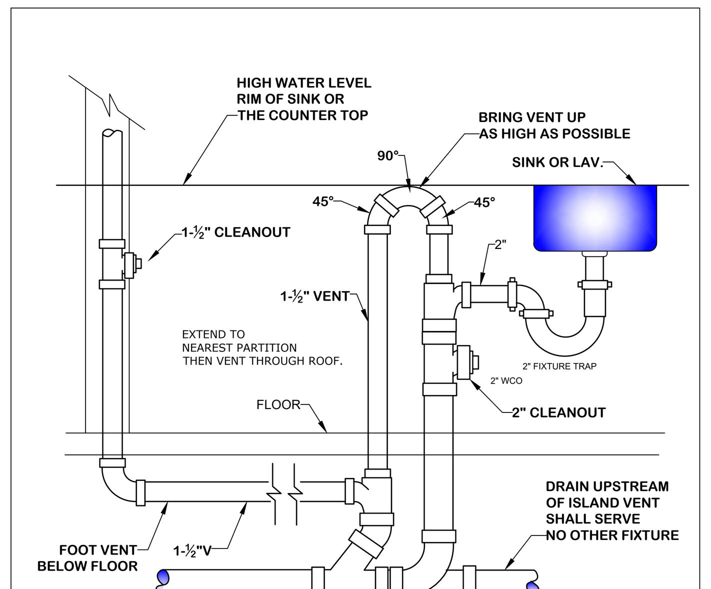


SECTION:

DETAIL: WATER HEATERS INSTALLATION DETAIL

A



NOTES:

TRAPS FOR ISLAND SINKS AND SIMILAR EQUIPMENT SHALL BE ROUGHED IN ABOVE THE FLOOR AND MAY BE VENTED BY EXTENDING THE VENT AS HIGH AS POSSIBLE. BUT NO LESS THAN DRAIN BOARD HEIGHT. THE VENT IS THEN RETURNED DOWNWARD AND CONNECTED TO THE HORIZONTAL SINK DRAIN IMMEDIATELY DOWNSTREAM FROM THE VERTICAL FIXTURE DRAIN. THE DRAWING ABOVE ILLUSTRATES THE CONSTRUCTION OF THE COMPLETED ISLAND VENTING SYSTEM.

SECTION: 909.0 CPC 2016

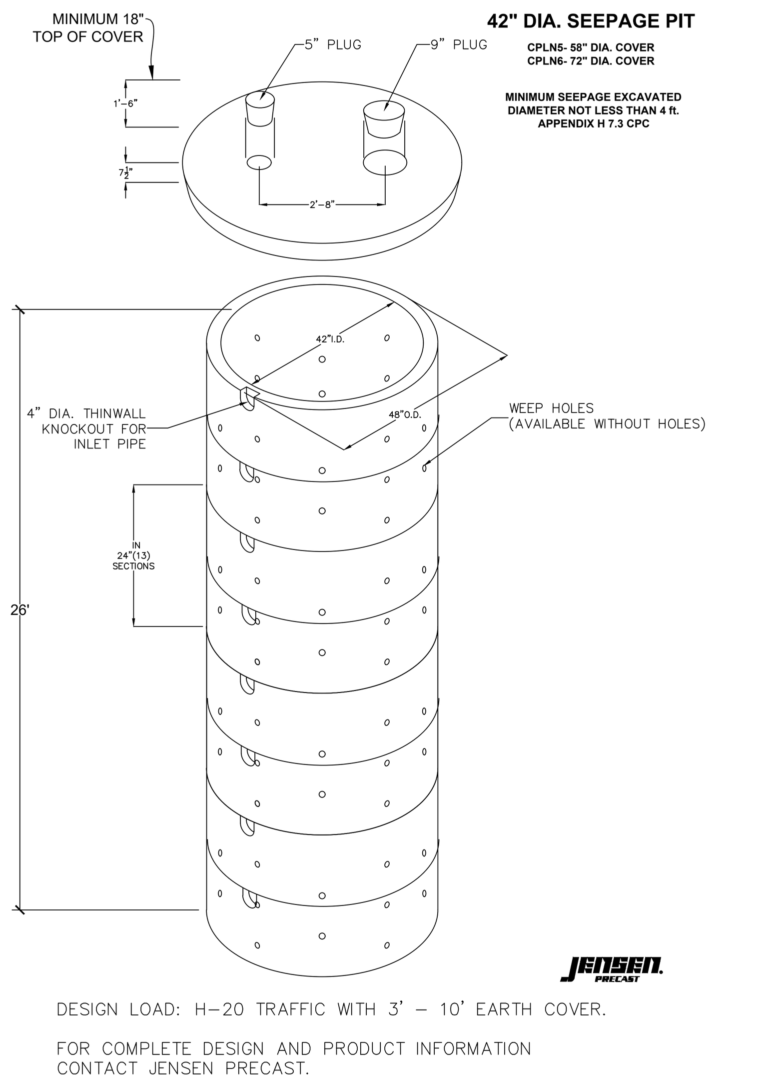
DETAIL: ISLAND VENT DETAIL

B

42" DIA. SEEPAGE PIT

CPLN5- 58" DIA. COVER
CPLN6- 72" DIA. COVER

MINIMUM SEEPAGE EXCAVATED DIAMETER NOT LESS THAN 4 ft. APPENDIX H 7.3 CPC



DESIGN LOAD: H-20 TRAFFIC WITH 3' - 10' EARTH COVER.

FOR COMPLETE DESIGN AND PRODUCT INFORMATION CONTACT JENSEN PRECAST.

Jensen Precast reserves the right to make changes to product design and/or dimensions without notice. Please contact Jensen Precast whenever necessary for confirmation or advice on product design.

C

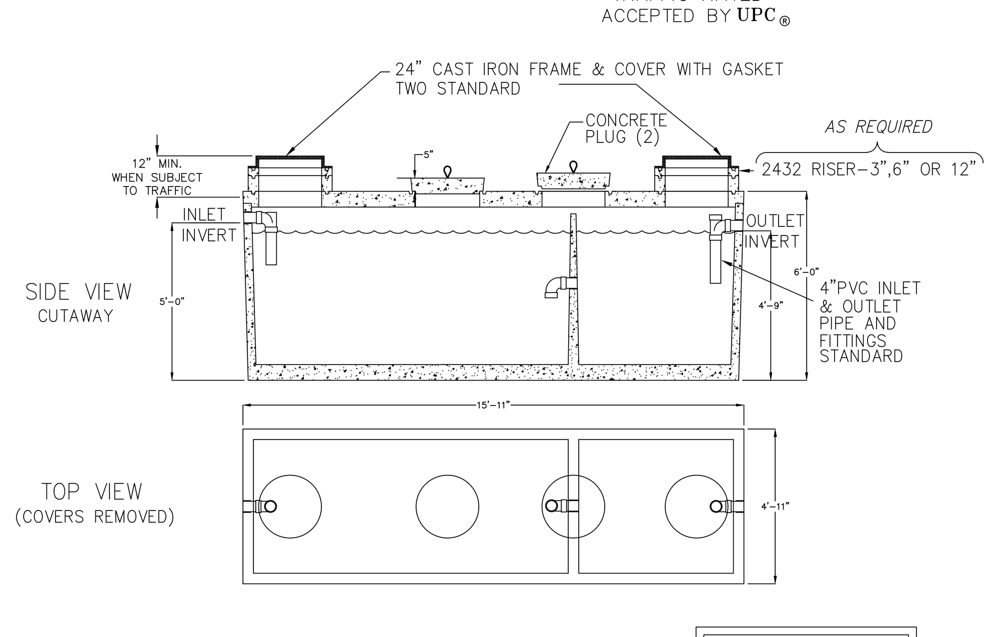
TEST DATA BY PERCOLATION INVESTIGATION AM/PAC AND ASSOCIATES, INC
2900 ADAMS ST., SUITE C-35, RIVERSIDE, CA 92504:

A SEEPAGE PIT TEST HAS BEEN PERFORMED ON THIS LOT WITH THE FOLLOWING RES UL TS:
"PIT -A" 2.89 GALLONS PER SQ. FT. OF SIDEWALL PER DAY
"PIT - B" 3.52
THE SYSTEM DESIGN IS BASED ON A MORE CONSERVATIVE "Q" = 2.5
2000 GALLON SEPTIC TANK
2.5 X 15.7 = 39.25, 2000 / 39.25 50.95 VERTICAL FEET OF SIDEWALL

INSTALL 2 PITS, 5' DIAMETER X 26' IN DEPTH AS MEASURED BELOW THE INLET. SET THE INLET AT 4' BELOW GRADE.
PERCOLATION TEST HOLE BORING, EXPLORATORY BORING AND PERCOLATION TESTING WERE PERFORMED ON 6-20-17. ALL SITES WERE MARKED WITH LATH AND FLAGGING.
CONSTRUCTION REQUIREMENTS AND RECOMMENDATIONS:
ALL SEPTIC TANKS AND SEEPAGE PITS MUST HAVE TRAFFIC RATED LIDS (H-20) AND TRAFFIC RATED RISERS AND MAN HOLE COVERS TO GRADE.
SEE THE ATTACHED TYPICAL SEEPAGE PIT CROSS SECTION AND SETBACK GUIDELINES FOR FURTHER INFORMATION.
THERE IS SUFFICIENT ROOM AVAILABLE FOR OUTBUILDINGS WITHOUT ENDANGERING THE 100% EXPANSION AREA REQUIRED.
ALL WATER WELLS MUST BE AT LEAST 150' AWAY FROM ANY SEEPAGE PIT AND 100' FROM ANY SEPTIC TANK.
THE SEPTIC TANK MUST HAVE AN APPROVED EFFLUENT FILTER INSTALLED IN THE OUTLET TEE OF THE SEPTIC TANK.

2000 GALLON COMMERCIAL SEPTIC TANK

MODEL JP2000
TRAFFIC RATED
ACCEPTED BY UPC®



MINIMUM EXCAVATION
5'-11" x 16'-11"
x REQ'D DEPTH

- LIQUID CAPACITY: 2000 GALLONS
- TANK DESIGNED FOR H-20 TRAFFIC WHEEL LOAD WITH DRY SOIL CONDITIONS (WATER TABLE BELOW TANK) EARTH COVER OVER TANK NOT TO EXCEED 6 FT.
- SUITABLE NATIVE OR SUB-BASE SHALL BE PREPARED TO HANDLE ANTICIPATED LOADS. THE EXCAVATION SHALL BE BEDDED WITH SUITABLE GRANULAR MATERIAL AND SHALL BE COMPACTED TO 90% MAXIMUM DRY DENSITY, OR TO REQUIREMENTS OF THE PROJECT GEOTECHNICAL ENGINEER.
- FOR COMPLETE DESIGN AND PRODUCT INFORMATION CONTACT JENSEN PRECAST.

THE DESIGN AND DETAIL OF THIS DRAWING ARE THE PROPERTY OF JENSEN PRECAST AND NOT TO BE USED EXCEPT IN CONNECTION WITH ITS OWN WORK. DESIGN AND INVENTION RIGHTS ARE RESERVED.

JENSEN PRECAST®

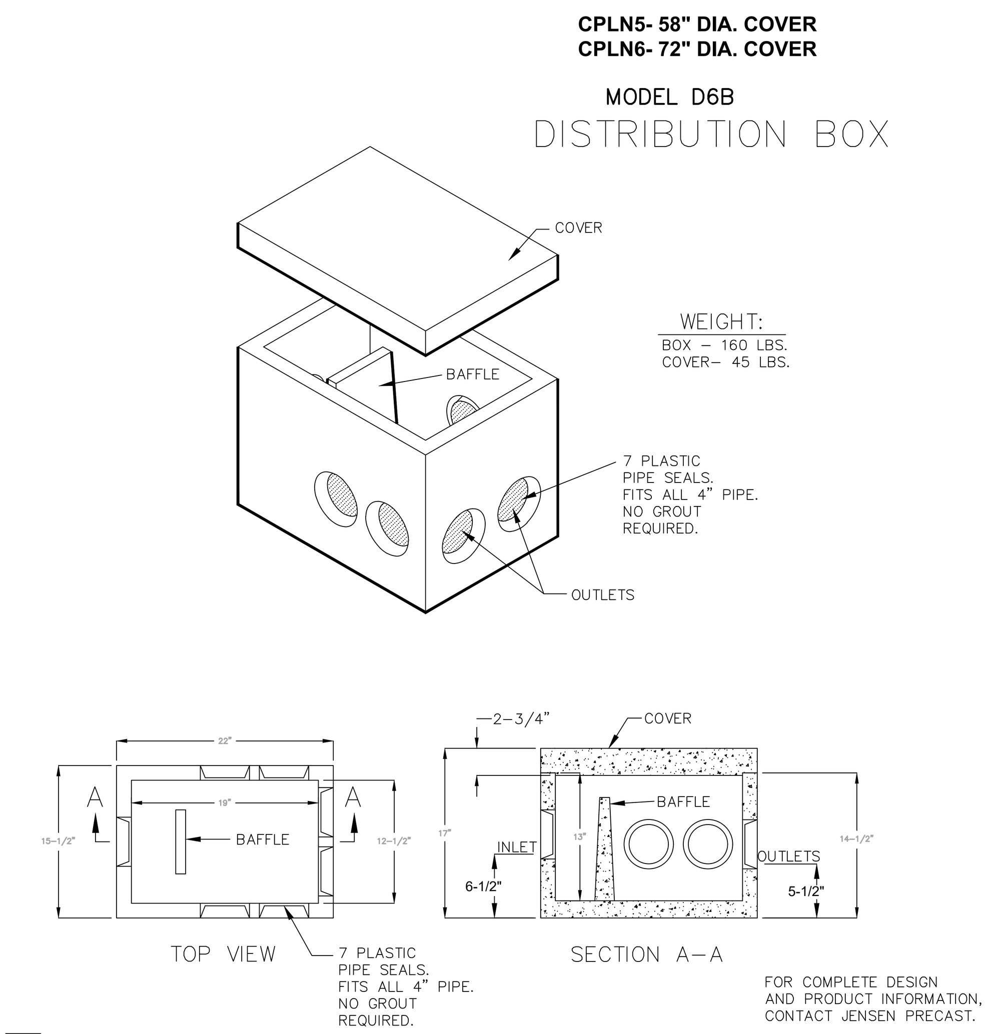
D

42" DIA. SEEPAGE PIT

CPLN5- 58" DIA. COVER
CPLN6- 72" DIA. COVER

MODEL D6B

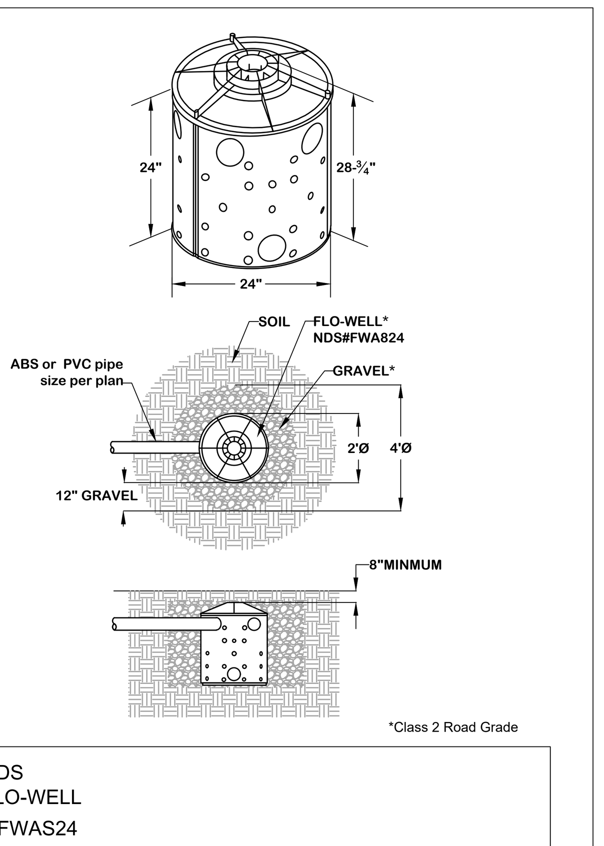
DISTRIBUTION BOX



WEIGHT:
BOX - 160 LBS.
COVER- 45 LBS.

FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN PRECAST.

E



*Class 2 Road Grade

NDS
FLO-WELL
FWAS24

SECTION: Condensate Drain

DETAIL: FLOW-WEL INSTALLATION DETAIL IN GRAVEL BACKFILL

F

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

TABLE - MAXIMUM FIXTURE WATER USE	
FIXTURE TYPE	***FLOW RATE***
SHOWER HEADS (RESIDENTIAL)	1.8 GMP @ 80 PSI
LAVATORY FAUCETS (RESIDENTIAL)	MAX. 1.2 GPM @ 60 PSI MIN. 0.8 GPM @ 20 PSI
LAVATORY FAUCETS IN COMMON & PUBLIC USE AREAS	0.5 GPM @ 60 PSI[1]
KITCHEN FAUCETS	1.8 GPM @ 60 PSI
METERING FAUCETS	0.20 GAL/CYCLE
WATER CLOSET	1.28 GAL/FLUSH
URINALS	0.125 GAL/FLUSH

1. Lavatory faucets shall not have a flow rate less than 0.8 gpm at 20 psi.

When a shower is provided with multiple shower heads, the sum of flow to all the heads shall not exceed 1.8 gpm @ 80 psi, or the shower shall be designed so that only one head is on at a time. CGC Section 4.303.1.3.2.

GENERAL PLUMBING NOTES

1. INSTALLATION OF PLUMBING WORK SHALL BE IN ACCORDANCE WITH THE FOLLOWING CODES:

2019 CALIFORNIA PLUMBING CODE AND ALL CODES AND ORDINANCES, ETC. OF ALL AUTHORITIES HAVING JURISDICTION OVER THE WORK.

2. ALL EQUIPMENT AND DEVICES SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE EQUIPMENT MANUFACTURERS' RECOMMENDATIONS. ALL MATERIALS USED OUTSIDE SHALL BE UV-RESISTANT (PVC PIPING, SEALANTS AND CAULKS, ETC.).

3. THE DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC AND AS SUCH DO NOT SHOW EVERY FITTING, OFFSET, TRANSITION, ETC. REQUIRED. THE DRAWINGS INDICATE REQUIRED SIZES AND TERMINATIONS OF PIPING AND SUGGEST ROUTES OF PIPING TO CONFORM TO THE STRUCTURE, TO AVOID OBSTRUCTIONS, AND TO PRESERVE CLEARANCE.

4. COORDINATE PLUMBING WORK WITH WORK OF ALL OTHER TRADES.

5. VERIFY REQUIRED OPENINGS THROUGH BUILDING STRUCTURE FOR PLUMBING WORK WITH GENERAL CONTRACTOR BEFORE ROUGH-IN.

6. LOCATE ALL PLUMBING DEVICES SUCH AS VALVES, ETC. REQUIRING ACCESS ABOVE AREAS WITH ACCESSIBLE CEILINGS, OR PROVIDE ACCESS DOORS OF REQUIRED SIZE AND FIRE RATING, ONLY WITH PRIOR APPROVAL OF ARCHITECT.

7. BEFORE COMMENCEMENT OF WORK, THE CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS, ELEVATIONS, SIZES, AND MATERIALS OF ALL UTILITIES AND PIPING, AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT OF ALL DISCREPANCIES.

8. REFER TO ARCHITECTURAL DRAWINGS FOR THE EXACT LOCATIONS AND MOUNTING HEIGHTS OF ALL PLUMBING FIXTURES.

9. INSTALL PLUMBING WORK TO AVOID INTERFERENCE WITH THE STRUCTURE AND WITH MECHANICAL AND ELECTRICAL EQUIPMENT.

10. ALL CLEANOUTS SHALL BE INSTALLED IN READILY ACCESSIBLE LOCATIONS. THE CONTRACTOR SHALL COORDINATE CLEANOUT LOCATIONS WITH CABINETS, EQUIPMENT, ETC., AND WITH THE ARCHITECT.

11. ALL PLUMBING VENTS THROUGH ROOF SHALL TERMINATE AT LEAST 12 INCHES FROM ANY VERTICAL SURFACE, 3 FEET ABOVE AND/OR 10 FEET FROM ANY OUTSIDE AIR INTAKES.

12. BEFORE FABRICATION OR INSTALLATION OF PLUMBING ROUGH-IN, THE CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS OF ALL MECHANICAL EQUIPMENT AND EQUIPMENT PROVIDED UNDER OTHER SPECIFICATION SECTIONS. BEFORE INSTALLATION OF PLUMBING TRIM, THE CONTRACTOR SHALL VERIFY THE FINAL FINISHES AND/OR SURFACE TREATMENTS.

13. FIRESTOPPING: PENETRATIONS THROUGH RATED WALLS, FLOORS, AND ROOFS SHALL BE SEALED WITH A MATERIAL CAPABLE OF PREVENTING THE PASSAGE OF FLAMES AND HOT GASES WHEN SUBJECTED TO THE REQUIREMENTS OF TEST STANDARD SPECIFIC OF FIRE STOPS ASTM E-814. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF FIRE-RATED ASSEMBLIES, WHICH INCLUDE COMMON WALLS BETWEEN TENANT SPACES.

14. SUBMITTALS: AT LEAST TWO WEEKS PRIOR TO ORDERING, FABRICATION, OR INSTALLATION OF ANY WORK, SUBMIT TO ARCHITECT FOUR SETS OF PRODUCT DATA FOR ALL EQUIPMENT, DEVICES, AND MATERIAL TO BE USED.

15. WARRANTEE: THE COMPLETE JOB SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR AFTER DATE OF FINAL ACCEPTANCE BY THE OWNER. ANY WORK, MATERIAL, OR EQUIPMENT FOUND TO BE DEFECTIVE DURING THIS PERIOD SHALL BE CORRECTED IMMEDIATELY, UPON WRITTEN NOTIFICATION AT THE CONTRACTOR'S EXPENSE.

16. CONDENSATE SHALL BE COLLECTED AND DISCHARGED TO AN APPROVED PLUMBING FIXTURE OR APPROVED DISPOSAL AREA.

17. ALL HOSE BIBBS ARE TO BE PROVIDED WITH A BACKFLOW / ANTI-SIPHON VALVE.

18. WHERE ANY 2" VENTS RUN HORIZONTALLY TROUGH WALL STUDS, THE MINIMUM STUD SIZE OF 2x6 SHALL BE USED FOR THAT PLUMBING WALL.

DWV NOTES

1- VENTS SHALL BE JOINED IN STRUCTURE AS CONDITIONS PERMIT WITH SIZING PER UPC TABLE 7-5 TO MINIMIZE ROOF PENETRATIONS.

2- VENTS SHALL TERMINATE A MINIMUM OF 6" ABOVE THE ROOF THROUGH AN APPROVED FLASHING.

3- VENTS SHALL TERMINATE ON THE BACK SIDE OF ROOF, IN MECHANICAL WELL OR AS ABLE TO AVOID AS MUCH IMPACT ON THE ARCHITECTURAL CHARTER AS POSSIBLE.

4- VENTS SHALL TERMINATE NOT LESS THAN TEN FEET OR AT LEAST THREE FEET ABOVE ANY OPENABLE WINDOW, DOOR, OPENING, AIR INTAKE OR VENT SHAFT OR NOT LESS THAN THREE FEET IN EVERY DIRECTION FROM ANY LOT LINE.

NOTES:

1- EFFECTIVE JANUARY 1, 2011 NO PERSON SHALL USE ANY PIPE, OR PLUMBING FITTING OR FIXTURE, SOLDER, OR FLUX THAT IS NOT LEAD FREE IN THE INSTALLATION OR REPAIR OF ANY PUBLIC WATER SYSTEM OR ANY PLUMBING IN A FACILITY PROVIDING WATER FOR HUMAN CONSUMPTION, EXCEPT WHEN NECESSARY FOR THE REPAIR OF LEADED JOINTS OF CAST IRON PIPES. (HEALTH & SAFETY CODE 116875)

INFORMATIONAL: FOR THE PURPOSE OF THIS SECTION "LEAD FREE" MEANS NOT MORE THAN 0.2 PERCENT LEAD WHEN USED WITH RESPECT TO SOLDER AND FLUX AND NOT MORE THAN 8 PERCENT WHEN USED WITH RESPECT TO PIPES AND PIPE FITTINGS. WITH RESPECT TO PLUMBING FITTINGS AND FIXTURES, "LEAD FREE" MEANS NO MORE THAN 4 PERCENT BY DRY WEIGH AFTER AUGUST 6, 2002.

2- A WATER HEATER SUPPORTED FROM THE GROUND SHALL REST ON LEVEL CONCRETE OR OTHER APPROVED BASE EXTENDING NOT LESS THAN (3) INCHES ABOVE THE ADJOINING GROUND LEVEL. (CPC 508.3)

3- WATER HEATER APPLIANCES IN RESIDENTIAL GARAGES AND IN ADJACENT SPACES THAT OPEN TO THE GARAGE SHALL BE INSTALLED SO THAT BURNERS AND BURNER-IGNITION DEVICES ARE LOCATED NOT LESS THAN EIGHTEEN (18) INCHES ABOVE THE FLOOR. (CPC 508.1491))

4- PROVIDE ACCESSIBLE APPLIACE/EQUIPMENT SHUTOFF VALVE (S) WITHIN 6 FEET OF THE APPLIANCE/EQUIPMENT IT SERVES. (CPC 1212.3.5)

WATER HEATER SYSTEM SCHEDULE				
DESIGN	ITEM	MANUFACTURER	MODEL #	DESCRIPTION
WH- 1 WH-2	WATER HEATER	NAVIEN	NPE-240S	TANK-LESS WATER HEATER, 19,900-199,900 BTU, EF: 0.97, 3"VENT, T&P DISCHARGE TO EXTERIOR, FLOW 5.7 GPM @ 67°F RISE, 120V, 60HZ.
ET-1	EXPANSION TANK	WATTS	DET-5	INSTALL WHEN BLDG. SUPPLY EXCEEDS T&P VALVE SETTING OR WHEN ANY DEVICE IS INSTALLED WHICH PREVENTS PRESSURE RELIEF THROUGH THE BUILDING SUPPLY PER CPC 608.3
CP-1	CIRC PUMP	ARMSTRONG	ASTOR 25B3/4S	3000 RPM, .58 AMP, $\frac{1}{25}$ HP, 115 V, 60 HZ, SINGLE PHASE

PLUMBING MATERIALS LIST		
	✓	ABS SCHED 40
	.	ABS SDR 35
	.	HUBLESS CAST IRON
DWV BELOW SLAB	✓	ABS SCHED 40
	.	HUBLESS CAST IRON
WASTE ABOVE SLAB	✓	ABS SCHED 40
	.	HUBLESS CAST IRON
WATER SERVICE	.	COPPER TYPE K
	✓	PVC 40
	.	PVC 80
WATER BELOW SLAB	.	COPPER TYPE K
	.	COPPER TYPE L
	✓	WIRSBO AQUAPEX
	.	CPVC
WATER ABOVE SLAB	.	COPPER TYPE K
	.	COPPER TYPE L
	✓	WIRSBO AQUAPEX
	.	CPVC
GAS BELOW GRADE	✓	POLYETHYLENE
	.	STEEL PIPE SCHED 40 W/RAPPED
GAS ABOVE GRADE	✓	STEEL PIPE BLK SCHED 40
	.	CSST (TRACPIPE OR EQUAL)
ROOF DRAIN PIPING	✓	ABS SCHED 40
	.	HUBLESS CAST IRON
	.	RECTANGULAR FIBERGLASS
	✓	APPROVED MANUFACTURER
	.	NO GATES VALVES
INSULATION REQUIRED	.	DWV
	.	COLD WATER
	✓	HOT WATER
	.	ROOF DRAINS
	.	CONDENSATE
INSULATION	.	FIBERGLASS W/AP JACKET
	✓	POLYETHYLENE CLOSET CELL
	.	CELLULAR GLASS INSERTS
INDIRECT WASTE	✓	PVC SCHED 40
	.	TYPE M COPPER

WATER CALCULATION

TOTAL DEVELOPED LENGTH	
FROM METER TO REGULATOR	>100'
FROM PRV TO MOST REMOTE OUTLET	250'
PRESSURE RANGE AT METER OUTLET	>60 PSI
AT REGULATOR OUTLET	46-60 PSI
SIZING	
WATER METER SIZE	1"
REQUIRED GPM	36
AT REGULATOR OUTLET	>60 PSI
WATER SERVICE SIZE	1-1/2"
PRESSURE REGULATOR SIZE	1-1/2"
PRESSURE RANGE	46-60 PSI

WATER SIZING			
QTY	FIXTURE	FU	TOTAL
2	TS	4	8
3	SH	2	6
7	LAV	1	7
1	KS	1.5	1.5
1	DW	1.5	1.5
1	LS	1.5	1.5
1	WM	4	4
1	HB	2.5	2.5
5	HB	1	5
5	WC	2.5	12.5
1	ICE	0.5	0.5
		TOTAL	50.0

MAXIMUM PER TABLE 610.4 CPC 2019			
SIZE	F/U	SIZE	F/U
½"	2	1 ¼"	39
¾"	9	1 ½"	80
1"	23	2"	85

GAS CALCULATION

SIZING PER TABLE 1215.2 (20) CPC 2019 (POLYETHYLENE PIPE)									
SIZE	@ 70'	@ 100'	@ 125'	@ 150'	@ 200'	@ 250'	@ 300'	@ 350'	
¾"	140	116	103	93	80	71	64	59	CFH
1"	254	209	185	168	144	127	115	106	CFH
1-1/4"	477	362	321	291	249	221	200	184	CFH
1-1/2"	721	547	485	439	376	333	302	278	CFH
2"	1190	983	871	789	675	598	542	499	CFH
3"		2720	2410	2180	1870	1639	1485	1366	CFH

SIZING PER TABLE 1215.2 (14) CPC 2019 (CSST PIPE)								
SIZE	@ 30'	@ 70'	@ 100'	@ 150'	@ 200'	@250'	@ 300'	
½"	55	36	30	23	21	23	17	CFH
¾"	112	74	62	48	44	48	36	CFH
1"	218	141	118	91	82	90	67	CFH
1-1/4"	374	248	208	171	148	185	226	CFH
1-1/2"	723	440	393	320	277	277	226	CFH
2"	1520	1000	843	691	600	538	492	CFH

SIZING PER TABLE 1215.2 (1) CPC 2019 (SCHEDULE 40 MET. PIPE)								
SIZE	@ 60'	@ 100'	@ 125'	@ 150'	@ 200'	@ 250'	@ 300'	
1/2"	65	50	44	40	34	30	27	CFH
3/4"	137	104	92	83	71	63	57	CFH
1"	257	195	173	157	134	119	108	CFH
1-1/4"	528	400	355	322	275	244	221	CFH
1-1/2"	791	600	532	482	412	366	331	CFH
2"	1520	1160	1020	928	794	704	638	CFH
2-1/2"			1630	1480	1270	1120	1020	CFH

GAS DEMAND PER UNIT				
QTY	FIXTURES	BTU EA.	CFH. EA.	TOTAL
1	CT	150000	150	150
2	WH	85000	85	170
1	BBQ	80000	80	80
1	DRY	35000	35	35
7	FAU	88000	88	616
6	LL	40000	40	240
1	LL	60000	60	60
1	LL	100000	100	100
1	P.EQUIP	1200000	1200	1200
			TOTAL	2651.0

DRAIN WASTE & VENT

TABLE 703.2
Maximum Unit Loading and Maximum Length of Drainage and Vent Piping

Size of Pipe, inches	1-1/4	1-1/2	2	2-1/2	3	4
Maximum Units Drainage Piping [1] Vertical	1	2[2]	16[3]	32[3]	48[4]	256
Horizontal	1	1	8[3]	14[3]	35[4]	216[5]
Maximum Length Drainage Piping Vertical, feet	45	65	85	148	212	300
Horizontal (Unlimited)						
Vent Piping (See note) Horizontal and Vertical Maximum Units	1	8[3]	24	48	84	256
Maximum Lengths, feet	45	60	120	180	212	300

1. Excluding trap arm.
2. Except sinks, urinals and dishwashers.
3. Except six-unit traps or water closets.
4. Only four (4) water closets or six-unit traps allowed on any vertical pipe or stack; and not to exceed three (3) water closets or six-unit traps on any horizontal branch or drain. -
5. Based on one-fourth (1/4) loch per foot (20.9 mm/m) slope. For one-eighth (1/8) inch per foot (10.4 mm/m) slope, multiply horizontal fixture units by a factor of 0.8. - -

Note: The diameter of an individual vent shall not be less than one and one-fourth (1-1/4) inches (31.8 mm) nor less than one-half (1/2) the diameter of the drain to which it is connected. Fixture unit load values for drainage and vent piping shall be computed from Tables 7-3 and 7-4. Not to exceed one-third (1/3) of the total permitted length of any vent may be installed in a horizontal position. When vents are increased one (1) pipe size for their entire length, the maximum length limitations specified in this table do not apply.

DRAIN WASTE & VENT SIZING CALCULATION BY TABLE 702.1 CPC 2019			
DRAINAGE/VENT FIXTURE UNIT CALCULATION SYSTEM:			
QTY	FIXTURE	F/U EA.	F.U. TOTAL
5	WC	6	30
2	SH	2	4
7	LAV	1	7
1	KS	3	3
2	TS	2	4
1	LS	2	2
1	WM	3	3
		TOTAL	50

PLUMBING INSTALLATION NOTES

1. ***LEAD CONTENT*** - THE MAXIMUM ALLOWABLE LEAD CONTENT IN PIPES, PIPE FITTINGS, PLUMBING FITTINGS, AND FIXTURES INTENDED TO CONVEY OR DISPENSE WATER FOR HUMAN CONSUMPTION SHALL BE NOT MORE THAN A WEIGHTED AVERAGE OF 0.25 PERCENT WITH RESPECT TO THE WETTED SURFACES OF PIPES, PIPE FITTINGS, PLUMBING FITTINGS AND FIXTURES. FOR SOLDER AND FLUX, THE LEAD CONTENT SHALL BE NOT MORE THAN 0.2 PERCENT WHEN USED IN PIPING SYSTEMS THAT CONVEY OR DISPENSE WATER FOR HUMAN CONSUMPTION. CPC 604.2

EXCEPTIONS:

A. PIPES, PIPE FITTINGS, PLUMBING FITTINGS, FIXTURES OR BACK-FLOW PREVENTERS USED FOR NON-POTABLE SERVICES SUCH AS MANUFACTURING, INDUSTRIAL PROCESSING, IRRIGATION, OUTDOOR WATERING OR ANY OTHER USES WHERE THE WATER IS NOT USED FOR HUMAN CONSUMPTION.

B. FLUSH VALVES, FILL VALVES, FLUSHOMETER VALVES, TUB FILLERS, SHOWER VALVES, SERVICE SADDLES OR WATER DISTRIBUTION MAIN GATE VALVES THAT ARE 2 INCHES (50 MM) IN DIAMETER OR LARGER.

2. ALL PLUMBING FIXTURES AND FIXTURE FITTINGS SHALL BE LISTED IN CONFORMANCE WITH CPC CHAPTER 4.

3. ***MANDATORY FIXTURE RATES*** - SEE TABLE MAXIMUM FIXTURE WATER USE

4. ***INSTALLATION AND ACCESS*** - BATHTUBS AND WHIRLPOOL BATHTUBS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. ACCESS OPENINGS SHALL BE OF SIZE AND OPENING TO PERMIT THE REMOVAL AND REPLACEMENT OF THE CIRCULATION PUMP. WHIRLPOOL PUMP ACCESS LOCATED IN THE CRAWL SPACE SHALL BE LOCATED NOT MORE THAN 20 FEET (6096 MM) FROM AN ACCESS DOOR, TRAP DOOR, OR CRAWL HOLE. THE CIRCULATION PUMP SHALL BE LOCATED ABOVE THE CROWN WEIR OF THE TRAP. THE PUMP AND THE CIRCULATION PIPING SHALL BE SELF-DRAINING TO MINIMIZE WATER RETENTION. SUCTION FITTINGS ON WHIRPOOL BATHTUBS SHALL BE LISTED IN ACCORDANCE WITH ASME A112.19.7/CSA B45.10, CPC 409.6.

5. ***TESTS FOR SHOWER RECEPTORS*** - SHOWER RECEPTORS SHALL BE TESTED FOR WATERTIGHTNESS BY FILLING WITH WATER TO THE LEVEL OF THE ROUGH THRESHOLD. THE TEST PLUG SHALL BE SO PLACED THAT BOTH UPPER AND UNDER SIDES OF THE SUB PAN SHALL BE SUBJECTED TO THE TEST AT THE POINT WHERE IT IS CLAMPED TO THE DRAIN. (PER CPC SECTION 408.7.5).

6. ***INDIVIDUAL SHOWER AND TUB-SHOWER COMBINATION CONTROL VALVES*** - SHOWERS AND TUB-SHOWER COMBINATIONS SHALL BE PROVIDED WITH INDIVIDUAL CONTROL VALVES OF THE PRESSURE BALANCE, THERMOSTATIC, OR COMBINATION PRESSURE BALANCE/THERMOSTATIC MIXING VALVE TYPE THAT PROVIDE SCALD AND THERMAL SHOCK PROTECTION FOR THE RATED FLOW RATE OF THE INSTALLED SHOWERHEAD. THESE VALVES SHALL BE INSTALLED AT THE POINT OF USE AND IN ACCORDANCE WITH ASSE I 016 OR ASME AI12.18.L/CSA B 125.1. GANG SHOWERS WHERE SUPPLIED WITH A SINGLE TEMPERATURE CONTROLLED WATER SUPPLY PIPE, SHALL BE CONTROLLED BY A MIXING VALVE THAT IS IN ACCORDANCE WITH ASSE 1069. HANDLE POSITION STOPS SHALL BE PROVIDED ON SUCH VALVES AND SHALL BE ADJUSTED PER THE MANUFACTURER'S INSTRUCTIONS TO DELIVER A MAXIMUM MIXED WATER SETTING OF 120°F (49°C). WATER HEATER THERMOSTATS SHALL NOT BE CONSIDERED A SUITABLE CONTROL FOR MEETING THIS PROVISION.
a) 45. WATER HEATING THERMOSTATS SHALL NOT BE CONSIDERED A SUITABLE CONTROL FOR MEETING THIS PROVISION. (CPC 408.3)

7. HOT WATER PIPING SHALL BE INSULATED (PER CPC 609.11.1)

8. DOMESTIC WATER HEATERS SHALL BE CERTIFIED AND LISTED BY THE CALIFORNIA ENERGY COMMISSION.

9. NO WATER HEATER SHALL BE HEREINAFTER INSTALLED WHICH DOES NOT COMPLY IN ALL RESPECTS WITH THE TYPE AND MODEL OF EACH SIZE THEREOF APPROVED BY THE ADMINISTRATIVE AUTHORITY.

10. APPLIANCES REQUIRING COMBUSTION AIR (UNLESS SEALED COMBUSTION CHAMBERS) SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO DESIGN AND PROVIDE IN ACCORDANCE WITH CPC SECTION 506.0 AND CMC CHAPTER 9.

11. WATER HEATERS SHALL BE ANCHORED OR STRAPPED TO RESIST HORIZONTAL DISPLACEMENT DUE TO EARTHQUAKE MOTION. STRAPPING SHALL BE AT POINTS WITHIN THE UPPER ONE-THIRD (1/3) AND LOWER ONE-THIRD (1/3) OF ITS VERTICAL DIMENSIONS. AT THE LOWER POINT, A MINIMUM DISTANCE OF FOUR (4) INCHES SHALL BE MAINTAINED ABOVE THE CONTROLS WITH THE STRAPPING. (PER CPC SECTION 507.2)

12. ***DRAINAGE PAN*** - WHEN A WATER HEATER IS LOCATED IN AN ATTIC OR ON AN ATTIC-CEILING ASSEMBLY, FLOOR-CEILING ASSEMBLY, OR FLOOR-SUBFLOOR ASSEMBLY WHERE DAMAGE RESULTS FROM A LEAKING WATER HEATER, A WATERTIGHT PAN OF CORROSION-RESISTANT MATERIALS SHALL BE INSTALLED BENEATH THE WATER HEATER WITH NOT LESS THAN ¾" OF AN INCH (20 MM) DIAMETER DRAIN TO AN APPROVED DRAINAGE PAN. SUCH PAN SHALL BE NOT LESS THAN 1 1/2, INCHES (38 MM) IN DEPTH. (PER CPC 507.5)

13. APPROVED NON-REMOVABLE BACKFLOW DEVICE SHALL BE INSTALLED AT ALL HOSE BIBBS AND FAUCETS FITTED WITH THREADED CONNECTIONS. PER CPC SECTION 602.

14. WHERE LOCAL STATIC WATER PRESSURE IS IN THE WATER SUPPLY IS EXCEEDING 80 PSI, AN APPROVED-TYPE PRESSURE REGULATOR PRECEDED BY AN ADEQUATE STRAINER SHALL BE INSTALLED AND THE STATIC PRESSURE REDUCED TO 80 PSI OR LESS. PRESSURE REGULATOR(S) EQUAL TO OR EXCEEDING 1-1/2" SHALL NOT REQUIRE A STRAINER. PER CPC SECTION 608.2

15. EXPANSION TANKS, AND COMBINATION TEMPERATURE AND PRESSURE RELIEF VALVES - A WATER SYSTEM PROVIDED WITH A CHECK VALVE, BACKFLOW PREVENTER, OR OTHER NORMALLY CLOSED DEVICE THAT PREVENTS DISSIPATION OF BUILDING PRESSURE BACK INTO THE WATER MAIN, INDEPENDENT OF THE TYPE OF WATER HEATER USED, SHALL BE PROVIDED WITH AN APPROVED, LISTED, AND ADEQUATELY SIZED EXPANSION TANK OR OTHER APPROVED DEVICE HAVING A SIMILAR FUNCTION TO CONTROL THERMAL EXPANSION. SUCH EXPANSION TANK OR OTHER APPROVED DEVICE SHALL BE INSTALLED ON THE BUILDING SIDE OF THE CHECK VALVE, BACKFLOW PREVENTER, OR OTHER DEVICE AND SHALL BE SIZED AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. PER CPC SECTION 608.3.

16. HORIZONTAL DRAINAGE PIPING SHALL BE RUN IN PRACTICAL ALIGNMENT AND A UNIFORM SLOPE OF NOT LESS THAN ONE-FOURTH (1/4) OF AN INCH PER FOOT OR 2 PERCENT TOWARD THE POINT OF DISPOSAL PROVIDED THAT, WHERE IT IS IMPRACTICAL DUE TO THE DEPTH OF THE STREET SEWER, TO THE STRUCTURAL FEATURES, OR TO THE ARRANGEMENT OF A BUILDING OR STRUCTURE TO OBTAIN A SLOPE OF ¼" PER FOOT OR 2%, SUCH PIPE OR PIPING 4" OR LARGER IN DIAMETER SHALL BE PERMITTED TO HAVE A SLOPE OF NOT LESS THAN ⅛" PER FOOT OR 1%, WHERE FIRST APPROVED BY THE AUTHORITY HAVING JURISDICTION. CPC 708

17. VENT TERMINATION CLEARANCE - EACH VENT SHALL TERMINATE NOT LESS THAN 10 FEET (3048 MM) FROM, OR NOT LESS THAN 3 FEET (914 MM) ABOVE, AN OPENABLE WINDOW/SKYLIGHT, DOOR, OPENING, AIR INTAKE, OR VENT SHAFT, OR NOT LESS THAN 3 FEET (914 MM) IN EVERY DIRECTION FROM A LOT LINE, ALLEY AND STREET EXCEPTED. PER CPC 906.2; 906.2.1 [OSHPD 1, 2, 3 & 4 EACH VENT PIPE SHALL TERMINATE NOT LESS THAN TWENTY-FIVE (25) FEET (7620 MM) FROM ANY AIR INTAKE OR VENT SHAFT.

18. VENT TERMINATION - EACH VENT PIPE OR STACK SHALL TERMINATE VERTICALLY NOT LESS THAN 6 INCHES ABOVE THE ROOF NOR LESS THAN ONE FOOT FROM ANY VERTICAL SURFACE. (CPC 906.1)

19. FLOOR DRAIN OR SIMILAR TRAPS DIRECTLY CONNECTED TO THE DRAINAGE SYSTEM AND SUBJECT TO INFREQUENT USE SHALL BE PROTECTED WITH A TRAP SEAL PRIMER, EXCEPT WHERE NOT DEEMED NECESSARY FOR SAFETY OR SANITATION BY THE AUTHORITY HAVING JURISDICTION. TRAP SEAL PRIMERS SHALL BE ACCESSIBLE FOR MAINTENANCE. PER CPC SECTION 1007.1, TRAP SEAL PRIMERS. POTABLE WATER SUPPLY TRAP SEAL PRIMER VALVES SHALL COMPLY WITH ASSE 1018. DRAINAGE AND ELECTRONIC DESIGN DESIGN TYPE TRAP PRIMER DEVICES SHALL COMPLY WITH ASSE 1044. PER CPC 1007.2 (CPC 1007.0)

20. DISINFECTION OF POTABLE WATER SYSTEM. NEW OR REPAIRED POTABLE WATER SYSTEM SHALL BE DISINFECTED PRIOR TO USE WHERE REQUIRED BY THE AUTHORITY HAVING JURISDICTION. [OSHPD 1, 1R, 2, 3, 4,& 5] (PER CPC 609.9)

21. HANGERS AND SUPPORTS SHALL BE IN ACCORDANCE WITH CPC SECTION 313.0

22. ALL SYSTEMS SHALL BE TESTED IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE UNIFORM BUILDING CODE WITNESSED BY THE BUILDING AUTHORITY AND OWNERS REPRESENTATIVE IF REQUIRED.

23. CONTRACTOR SHALL COMPLETE CALIFORNIA ENERGY FORM CF-1R AND SIGN CERTIFYING WATER HEATER EQUIPMENT INSTALLATION PRIOR TO FINAL INSPECTION.

24. APPLIANCE SHUTOFF VALVES AND CONNECTIONS. EACH APPLIANCE CONNECTED TO A PIPING SYSTEM SHALL HAVE AN ACCESSIBLE, APPROVED MANUAL SHUTOFF VALVE WITH A NONDIS-PLACEABLE VALVE MEMBER OR A LISTED GAS CONVENIENCE OUTLET. APPLIANCE SHUTOFF VALVES AND CONVENIENCE OUTLETS SHALL SERVE A SINGLE APPLIANCE ONLY. THE SHUTOFF VALVE SHALL BE LOCATED WITHIN 6 FEET (1829 MM) OF THE APPLIANCE IT SERVES. WHERE A CONNECTOR IS USED, THE VALVE SHALL BE INSTALLED UPSTREAM OF THE CONNECTOR. A UNION OR FLANGED CONNECTION SHALL BE PROVIDED DOWNSTREAM FROM THE VALVE TO PERMIT REMOVAL OF APPLIANCE CONTROLS. SHUTOFF VALVES SERVING DECORATIVE APPLIANCES SHALL BE PERMITTED TO BE INSTALLED IN FIREPLACES IF LISTED FOR SUCH USE.[NFPA 54:9.6.5, 9.6.5.1(A)(B)] PER CPC 1212.6

EXCEPTIONS:

(1) SHUTOFF VALVES SHALL BE PERMITTED TO BE ACCESSIBLY LOCATED INSIDE OR UNDER AN APPLIANCE WHERE SUCH APPLI-ANCE IS REMOVED WITHOUT REMOVAL OF THE SHUTOFF VALVE.
(2) SHUTOFF VALVES SHALL BE PERMITTED TO BE ACCESSIBLY LOCATED INSIDE WALL HEATERS AND WALL FURNACES LISTED FOR RECESSED INSTALLATION WHERE NECESSARY MAINTENANCE IS PERFORMED WITHOUT REMOVAL OF THE SHUTOFF VALVE.

25. CONDENSATE DRAIN POINT OF DISCHARGE. AIR-CONDITIONING CONDENSATE WASTE PIPES SHALL CONNECT INDIRECTLY, EXCEPT WHERE PERMITTED IN SECTION 814.6, TO THE DRAINAGE SYSTEM THROUGH AN AIR GAP OR AIR BREAK TO TRAPPED AND VENTED RECEPTORS, DRY WELLS, LEACH PITS, OR THE TAILPIECE OF PLUMBING FIXTURES. A CONDENSATE DRAIN SHALL BE TRAPPED IN ACCORDANCE WITH THE APPLIANCE MANUFACTURERS INSTRUCTION'S OR AS APPROVED. PER CPC 814.5

26. THE MINIMUM CAPACITY FOR STORAGE WATER HEATERS SHALL BE IN ACCORDANCE WITH THE FIRST-HOUR RATING LISTED IN TABLE 501.1(2). NO WATER HEATER SHALL BE HEREINAFTER INSTALLED THAT DOES NOT COMPLY WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND THE TYPE AND MODEL OF EACH SIZE THEREOF APPROVED BY THE AUTHORITY HAVING JURISDICTION. A LIST OF ACCEPTED WATER HEATER APPLIANCE STANDARDS IS REFERENCED IN TABLE 501.1(1). LISTED APPLIANCES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANU-FACTURER'S INSTALLATION INSTRUCTIONS. UNLISTED WATER HEATERS SHALL BE PERMITTED IN ACCORDANCE WITH SECTION 504.3.2.

27. GAS PIPING THROUGH FOUNDATION WALL. UNDER-GROUND PIPING, WHERE INSTALLED THROUGH THE OUTER FOUNDATION OR BASEMENT WALL OF A BUILDING SHALL BE ENCASED IN A PROTEC-TIVE SLEEVE OR PROTECTED BY AN APPROVED DEVICE OR METHOD. THE SPACE BETWEEN THE GAS PIPING AND THE SLEEVE AND BETWEEN THE SLEEVE AND THE WALL SHALL BE SEALED TO PREVENT ENTRY OF GAS AND WATER. [NFPA 54:7.1.5] PER CPC 1210.1.5.

28. TRACER WIRE. PLASTIC MATERIALS FOR BUILDING SUPPLY PIPING OUTSIDE UNDERGROUND SHALL HAVE AN ELECTRI-CALLY CONTINUOUS CORROSION-RESISTANT BLUE INSULATED COP-PER TRACER WIRE, OR OTHER APPROVED CONDUCTOR INSTALLED ADJACENT TO THE PIPING. ACCESS SHALL BE PROVIDED TO THE TRACER WIRE, OR THE TRACER WIRE SHALL TERMINATE ABOVE-GROUND AT EACH END OF THE NONMETALLIC PIPING. THE TRACER WIRE SIZE SHALL BE NOT LESS THAN 14 AWG, AND THE INSULA-TION TYPE SHALL BE SUITABLE FOR DIRECT BURIAL. PER CPC 604.10.1.

29. PROVIDE MINIMUM R-12 INSULATION FOR SMALL STORAGE WATER HEATERS WITH AN INPUT RATING LESS THAN OR EQUAL TO 75,000 BTU/HR. BEES 110.3 and 150.0 (J) I).

30. INSULATION REQUIREMENTS. DOMESTIC HOT WATER PIPING SHALL BE INSULATED.
609.11.2 PIPE INSULATION WALL THICKNESS. HOT WATER PIPE INSULATION SHALL HAVE A MINIMUM WALL THICKNESS OF NOT LESS THAN THE DIAMETER OF THE PIPE FOR A PIPE UP TO 2 INCHES (50 MM) IN DIAMETER. INSULATION WALL THICKNESS SHALL BE NOT LESS THAN 2 INCHES (51 MM) FOR A PIPE OF 2 INCHES (50 MM) OR MORE IN DIAMETER. PER CPC 609.11.1 ES 150.0(J)
EXCEPTIONS:
(1) PIPING THAT PENETRATES FRAMING MEMBERS SHALL NOT BE REQUIRED TO HAVE PIPE INSULATION FOR THE DISTANCE OF THE FRAMING PENETRATION.
(2) HOT WATER PIPING BETWEEN THE FIXTURE CONTROL VALVE OR SUPPLY STOP AND THE FIXTURE OR APPLIANCE SHALL NOT BE REQUIRED TO BE INSULATED.

31. BELOW GRADE HOT WATER PIPING MUST BE INSTALLED IN A WATERPROOF AND NON-CRUSHABLE SLEEVE OR CASING THAT ALLOWS FOR REPLACEMENT OF BOTH THE PIPING AND INSULATION. BUILDING ENERGY EFFICIENCY STANDARD 150.O (J)

32. STANDPIPE RECEPTORS. PLUMBING FIXTURES OR OTHER RECEPTORS RECEIVING THE DISCHARGE OF INDIRECT WASTE PIPES SHALL BE APPROVED FOR THE USE PROPOSED AND SHALL BE OF SUCH SHAPE AND CAPACITY AS TO PREVENT SPLASHING OR FLOODING AND SHALL BE LOCATED WHERE THEY ARE READILY ACCESSIBLE FOR INSPECTION AND CLEANING. NO STANDPIPE RECEPTOR FOR A CLOTHES WASHER SHALL EXTEND MORE THAN 30 INCHES (762 MM), OR NOT LESS THAN 18 INCHES (457 MM) ABOVE ITS TRAP. NO TRAP FOR A CLOTHES WASHER STANDPIPE RECEPTOR SHALL BE INSTALLED BELOW THE FLOOR, BUT SHALL BE ROUGHED IN NOT LESS THAN 6 INCHES (152 MM) AND NOT MORE THAN 18 INCHES (457 MM) ABOVE THE FLOOR. NO INDIRECT WASTE RECEPTOR SHALL BE INSTALLED IN A TOILET ROOM, CLOSET, CUPBOARD, OR STOREROOM, OR IN A PORTION OF A BUILDING NOT IN GENERAL USE BY THE OCCUPANTS THEREOF; EXCEPT STANDPIPES FOR CLOTHES WASH-ERS SHALL BE PERMITTED TO BE INSTALLED IN TOILET AND BATHROOM AREAS WHERE THE CLOTHES WASHER IS INSTALLED IN THE SAME ROOM. PER CPC 804.1

33. PLUMBING FIXTURES ARE REQUIRED TO BE CONNECTED TO A SANITARY SEWER OR TO APPROVED SEWAGE DISPOSAL SYSTEM. [R306.3]

34. CONNECTIONS TO PLUMBING SYSTEM REQUIRED.
304.1 GENERAL. PLUMBING FIXTURES, DRAINS, APPURTENANCES, AND APPLIANCES, USED TO RECEIVE OR DISCHARGE LIQUID WASTES OR SEWAGE, SHALL BE CONNECTED PROPERLY TO THE DRAINAGE SYSTEM OF THE BUILDING OR PREMISES, IN ACCORDANCE WITH THE REQUIREMENTS OF THIS CODE.
EXCEPTION: [HCD 1] LIMITED-DENSITY OWNER-BUILT RURAL DWELLINGS. WHERE CONVENTIONAL PLUMBING, IN ALL OR IN PART, IS INSTALLED WITHIN THE STRUCTURE, IT SHALL BE INSTALLED IN ACCORDANCE WITH THE PROVISIONS OF THIS CODE. ALTERNATIVE MATERIALS AND METHODS SHALL BE PERMITTED PROVIDED THAT THE DESIGN COMPLIES WITH THE INTENT OF THE CODE, AND THAT SUCH ALTERNATIVES SHALL PER-FORM TO PROTECT HEALTH AND SAFETY FOR THE INTENDED PURPOSE. PER CPC 304.0

34. BATHTUB AND SHOWER FLOORS, WALLS ABOVE BATHTUBS WITH A SHOWERHEAD, AND SHOWER COMPARTMENTS SHALL BE FINISHED WITH A NONABSORBENT SURFACE. SUCH WALL SURFACES SHALL EXTEND TO HEIGHT OF NOT LESS THAN 6 FEET ABOVE THE FLOOR. [R307.2]

35. INSTANTANEOUS WATER HEATERS SHALL HAVE ISOLATION VALVES ON BOTH THE COLD AND THE HOT WATER PIPING LEAVING THE WATER HEATER COMPLETE WITH HOSE BIBS OR OTHER FITTINGS ON EACH VALVE FOR FLUSHING THE WATER HEATER WHEN THE VALVES ARE CLOSED. ES 110.3

36. INSTANTANEOUS WATER HEATERS WITH AN INPUT RATING GREATER THAN 6.8 KBTU/HR (2 KW) SHALL HAVE ISOLATION VALVES ON BOTH THE COLD WATER SUPPLY AND THE HOT WATER PIPE LEAVING THE WATER HEATER, AND HOSE BIBBS OR OTHER FITTINGS ON EACH VALVE FOR FLUSHING THE WATER HEATER WHEN THE VALVES ARE CLOSED. PER 2019 BUILDING ENERGY EFFICIENCY STANDARDS (ES) 110.3.6

37. INSULATION REQUIREMENTS. DOMESTIC HOT WATER PIPING SHALL BE INSULATED.
609.11.2 PIPE INSULATION WALL THICKNESS. HOT WATER PIPE INSULATION SHALL HAVE A MINIMUM WALL THICKNESS OF NOT LESS THAN THE DIAMETER OF THE PIPE FOR A PIPE UP TO 2 INCHES (50 MM) IN DIAMETER. INSULATION WALL THICKNESS SHALL BE NOT LESS THAN 2 INCHES (51 MM) FOR A PIPE OF 2 INCHES (50 MM) OR MORE IN DIAMETER. PER CPC 609.11.1. AND ES 120.3-A

38. DOMESTIC DISHWASHING MACHINE. NO DOMESTIC DISHWASHING MACHINE SHALL BE DIRECTLY CONNECTED TO A DRAINAGE SYSTEM OR FOOD WASTE DISPOSER WITHOUT THE USE OF AN APPROVED DISHWASHER AIR GAP FITTING ON THE DISCHARGE SIDE OF THE DISHWASHING MACHINE. LISTED AIR GAPS SHALL BE INSTALLED WITH THE FLOOD-LEVEL (FL) MARKING AT OR ABOVE THE FLOOD LEVEL OF THE SINK OR DRAINBOARD, WHICHEVER IS HIGHER. PER CPC SECTION 807.3

39. INSTANTANEOUS WATER HEATERS SHALL HAVE ISOLATION VALVES ON BOTH THE COLD AND THE HOT WATER PIPING LEAVING THE WATER HEATER COMPLETE WITH HOSE BIBS OR OTHER FITTINGS ON EACH VALVE FOR FLUSHING THE WATER HEATER WHEN THE VALVES ARE CLOSED. ES 110.3

40. ALL DOMESTIC HOT WATER PIPING TO HAVE THE FOLLOWING MINIMUM INSULATION INSTALLED: ½" PIPE (½" INSULATION); ¾" PIPE (1" INSULATION); 1" TO 1-½" PIPE (1-½" INSULATION). CPC 609.11 & ES 150.0(J)
a) ADDITIONALLY, THE ½" HOT WATER PIPE TO THE KITCHEN SINK, AND THE COLD-WATER PIPE WITHIN 5' OF THE WATER HEATER BOTH REQUIRE 1" MINIMUM INSULATION. ES O(J)

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REVISIONS

RESIDENTIAL DESIGN BY:
JONATHAN PELEZZARE

PLUMBING NOTES, NOTES AND DETAILS

A CUSTOM RESIDENCE FOR:
Torchia
Palm Springs, California

DRAWN:
CHECKED:
PRINT DATE: 2/27/2022
SCALE: NOT TO SCALE
JOB #: 081115
SHEET NO.
P1.0

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PIPING SYSTEM ACRONYMS

—XX—

AC	AIR COMPRESSOR	LAV	LAVATORY
AG	ABOVE GRADE	LI	LINT INTERCEPTOR
AP	ACCESS PANEL	LS	LAUNDRY SINK
BBQ	BAR-B-QUE	LL	LOG LIGHTER
BD	BIDET	MS	MOP SINK
BE	BAR EQUIPMENT	MV	MIXING VALVE
BG	BELOW GRADE	OFD	OVERFLOW DRAIN
BT	BATH TUB	OV	OVEN
BS	BAR SINK	PE	PEDICURE SINK
BV	BALL VALVE	POC	POINT OF CONNECTION
BWV	BACK WATER VALVE	PRV	PRES. REDUCING VLV.
BW	BACK WATER WASTE	PTRV	PRESS/TEMP RELIEF VLV.
BUV	BUTTERFLY VLAVE	RD	ROOF DRAIN
CO	CLEAN OUT	R	RETURN
COTG	CLEAN OUT TO GRADE	RNG	RANGE
CT	COOKTOP	SB	SHAMPO BOWL
CP	CIRC PUMP	SH	SHOWER
CV	CHECK VALVE	SE	SEWAGE EJECTOR
CWFU	COLD WATER FIXTURE UNITS	SMP	SUMP
DB	DISTRIBUTION BOX	SK	SINK
DFU	DRAINAGE FIXTURE UNITS	SOI	SAND & OIL INTERTR.
DISP	WATER DISPENSER	SP	SUM PUMP
DW	DISHWASHER	ST	SEPTIC TANK
DWL	DRYWELL	SS	SERVICE SINK
DKD	DECK DRAIN	SP	SEE PAGE
EC	EVAP. COOLER	S	SUPPLY
ET	EXPANSION TANK	TD	TRENCH DRAIN
EW	EYES WASH	TP	TRAP PRIMER
FD	FLOOR DRAIN	TS	TUB SHOWER
FG	FINISH GRADE	TYP	TYPICAL
FF	FINISH FLOOR	UH	UNIT HEATER
FL	FILTER	UR	URINAL
FP	FIRE PIT	VFU	VENT FIXTURE UNITS
FS	FLOOR SINK	VLV	VALVE
GD	GARBAGE DISPOSAL	VP	VACUUM PUMP
GI	GREASE INTERCEPTOR	VTR	VENT THRU ROOF
GLV	GLOVE VALVE	VS	VEGETABLE SINK
GV	GATE VALVE	WC	WATER CLOSET
HB	HOSE BIBB	WCO	WALL CLEAN OUT
HP	HEAT PUMP	WD	WASHER/DRYER COMBO
HT	HAIR TRAP	WFU	WATER FIXTURE UNITS
HWFU	HOT WATER FIXTURE UNITS	WH	WATER HEATER
ICE	ICEMAKER	WLH	WALL HTR
IE	INVERT ELEVATION	WM	WASHING MACHINE
IHW	INSTANT HOT WATER	WSFU	WATER SUPPLY FIXTURE UNITS
KS	KITCHEN SINK	2WCO	TWO WAY CLEAN OUT
KE	KITCHEN EQUIPMENT	YB	YARD BOX

PLUMBING SYMBOLS

SYMBOL	DESCRIPTION
	BALL VALVE
	CHECK VALVE
	GATE VALVE
BFP	BACKFLOW PREVENTER
FCO	FLOOR CLEANOUT
DCO	DOUBLE CLEAN OUT
WCO	WALL CLEAN OUT
CO	END OF PIPE CLEAN OUT
	ELBOW – TURNED UP
	ELBOW – TURNED DOWN
	FLANGE CONNECTION
	TEE – OUTLET UP
	TEE – OUTLET DOWN
	UNION
	FLANGED UNION
	GAS PLUG
	CAP ON END OF PIPE
	DRAIN WASTE
	WASTE ARM
	VENT
	COLD WATER PIPING
	HOT WATER PIPING
	HOT WTR RETURN PIPING
	GAS PIPING
	GAS PIPING BELOW GRADE
	GAS PIPING BELOW SLAB

SYMBOL	DESCRIPTION
	HOSE BIBB W/VAC BREAKER
	PLUG VALVE COCK
	PRESSURE REDUCING VALVE
	GAS REGULATOR
	RELIEF OR SAFETY VALVE
	SOLENOID VALVE
M	METER
	DIRECTION OF FLOW
	COLD WATER STUB
	HOT WATER STUB/RETURN
	HOT WATER RETURN
	POINT OF CONNECTION
	PUMP
	PLUMBING EQUIPMENT DESIGNATION
	GAS STUB
	TRAP PRIMER
	WATER HAMMER ARRESTORS
	UPPER TERMINAL DRAIN
	STACK DRAIN
	STACK VENT
	VENT THROUGH ROOF
	STORM DRAIN OUT

NOTE: SLEEVE ALL WATER LINES W/ POLYWRAP-C TO AVOID DAMAGE FROM SOIL AND CONCRETE

1-1/2" WATER SERVICE EXTEND AND CONNECT TO 1" WATER METER AT PROPERTY LINE

HB

1-1/2" SOV & PRV IN A.P.

GAS METER BY SOCAL CO.
TOTAL GAS DEMAND: 1215CFH

3"COTG

P1

2"(550CFH)

MASTER BEDROOM #2

MASTER BATH #2

VANITY

SH 2

2"(665CFH)

2"WCO

LAV 2B

LAV 2A

3"WCO

WC 2

MASTER BATH #1

SH 1

LAV 1B

LAV 1A

MASTER BEDROOM #1

HALL #1

WC 1

2% SLOPE

POLYETHYLENE GAS LINE AT -18" BELOW GRADE MINIMUM

TWO CAR GARAGE # 1

P.E. 1 500CFH @ 143'TDL

RAISED PLANTING

1-1/4"(265CFH)

¾"(40CFH)

2"(625CFH)

MASTER CLOSET #2

MASTER CLOSET #1

LL 1 40CFH @ 52'TDL

LL 2 40CFH @ 68.5'TDL

LIBRARY & MEDIA

SITTING ROOM

2"(585CFH)

LAUNDRY RM.

WM 1

2"WCO

½"(35CFH)

POWDER

LAV 5

WC 5

LS 1

DRY 1 35CFH @ 76'TDL

STORAGE

2% SLOPE

COVERED ENTRY

ENTRY

ENTRY HALL

5,601.7 sq ft
F.F. = 564 .00
HALL #2

FAMILY ROOM

COVERED PATIO

down (3) 5" risers

LAP POOL

2"(500CFH)

POLYETHYLENE GAS LINE AT -18" BELOW GRADE MINIMUM

½"(50CFH)

FP 1 50CFH @ 122'TDL

FIRE PIT

SP 1 C P1.0

DB 1 E P1.0

WITH EFFLUENT FILTER TUF-TITE EF-6 COMBO OR EQUAL

ST 1 D P1.0

4"COTG

DW 1

KS 1 GD 1 B P1.0

KITCHEN

2"WCO

2"(550CFH)

DINING ROOM

BREAKFAST

1-1/2"V

ICE 1

1"(150CFH)

1-1/2"WCO

RNG 1 150CFH @ 108'TDL

HALL #3

LAV 3

LAV 4

3"WCO

1-1/2"(400CFH)

BATH #4

BATH #3

WC 4

WC 3

TS 2

TS 1

2"WCO

CLOSET

GUEST BEDROOM #4

GUEST BEDROOM #3

MECH.

COMBUSTION AIR CALCULATION
BUILDING OF ORDINARY "FIGHTNESS
WATER HEATER IN CONFINED SPACE
ALL COMBUSTION AIR FROM OUTSIDE BLD.
PROVIDE 2 OPENINGS IN EXTERIOR WALL
OR DOOR, EACH OPENING 1 SQ. IN. PER 4,000 BTU/H
INPUT- TOTAL 100 SQ.IN. PER OPENING
(SEE MECHANICAL PLAN FOR COMBINED AIR
REQUIREMENTS) CPC 2016 TWO PERMANENT
OPENINGS METHOD 506.4.1 (1)

WH 1 WH 2 CP 1 A P1.0

200CFH (EA) @ 122'TDL

4"COTG

(2) 3/4" T & P VALVE PIPING-EXTEND TO EXTERIOR AND TERMINATE DOWNWARD NOT MORE THAN 24" OR LESS THAN 6" ABOVE GROUND PER SECTION 608.0 CPC.

RAISED PLANTING

TWO CAR GARAGE # 2

SH 3

DWL 1 D P1.0

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1 5/12/2022
2
3
4

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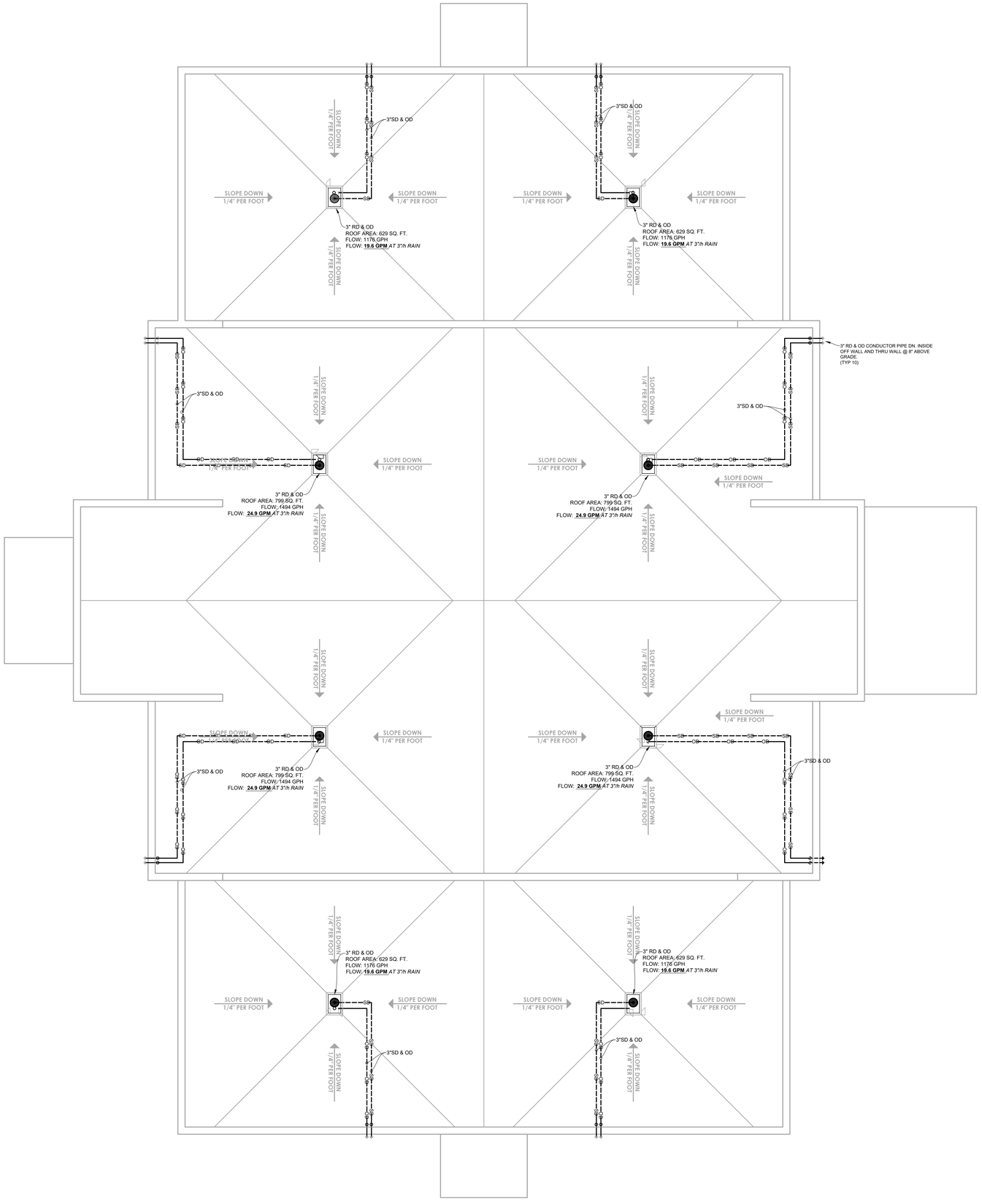
PLUMBING FLOOR PLAN

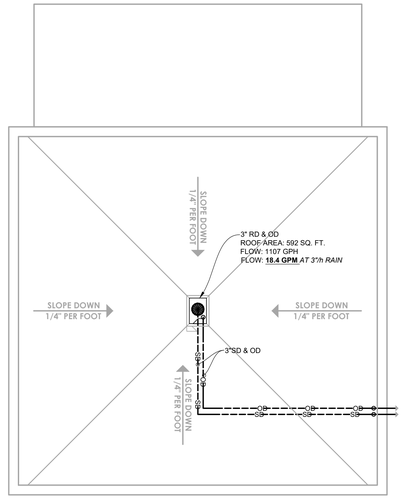
A CUSTOM RESIDENCE FOR:
Torchia
Palm Springs, California

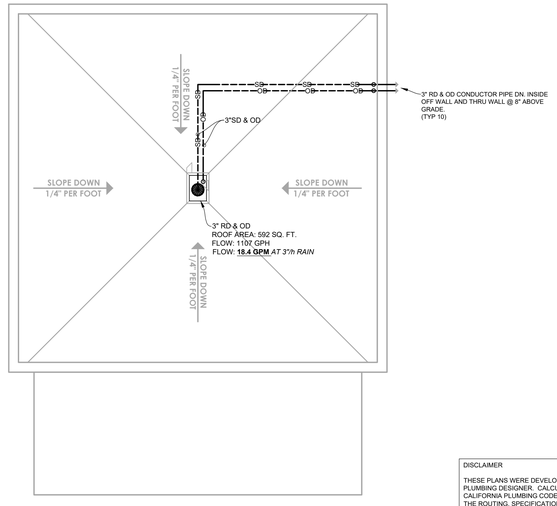
UPDATED TO 2019 CODES

UPDATED TO 2019 CODES

DRAWN
CHECKED
PRINT DATE 6/28/2026
SCALE 1/4" = 1'-0" (UNO)
JOB NO. 081115
SHEET NO. P1.1
OF XX SHEETS







MAXIMUM FLOW AT 3"/h PER TABLE 1101.12 CPC 2016 VERTICAL RAINWATER PIPING		
SIZE OF DRAIN INCHES	FLOW GPM	AREA SQ.FT.
2	30	960
3	92	2930
4	192	6130

MAXIMUM FLOW AT 3"/h PER TABLE 1101.8 CPC 2016 HORIZONTAL RAINWATER PIPING		
SIZE OF DRAIN INCHES	FLOW AT ¼"/FT. GPM	AREA SQ.FT.
3	48	1546
4	110	3533

NOTE:
- ROOF DRAIN CALCULATIONS BASE ON 100 YEAR RAIN FALL PRECIPITATIONS DATA
- PROVIDED EXPANSION JOINTS IN ALL STORM DRAIN CONDUCTOR PIPE FOR TEMPERATURE CONDITION VARIATION

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PLUMBING ROOF PLAN

A CUSTOM RESIDENCE FOR:
Torchia
Palm Springs, California

DRAWN
CHECKED
PRINT DATE
2/27/2022
SCALE
1/4" = 1'-0" (UNO)
JOB #
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SHEET NO.
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3 OF 4 SHEETS

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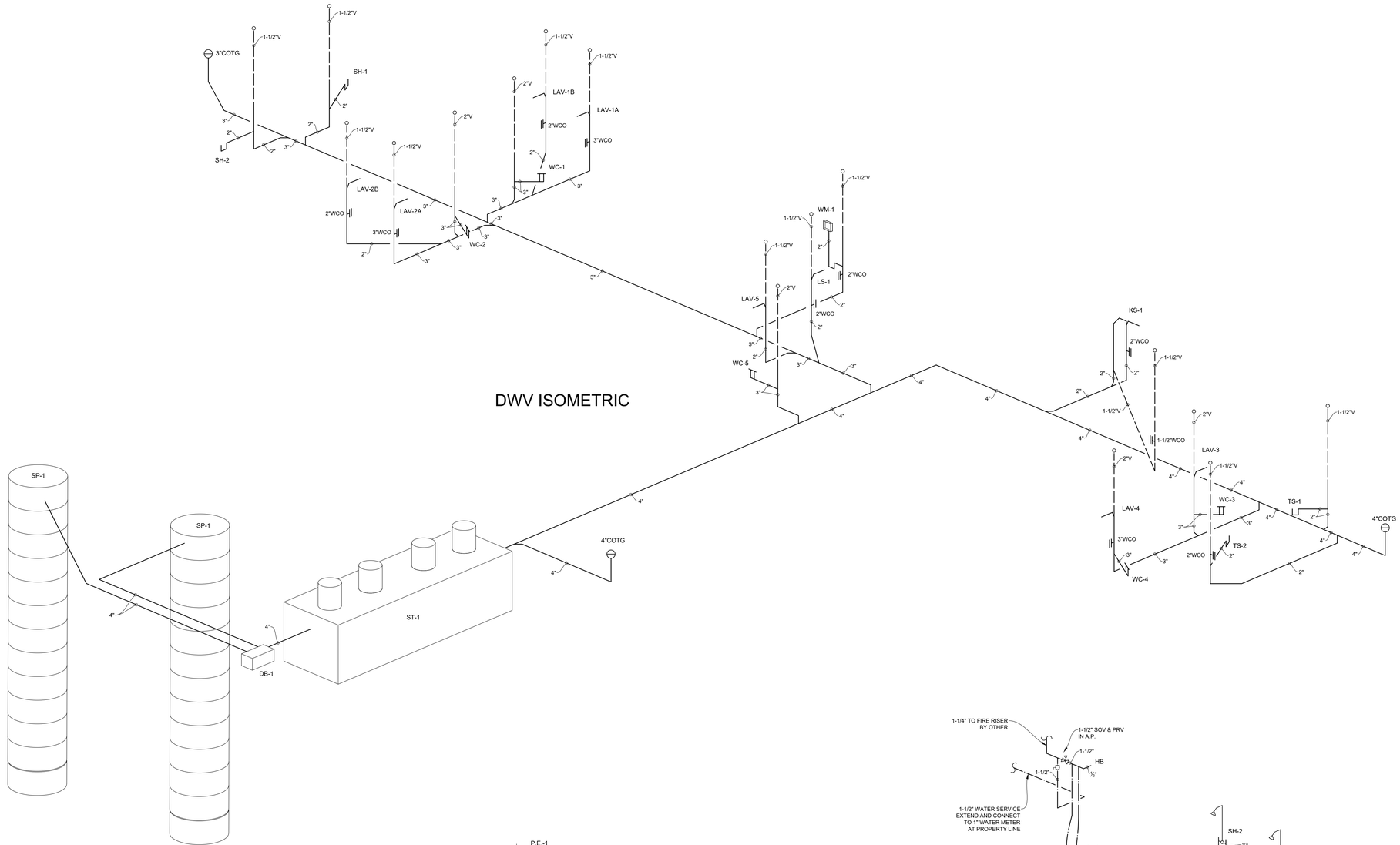
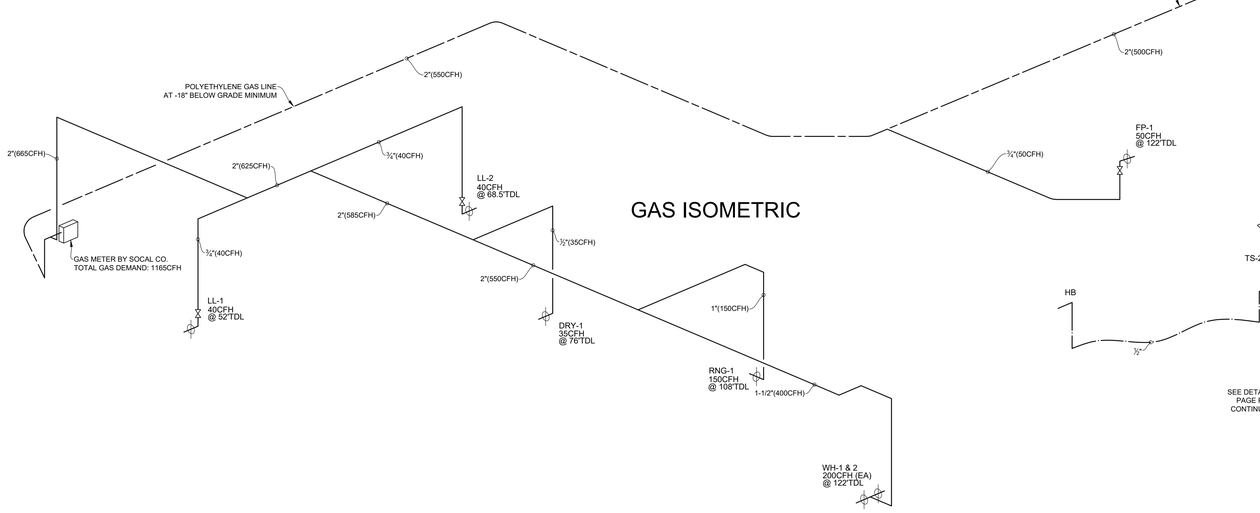
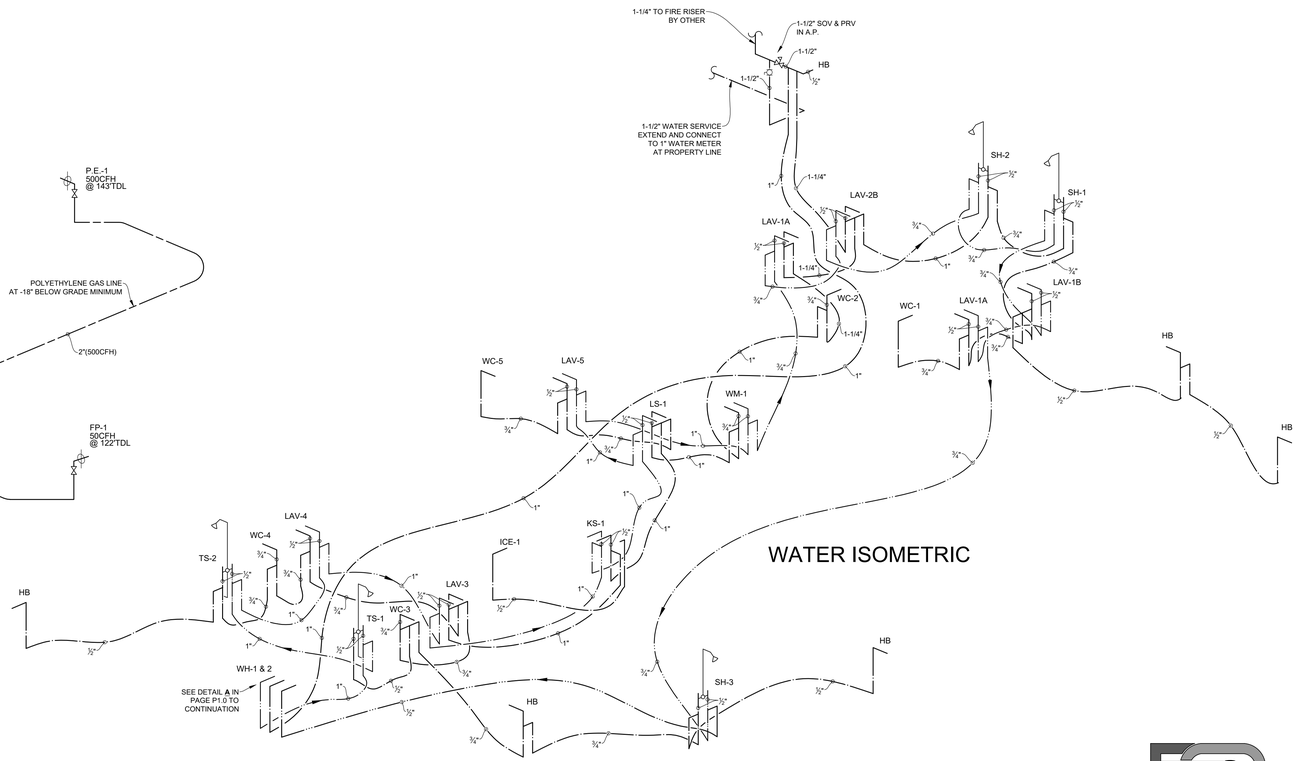


DWV ISOMETRIC



GAS ISOMETRIC



WATER ISOMETRIC

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RESIDENTIAL DESIGN BY:
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PLUMBING ISOMETRICS

A CUSTOM RESIDENCE FOR:
Torchia
Palm Springs, California

DRAWN:
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GENERAL NOTES

PERFORM CONSTRUCTION AND WORKMANSHIP IN COMPLIANCE WITH THE DRAWINGS, SPECIFICATIONS AND THE 2019 CALIFORNIA BUILDING CODE (2019 CBC) & 2018 INTERNATIONAL BUILDING CODE (2018 IBC).

GOVERNING CODE AUTHORITY CITY OF PALM SPRINGS, CALIFORNIA.

THE CONTRACTOR SHALL COORDINATE THE WORK OF ALL TRADES AND VERIFY ALL DIMENSIONS PRIOR TO THE START OF CONSTRUCTION. NOTIFY THE STRUCTURAL ENGINEER OF ANY DISCREPANCIES OR INCONSISTENCIES. DO NOT SCALE DRAWINGS.

ALL DETAILS, SECTIONS, AND NOTES SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO SIMILAR SITUATIONS ELSEWHERE, UNLESS NOTED OTHERWISE. SPECIFIC NOTES AND DETAILS ON THE DRAWINGS TAKE PRECEDENCE OVER THESE GENERAL NOTES AND TYPICAL DETAILS.

CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AT THE SITE AND SHALL REPORT ANY DISCREPANCIES TO THE STRUCTURAL ENGINEER.

ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS ARE TO BE CONSIDERED PART OF THE DOCUMENT PACKAGE AND ARE TO BE USED TO DEFINE LOCATION AND CONFIGURATIONS INCLUDING BUT NOT LIMITED TO CONCRETE CURB HEIGHT AND LOCATION. FLOOR DRAINS, SLAB DEPRESSIONS, ROOF OPENINGS, DUCT PENETRATIONS, ELECTRICAL CONDUIT RUNS, CONNECTIONS FOR PIPES, DUCTS AND EQUIPMENT, DOORS, WINDOWS, NON-BEARING INTERIOR AND EXTERIOR WALLS, SLOPES, STAIRS, RAILINGS, AND WATERPROOFING.

REFER TO THE ARCHITECTURAL SPECIFICATIONS (WHERE APPLICABLE) FOR INFORMATION NOT COVERED BY THESE GENERAL NOTES OR THE STRUCTURAL DRAWINGS.

ALL OMISSIONS OR CONFLICTS BETWEEN THE VARIOUS ELEMENTS FOR THE WORKING DRAWINGS (AND/OR ARCHITECTURAL SPECIFICATIONS WHERE APPLICABLE) SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND STRUCTURAL ENGINEER BEFORE PROCEEDING WITH ANY OF THE WORK INVOLVED. APPROVAL BY GOVERNING AGENCY DOES NOT CONSTITUTE AUTHORITY TO DEVIATE FROM THE PLANS OR SPECIFICATIONS.

THE CONTRACT DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE, UNLESS OTHERWISE SHOWN. THEY DO NOT INDICATE MEANS AND METHODS OF CONSTRUCTION. CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. PROVIDE ADEQUATE ERECTION SHORING, BRACING AND GUYS THAT COMPLY WITH LOCAL STATE, OSHA AND NATIONAL SAFETY STANDARDS.

THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL EXCAVATION PROCEDURES INCLUDING LAGGING, SHORING AND PROTECTION OF ADJACENT PROPERTY, STRUCTURES, STREETS AND UTILITIES COMPLYING WITH ALL LOCAL STATES OSHA, AND NATIONAL SAFETY STANDARDS. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AT THE SITE AND SHALL REPORT ANY DISCREPANCIES TO THE STRUCTURAL ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL WORK AND MATERIALS INCLUDING THOSE FURNISHED BY SUB-CONTRACTORS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR BRACING AND SHORING ALL EXCAVATIONS, TEMPORARY AND EXISTING STRUCTURES AND PARTIALLY COMPLETED PORTIONS OF THE WORK TO ASSURE THE SAFETY OF ANY OF ALL WORK AND MATERIALS INCLUDING THOSE PERSONS COMING IN CONTACT WITH THE WORK.

THE CONTRACTOR SHALL INVESTIGATE THE SITE FOR FILLED EXCAVATIONS OR BURIED STRUCTURES SUCH AS FOUNDATIONS, CESSPOOLS, ETC. IF ANY SUCH STRUCTURES ARE FOUND, THE STRUCTURAL ENGINEER SHALL BE IMMEDIATELY NOTIFIED.

OBSERVATION VISITS TO THE SITE BY FIELD REPRESENTATIVES OF THE STRUCTURAL ENGINEER DO NOT INCLUDE INSPECTIONS OF THE PROTECTIVE MEASURES, OR METHODS OF CONSTRUCTION. CONSTRUCTION SUPPORT SERVICES PERFORMED BY REPRESENTATIVES OF THE STRUCTURAL ENGINEER SHALL BE DISTINGUISHED FROM CONTINUOUS AND DETAILED INSPECTION SERVICES PERFORMED BY OTHERS. OBSERVATION VISITS TO THE SITE BY THE ENGINEERS FIELD REPRESENTATIVE SHALL NEITHER BE CONSTRUED AS INSPECTION NOR APPROVAL OF CONSTRUCTION.

FOR PROPER FIELD OBSERVATION BY THE STRUCTURAL ENGINEER, THE STRUCTURAL ENGINEER SHALL BE NOTIFIED OF THE VARIOUS CONSTRUCTION PHASES.

NOTIFY THE STRUCTURAL ENGINEER WHEN DRAWINGS BY OTHERS SHOW OPENINGS, HOLES, POCKETS, ETC., IN STRUCTURAL ELEMENTS BUT ARE NOT SPECIFICALLY DETAILED ON THE STRUCTURAL DOCUMENTS.

DURING AND AFTER CONSTRUCTION, BUILDER AND/OR OWNER SHALL KEEP LOADS ON STRUCTURE WITHIN THE LIMITS OF DESIGN LOADS.

ALL CODES AND SPECIFICATIONS NOTED ON THESE DRAWINGS SHALL BE THE LATEST APPROVED EDITIONS AND REVISIONS BY THE GOVERNING CODE AUTHORITY HAVING JURISDICTION OVER THIS PROJECT.

THE CONTRACTOR SHALL REVIEW AND STAMP ALL SHOP DRAWINGS PRIOR TO SUBMISSION TO THE STRUCTURAL ENGINEER. REVIEW THE SHOP DRAWINGS FOR COMPLETENESS AND COMPLIANCE WITH THE CONTRACT DOCUMENTS AND SPECIFICATIONS. SUBMIT A WRITTEN REQUEST TO THE STRUCTURAL ENGINEER FOR APPROVAL OF ANY MODIFICATION OR SUBSTITUTION. SUBSTITUTIONS AND MODIFICATIONS MUST BE APPROVED PRIOR TO SUBMISSION OF THE SHOP DRAWINGS TO THE STRUCTURAL ENGINEER. CLOUD THE SHOP DRAWINGS AT LOCATIONS OF ALL MODIFICATIONS. MAINTAIN A COPY OF ALL APPROVED SHOP DRAWINGS AT SITE DURING CONSTRUCTION.

SHOP DRAWINGS SHALL BE SUBMITTED TO THE BUILDING DEPARTMENT, ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO FABRICATION WITH SUFFICIENT TIME FOR REVIEW OF DESIGN INTENT (MINIMUM OF 10 WORKING DAYS).

ALL ASTM DESIGNATIONS SHALL BE AS AMENDED TO DATE UNLESS NOTED OTHERWISE.

IN NO CASE SHALL WORKING DIMENSIONS BE SCALED FROM PLANS, SECTIONS OR DETAILS ON THE STRUCTURAL DRAWINGS.

VIBRATIONAL EFFECTS OF MECHANICAL EQUIPMENT HAVE NOT BEEN CONSIDERED BY THE STRUCTURAL ENGINEER.

NO FRAMING OF ANY TYPE SHALL BE CONCEALED PRIOR TO INSPECTION BY GOVERNING AGENCIES.

GRADING AND DRAINAGE, ALL PAVING, FLAT WORK AND PLANTERS NEXT TO BUILDING SHALL BE PROPERLY GRADED TO CARRY WATER AWAY FROM BUILDINGS.

NO CHANGES ARE TO BE MADE TO THOSE PLANS WITHOUT THE KNOWLEDGE AND CONSENT OF THE STRUCTURAL ENGINEER WHOSE SIGNATURE APPEARS HEREON.

CONTINUOUS (OR SPECIAL) INSPECTION SHALL MEAN INSPECTION DONE CONTINUOUSLY BY A REGISTERED SPECIAL INSPECTOR CURRENTLY LICENSED BY THE STATE AND THE CITY AND APPROVED BY THE ARCHITECT AND ENGINEER.

FORMWORK

DESIGN AND CONSTRUCT FORMWORK IN ACCORDANCE WITH ACI 347, "RECOMMENDED PRACTICE FOR CONCRETE FORMWORK" AND ACI 301, "SPECIFICATIONS FOR STRUCTURAL CONCRETE" UNLESS NOTED OTHERWISE.

REMOVE FORMS AND SHORES IN ACCORDANCE WITH THE FOLLOWING:

A. 48 HRS: FORMS FOR FOOTINGS, PILE CAPS AND GRADE BEAMS.

B. 72 HRS: FORMS FOR COLUMNS, WALLS AND SIDE FORMS FOR BEAMS AND GIRDERS.

C. 7 DAYS AND F'c=3000 PSI (MIN): BOTTOM FORMS AND SHORES FOR MILDLY REINFORCED SLABS AND GIRDERS.

PROVIDE POUR POCKETS IN FORMS AND UNDER EXISTING STRUCTURAL MEMBERS AS REQUIRED TO PREVENT AIR POCKETS AND/OR "HONEYCOMB" UNDER OR AROUND THE EXISTING MEMBERS IS NOT ACCEPTABLE.

PROVIDE 3/4 INCH x 3/4 INCH CHAMFER STRIPS ON ALL EXTERNAL CORNERS OF BEAMS, COLUMNS AND WALLS, UNLESS NOTED OTHERWISE.

PROVIDE CURING WHERE FORMS ARE REMOVED IN LESS THAN 7 DAYS, INCLUDING BUT NOT LIMITED TO WALLS, COLUMNS AND UNDERSIDE OF ELEVATED SLABS.

"SOILS COMPACTION TEST AND CERTIFICATE OF ACCEPTANCE FOR ANY FOUNDATION WORK SHALL BE READY AT TIME OF FOUNDATION INSPECTION AT THE REQUEST OF THE INSPECTOR."

SUBMITTALS

SUBMITTAL REVIEW FOR ITEMS DESIGNED BY BG STRUCTURAL ENGINEERING, INC., 10 BUSINESS DAY REVIEW TIME IS REQUIRED UNLESS OTHERWISE AGREED.

RFI REVIEW: ALLOW 5 BUSINESS DAY RESPONSE TIME UNLESS OTHERWISE AGREED.

SUBMIT COPIES OF REQUIRED SUBMITTALS TO OWNER'S REPRESENTATIVE FOR REVIEW.

CONCRETE REINFORCING STEEL:

A. SUBMIT CERTIFIED MATERIAL CERTIFICATES FOR REINFORCING STEEL SIGNED BY THE MANUFACTURER AND OR CONTRACTOR.

B. SUBMIT SHOP DRAWINGS FOR FABRICATION, BENDING AND PLACEMENT OF CONCRETE REINFORCEMENT IN ACCORDANCE WITH ACI 318 "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT".

CAST-IN-PLACE CONCRETE:

A. SUBMIT MIX DESIGNS PREPARED, STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF CALIFORNIA FOR EACH CLASS OF CONCRETE. INCLUDE RESULTS OF SLUMP, SHRINKAGE AND COMPRESSION TESTS USED TO ESTABLISH MIX PROPORTIONS. ALSO INCLUDE CERTIFIED MATERIAL CERTIFICATES FOR EACH COMPONENT OF THE MIX.

B. SUBMIT PROPOSED CONSTRUCTION JOINTS LOCATIONS FOR REVIEW.

C. SUBMIT PRODUCT DATA FOR CURING MATERIALS.

D. SUBMIT PRODUCT DATA FOR NON-SHRINK GROUT.

STRUCTURAL STEEL:

A. SUBMIT MILL CERTIFICATES FOR STRUCTURAL STEEL SHAPES INDICATING STRUCTURAL STRENGTH AND CHEMICAL COMPOSITION FOR EACH HEAT OF STEEL.

B. SUBMIT SHOP DRAWINGS PRIOR TO FABRICATION. INCLUDE AT A MINIMUM ASTM MATERIAL DESIGNATIONS, MEMBER SIZES, SIZES AND TYPES OF WELDS, SIZES AND TYPES OF BOLTS AND DIMENSIONS.

C. SUBMIT MILL CERTIFICATES FOR FASTENERS AND THREADED RODS.

D. SUBMIT WELDING PROCEDURE SPECIFICATION FOR EACH TYPE OF WELD TO BE USED AND PRODUCT DATA FOR WELDING ELECTRODES.

E. SUBMIT MANUFACTURERS PRODUCT DATA FOR PRIMER AND FINISH PAINT INCLUDING COLOR CHARTS.

MECHANICAL ANCHORS: SUBMIT PRODUCT DATA FOR EACH TYPE OF ANCHOR USED.

ADHESIVE ANCHORS: SUBMIT PRODUCT DATA FOR EACH TYPE OF ADHESIVE ANCHORING SYSTEMS USED.

CAST IN PLACE CONCRETE

SCHEDULE OF STRUCTURAL CONCRETE 28 DAY STRENGTHS AND TYPES:

LOCATION IN STRUCTURE	STRENGTH (PSI)	TYPE
SLAB ON GRADE / FOOTINGS	2500 (U.N.O.)	HARDROCK
WALLS	3000	HARDROCK
GRADE BEAMS	3000	HARDROCK
BEAMS AND SUPPORTED SLABS	4000	HARDROCK
COLUMNS	4000	HARDROCK
FILL ON METAL DECK	4000	LT. WT.

CEMENT SHALL CONFORM TO ASTM C150. TYPE V CEMENT SHALL BE USED. MIX DESIGN TO BE IN ACCORDANCE WITH CBC SECTION 1901.2 AND 1905.

PROVIDE SLICEOUS, NORMAL WEIGHT AGGREGATES OF NATURAL SAND AND ROCK CONSISTING OF SILICA OR COMPOUNDS OTHER THAN CALCIUM OR MAGNESIUM CARBONATE FOR HARDROCK CONCRETE. AGGREGATES ARE TO COMPLY WITH ASTM C33 WITH PROVEN SHRINKAGE CHARACTERISTICS OF LESS THAN 0.05%.

ALL REINFORCING STEEL, DOWELS, ANCHOR BOLTS, AND OTHER INSERTS SHALL BE SECURED IN POSITION PRIOR TO POURING CONCRETE OR GROUT. ALL REINFORCEMENT SHALL BE SECURELY HELD IN PLACE WHILE PLACING CONCRETE. IF REQUIRED, ADDITIONAL BARS OR STIRRUPS SHALL BE PROVIDED BY THE CONTRACTOR TO FURNISH SUPPORT FOR ALL BARS.

ANCHOR BOLTS SHALL BE EMBEDDED INTO CONCRETE PER C.B.C. SECTION 1901.3 AND SECTION 1905 OR UNLESS NOTED OTHERWISE.

THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT PLACED IN CAST-IN-PLACE CONCRETE:
TOLERANCES SHALL BE AS PER AMERICAN CONCRETE INSTITUTE (ACI-318).

LOCATION	CLEAR COVER (MIN)
CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH:	
- ALL BARS	3"
CONCRETE EXPOSED TO EARTH OR WEATHER:	
- #6 THROUGH #18 BARS	2"
- #5 BAR, W31 OR D31 WIRE AND SMALLER	1 1/2"
CONCRETE NOT EXPOSED TO EARTH, TO WEATHER, OR IN CONTACT TO GROUND:	
- SLABS, WALLS, JOISTS: #14 AND #18 BARS	1" - 1 1/2"
- SLABS, WALLS, JOISTS: #11 AND #18 SMALLER	3/4"
- BEAMS, COLUMNS: PRIMARY REINFORCEMENT, TIES, STIRRUP AND SPIRAL	1 1/2"

THE CONTRACTOR SHALL PLACE ALL CONCRETE IN COMPLIANCE WITH ACI 301 AND ACI 304.

PROVIDE KEYS IN CONSTRUCTION JOINTS UNLESS DETAILED OTHERWISE. THOROUGHLY CLEAN, REMOVE ALL LAITANCE AND THOROUGHLY WET AND REMOVE STANDING WATER IN CONSTRUCTION JOINTS BEFORE PLACING NEW CONCRETE AT VERTICAL JOINTS SLUSH WITH A COAT OF NEAT CEMENT BEFORE PLACING NEW CONCRETE.

ALL CONCRETE SHALL BE MAINTAINED ABOVE 50 DEGREES FAHRENHEIT AND IN A MOIST CONDITION A MINIMUM OF 7 DAYS AFTER PLACEMENT.

SLUMP IN CONCRETE USED FOR FLAT SURFACES SHALL NOT EXCEED 4 INCHES.

PROJECTING CORNERS OF COLUMNS, BEAMS, WALLS, ETC SHALL BE FORMED WITH A 3/4 INCH CHAMFER, UNLESS NOTED OTHERWISE ON THE ARCHITECT'S DRAWINGS.

ELECTRICAL CONDUIT AND MECHANICAL PIPES IN EXCESS OF 1 INCH DIAMETER SHALL NOT BE EMBEDDED IN CONCRETE UNLESS DETAILED. CONDUIT AND PIPES LESS THAN 1 INCH IN DIAMETER MAY BE EMBEDDED IN SLAB ON GRADE, AND ELEVATED SLABS PROVIDED THE SPACING EXCEEDS 2 INCHES ON CENTER IN HORIZONTAL RUNS, AND ARE PLACED WITHIN THE MIDDLE ONE-THIRD OF THE SECTION DEPTH.

ALL PLUMBING PIPE PENETRATIONS TO BE PERPENDICULAR TO CONTINUOUS OR GRADE BEAM FOOTINGS (U.N.O.). IN ADDITION, PROVIDE SLEEVE TO ALL PLUMBING PIPES THAT PENETRATES CONTINUOUS OR GRADE BEAM FOOTINGS.

PROVIDE CORNER BARS IN ALL WALLS AND AT WALL INTERSECTIONS TO MATCH SIZE AND SPACING OF HORIZONTAL BARS ON THOSE WALLS.

LOCATION OF SLOTTED INSERTS, WELD PLATES AND ALL OTHER ITEMS TO BE EMBEDDED IN CONCRETE SHALL BE COORDINATED WITH ARCHITECTURAL AND MECHANICAL DRAWINGS.

REINFORCING BARS SHALL NOT BE WELDED UNLESS SPECIFICALLY NOTED ON THE DRAWING AS BEING WELDED. WELDED REINFORCING SHALL CONFORM TO ASTM A706.

ALL CONCRETE WORK SHALL CONFORM TO THE LATEST ACI CODE AND DETAILING MANUAL. ALL CONCRETE CONSTRUCTION PER INTERNATIONAL BUILDING CODE.

DIMENSIONS ARE NOT FURNISHED TO SIMPSON "HDA" OR "PA" TYPE HOLDOWNS, IT IS THE RESPONSIBILITY OF THE CONTRACTOR'S SUPERINTENDENT. THE FRAMING CONTRACTOR AND THE CONCRETE CONTRACTOR TO LOCATE THE EXACT LOCATION REFER TO THE DETAILS AND MANUFACTURER'S SPECIFICATIONS FOR PROPER INSTALLATION.

COARSE AGGREGATE OR CONCRETE SHALL NOT CONTAIN LIGNITE, STEEL, OR OTHER MATERIALS THAT MAY BE DETRIMENTAL TO THE CONCRETE.

FLY ASH MAYBE SUBSTITUTED FOR A PORTION FOR THE CEMENT. A MAXIMUM OF 20% OF THE CEMENT MAY BE REPLACED BY FLY ASH WHEN REPLACEMENT IS USED THE REPLACED CEMENT SHALL BE SUBSTITUTED WITH ONE AND ONE HALF TIMES WITH FLY ASH, WATER CEMENT RATIOS SHALL BE BASED ON THE WATER/CEMENT FLY ASH RATIO.

MIX DESIGN SHALL NOT CONTAIN LESS THAN A WATER/CEMENT RATIO OF 0.45.

FOUNDATION (WIDTHS AND DEPTHS), AND REINFORCING AS SHOWN ON PLANS ARE SUPERSEDED BY LOCAL CODES OR ORDINANCES WHICH REQUIRE INCREASES OF THE SAME.

CAST-IN-PLACE CONCRETE CONT

CONCRETE MIX AND STRENGTH f'c AT 28 DAYS, SHALL CONFORM TO THE FOLLOWING TABLE:

CLASS	LOCATION	28 DAY F'c	TYPE	W/C RATIO	MAX AGGREGATE SIZE
B	SHALLOW FOUNDATIONS, MISC CURBS, PADS, ETC.	2500 PSI	NORMAL WEIGHT	0.45	3/4"
C	SLABS ON GRADE	2500 PSI	NORMAL WEIGHT	0.45	3/4"
D	WALLS, SUSPENDED SLABS AND COLUMNS	5000 PSI	NORMAL WEIGHT	0.45	3/4"

REFERENCE ACI 318-19 WHEN SOIL CONTAINS MORE THAN 0.1% SULFATE CONCENTRATION IF STATED IN THE GEOTECHNICAL SOILS REPORT (WHEN PROVIDED).

IF STRENGTH DATA FROM FIELD EXPERIENCE OR TRIAL MIXTURES ARE NOT AVAILABLE, THE MAXIMUM W/C RATIO SHALL BE AS SPECIFIED IN ACI 318 TABLE(S) 4.2.1 AND 4.3.1.

ALL REINFORCING SHALL BE SUPPORTED IN CONFORMANCE WITH THE MANUAL OF STANDARD PRACTICE FOR REINFORCED CONCRETE CONSTRUCTION (THE LATEST ADDITION).

REFER TO ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR MISCELLANEOUS ITEMS TO BE CAST INTO CONCRETE AND MASONRY.

SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR SCORING AND FINISHES FOR CONCRETE SLABS AND STRUCTURAL CONCRETE.

PROPORTION, MIX, TRANSPORT AND PLACE CAST-IN-PLACE CONCRETE IN ACCORDANCE WITH ACI 301, "SPECIFICATIONS FOR STRUCTURAL CONCRETE" U.N.O.

CONCRETE IS REINFORCED AND CAST-IN-PLACE UNLESS OTHERWISE NOTED. WHERE REINFORCING IS NOT SPECIFICALLY SHOWN OR WHERE DETAILS ARE NOT GIVEN, PROVIDE REINFORCING SIMILAR TO THAT SHOWN FOR SIMILAR CONDITIONS. SUBJECT TO REVIEW BY THE OWNER'S REPRESENTATIVE.

ROUGHEN CONCRETE SURFACES OF CONSTRUCTION JOINTS TO 1/4 INCH AMPLITUDE AND CLEAN OF LAITANCE, FOREIGN MATTER AND LOOSE PARTICLES. LOCATE CONSTRUCTION JOINTS AS SHOWN ON THE DRAWINGS. SUBMIT ALTERNATE JOINT LOCATIONS OR JOINTS NOT SHOWN TO THE OWNER'S REPRESENTATIVE FOR REVIEW AND APPROVAL PRIOR TO PROCEEDING WITH THE WORK.

AT LOCATIONS WHERE CONCRETE IS CAST AGAINST EXISTING CONCRETE, ROUGHEN CONTACT SURFACES TO 1/4 INCH AMPLITUDE AND CLEAN OF LAITANCE, FOREIGN MATTER AND LOOSE PARTICLES.

AT LOCATIONS WHERE CONCRETE IS CAST AGAINST EXISTING MASONRY, THOROUGHLY ROUGHEN CONTACT SURFACES BY LIGHT SANDBLASTING OR OTHER SUITABLE MEANS AND CLEAN OF LAITANCE, FOREIGN MATTER AND LOOSE PARTICLE.

REFER TO ARCHITECTURAL AND MECHANICAL DRAWINGS FOR LOCATIONS OF ADDITIONAL CONCRETE CURBS AND HOUSEKEEPING PADS NOT SHOWN.

CONTINUOUSLY MOIST CURE CONCRETE SLABS ON GRADE FOR 7 DAYS MINIMUM. WATER FOG SPRAYS, PONDING, SATURATED ABSORPTIVE COVERS OR MOISTURE RETAINING COVERS MAY BE USED. CURING COMPOUNDS CAN BE USED BASED ON SATISFACTORY PERFORMANCE ON PREVIOUS APPLICATIONS. CONTRACTOR TO SUBMIT SPECIFICATIONS FOR REVIEW AND APPROVAL.

REINFORCING STEEL

FABRICATE AND PLACE REINFORCING STEEL IN ACCORDANCE WITH ACI 318, "DETAILS AND DETAILING CONCRETE REINFORCING" AND ACI 301, "SPECIFICATIONS FOR STRUCTURAL CONCRETE" OR UNLESS NOTED OTHERWISE.

ACCURATELY POSITION, SUPPORT AND SECURE REINFORCEMENT FROM DISPLACING DUE TO FORMWORK, CONSTRUCTION OR CONCRETE PLACEMENT OPERATIONS. LOCATE AND SUPPORT REINFORCEMENT BY METAL CHAIRS, RUNNERS, BOLSTERS, SPACERS AND HANGERS AT MAXIMUM 3-FOOT SPACING.

MECHANICAL COUPLERS: LENTON THREADED OR INTERLOCK COUPLERS BY ERICO (IAPMO UES ER-0129 & LARR 24507) OR EXTENDED BY HEADED REINFORCEMENT CORPORATION (ICC ESR-2764 & LARR 25347). COUPLERS FOR BEAM AND SLAB BARS AT FORMED CONSTRUCTION JOINTS MAY BE LENTON FORM SAVERS BY ERICO (IAPMO ER-0188 & LARR 25893).

WELD REINFORCING STEEL IN ACCORDANCE WITH AWS D1.4 USING QUALIFIED WELDERS.

WELDING OR REINFORCING STEEL SHALL ONLY OCCUR WITH ASTM A706 BARS AND USING E-90XX LOW HYDROGEN ELECTRODES COMPLYING WITH ANSI/AWS D1.4.

REINFORCING STEEL #8 AND LARGER AND ALL REINFORCING STEEL TO BE WELDED TO BE ASTM A706, 60KSI. ALL OTHER REINFORCING STEEL TO BE ASTM A615, 60KSI.

TERMINATE REINFORCING STEEL IN STD HOOKS, UNLESS NOTED OTHERWISE.

PROVIDE REINFORCING SHOWN OR NOTED CONTINUOUS IN LENGTH AS LONG AS PRACTICABLE.

ALL BARS SHALL BE FREE OF LOOSE AND FLAKY RUST AND SCALE, GREASE OR OTHER MATERIALS WHICH MIGHT AFFECT OR IMPAIR BOND.

LAP REINFORCING STEEL AT SPLICES, AT WELL STAGGERED LOCATIONS AND TO THE FOLLOWING MINIMUM LENGTHS UNLESS NOTED OTHERWISE:

#3 AND #4	2'-0"	#8	5'-3"
#5	2'-6"	#9	6'-9"
#6	3'-0"	#10	8'-6"
#7	4'-3"	#11	10'-6"

SPLICE REINFORCING STEEL WHERE INDICATED PER PLAN.

ALL REINFORCING SHALL BE SECURELY TIED AND BRACED IN PLACE PRIOR TO PLACING CONCRETE.

MINIMUM CLEAR DISTANCES BETWEEN BARS INCLUDING AREAS AT SPLICES SHALL BE 1 INCH OR 1 BAR DIAMETER, WHICHEVER IS GREATER. MINIMUM CLEAR DISTANCE AT COLUMNS SHALL BE 1-1/2 INCHES OR 1-1/2 BAR DIAMETERS, WHICHEVER IS GREATER.

DOWELS BETWEEN FOOTINGS AND WALLS OR COLUMNS SHALL BE THE SAME SIZE, GRADE, SPACING AND NUMBER AS THE SPECIFIED VERTICAL REINFORCING AND SHALL LAP AS NOTED ABOVE, UNLESS NOTED OTHERWISE.

SMOOTH DOWELS IN SLAB ON GRADE TO BE ASTM A36, 36KSI.

ALL REINFORCING BAR BENDS SHALL BE MADE COLD.

TESTS AND INSPECTIONS

1. PROVIDE ALL STRUCTURAL MATERIAL FROM TESTED STOCK, FURNISH COPIES OF TEST REPORTS TO ARCHITECT & GOVERNING CODE AUTHORITY UPON REQUEST.
2. SEE TABLE(S) ON SHEET S-1.1 FOR TEST AND INSPECTION REQUIREMENTS.
3. THE USE OF ROLLED STEEL SECTIONS, BOLTS, & OR REBAR MANUFACTURED OUTSIDE THE UNITED STATES WILL REQUIRE VERIFICATION THAT THE PRODUCTS COMPLY WITH APPLICABLE ASTM STANDARD. FOREIGN STEEL WILL REQUIRE MILL CERTIFICATES, & REPRESENTATIVE TESTING BY AGENCIES APPROVED BY THE GOVERNING CODE AUTHORITY TO DEMONSTRATE COMPLIANCE. ALL FOREIGN BOLTS & CONNECTORS SHALL BE APPROVED BY THE GOVERNING CODE AUTHORITY.
4. A TESTING LABORATORY SHALL PROVIDE CONTINUOUS INSPECTION, COMPLYING WITH CHAPTER 17 OF THE 2019 CBC FOR THE FOLLOWING:
   A. FIELD WELDING
   B. CONCRETE & REINFORCING STEEL WHEN SPECIFIED COMPRESSIVE STRENGTH EXCEEDS 2500 PSI
   C. BOLTS INSTALLED IN CONCRETE
   D. HIGH-STRENGTH BOLTS
   E. VERMICULITE FILL
   F. SPRAYED FIREPROOFING
   G. EXPANSION AND EPOXY ANCHORS
5. ALL COMPLETE PENETRATION GROOVE WELDS CONTAINED IN JOINTS OF ORDINARY AND SPECIAL MOMENT-RESISTING FRAMES SHALL BE TESTED 100% EITHER BY ULTRASONIC TESTING OR BY RADIOGRAPHY.
6. AN INDEPENDENT TESTING AGENCY AND SPECIAL INSPECTOR WILL BE RETAINED BY THE OWNER TO PERFORM THE FOLLOWING TEST AND INSPECTIONS. PROVIDE ACCESS AND FURNISH SAMPLES TO THE AGENCY AS REQUIRED BY THE CONTRACT DOCUMENTS.
7. IF INITIAL TESTS OR INSPECTIONS MADE BY THE OWNER'S TESTING AGENCY REVEAL THAT ANY PORTION OF THE WORK DOES NOT COMPLY WITH THE CONTRACT DOCUMENTS, ADDITIONAL TESTS, INSPECTIONS AND NECESSARY REPAIRS WILL BE MADE AT THE CONTRACTOR'S EXPENSE.
8. THE FOLLOWING ITEMS REQUIRING TESTS AND INSPECTIONS IN ACCORDANCE WITH THE REQUIREMENTS OF THE CHAPTER, "STRUCTURAL TEST AND INSPECTIONS" OF THE CODE OF THE GOVERNING JURISDICTION AS NOTED IN THE GENERAL SECTION OF THE GENERAL NOTES. AN "X" PRESENT IN COLUMN "C" INDICATES CONTINUOUS INSPECTION & "X" PRESENT IN COLUMN "P" INDICATES PERIODIC INSPECTION. SEE SPECIAL INSPECTION TABLES ON S-1.2.

STRUCTURAL OBSERVATION

STRUCTURAL OBSERVATION IS REQUIRED IN ACCORDANCE WITH SECTION 1704.6 OF THE 2019 CALIFORNIA BUILDING CODE OR THE GOVERNING CODE OF JURISDICTION AS NOTED IN THE GENERAL SECTION OF THE GENERAL NOTES. NOTIFY THE ENGINEER OF RECORD AT SIGNIFICANT CONSTRUCTION STAGES 72 HOURS IN ADVANCE AND PROVIDE ACCESS FOR THE FOLLOWING STRUCTURAL OBSERVATIONS:

A. FOUNDATIONS
   1. REINFORCEMENT

B. STEEL FRAMING
   1. GENERAL

C. WOOD FRAMING
   1. GENERAL
   2. SHEAR WALLS AND HOLD-DOWNS
   3. DIAPHRAGMS AND COLLECTORS

D. CONCRETE
   1. WALL REINFORCEMENT
   2. SLABS AND SLAB ON GRADE

REQUIRED SPECIAL INSPECTIONS

IN ADDITION TO THE REGULAR INSPECTIONS, THE FOLLOWING CHECKED ITEMS WILL ALSO REQUIRE SPECIAL INSPECTION IN ACCORDANCE WITH SEC. 1709 OF THE INTERNATIONAL BUILDING CODE & SEC 1704 & 1705 OF THE CBC

ITEM	REQUIRED?	REMARKS
SOILS COMPLIANCE PRIOR TO FOUNDATION INSPECTION	YES	SEE SOILS REPORT
STRUCTURAL CONCRETE OVER 2,500 PSI	N/A	
FIELD WELDING	YES	
HIGH STRENGTH BOLTS	YES	
EXPANSION / EPOXY ANCHORS	YES	
STRUCTURAL MASONRY	YES	
MOMENT FRAMES / CONNECTIONS	N/A	
SIMPSON SSW STRONG WALL	N/A	
DRYPACK OR NON-SHRINK GROUT	YES	4000 PSI

PERIODIC SPECIAL INSPECTION IS REQUIRED FOR NAILING, BOLTING, ACHORING AND OTHER FASTENING OF THE COMPONENTS WITHIN THE SEISMIC-FORCE-RESISTING SYSTEM INCLUDING WOOD SHEAR WALLS, WOOD DIAPHRAGMS, DRAG STRUTS, BRACES, SHEAR PANELS AND HOLD-DOWNS

SEE SHEET S-1.2 FOR ADDITIONAL INFORMATION

DESIGN DATA

1. GENERAL DATA:

   LOAD COMBINATIONS = ASD
   FLAT ROOF DEAD LOAD = 70.0 psf
   SLOPED DEAD LOAD = N/A
   TRUSS TOP CHORD DEAD LOAD = N/A
   TRUSS TOP CHORD LIVE LOAD = N/A
   TRUSS BOTTOM CHORD DEAD LOAD = N/A
   TRUSS BOTTOM CHORD LIVE LOAD = N/A
   ROOF LIVE LOAD = 20 psf (At ≤ 400sf)
   ROOF LIVE LOAD = 16 psf (400sf < At ≤ 600sf)
   ROOF LIVE LOAD = 12 psf (At > 600sf)
   FLOOR LIVE LOAD = N/A (USE OF LIVE LOAD REDUCTION SHALL BE INDICATED FOR EACH TYPE OF LIVE LOAD USED IN THE DESIGN)
   SOLAR LOAD = N/A

2. WIND DESIGN DATA:

   WIND DESIGN METHOD = MWFRS ENVELOPE (METHOD 2)
   BASIC WIND SPEED = 130 mph
   WIND IMPORTANCE FACTOR I = 1
   OCCUPANCY CATEGORY = II
   ENCLOSURE CLASSIFICATION = ENCLOSED
   WIND EXPOSURE = C
   INTERNAL PRESSURE COEFFICIENT GCpi = ± 0.18 (ENCLOSED BUILDINGS)
   WIND DESIGN LOAD = 24.0 psf
   COMPONENTS AND CLADDING DESIGN LOAD = 63.3 psf

3. EARTHQUAKE DESIGN DATA:
   (THE STRUCTURE HAS BEEN EVALUATED IN ACCORDANCE WITH THE CALIFORNIA BUILDING CODE)

   SEISMIC METHOD = ANALYTICAL
   SEISMIC IMPORTANCE FACTOR I = 1
   OCCUPANCY CATEGORY = II
   S_S = 1.500 S_{DS} = 1.200
   S_1 = 0.600 S_{D1} = 0.600
   SEISMIC DESIGN CATEGORY = D
   DESIGN BASE SHEAR = 0.245
   SEISMIC RESPONSE COEFFICIENT(S) CS = 0.343
   RHO = 1.3 (MASONRY SHEAR WALLS)

   BASIC SEISMIC-FORCE-RESISTING SYSTEM(S) = BEARING WALL SYSTEMS
   RESPONSE MODIFICATION FACTOR(S) R = 3.5 (MASONRY SHEAR WALLS)
   ANALYSIS PROCEDURE USED: EQUIVALENT LATERAL FORCE PROCEDURE
   DESIGN BASE SHEAR = ASD

4. FLOOD DESIGN DATA: NOT REQUIRED
5. SPECIAL LOADS: NOT APPLICABLE
6. SYSTEMS AND COMPONENTS REQUIRING SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE: SEE TABLE(S) ON SHEET S-1.2

GLUE-LAM BEAM

GLUE-LAM MEMBERS SHALL BE FABRICATED BY A LICENSED FABRICATOR PER WCLA, AITC, AND I.C.C. REQUIREMENTS.

FABRICATOR TO PROVIDE A CERTIFICATE OF INSPECTION TO GENERAL CONTRACTOR.

CUTTING, NOTCHING OR DRILLING OF GLUE-LAMS ONLY WITH THE APPROVAL OF THE STRUCTURAL ENGINEER.

LUMBER SPECIES TO BE DOUGLAS FIR, COMBINATION 24F-V8, Fb=2,400, Fv=165, Fc=385 AT TOP, Fc=450 AT BOTTOM, E-1,800,000 UNLESS NOTED OTHERWISE ON PLANS.

PROVIDE TENSION LAMINATIONS AT BOTTOM OF BEAMS AND AT TOP OF CONTINUOUS BEAMS OVER COLUMNS UNLESS NOTED OTHERWISE.

MOISTURE CONTENT PER PS 56.

SCARF PER PS 56 (FINGER TYPE).

LAMINATIONS TO BE 1 1/2 INCHES.

GLUE LAMINATED BEAMS TO BE INSPECTED DURING FABRICATION BY AN APPROVED TESTING LABORATORY. EACH BEAM TO BE STAMPED WITH AN IDENTIFYING NUMBER. BEAMS ARE NOT TO BE ERECTED UNTIL CERTIFICATE OF INSPECTION FROM TESTING LAB HAS BEEN APPROVED BY THE BUILDING DEPARTMENT.

SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW BY BUILDING DEPARTMENT, ARCHITECT AND STRUCTURAL ENGINEER.

SEAL........ENDS
APPEARANCE........INDUSTRIAL (U.N.O.)
ADHESIVE........WET-PER PS 56
PRIME........NONE
WRAP........GROUP
CAMBER........BASED ON 2,000 FOOT RADIUS
SEE PLAN FOR SPECIFIED CAMBER
INSPECTION........AITC WITH ATTACHMENTS 1&2

GLUE-LAM STRUCTURAL MEMBERS WHICH ARE EXPOSED TO WEATHER AND NOT PROPERLY PROTECTED BY A ROOF, EAVE, OVERHANGS OR SIMILAR COVERING SHALL BE PRESSURE TREATED WITH AN APPROVED PRESERVATIVE OR BE MANUFACTURED FROM WOOD WITH A NATURAL RESISTANCE TO DECAY.

NO ROSBORO X-BEAMS PERMITTED.

ABREVIATIONS

AB	ANCHOR BOLT
ABV	ABOVE
BAR	REINFORCING BAR
BD	BOARD
BLKG	BLOCKING
BLW	BELOW
BM	BEAM
BN	BOUNDARY NAIL
BOB	BOTTOM OF BEAM
BW	BOTH WAYS
CF	CONTINOUS FOOTING
CIDH	CAST-IN DRILLED HOLE
CJ	CEILING JOIST
CL	CENTERLINE
COL	COLUMN
CONC	CONCRETE
CONT	CONTINOUS
CPE	CONT PANEL EDGES
D	DEPTH
DBL	DOUBLE
DF	DOUGLAS FIR
DIA	DIAMETER
DO	DITTO
(E)	EXISTING
EJ	EXPANSION JOINT
EN	EDGE NAIL
EQ	EQUAL
EW	EACH WAY
FB	FLOOR BEAM
FG	FINISH GRADE
FJ	FLOOR JOIST
FLR	FLOOR
FMG	FRAMING
FN	FIELD NAIL
FOC	FACE OF CONCRETE
FOM	FACE OF MASONRY
FOS	FACE OF STUDS
FP	FULL PENETRATION
FTG	FOOTING
GA	GAUGE
GALV	GALVANIZED
GLB	GLUE-LAMINATED BEAM
GR BM	GRADE BEAM
GWB	GYPSUM WALLBOARD
GT	GIRDER TRUSS
H	HIGH
HDR	HEADER
HGT	HEIGHT
HGR	HANGER
HORIZ	HORIZONTAL
HSS	HOLLOW STRUCTURAL STEEL
HT	HIP TRUSS
KP	KING POST
L	LOW
LT WT	LIGHT WEIGHT
LVL	LAMINATED VENEER LUMBER

ABREVIATIONS

RF	ROOF
RJ	ROOF JOIST
RR	ROOF RAFTER
RT	ROOF TRUSSES
SIM	SIMILAR
SIMP	SIMPSON PRODUCT
SM	SHEAR MAX
SMS	SHEET METAL SCREW
SQ	SQUARE
SS	SELECT STRUCTURAL
SSW	SIMPSON STRONG WALL
STD	STANDARD
STL	STEEL
SW	SHEAR WALL
THK	THICK
THRD	THREADED
TN	TOE NAIL
TOB	TOP OF BEAM
TOC	TOP OF CONCRETE
TOL	TOP OF LEDGER
TOM	TOP OF MASONRY
TOP	TOP OF PLYWOOD
TOS	TOP OF SHEATHING
TOW	TOP OF WALL
TSG	TAPPERED STEEL GIRDER
TYP	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
VERT	VERTICAL
W	WIDTH OF FOOTING
W/	WITH
WF	WIDE FLANGE
WP	WEAKENED PLANE JOINT
WWF	WELDED WIRE FABRIC
DIA ø	DIAMETER
@	AT
MAS	MASONRY
MAX	MAXIMUM
MB	MACHINE BOLT
MI	MALLEABLE IRON
MIN	MINIMUM
MLB	MICRO LAM BEAM
(N)	NEW
NG	NATURAL GRADE
O/	OVER
OC	ON CENTER
PJ	POUR JOINT
PLB	PARALLAM BEAM
PLWD	PLYWOOD
PT	PRESSURE TREATED
RB	ROOF BEAM
REINF	REINFORCING
REQ'D	REQUIRED

FOUNDATION AND SITE WORK

REFER TO SOIL INVESTIGATION BY: WAC GEOTECHNICAL INC.
DATED: AUGUST 1, 2017 PROJECT# 17-1102 SOIL INVESTIGATION AND ADDENDUM SHALL BE CONSIDERED PART OF THE CONTRACT DOCUMENTS.

ALLOWABLE SOIL PRESSURE TO BE 1906 PSF. ALL REQUIRED FILL AND BACKFILL SHALL BE COMPACTED TO AT LEAST (90 %) OF THE MAXIMUM DENSITY OBTAINABLE BY THE ASTM DESIGNATION (D-15S7-70T) METHOD OF COMPACTION OR SOILS REPORT.

CARRY ALL FOOTINGS A MINIMUM OF 12" INTO NATURAL GRADE OR APPROVED COMPACTED FILL. ACTUAL ELEVATION OF BOTTOM OF FOOTINGS SHALL BE AS DIRECTED BY THE SOILS ENGINEER DURING CONSTRUCTION.

ALL FOOTINGS SHALL BE INSPECTED BY THE BUILDING DEPARTMENT PRIOR TO POURING CONCRETE.

ALL WATER SHALL BE REMOVED FROM FOUNDATION EXCAVATIONS PRIOR TO POURING CONCRETE.

EXPANSION INDEX (EI) = 0

LOCATE AND PROTECT EXISTING UTILITIES TO REMAIN DURING AND/OR AFTER CONSTRUCTION.

REMOVE ABANDONED FOOTINGS, UTILITIES, ETC. WHICH INTERFERE WITH NEW CONSTRUCTION UNLESS OTHERWISE INDICATED.

NOTIFY THE OWNER'S REPRESENTATIVE IF ANY BURIED STRUCTURES NOT INDICATED.

THE CONTRACTOR IS SOLELY RESPONSIBLE FOR EXCAVATION PROCEDURES INCLUDING LAGGING, SHORING, UNDERPINNING AND PROTECTION OF EXISTING CONSTRUCTION.

REMOVE LOOSE SOIL AND STANDING WATER FROM FOUNDATION EXCAVATION PRIOR TO PLACING CONCRETE.

EXCAVATIONS FOR FOUNDATIONS MUST BE ACCEPTED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACING REINFORCING AND CONCRETE. NOTIFY THE GEOTECHINCAL ENGINEER WHEN EXCAVATIONS ARE READY FOR INSPECTION.

PLACE BACKFILL BEHIND RETAINING WALLS AFTER CONCRETE OR MASONRY HAS ATTAINED FULL DESIGN STRENGTH. BRACE BUILDING AND PIT WALLS BELOW GRADE FROM LATERAL LOADS UNTIL ATTACHED FLOORS AND SLABS ON GRADE ARE COMPLETE AND HAVE ATTAINED FULL DESIGN STRENGTH.

COMPACT EXCAVATION BACKFILLS IN LAYERS PER THE GEOTECHNICAL REPORT. FIELD OBSERVATION AND TESTING SHALL BE PERFORMED BY THE SOILS ENGINEER DURING GRADING TO ASSIST THE CONTRACTOR IN OBTAINING THE REQUIRED DEGREE OF COMPACTION AND PROPER MOISTURE CONTENT.

IF ADVERSE SOIL CONDITIONS ARE ENCOUNTERED, NOTIFY GEOTECHNICAL ENGINEER AND ADDITIONAL SOILS REPORT MAY BE REQUIRED.

NOTE
ALL NOTES FROM SHEETS S-1 TO S-1.2 SHALL APPLY TO EACH SHEET OF THIS SET OF STRUCTURAL DRAWINGS

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REVISIONS
1 Plan Check #1 May 31, 2022

RESIDENTIAL DESIGN BY
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REGISTERED PROFESSIONAL ENGINEER BRIAN GOTTLIEB No. C33047 STATE OF CALIFORNIA

A CUSTOM RESIDENCE FOR:
Torchia
Palm Springs, California

DRAWN S.C.
CHECKED
DATE 04-08-2022
SCALE N.T.S.
BG JOB # 875.53
SHEET NO.
S-1

GENERAL NOTES

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WOOD

ALL WOOD CONSTRUCTION PER CALIFORNIA BUILDING CODE.

ALL STRUCTURAL LUMBER SHALL BE DOUGLAS FIR, UNLESS NOTED OTHERWISE AND CONFORM TO THE GRADING RULES OF THE WESTERN WOOD PRODUCTS ASSOCIATION.

A) 2x LUMBER - GRADE #2
B) 4x LUMBER - GRADE #2
C) 6x BEAMS, LEDGERS AND POSTS - GRADE #1
D) STUDS AT 16" O.C. (U.N.O. ON PLANS)

EXTERIOR BEARING STUDS:
1) FROM 0 FT TO 9 FT - 2x4 STUD GRADE
2) FROM 9 FT TO 11 FT - 2x4 GRADE #2
3) FROM 11 FT TO 15 FT - 2x6 GRADE #2

EXTERIOR AND INTERIOR NON-BEARING STUDS:
1) FROM 0 FT TO 14 FT - 2x4 STUD GRADE
2) FROM 14 FT TO 20 FT - 2x6 STUD GRADE

INTERIOR BEARING STUDS:
1) FROM 0 FT TO 11 FT - 2x4 STUD GRADE
2) FROM 11 FT TO 12 FT - 2x4 CONST GRADE
3) FROM 12 FT TO 20 FT - 2x6 STUD GRADE

E) SILL PLATES (P.T.D.F.) - CONST/STD
F) TOP & BOTTOM PLATES - CONST/STD
G) BLOCKING - STD OR BETTER

REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL APPEARANCE REQUIREMENTS. (SAND BLSTING/R.S. = ROUGH SAWN.

INTERIOR NON-BEARING WALL HEADER SCHEDULE:
(U.N.O. ON PLANS)
LESS THAN 4'-0" - (1)-2x4 CONST/STD
TO 5'-0" - 4x4 OR (2)-2x4 CONST/STD
TO 7'-0" - 4x6 #2
TO 10'-0" - 4x8 #2
TO 13'-0" - 4x10 #2
TO 16'-0" - 4x12 #2

ALL SHEATHING SHALL BE STAMPED BY THE AMERICAN PLYWOOD ASSOCIATION (APA) AND SHALL CONFORM TO THE U.S. PRODUCT STANDARD (PS 1) WITH EXTERIOR GLUE. COMPOSITE OR NON-VENEERED PANELS: COMPLY WITH NATIONAL RESEARCH BOARD REPORT NER-108. SUBFLOOR ADHESIVE: APA SPECIFICATION AFG-01. INSTALL PLYWOOD AND NON-VENEERED PANELS PER APA CONSTRUCTION GUIDE, LATEST EDITION. SEE STRUCTURAL FRAMING PLANS FOR THICKNESS AND TYPE OF FLOOR AND ROOF SHEATHING. SEE SHEAR WALL NOTES FOR SIZE AND TYPE OF WALL SHEATHING.

NAILING OF HORIZONTAL AND VERTICAL DIAPHRAGMS SHALL BE INSPECTED AND APPROVED BY THE BUILDING DEPARTMENT PRIOR TO COVERING.

ALL NAILS USED IN TIMBER-TO-TIMBER CONNECTIONS SHALL BE COMMON OR COATED SINKER NAILS AND NAILING SHALL CONFORM TO THE APPLICABLE BUILDING CODE. ALL NAILS CONNECTING PRE-MANUFACTURED METAL ITEMS (CONNECTORS, HANGERS, STRAPS, ETC.) TO TIMBER SHALL CONFORM TO THE MANUFACTURER'S CATALOGUE AND APPLICABLE I.C.C. REPORTS.

ALL STUD WALLS SHALL HAVE FIRE BLOCKING AT 10'-0" O.C. MAXIMUM.

WHERE WOOD IS IN CONTACT WITH CONCRETE OR MASONRY, USE PRESSURE TREATED DOUGLAS FIR OR SHEET METAL CONNECTORS.

FASTENERS IN PRESSERVATIVE-TREATED AND FIRE-RETARDANT-TREATED WOOD SHALL CONFORM TO SECTION 2304.10.5 OF THE CBC. FASTENERS FOR PRESERVATIVE-TREATED AND FIRE-RETARDANT-TREATED WOOD SHALL BE OF HOT DIPPED ZINC-COATED GALVANIZED STEEL, STAINLESS STEEL, SILICON BRONZE OR COPPER. THE COATING WEIGHTS FOR ZINC-COATED FASTENERS SHALL BE IN ACCORDANCE WITH "ASTM A 153".
EXCEPTION: FASTENERS OTHER THAN NAILS, TIMBER, RIVETS, WOOD SCREWS AND LAG SCREWS SHALL BE PERMITTED TO BE OF MECHANICALLY DEPOSITED ZINC COATED STEEL WITH COATING WEIGHTS IN ACCORDANCE WITH "ASTM B 695", CLASS 55 MINIMUM.
FASTENING FOR WOOD FOUNDATIONS SHALL BE AS REQUIRED IN "AF & PA" TECHNICAL REPORT No.7.

THE QUALITY MARK SHALL BE ON THE STAMP OR LABEL AFFIXED TO PRESERVATIVE-TREATED WOOD, AND SHALL INCLUDE THE FOLLOWING INFORMATION: IDENTIFICATION OF TREATING MANUFACTURER, TYPE OF PRESERVATIVE USED, MINIMUM PRESERVATIVE RETENTION (pcf), AND USE FOR WHICH THE PRODUCT IS TREATED, "AWPA" STANDARD TO WHICH THE PRODUCT WAS TREATED AND IDENTITY OF THE ACREDITED INSPECTION AGENCY. (CBC 2303.1.8.1).

UNLESS OTHERWISE SPECIFIED, ALL SILL PLATES IN CONTACT WITH CONCRETE OR MASONRY SHALL BE BOLTED TO THE CONCRETE OR MASONRY WITH 5/8" DIA BOLTS AT 48" O.C.

NOTE:
A) ALL BOLTS SHALL EXTEND A MINIMUM OF 7" INTO FOOTING, WITH 5" MIN. INTO THE FIRST POUR OF CONCRETE.
B) PER CBC 2308.3.1, THE END ANCHOR BOLT MUST BE BETWEEN 4" TO 12" AT EACH END OF EACH SILL PLATE (2 ANCHOR BOLT MIN).
C) AT INTERIOR NON-BEARING WALLS, OKAY TO USE 0.145" DIAMETER POWER DRIVEN PINS AT 36" O.C. UNLESS NOTED OTHERWISE. SIMPSON PBPWL-300 SHOT PINS ICC-ES ESR-2138. SHOT PINS SHALL NOT BE INSTALLED UNTIL CONCRETE HAS CURED FOR 7 DAYS MINIMUM. AT TWO-POUR FOUNDATIONS, 2ND POUR SHALL HAVE 4 3/4" MINIMUM THICKNESS AT SHOT PIN LOCATIONS.

ALL BOLT HEADS AND NUTS WHICH BEAR AGAINST THE FACE OF WOOD MEMBERS SHALL BE PROVIDED WITH WASHERS.

HOLES FOR BOLTS SHALL BE BORED WITH A BIT 1/32" TO 1/16" LARGER THAN THE NOMINAL BOLT DIAMETER.

ALL BOLTS SHALL BE RETIGHTENED PRIOR TO APPLICATION OF PLYWOOD, PLASTER, ETC.

PROVIDE MULTIPLE STUDS FOR SOLID BEARING AT ENDS OF MISCELLANEOUS BEAMS OR GIRDER TRUSSES WHERE POSTS ARE NOT SHOWN.

HOLES IN STRUCTURAL MEMBERS FOR PIPES AND CONDUITS SHALL COMPLY WITH THE BUILDING CODE AND THE TYPICAL DETAILS ON SHEET S-1.4.

PROVIDE DOUBLE FLOOR JOISTS UNDER PARALLEL PARTITIONS WHERE THE LENGTH OF THE WALL ABOVE EXCEEDS 25% OF THE SPAN OF THE FLOOR JOIST.

SOLID BLOCK AT BEARING WALLS,UNDER PERPENDICULAR PARTITIONS AND ELSEWHERE AS REQUIRED PER I.C.C. 2308. A) ALL BOLTS SHALL EXTEND A MINIMUM OF 7" INTO B) PROVIDE A MINIMUM OF TWO ANCHOR BOLTS PER PIECE 6" OF THE END OF SILL PLATE WITH ONE ANCHOR BOLT LOCATED WITHIN WITH 0.15" DIA POWDER DRIVEN PINS AT 36" O/C UNLESS C) AT INTERIOR WALLS, ANCHOR BOLTS MAY BE SUBSTITUTED.

MINIMUM SPLICE NAILING OF DOUBLE PLATES SHALL BE AS FOLLOWS UNLESS OTHERWISE SPECIFIED: (12)16d EACH SIDE OF SPLICE WITH NO ADJACENT SPLICE WITHIN 4'-0". (SEE TYPICAL DETAIL ON S-1.4).

FACE NAIL TWO PIECE BUILT-UP BEAMS WITH 16d AT 12" O/C AT TOP AND BOTTOM. FACE NAIL MEMBERS OF THREE PIECE BUILT-UP BEAMS WITH 16d AT 12" O/C AT TOP AND BOTTOM TO ALTERNATE SIDES OF BEAM. PROVIDE ADDITIONAL ROW OF NAILING AT ALL BEAMS GREATER THAN 12" DEEP. BOLT BUILT-UP BEAMS OF FOUR OR MORE MEMBERS. (SEE TYPICAL DETAIL ON S-1.4).

BALLOON FRAME ALL STUD WALLS AT SLOPING CEILINGS U.N.O.

PRE DRILL ALL HOLES FOR 20d AND LARGER NAILS, SPIKES AND LAG BOLTS. LEAD HOLES FOR LAGS SHALL BE AS FOLLOWS: A) SHANK PORTION-SAME DIAMETER AND LENGTH AS SHANK B) THREADED PORTION-60 TO 75 % OF THE DIAMETER OF THREAD AND SAME LENGTH AS THREAD.

LAMINATED VENEER LUMBER (L.V.L) BEAMS SHALL BE CONSTRUCTED, INSTALLED, AND MANUFACTURED PER MANUFACTURERS SPECIFICATIONS AND I.C.C. REPORT. THE PROPERTIES OF LAMINATED VENEER LUMBER (L.V.L) MEMBERS SHALL BE: E= 2,000,000 PSI, Fb= 2,800 PSI, Fv= 285 PSI, Fc= 500 PSI.

PROVIDE 2x4 CROSS BRIDGING OR 2X SOLID BLOCKING AT A MINIMUM OF 8'-0" O.C. FOR JOISTS (CONTACT METAL BRIDGING OR EQUAL MAY BE USED) WHERE SHEATHING OR GYP.BD IS NOT APPLIED TO TOP AND BOTTOM OF JOISTS FOR ENTIRE LENGTH OF JOIST.

ALL PRE MANUFACTURED METAL ITEMS (CONNECTORS, HANGERS, STRAPS, ETC.) SHALL BE BY SIMPSON STRONG TIE COMPANY, INC. U.N.O. (SEE PARAGRAPH 6 ABOVE CONCERNING NAILING).

A MAXIMUM OF 10% OF LUMBER USED FOR CONSTRUCTION MAY CONTAIN "WANE". THOSE MEMBERS WITH "WANE" SHALL NOT BE USED AT PLYWOOD OR DRY WALL EDGES, SOLID BLOCKING OR AT DOUBLE PLATES.

TWO INCH SOLID BLOCKING SHALL BE PLACED BETWEEN JOISTS OR RAFTERS AT ALL SUPPORTS.

WOOD FASTENING TABLE

TABLE 2304.10.1 (2019 CBC) FASTNENING SCHEDULE (U.N.O.)

CONNECTION	FASTENING (A,M)	LOCATION
1. BLK'G BETWEEN CEILING JOISTS, RAFTERS OR TRUSSES TO TOP PLATE OR OTHER FRAMING BELOW	3-8d COMMON (2 1/2"x0.131") 3-10d COMMON (3"x0.128") 3-3"x0.131" NAILS 3-3" 14 GAGE STAPLES, 7/16" CROWN	EACH END, TOENAIL
BLK'G BETWEEN RAFTERS OR TRUSS NOT AT THE WALL TOP PLATE, TO RAFTER OR TRUSS	2-8d COMMON (2 1/2"x0.131") 2-3"x0.131" NAILS 2-3" 14 GAGE STAPLES	EACH END, TOENAIL
	2-16d COMMON (3 1/2"x0.162") 3-3"x0.131" NAILS 3-3" 14 GAGE STAPLES	END NAIL
FLAT BLG'K TO TRUSS AND WEB FILLER	16d COMMON (3 1/2"x0.162") @ 6" O.C. 16d COMMON (3"x0.131") @ 6" O.C. 3"x14 GAGE STAPLES @ 6" O.C.	FACE NAIL
2. CEILING JOIST TO TOP PLATE	3-8d COMMON (2 1/2"x0.131") 3-10d COMMON (3"x0.128") 3-3"x0.131" NAILS 3-3" 14 GAGE STAPLES, 7/16" CROWN	EACH JOIST, TOENAIL
3. CEILING JOIST NOT ATTACHED TO PARALLEL RAFTER, LAPS OVER PARTITIONS (NO THRUST) (SEE SECTION 2308.7.3.1, TABLE 2308.7.3.1)	3-16d COMMON (3 1/2"x0.162") 4-10d COMMON (3"x0.128") 4-3"x0.131" NAILS 4-3" 14 GAGE STAPLES, 7/16" CROWN	FACE NAIL
4. CEILING JOIST ATTACHED TO PARALLEL RAFTER (HEEL JOINT) (SEE SECTION 2308.7.3.1, TABLE 2308.7.3.1)	PER TABLE 2308.7.3.1	FACE NAIL
5. COLLAR TIE TO RAFTER	3-10d COMMON (3"x0.148") 4-10d COMMON (3"x0.128") 4-3"x0.131" NAILS 4-3" 14 GAGE STAPLES, 7/16" CROWN	FACE NAIL
6. RAFTER OR ROOF TRUSS TO TOP PLATE (SEE SECTION 2308.7.5, TABLE 2308.7.5)	3-10d COMMON (3"x0.148") 3-16d BOX (3 1/2"x0.135") 4-10d BOX (3"x0.128") 4-3"x0.131" NAILS 4-3" 14 GAGE STAPLES, 7/16" CROWN	TOENAIL[C]
7. ROOF RAFTERS TO RIDGE VALLEY OR HIP RAFTERS; OR ROOF RAFTERS TO 2-INCH RIDGE BEAM	2-16d COMMON (3 1/2"x0.162") 3-10d COMMON (3"x0.128") 3-3"x0.131" NAILS 3-3" 14 GAGE STAPLES, 7/16" CROWN	END NAIL
	3-10d COMMON (3 1/2"x0.148") 3-16d BOX (3 1/2"x0.135") 4-10d BOX (3"x0.128") 4-3"x0.131" NAILS 4-3" 14 GAGE STAPLES, 7/16" CROWN	TOENAIL
8. STUD TO STUD (NOT AT BRACED WALL PANELS)	16d COMMON (3 1/2"x0.162")	24" O.C. FACE NAIL
	10d BOX (3"x0.128") 3"x0.131" NAILS 3" 14 GAGE STAPLES, 7/16" CROWN	16" O.C. FACE NAIL
9. STUD TO STUD AND ABUTTING STUDS AT INTERSECTING WALL CORNERS (AT BRACED WALL PANELS)	16d COMMON (3 1/2"x0.162")	16" O.C. FACE NAIL
	16d BOX (3 1/2"x0.135")	12" O.C. FACE NAIL
	3"x0.131" NAILS 3" 14 GAGE STAPLES, 7/16" CROWN	12" O.C. FACE NAIL
10. BUILT-UP HEADER (2" TO 2" HEADER)	16d COMMON (3 1/2"x0.162")	16" O.C. EACH EDGE, FACE NAIL
	16d BOX (3 1/2"x0.135")	12" O.C. EACH EDGE, FACE NAIL
11. CONTINUOUS HEADER TO STUD	4-8d COMMON (2 1/2"x0.131") 4-10d BOX (3"x0.128")	TOENAIL
12. TOP PLATE TO TOP PLATE	16d COMMON (3 1/2"x0.162")	16" O.C. FACE NAIL
	10d BOX (3"x0.128") 3"x0.131" NAILS 3" 14 GAGE STAPLES, 7/16" CROWN	12" O.C. FACE NAIL
13. TOP PLATE TO TOP PLATE, AT END JOINTS	8-16d COMMON (3 1/2"x0.162") 12-10d BOX (3"x0.128") 12-3"x0.131" NAILS 12-3" 14 GAGE STAPLES, 7/16" CROWN	EACH SIDE PF END JOINT. FACE NAIL (MIN 24" LAP SPLICE LENGTH EACH SIDE OF END JOINT)
14. BOTTOM PLATE TO JOIST, RIM JOIST, BAND JOIST OR BLOCKING (NOT AT BRACED WALL PANELS)	16d COMMON (3 1/2"x0.162")	16" O.C. FACE NAIL
	16d BOX (3 1/2"x0.135") 3"x0.131" NAILS 3" 14 GAGE STAPLES, 7/16" CROWN	12" O.C. FACE NAIL
15. BOTTOM PLATE TO JOIST, RIM JOIST, BAND JOIST OR BLOCKING AT BRACED WALL PANELS	2-16d COMMON (3 1/2"x0.162") 3-16d BOX (3 1/2"x0.135") 4-3"x0.131" NAILS 4-3" 14 GAGE STAPLES, 7/16" CROWN	16" O.C. FACE NAIL
16. STUD TO TOP OR BOTTOM PLATE	4-8d COMMON (2 1/2"x0.131") 4-10d BOX (3"x0.128") 4-3"x0.131" NAILS 4-3" 14 GAGE STAPLES, 7/16" CROWN	TOENAIL
	2-16d COMMON (3 1/2"x0.162") 3-10d BOX (3"x0.128") 3-3"x0.131" NAILS 3-3" 14 GAGE STAPLES, 7/16" CROWN	END NAIL
17. TOP OR BOTTOM PLATE TO STUD	2-16d COMMON (3 1/2"x0.162") 3-10d BOX (3"x0.128") 3-3"x0.131" NAILS 3-3" 14 GAGE STAPLES, 7/16" CROWN	END NAIL
18. TOP PLATES, LAPS AT CORNERS AND INTERSECTIONS	2-16d COMMON (3 1/2"x0.162") 3-10d BOX (3"x0.128") 3-3"x0.131" NAILS 3-3" 14 GAGE STAPLES, 7/16" CROWN	FACE NAIL
19. 1" BRACE TO EACH STUD AND PLATE	2-8d COMMON (2 1/2"x0.131") 2-10d BOX (3"x0.128") 2-3"x0.131" NAILS 2-3" 14 GAGE STAPLES, 7/16" CROWN	FACE NAIL
20. 1"x6" SHEATHING TO EACH BEARING	2-8d COMMON (2 1/2"x0.131") 2-10d BOX (3"x0.128")	FACE NAIL
21. 1"x8" AND WIDER SHEATHING TO EACH BEARING	3-8d COMMON (2 1/2"x0.131") 3-10d BOX (3"x0.128")	FACE NAIL
22. JOIST TO SILL, TOP PLATE, OR GIRDER	3-8d COMMON (2 1/2"x0.131") FLOOR 3-10d BOX (3"x0.128") 3-3"x0.131" NAILS 3-3" 14 GAGE STAPLES, 7/16" CROWN	TOENAIL
23. RIM JOIST, BAND JOIST, OR BLOCKING TO TOP PLATE, SILL OR OTHER FRAMING BELOW	8d COMMON (2 1/2"x0.131") 10d BOX (3"x0.128") 3"x0.131" NAILS 3" 14 GAGE STAPLES, 7/16" CROWN	6" O.C. TOENAIL
24. 1"x6" SUBFLOOR OR LESS TO EACH JOIST	2-8d COMMON (2 1/2"x0.131") 2-10d BOX (3"x0.128")	FACE NAIL
25. 2" SUBFLOOR TO JOIST OR GIRDER	2-16d COMMON (3 1/2"x0.162")	FACE NAIL
26. 2" PLANKS (PLANK & BEAM - FLOOR & ROOF)	2-16d COMMON (3 1/2"x0.162")	EACH BEARING, FACE NAIL
27. BUILT-UP GIRDERS AND BEAMS, 2" LUMBER LAYERS	20d COMMON (4"x0.192")	32" O.C., FACE NAIL AT TOP AND BOTTOM STAGGERED ON OPPOSITE SIDES
	10d BOX (3"x0.128") 3"x0.131" NAILS 3" 14 GAGE STAPLES, 7/16" CROWN	24" O.C., FACE NAIL AT TOP AND BOTTOM STAGGERED ON OPPOSITE SIDES
	2-20d COMMON (4"x0.192") 3-10d BOX (3"x0.128") 3-3"x0.131" NAILS 3-3" 14 GAGE STAPLES, 7/16" CROWN	ENDS AND AT EACH SPLICE, FACE NAIL
28. LEDGER STRIP SUPPORTING JOISTS OR RAFTERS	3-16d COMMON (3 1/2"x0.162") 4-10d BOX (3"x0.128") 4-3"x0.131" NAILS 4-3" 14 GAGE STAPLES, 7/16" CROWN	EACH JOIST OR RAFTER, FACE NAIL
29. JOIST TO BAND JOIST OR RIM JOIST	3-16d COMMON (3 1/2"x0.162") 4-10d BOX (3"x0.128") 4-3"x0.131" NAILS 4-3" 14 GAGE STAPLES, 7/16" CROWN	END NAIL
30. BRIDGING OR BLOCKING TO JOIST, RAFTER OR TRUSS	2-8d COMMON (2 1/2"x0.131") 2-10d BOX (3"x0.128") 2-3"x0.131" NAILS 2-3" 14 GAGE STAPLES, 7/16" CROWN	EACH END, TOENAIL

TABLE 2304.10.1 (2019 CBC) FASTNENING SCHEDULE (U.N.O.)

WOOD STRUCTURAL PANELS (WSP), SUBFLOOR, ROOF AND INTERIOR WALL SHEATHING TO FRAMING AND PARTICLEBOARD WALL SHEATHING TO FRAMING[A] (U.N.O.)			
	FASTENING	EDGES (INCHES)	INTERMEDIATE SUPPORT (INCHES)
31. 3/8" - 1/2"	6d COMMON OR DEFORMED (2"x0.113") (SUBFLOOR AND WALL)	6"	12"
	8d BOX OR DEFORMED (2 1/2"x0.113") (ROOF)	6"	12"
	2 3/8"x0.113" NAIL (SUBFLOOR AND WALL)	6"	12"
	1 3/4" 16 GAGE STAPLES, 7/16" CROWN (SUBFLOOR AND WALL)	4"	8"
	2 3/8"x0.113" NAIL (ROOF)	4"	8"
	1 3/4" 16 GAGE STAPLES, 7/16" CROWN (ROOF)	3"	6"
32. 3/8" - 1/2"	8d COMMON (2 1/2"x0.131") OR 6d DEFORMED (2"x0.113")	6"	12"
	2 3/8"x0.113" NAIL OR 2" 16 GAGE STAPLES, 7/16" CROWN	4"	8"
33. 7/8" - 1 1/4"	10d COMMON (3"x0.148") OR 8d DEFORMED (2 1/2"x0.131")	6"	12"
OTHER EXTERIOR WALL SHEATHING (U.N.O.)			
34. 1/2" FIBERBOARD SHEATHING[B]	1 1/2" GALVANIZED ROOFING NAIL (7/16" HEAD DIAMETER) 1 1/4" 16 GAGE STAPLES, 7/16" CROWN OR 1" CROWN	3"	6"
35. 25/32" FIBERBOARD SHEATHING[B]	1 3/4" GALVANIZED ROOFING NAIL (7/16" HEAD DIAMETER) 1 1/2" 16 GAGE STAPLES, 7/16" CROWN OR 1" CROWN	3"	6"
WOOD STRUCTURAL PANELS, COMBINATION SUBFLOOR UNDERLAYMENT TO FRAMING (U.N.O.)			
36. 3/4" AND LESS	8d COMMON (2 1/2"x0.131") OR 6d DEFORMED (2"x0.113")	6"	12"
37. 7/8" - 1"	8d COMMON (2 1/2"x0.131") OR 8d DEFORMED (2 1/2"x0.131")	6"	12"
38. 1 1/8" - 1 1/4"	10d COMMON (3"x0.148") OR 8d DEFORMED (2 1/2"x0.131")	6"	12"
PANEL SIDING TO FRAMING (U.N.O.)			
39. 1/2" OR LESS	6d CORROSION-RESISTANT SIDING (1 7/8"x0.106") 6d CORROSION-RESISTANT CASING (2"x0.099")	6"	12"
40. 5/8"	8d CORROSION-RESISTANT SIDING (2 3/8"x0.128") 8d CORRDSION-RESISTANT CASING (2 1/2"x0.113")	6"	12"
INTERIOR PANELING (U.N.O.)			
41. 1/4"	4d CASING (1 1/2"x0.080") OR 4d FINISH (1 1/2"x0.072")	6"	12"
42. 3/8"	6d CASING (2"x0.099") OR 6d FINISH (PANEL SUPPORTS @ 24" O.C.)	6"	12"

FOR "SI": 1 INCH = 25.4mm

(A) NAILS SPACED AT 6" AT INTERMEDIATE SUPPORTS WHERE SPANS ARE 48 INCHES OR MORE. FOR NAILING OF WOOD STRUCTURAL PANEL AND PARTICLEBOARD DIAPHRAGMS AND SHEAR WALLS, REFER TO SECTION 2305. NAILS FOR WALL SHEATHING ARE PERMITTED TO BE COMMON, BOX OR CASING.

(B) SPACING SHALL BE 6 INCHES ON CENTER ON THE EDGES AND 12 INCHES ON CENTER AT THE INTERMEDIATE SUPPORTS FOR NONSTRUCTURAL APPLICATIONS. PANEL SUPPORTS AT 16 INCHES (20 INCHES IF STRENGTH AXIS IN THE LONG DIRECTION OF THE PANEL, UNLESS OTHERWISE MARKED).

(C) WHERE A RAFTER IS FASTENED TO AN ADJACENT PARALLEL CEILING JOIST IN ACCORDANCE WITH THIS SCHEDULE AND THE CEILING JOIST IS FASTENED TO THE TOP PLATE IN ACCORDANCE WITHT THIS SCHEDULE, THE NUMBER OF TOENAILS IN THE RAFTER SHALL BE PERMITTED TO BE REDUCED BY ONE NAIL.

SHEAR WALL

WALL SHEATHING SHALL BE 3/8" THICK, APA STRUCTURAL 1 RATED SHEATHING. 24/0 SPAN RATING EXPOSURE 1. SIZE AND NAILING PER SHEAR WALL SCHEDULE U.N.O. 1/2" AT SHEAR PANEL 4 AND 5.

FIELD NAIL INTERIOR OF WOOD SHEATHED SHEAR WALLS WITH 8d (OR 10d PER SCHEDULE) AT 12" O.C.

BLOCK ALL EDGES OF WOOD SHEATHED SHEAR WALLS.

PROVIDE 3x (OR 4x) MEMBERS AT ALL SHEATHING BOUNDARIES AND EDGES FOR SHEAR WALL #3, #4 AND AT ALL ADJOINING SHEATHING EDGES AT LOCATIONS WITH SHEATHING ON BOTH SIDES. A 1/2" EDGE DISTANCE IS REQUIRED FOR THESE NAILING CONDITIONS.

SHEAR WALLS SHALL RUN TO UNDERSIDE OF ROOF/FLOOR SHEATHING WITH APPROVED BLOCKING AS REQUIRED.

ALL SHEATHING SHALL BE APPLIED DIRECTLY TO THE STUD WITH STUD SPACING NO GREATER THAN 16" O.C.

PLATES AND STUDS IN SHEAR WALLS SHALL NOT HAVE HOLES LARGER THAN 1" DIA OR ANY NOTCHES WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER.

BOLT HOLES TO BE 1/16" OVERSIZED AT CONNECTION OF HOLDOWN TO THE POST INSPECTOR TO VERIFY.

SPECIFIC HOLDOWN CONNECTORS SHALL BE TORQUED AS REQUIRED BY THE MANUFACTURER.

ALL NAILS SHALL BE COMMON FOR SHEAR WALL CONSTRUCTION.

SIMPSON SDS 1/4"x SCREWS PER ICC-ESR 2236.

REFER TO SHEAR WALL NOTES ON PLANS FOR ADDITIONAL INFORMATION.

CONSTRUCTION OF PLYWOOD SHEAR WALLS TO BE WITH COMMON NAILS ONLY.

HOLD-DOWN BOLT HOLES AT EACH END OF THE PLYWOOD SHEAR WALL SHALL HAVE A TOLERANCE OF NO MORE THAN 1/18" (INSPECTION REQUIRED). HOLD-DOWNS SHALL BE TIGHTENED JUST PRIOR TO COVERING THE SHEAR WALL. ALL POSTS WITH HOLD-DOWNS OR UPLIFT STRAPS SHALL HAVE CONTINUOUS EDGE NAILING.

ALL ANCHOR BOLTS SHALL BE ATTACHED TO THE SILL PLATE WITH 3"x3"x1/4" SQUARE STEEL WASHER PLATES.

4x MEMBER TO BE PROVIDED UNDER THE FLOOR SHEATHING TO RECEIVE SILL NAILING AT SHEAR WALLS #4, #5 AND TWO SIDED APPLICATIONS OF SHEAR WALL #3.

FRAMING AT ADJOINING PANEL EDGES SHALL BE 3 INCH NOMINAL OR WIDER AND NAILS SHALL BE STAGGERED WHERE NAILS ARE SPACED 2 INCHES ON CENTER.

WHERE SHEAR PANELS ARE APPLIED ON BOTH FACES OF A WALL AND NAIL SPACING IS LESS THAN 6 INCHES OFF CENTER ON EITHER SIDE, PANEL JOINTS SHALL BE OFFSET TO FALL ON DIFFERENT FRAMING MEMBERS OR FRAMING SHALL BE 3 INCH NOMINAL OR THICKER AND NAILS SHALL BE STAGGERED. SILL PLATES SHALL BE 3 INCH NOMINAL AND NAILS SHALL BE STAGGERED.

ALL WOOD STRUCTURAL PANEL SHEATHING SHALL BE C-D, C-C AND OTHER GRADES COVERED IN CBC, IBC AND NDS STANDARDS.

CONTRACTORS RESPONSIBILITY

EACH CONTRACTOR OR SUB-CONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION OF THE WIND AND/OR SEISMIC RESISTING SYSTEM THAT IS 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 WORK REQUIRING SPECIAL INSPECTION. THE CONTRACTOR'S STATEMENT OF RESPONSIBILITY SHALL CONTAIN THE FOLLOWING:

1. ACKNOWLEDGMENT OF AWARENESS OF THE SPECIAL REQUIREMENTS CONTAINED IN THE STATEMENT OF SPECIAL INSPECTIONS.
2. ACKNOWLEDGMENT 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 QUALIFICATIONS OF THE PERSONS(S) EXERCISING SUCH CONTROL AND THEIR POSITIONS(S) IN THE ORGANIZATION.

NOTE
ALL NOTES FROM SHEETS S-1 TO S-1.2 SHALL APPLY TO EACH SHEET OF THIS SET OF STRUCTURAL DRAWINGS

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REVISIONS
1 Plan Check #1 May 31, 2022

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Palm Springs, California

GENERAL NOTES

DRAWN S.C.
CHECKED
DATE 04-08-2022
SCALE N.T.S.
BG JOB # 875.53
SHEET NO.
S-1.1

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REQUIRED SPECIAL INSPECTIONS TABLES

REQUIRED SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION

TYPE OF VERIFICATION AND INSPECTIONS	CONTINUOUS	PERIODIC	REFERENCED STANDARD [a]	IBC REFERENCE
1. INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT	–	X	ACI 318: Ch. 20, 25.2 25.3, 26.5.1–26.5.3	1908.4
2. REINFORCING BAR WELDING: a. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706; b. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16"; AND c. INSPECT ALL OTHER WELDS.	– X	X X –	AWS D1.4 ACI 318: 26.5.4	–
3. INSPECT ANCHORS CAST IN CONCRETE	–	X	ACI 318: 17.8.2	–
4. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS:[b] a. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS b. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.a.	X –	– X	ACI 318: 17.8.2.4	–
5. VERIFYING USE OF REQUIRED DESIGN MIX	–	X	ACI 318: Ch. 19, 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3
6. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE	X	–	ASTM C172 ASTM C31 ACI 318: 26.4.5, 26.12	1908.10
7. INSPECTION OF CONCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	X	–	ACI 318: 26.4.5	1908.6, 1908.7, 1908.0
8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES	–	X	ACI 318: 26.4.7–26.4.9	1908.9
9. INSPECT PRESTRESSED CONCRETE FOR: a. APPLICATION OF PRESTRESSING FORCES; AND b. GROUTING OF BONDED PRESTRESSING TENDONS	X X	– –	ACI 318: 26.9.2.1 ACI 318: 26.9.2.3	–
10. INSPECT ERECTION OF PRECAST CONCRETE MEMBERS	–	X	ACI 318: Ch. 26.8	–
11. VERIFY IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS	–	X	ACI 318: 26.10.2	–
12. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED	–	X	ACI 318: 26.10.1(b)	–

FOR SI: 1 inch = 25.4 mm

a. WHERE APPLICABLE, SEE ALSO SECTION 1705.12 SPECIAL INSPECTION FOR SEISMIC RESISTANCE.

b. SPECIFIC REQUIREMENTS FOR SPECIAL INSPECTIONS SHALL BE INCLUDED IN THE RESEARCH REPORT FOR THE ANCHOR ISSUED BY AN APPROVED SOURCE IN ACCORDANCE WITH 17.8.2 IN ACI 318, OR OTHER QUALIFICATION PROCEDURES. WHERE SPECIFIC REQUIREMENTS ARE NOT PROVIDED, SPECIAL INSPECTION REQUIREMENTS SHALL BE SPECIFIED BY THE REGISTERED DESIGN PROFESSIONAL AND SHALL BE APPROVED BY THE BUILDING OFFICIAL PRIOR TO THE COMMENCEMENT OF THE WORK.

VERIFICATION AND SPECIAL INSPECTION OF MASONRY CONSTRUCTION

INSPECTION TASK	FREQUENCY OF INSPECTION: CONTINUOUS DURING TASK LISTED	FREQUENCY OF INSPECTION: PERIODICALLY DURING TASK LISTED
1. COMPLIANCE WITH REQUIRED INSPECTION PROVISIONS OF THE CONSTRUCTION DOCUMENTS AND THE APPROVED SUBMITTALS SHALL BE VERIFIED	–	X
2. VERIFICATION OF f'm AND f'AAC PRIOR TO CONSTRUCTION AND FROM EVERY 5,000 SQUARE FEET DURING CONSTRUCTION	–	X
3. VERIFICATION OF SLUMP FLOW AND VSI AS DELIVERED TO THE SITE FOR SELF-CONCOLIDATING GROUT	X	–
4. AS MASONRY CONSTRUCTION BEGINS, THE FOLLOWING SHALL BE VERIFIED TO INSURE COMPLIANCE:		
A. PROPORTIONS OF SITE-PREPARED MORTAR	–	X
B. CONSTRUCTION OF MORTAR JOINTS		
C. LOCATION OF REINFORCEMENT, CONNECTORS, AND PRE-STRESSING TENDONS AND ANCHORAGES	–	X
D. PRE-STRESSING TECHNIQUE	X	–
E. GRADE AND SIZE OF PRE-STRESSING TENDONS AND ANCHORAGES	X	–
5. DURING CONSTRUCTION, THE INSPECTION PROGRAM SHALL VERIFY:		
A. SIZE AND LOCATION OF STRUCTURAL ELEMENTS	–	X
B. TYPE, SIZE AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES OR OTHER CONSTRUCTION	X	–
C. SPECIFIED SIZE, GRADE AND TYPE OF REINFORCEMENT, ANCHOR BOLTS, PRE-STRESSING TENDONS AND ANCHORAGES	–	X
D. WELDING OF REINFORCING BARS	X	–
E. PREPARATION, CONSTRUCTION AND PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40F) OR HOT WEATHER (TEMPERATURE ABOVE 90F)	–	X
F. APPLICATION AND MEASUREMENT OF PRE-STRESSING FORCE	X	–
6. PRIOR TO GROUTING, THE FOLLOWING SHALL BE VERIFIED TO ENSURE COMPLIANCE:		
A. GROUT SPACE IS CLEAN	–	X
B. PLACEMENT OF REINFORCEMENT AND CONNECTORS, AND PRE-STRESSING TENDONS AND ANCHORAGES	–	X
C. PROPORTIONS OF SITE-PREPARED GROUT AND PRE-STRESSING GROUT FOR BONDED TENDONS	–	X
D. CONSTRUCTION OF MORTAR JOINTS	–	X
7. GROUT PLACEMENT SHALL BE VERIFIED TO ENSURE COMPLIANCE:		
A. GROUTING OR PRE-STRESSING BONDED TENDONS	X	–
B. PREPARATION OF ANY REQUIRED GROUT SPECIMENTS, MORTAR AND/OR PRISMS SHALL BE OBSERVED	–	X

FOR SI: 1 inch = 25.4 mm

REQUIRED VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION

TYPE OF VERIFICATION AND INSPECTIONS	CONTINUOUS	PERIODIC	REFERENCED STANDARD [a]	IBC REFERENCE
1. MATERIAL VERIFICATION OF HIGH-STRENGTH BOLTS, NUTS AND WASHERS:				
a. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS	–	X	AISC 360, SECTION A3.3 AND APPLICABLE ASTM MATERIAL STANDARDS	–
b. MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED	–	X	–	–
2. INSPECTION OF HIGH-STRENGTH BOLTING:				
a. SNUG TIGHT JOINTS	–	X	AISC 360, SECTION M2.5	–
b. PRETENSIONED AND SLIP-CRITICAL JOINTS USING TURN-OF-NUT WITH MATCHMARKING, TWIST-OFF BOLT OR DIRECT TENSION INDICATOR METHODS OF INSTALLATION	–	X		–
c. PRETENSIONED AND SLIP-CRITICAL JOINTS USING TURN-OF-NUT WITHOUT MATCHMARKING OR CALIBRATED WRENCH METHODS OF INSTALLATION	X	–		–
3. MATERIAL VERIFICATION OF STRUCTURAL STEEL AND COLD-FORMED STEEL DECK:				
a. FOR STRUCTURAL STEEL, IDENTIFICATION MARKINGS TO CONFORM TO AISC 360	–	X	AISC 360, SECTION A3.1	2203A.1
b. FOR OTHER STEEL, IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS	–	X	APPLICABLE ASTM MATERIAL STANDARDS	–
c. MANUFACTURER'S CERTIFIED TEST REPORTS	–	X	–	–
4. MATERIAL VERIFICATION OF WELD FILLER MATERIALS:				
a. IDENTIFICATION MARKINGS TO CONFORM TO AWS SPECIFICATION IN THE APPROVED CONSTRUCTION DOCUMENTS	–	X	AISC 360, SECTION A3.5 AND APPLICABLE AWS A5 DOCUMENTS	–
b. MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED	–	X	–	–
5. INSPECTION OF WELDING:				
a. STRUCTURAL STEEL AND COLD-FORMED STEEL DECK:				
1. COMPLETE AND PARTIAL JOINT PENETRATION GROOVE WELDS	X	–	AWS D1.1 AWS D1.8	1705A.2.1
2. MULTIPASS FILLET WELDS	X	–		
3. SINGLE-PASS FILLET WELDS > 5/16"	X	–		
4. PLUG AND SLOT WELDS	X	–		
5. SINGLE-PASS FILLET WELDS ≤ 5/16"	–	X		
6. FLOOR AND ROOF DECK WELDS	–	X	AWS D1.3	
b. REINFORCING STEEL:				
1. VERIFICATION OF WELDABILITY OF REINFORCING STEEL OTHER THAN ASTM A706	–	X	AWS D1.4, ACI 318: SECTIONS 26.6.4.1, 18.2.8, 25.5.7.4	–
2. REINFORCING STEEL RESISTING FLEXURAL AND AXIAL FORCES IN INTERMEDIATE AND SPECIAL MOMENT FRAMES, AND BOUNDARY ELEMENTS OF SPECIAL STRUCTURAL WALLS OF CONCRETE AND SHEAR REINFORCEMENT	X	–		–
3. SHEAR REINFORCEMENT	X	–		–
4. OTHER REINFORCING STEEL	–	X		–
6. INSPECTION OF STEEL FRAME JOINT DETAILS FOR COMPLIANCE:				
a. DETAILS SUCH AS BRACING AND STIFFENING	–	X	–	1705A.2.1
b. MEMBER LOCATIONS	–	X	–	
c. APPLICATIONS OF JOINT DETAILS AT EACH CONNECTION	–	X	–	

FOR SI: 1 inch = 25.4 mm

a. WHERE APPLICABLE, SEE ALSO SECTION 1705A.12, SPECIAL INSPECTION FOR SEISMIC RESISTANCE.

BLOCK MASONRY

ALL MASONRY CONSTRUCTION SECTION 21 OF 2019 CALIFORNIA BUILDING CODE.

REINFORCED BLOCK MASONRY: ASSUMED DESIGN STRENGTH f'm=1500 PSI.

UNITS SHALL BE NORMAL WEIGHT (OR LIGHTER) CONCRETE BLOCK, GRADE N, CONFORMING TO ASTM C90 WITH A MINIMUM COMPRESSIVE STRENGTH OF 1900 PSI.

GROUT SHALL BE OF FLUID CONSISTENCY, GROUT MIX SHALL BE (BY VOLUME) 1 PART CEMENT, 3 PARTS SAND (FINE GROUT) AND MAY CONTAIN AN ADDITIONAL 2 PARTS PEA GRAVEL IF SPACES ARE 4 INCHES OR MORE IN EVERY DIRECTION (COARSE GROUT). f'c=2,000 PSI AT 28 DAYS (ASTM-476).

MORTAR SHALL BE TYPE S, (BY VOLUME) 1 PART PORTLAND CEMENT, 3 1/2 PARTS SAND, 1/4 TO 1/2 PARTS LIME PUTTY OR HYDRATED LIME. f'c=2,000 PSI AT 28 DAYS (ASTM C-270).

REINFORCING SHALL HAVE A MINIMUM LAP OF 65 BAR DIAMETERS OR 2'-6" WHICH EVER IS LARGER, UNLESS NOTED OTHERWISE. ALL REINFORCING SHALL HAVE A MINIMUM COVERAGE OF 1/2" GROUT.

PROVIDE CLEANOUT OPENINGS AT THE BOTTOM OF ALL VERTICALLY GROUTED CELLS IF GROUT LIFT EXCEED 4'-0".

BOLTS SHALL BE GROUTED WITH 1" OF GROUT BETWEEN BOLT AND MASONRY.

NO PIPES OR DUCTS SHALL BE PLACED IN MASONRY WALLS UNLESS SPECIFICALLY NOTED OR DETAILED.

CENTER VERTICAL REINFORCING IN WALL UNLESS NOTED OTHERWISE.

LAY UNITS IN RUNNING BOND AND MAINTAIN VERTICAL CONTINUITY OF CORES OR CELL CAVITIES. USE OPEN END UNITS AT LOCATIONS OF VERTICAL REINFORCING. PLACE HORIZONTAL REINFORCING IN BOND BEAM UNITS.

FILL ALL CELLS SOLIDLY WITH GROUT. CLEAN CELLS AND BOND BEAMS OR MORTAR PROTRUSIONS AND DEBRIS BEFORE GROUTING.

DOWELS FROM THE FOUNDATION TO MATCH SIZE AND LOCATION OF VERTICAL REINFORCING IN MASONRY, UNLESS NOTED OTHERWISE.

PROVIDE VERTICAL CONTROL JOINTS IN THE WALLS AT LOCATIONS SHOWN ON THE DRAWINGS.

LOW LIFT GROUTING: LAY UNITS MAXIMUM OF 2 FEET HIGH BEFORE GROUTING. PLACE GROUT IN A CONTINUOUS PLACEMENT IN GROUT LIFTS NOT EXCEEDING 2 FEET. COMPLETELY GROUT THE FULL HEIGHT OF THE WALL SECTION IN ONE DAY WITH NO INTERRUPTIONS GREATER THAN ONE HOUR.

HIGH LIFT GROUTING: LAY UNITS MAXIMUM OF 12 FEET HIGH BEFORE GROUTING. PLACE GROUT IN A CONTINUOUS PLACEMENT IN GROUT LIFTS NOT EXCEEDING 4 FEET. COMPLETELY GROUT THE FULL HEIGHT OF THE WALL SECTION IN ONE DAY WITH NO INTERRUPTIONS GREATER THAN ONE HOUR. PROVIDE CLEANOUTS AT EVERY CELL ALONG THE BOTTOM COURSE OF EACH GROUT LIFT. USE SIKA GROUT AID TYPE II OR E-Z MIX ADMIXTURE IN THE GROUT TO REDUCE EARLY WATER LOSS AND PRODUCE AN EXPANSIVE ACTION.

STRUCTURAL PROPERTIES OF STEEL DECK SYSTEM SHALL EQUAL OR EXCEED THE PROPERTIES LISTED IN TYPICAL DETAILS.

PROVIDE THE FOLLOWING MINIMUM CLEARANCES:

LOCATIONS	CLEARANCES
BETWEEN REINFORCING AND INSIDE FACE OF MASONRY UNITS	1/2" CLEAR
BETWEEN PARALLEL BARS	1/2" CLEAR
EMBEDDED BOLTS	1/2" CLEAR ALL AROUND

SPECIAL INSPECTION (AS REQ'D) TO BE PER SECTION 1705A.4 OF 2019 CBC. SEE VERIFICATION AND INSPECTION REQUIREMENTS ON SHEET S-1.1.

MASONRY RETAINING WALL

ALL MASONRY CONSTRUCTION PER BLOCK MASONRY NOTES.

ALL CONCRETE CONSTRUCTION PER CONCRETE NOTES.

ALL REINFORCED STEEL CONSTRUCTION PER REINFORCING STEEL NOTES.

ALL CELLS TO BE SOLID GROUTED BELOW GRADE.

DO NOT BACKFILL RETAINING WALLS UNTIL ALL MASONRY AND CONCRETE HAVE REACHED DESIGN STRENGTHS (MINIMUM OF 28 DAYS OR APPROVED TESTING).

ALL RETAINING WALLS WITH SLAB TIES AT TOP SHALL REMAIN SHORED UNTIL UPPER SLAB IS POURED AND REACHES DESIGN STRENGTH (MINIMUM OF 28 DAYS OR APPROVED TESTING).

PROVIDE DRAINAGE AT THE BASE OF RETAINING WALLS AND AT THE BASE OF ALL BASEMENT WALLS (DESIGNED BY OTHERS).

STRUCTURAL STEEL

STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE AISC SPECIFICATION FOR THE DESIGN FABRICATION AND ERECTION OF STRUCTURAL STEEL BUILDINGS (LATEST EDITION), ALL COLUMN AND DOUBLER PLATES SHALL CONFORM TO ASTM A-572, GRADE 50, FY-50 KSI, AND THE FOLLOWING ASTM STANDARD SPECIFICATIONS, UNLESS NOTED OTHERWISE.

ALL STRUCTURAL STEEL UNLESS NOTED BELOW = ASTM A992 (50 KSI)
PIPES = ASTM A500, GRADE B (42 KSI)
TUBES = ASTM A500, GRADE B (46 KSI)
ANCHOR BOLTS AND UNFINISHED BOLTS = ASTM A307 U.N.O.
THREADED ROUND STOCK = ASTM A36
HIGH STRENGTH BOLTS = SEE NOTE BELOW

MILL CERTIFICATES SHALL ACCOMPANY ALL STRUCTURAL STEEL. ALL STRUCTURAL STEEL SHALL BE IDENTIFIABLE IN THE FIELD WITH THE CORRESPONDING MILL CERTIFICATES.

ALL BOLTS SHALL BE UNFINISHED, CONFORMING TO ASTM A307 OF SIZES SHOWN ON DRAWINGS, UNLESS NOTED OTHERWISE.

HIGH STRENGTH BOLTS:
PROVIDE HIGH STRENGTH BOLTS, NUTS AND WASHERS COMPLYING WITH ASTM A325.
ALL HIGH STRENGTH BOLTS SHALL BE SLIP-CRITICAL HIGH STRENGTH BOLTS (A325-SC) UNLESS NOTED OTHERWISE.
ASSEMBLE HIGH STRENGTH BOLTS IN COMPLIANCE WITH THE SPECIFICATION OF STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS.
TIGHTEN A325-N BOLTS TO A SMUG TIGHT CONDITION. TIGHTEN A325-SC BOLTS TO AT LEAST THE MINIMUM PROPER TENSION USING ONE OF THE FOLLOWING TIGHTENING METHODS: TURN-OF-NUT, CALIBRATED WRENCH OR DIRECT TENSION INDICATOR TIGHTENING.

HEADED STUD ANCHORS SHALL BE MANUFACTURED FROM C1015, C1017, OR C1020 COLD DRAWN STEEL CONFORMING TO ASTM A108 (58 KSI). STUD SIZE SHALL BE AS NOTED ON PLANS.

SUBMIT SHOP DRAWINGS TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION. INDICATE A WELDING PROCEDURE FOR DUCTILE MOMENT FRAMES INCLUDING THE SEQUENCE OF WELDING AT GIRDER TO COLUMN AND COLUMN TO BASE PLATE CONNECTIONS AND COLUMN SPLICES AS WELL AS THE SEQUENCE OF WELDING WITHIN EACH FRAME. SHOP DRAWINGS SHALL BE SUBMITTED TO THE BUILDING DEPARTMENT, ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO FABRICATION WITH SUFFICIENT TIME FOR REVIEW OF DESIGN INTENT (MINIMUM OF 10 WORKING DAYS) ALSO SEE NEXT 3 NOTES BELOW.

A WELDING PROCEDURE SPECIFICATION (W.P.M.) PER A.W.S D1.1 SHALL BE DEVELOPED BY THE FABRICATOR/ERECTOR AND APPROVED BY THE ENGINEER OF RECORD OR HIS DESIGNEE. THE W.P.M. SHALL INCLUDE THE WELDING PARAMETERS RECOMMENDED BY THE ELECTRODE MANUFACTURER.

COMPLETE JOINT PENETRATION GROOVE WELDS SHALL HAVE A FILLER METAL WITH A NOTCH TOUGHNESS OF 20 FOOT-POUNDS AVERAGE AT 70 DEGREES FAHRENHEIT.

WELD STRUCTURAL STEEL IN COMPLIANCE WITH AWS D1.1-10. WELDERS SHALL BE CERTIFIED AS REQUIRED BY THE GOVERNING CODE AUTHORITY. WELDING SHALL BE DONE BY THE ELECTRIC ARCH PROCESS USING APPROVED COATED RODS. WELDING MAYBE PERFORMED USING THE SUBMERGED ARC PROCESS WITH AUTOMATIC WELDING (SAW-1). USE E-90xx LOW HYDROGEN ELECTRODES FOR WELDING OF REINFORCING STEEL. PERFORM SHOP WELDING BY AN APPROVED FABRICATOR.

BUILDING STRUCTURAL STEEL IS DESIGNED FOR UNSHORED CONSTRUCTION UNLESS NOTED OTHERWISE.

CAMBER STRUCTURAL STEEL BEAMS AND GIRDERS SUPPORTING FLOOR LOADS WITH SPANS GREATER THAN 15'-0" L/360 UNLESS NOTED OTHERWISE. DO NOT CAMBER MEMBERS BELOW ELEVATOR ENTRANCE DOORS.

UNLESS A LARGER SIZE FILLET WELD IS INDICATED, PROVIDE MINIMUM SIZE OF WELD PER AISC. WELD LENGTHS INDICATED ARE THE NET EFFECTIVE LENGTH REQUIRED.

FIELD CUTTING OR BURNING OF STRUCTURAL STEEL IS NOT PERMITTED WITHOUT WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER.

SPLICING OF STRUCTURAL STEEL MEMBERS WHERE NOT DETAILED IS PROHIBITED WITHOUT PRIOR APPROVAL. IF APPROVED, THE CONTRACTOR SHALL HAVE THE CONNECTION TESTED BY ULTRASONIC TESTING METHOD BY AN INDEPENDENT TESTING LAB.

AS REQUIRED APPLY SPRAYED FIREPROOFING OVER STRUCTURAL STEEL WITH MONOKOTE MK6/CBF OR MK/ED AS MANUFACTURED BY W.R. GRACE AND COMPANY AS APPROVED BY ICC EVALUATION REPORT NO. 4607. OBTAIN APPROVAL FOR SUBSTITUTE PRODUCTS AS INDICATED IN GENERAL SECTION. HOURLY FIRE RESISTIVE REQUIREMENTS SHALL BE DETERMINED USING TABLE 17.A OF THE CBC AND BUILDING TYPES OF CONSTRUCTION AS INDICATED ON ARCHITECTURAL DRAWINGS.

WHERE EXPOSED STEEL SURFACES ARE EXPOSED TO VIEW IN THE FINISHED WORK, USE ONLY MATERIALS THAT ARE SMOOTH AND FREE FROM SURFACE BLEMISHES. REMOVE SUCH BLEMISHES BY GRINDING OR WELDING AND GRINDING PRIOR TO CLEANING AND APPLICATION OF FINISHES.

SHOP PRIME ALL STRUCTURAL STEEL, EXCEPT AT CONNECTION LOCATIONS, AND STEEL WHICH REQUIRES FIREPROOFING. FOR THE PROTECTION OF EXPOSED STRUCTURAL STEEL SEE ARCHITECTURAL DRAWINGS.

BOLT HOLES IN STEEL, SHALL BE 1/16 INCH LARGER IN DIAMETER THAN THE NORMAL SIZE OF THE BOLT USED EXCEPT AS NOTED.

FABRICATOR SHALL REVIEW THE WELDING PROCESS AND MATERIALS TO ENSURE CONFORMANCE WITH THE LATEST SAC/FEMA GUIDELINES AND RECOMMENDATIONS.

MINIMUM NOMINAL TENSILE STRENGTH OF WELD METAL SHALL BE 70 KSI.

STRUCTURAL STEEL CONTRACTOR IS RESPONSIBLE FOR VERIFYING AND COORDINATING ALL DIMENSIONS AND ELEVATIONS SHOWN ON STRUCTURAL DRAWINGS WITH ARCHITECTURAL DRAWINGS IN CASE OF CONFLICTS THE ARCHITECT / ENGINEER IS TO BE NOTIFIED.

ALL GROUT UNDER STEEL BEARING PLATES SHALL BE SOLID DRYPACK OR NON-SHRINK GROUT PLACED AS DIRECTED BY THE MANUFACTURER (F'c = 4,000 PSI MIN). SPECIAL INSPECTION REQUIRED.

ALL COMPLETE PENETRATION GROOVE WELDS EMPLOYED FOR THE ORDINARY MOMENT FRAME FULLY RESTRAINED CONNECTIONS BE TESTED 100 PERCENT BY ULTRASONIC TESTING OR BY RADIOGRAPHY CBC CHAPTER 17.

CONTINUOUS INSPECTION REQUIRED FOR ALL FIELD WELDING BY APPROVED SPECIAL INSPECTOR.

NOTE
ALL NOTES FROM SHEETS S-1 TO S-1.2 SHALL APPLY TO EACH SHEET OF THIS SET OF STRUCTURAL DRAWINGS

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REVISIONS

1	Plan Check #1 May 31, 2022

RESIDENTIAL DESIGN BY
JONATHAN PELEZZARE

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A CUSTOM RESIDENCE FOR:
Torchia
Palm Springs, California

DRAWN	S.C.
CHECKED	
DATE	04-08-2022
SCALE	N.T.S.
BG JOB #	875.53
SHEET NO.	S-1.2

GENERAL NOTES

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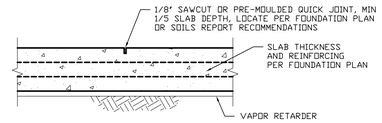
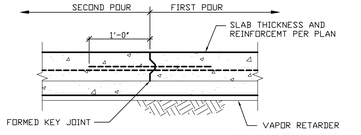
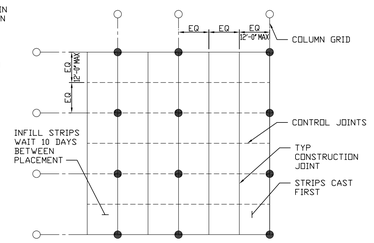


WEAKENED PLANE JOINT (W.P.J.)

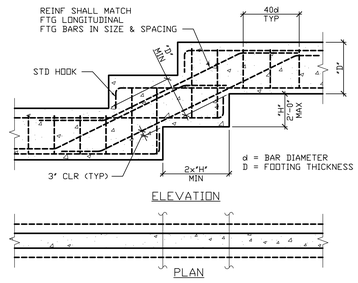


1/2" DIA SMOOTH DOWEL x 24" LONG AT 24" OC - TAPE OR GREASE ONE END

POUR JOINT (P.J.) SLAB JOINTS

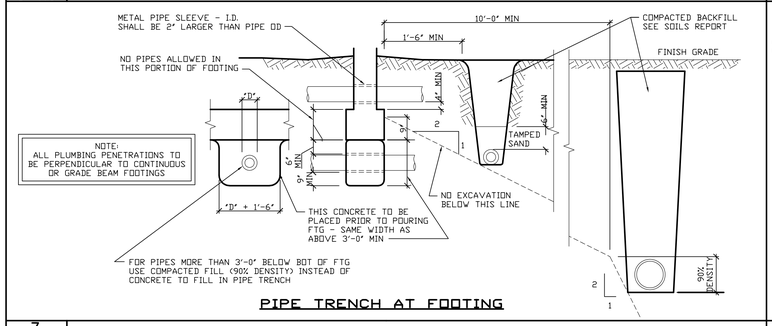


CONSTRUCTION JOINT AT SLAB ON GRADE



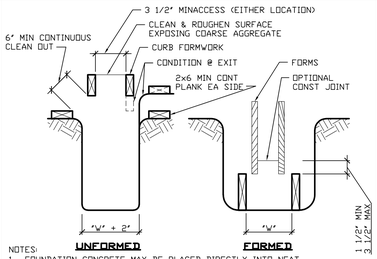
TYP STEPPED FOOTING

1 S-1.3 GENERAL DETAIL



PIPE TRENCH AT FOOTING

3 S-1.3 GENERAL DETAIL



UNFORMED FORMED

NOTES:
1. FOUNDATION CONCRETE MAY BE PLACED DIRECTLY INTO NEAT EXCAVATIONS, PROVIDED THE FOUNDATION TRENCH WALLS ARE STABLE AS DETERMINED BY THE STRUCTURAL ENGINEER & APPROVED BY O.S.A.
2. FORMWORK NOT PERMITTED BELOW GRADE UNLESS FOOTING AND WALL ARE FULLY FORMED.
3. STAKES NOT PERMITTED WITHIN FOOTING SECTION.

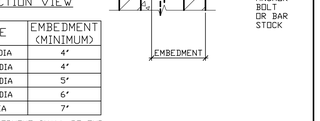
7 S-1.3 GENERAL DETAIL

FLARE-BEVEL-GROOVE WELD

WELD LENGTH		
BAR SIZE	WELD ONE SIDE	WELD BOTH SIDE
#3	5"	2 1/2"
#4	6 1/2"	3 1/4"
#5	8"	4"
#6	9 1/2"	4 3/4"
#7	11"	5 1/2"
#8	12 1/2"	6 1/4"
#9	14"	7"
#10	15 1/2"	7 3/4"
#11	17 1/2"	8 3/4"

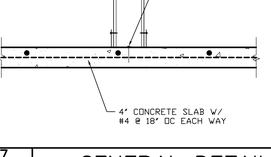
FLARE-V-GROOVE WELD

WELD LENGTH		
BAR SIZE	WELD ONE SIDE	WELD BOTH SIDE
#3	2 1/2"	1 1/4"
#4	3"	1 1/2"
#5	3 1/2"	1 3/4"
#6	4"	2"
#7	4 1/2"	2 1/4"
#8	5"	2 1/2"
#9	5 1/2"	2 3/4"
#10	6 1/2"	3 1/4"
#11	7"	3 1/2"



FLARE-BEVEL-GROOVE WELD

FLARE-V-GROOVE WELD



BUTT WELD

LAP WELD

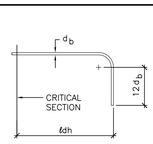
9 S-1.3 GENERAL DETAIL

13 S-1.3 GENERAL DETAIL

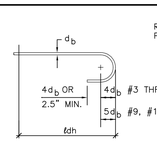
REBAR SPLICE AND EMBED LENGTH SCHEDULE

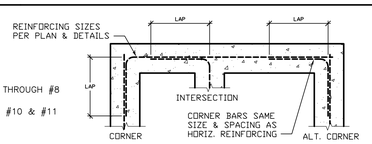
BAR #	CONC. f'c = 2500 PSI						
	LAP SPLICE LENGTHS			DEVELOPMENT LENGTH			
	COLUMNS	TOP BAR	OTHER	COLUMNS	TOP BAR	OTHER	STANDARD HOOKS &dh
3	12"	21"	16"	8"	16"	12"	7"
4	12"	27"	21"	8"	21"	16"	10"
5	21"	51"	39"	15"	39"	30"	12"
6	25"	61"	47"	18"	47"	36"	15"
7	30"	89"	69"	21"	69"	53"	17"
8	34"	102"	78"	24"	78"	60"	19"
9	38"	115"	88"	27"	88"	68"	22"
10	43"	129"	99"	31"	99"	77"	24"
11	47"	143"	110"	34"	110"	85"	29"

NOTES:
1. LAP SPLICES IN BEAMS ARE NOT PERMITTED WITHIN JOINTS, NOR WITHIN A DISTANCE OF TWICE THE MEMBER DEPTH FROM THE FACE OF THE JOINT, NOR AT CENTER 1/3 OF BEAM SPAN FOR BOTTOM REINFORCING, NOR AT END 1/3 OF BEAM SPAN FOR TOP REINFORCING.
2. LAP SPLICES IN BEAMS SHALL BE PERMITTED ONLY IF HOOP REINFORCEMENT IS PROVIDED AT A MAXIMUM SPACING OF 4" O/C ALONG THE LAP LENGTH.
3. WHEN BARS OF DIFFERENT SIZE ARE LAP SPLICED IN COMPRESSION, SPLICE LENGTH SHALL BE OF THE DEVELOPMENT LENGTH OF LARGER BAR OR SPLICE LENGTH OF SMALLER BAR.
4. COLUMN LAP SPLICE LENGTH SPECIFIED IS WHERE TIES ARE USED THROUGHOUT THE LAP SPLICE LENGTH. FOR OTHER CONDITIONS USE 30db AS THE COLUMN LAP SPLICE LENGTH.
5. LENGTHS SHOWN ARE FOR HOOKS WITH SIDE COVER (NORMAL TO PLANE OF HOOK) NOT LESS THAN 2-1/2" AND FOR 90° HOOK, COVER ON BAR EXTENSION BEYOND HOOK NOT LESS THAN 2". FOR OTHER CONDITIONS MULTIPLY ABOVE STANDARD HOOK DEVELOPMENT LENGTH BY 1.43.
6. SPLICE AND EMBEDMENT LENGTHS ARE IN INCHES. SPLICES SHALL BE CLASS "B".
7. TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12" CONCRETE BELOW, OTHER BARS ARE BOTTOM OR VERTICAL BARS.
WHERE REQUIRED EMBEDMENT CANNOT BE OBTAINED WITH STRAIGHT BARS, PROVIDE 180° OR 90° HOOK EQUALING LENGTH BELOW.
SCHEDULE IS FOR GRADE 60 BARS EXCEPT #3 AND #4 WHICH ARE FOR GRADE 40 BARS.

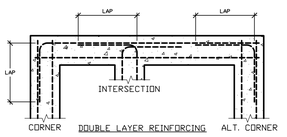


DETAIL (A)





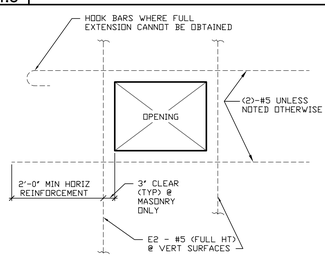
SINGLE LAYER REINFORCING



DOUBLE LAYER REINFORCING

REINFORCING LAYOUT

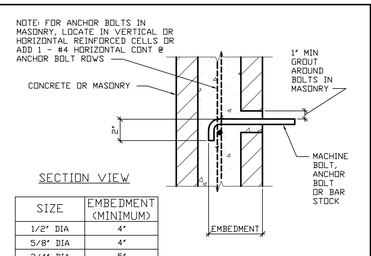
19 S-1.3 GENERAL DETAIL



(REINF. NOT REQUIRED @ OPENING LESS THAN 6' IN EA DIMENSION)

NOTE: DETAIL APPLIES TO CONCRETE WALLS, CONCRETE SLABS AND CONCRETE TIPPING OVER STEEL DECK. ALSO APPLIES TO OPENINGS IN REINFORCED HOLLOW UNIT MASONRY WALLS WHEN THE WIDTH OF THE MASONRY OPENING DOES NOT EXCEED 4'-0"

25 S-1.3 GENERAL DETAIL

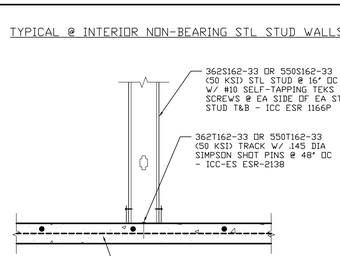


SECTION VIEW

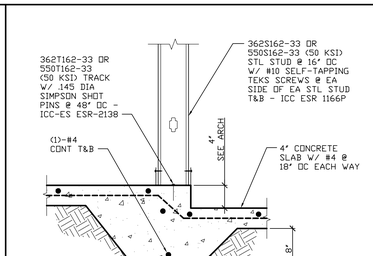
SIZE	EMBEDMENT (MINIMUM)
1/2" DIA	4"
5/8" DIA	4"
3/4" DIA	5"
7/8" DIA	6"
1" DIA	7"

THIS EMBEDMENT SHALL BE TYP UNLESS NOTED OTHERWISE

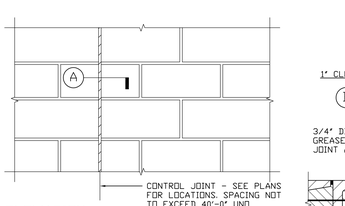
26 S-1.3 GENERAL DETAIL



27 S-1.3 GENERAL DETAIL



28 S-1.3 GENERAL DETAIL



ELEVATION

NOTE:
1. STOP HORIZONTAL BOND BEAM REINFORCEMENT @ JOINT EXCEPT HORIZONTAL CHORD REINFORCEMENT @ FLOORS AND ROOF TO BE CONT THRU JOINT.

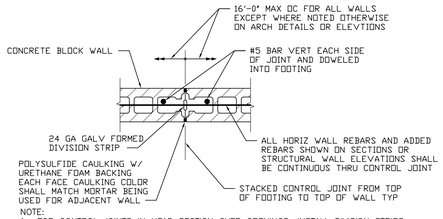
CONTROL JOINT

NOTE: ENGINEER AND ARCHITECT MUST REVIEW THE LOCATION OF THE EXPANSION JOINT PRIOR TO CONSTRUCTION

NOTE: PROVIDE CONTROL JOINT @ 20'-0" OC (MAX) - SEE ARCH

MASONRY WALL NOTES

1. GROUT ALL CELLS SOLID WHEN BELOW GRADE. CEMENT PER ASTM C-150.
2. REINFORCEMENT STEEL fs = 24,000 PSI ASTM A615 GRADE 40.
3. MASONRY f'm = 1500 PSI v = 19 PSI u = 70 PSI.
4. CONCRETE f'c = 3,000 PSI @ 28 DAYS. TYPE 5 PCC.
5. POUR FOOTING AGAINST NATURAL UNDISTURBED EARTH.
6. FOOTING TO BE INSPECTED & CERTIFIED IN WRITING PRIOR TO PLACEMENT OF CONCRETE BY SOILS ENGINEER.
7. BACKFILL TO BE INSPECTED & CERTIFIED IN WRITING BY SOILS ENGINEER.
8. ALL WALLS TO HAVE APPROVED WATERPROOFING (SEE ARCH SPECIFICATIONS).
9. WEEP HOLES TO BE PROVIDED @ SITE WALLS BY OMITTING HEAD JOINT IN FIRST COURSE @ 32" O.C.



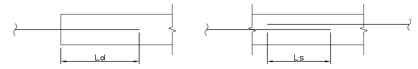
NOTE:
1. WHERE SINGLE LAYER OF REINF OCCURS, BEND REINF AS SHOWN FOR OUTSIDE BARS.
2. DETAIL APPLIES TO FOOTINGS, BEAMS AND CONCRETE WALLS
3. d = BAR DIAMETER

TYP REINFORCING AT INTERSECTION

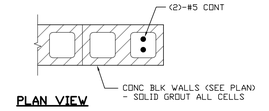
MASONRY CONTROL JOINT

CMU REINF DEVELOPMENT AND SPLICE LENGTHS													
BAR LOCATION	CONCRETE MASONRY UNIT		BAR SIZE										
			#3		#4		#5		#6		#7	#8	#9	
	TYPE	STRENGTH	Ld	Ls	Ld	Ls	Ld	Ls	Ld	Ls	Ld	Ls	Ld	Ls
CONCRETE MASONRY UNIT	–	fm > 1.5 ksi	25	25	33	33	41	41	49	49	57	57	65	65	74	74

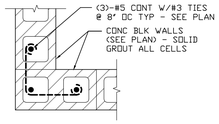
NOTES:
1. Ld= DEVELOPMENT LENGTH.
2. Ls= LAP SPLICE LENGTH.



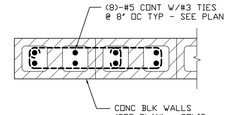
CMU REINFORCMENT DEVELOPMENT AND SPLICE LENGTHS



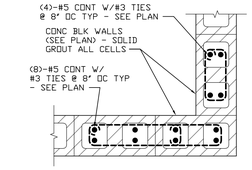
PLAN VIEW



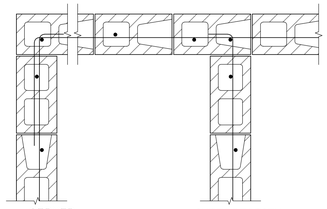
PLAN VIEW



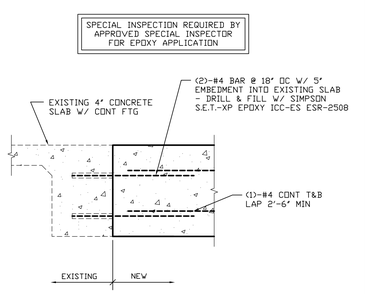
PLAN VIEW



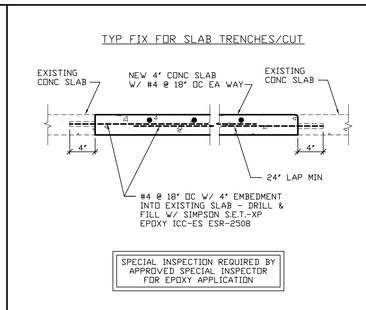
PLAN VIEW



CORNER INTERSECTION



23 S-1.3 GENERAL DETAIL



24 S-1.3 GENERAL DETAIL

29 S-1.3 GENERAL DETAIL

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30 S-1.3 BG DISCLAIMER

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⚠	Plan Check #1 May 31, 2022

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A CUSTOM RESIDENCE FOR: Torchia
Palm Springs, California

DRAWN	S.C.
CHECKED	
DATE	04-08-2022
SCALE	N.T.S.
BG JOB #	875.53
SHEET NO.	S-1.3

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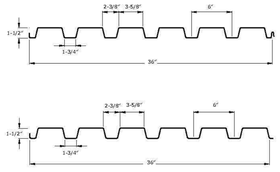
ASC Steel Deck

B-36 Roof Deck



B-36 Nestable

The **B-36 profile** has been enhanced via physical testing to give you the highest diaphragm shear values of any of our prior B-series profiles.

Note: B 35 1/4" – Sacramento

B-36 Section Properties

Gauge	Weight (psf)	I (In4)	S+ (In3)	S– (In3)
22	1.68	0.178	0.18	0.195
20	2.04	0.22	0.235	0.246
18	2.7	0.302	0.321	0.336
16	3.36	0.379	0.407	0.415

1. Section properties are based on minimum 38 ksi steel (Fy).

B-36 Allowable Reactions (plf)

Gauge	Bearing Length 1"	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"
22	416	468	520	572	625	677	729
	1007	1103	1213	1363	1513	1663	1813
20	700	776	853	929	1005	1082	1158
	1495	1617	1739	1897	2088	2280	2472
18	1443	1568	1693	1818	1943	2068	2193
	2734	2909	3084	3258	3436	3710	3985
16	2434	2608	2782	2957	3131	3305	3480
	4350	4578	4806	5034	5262	5490	5786

1. The top value reflects the allowable reaction at the panel end supports.
2. The bottom value reflects the allowable reaction at the interior supports.
3. Values are in pounds per linear foot.

B-36 Allowable Total (DL + LL) Uniform Load (psf)

Span Condition	Gauge		Span 5'0"	5'6"	6'0"	6'6"	7'0"	7'6"	8'0"	8'6"	9'0"	9'6"	10'0"
SINGLE SPAN	22	Stress	109	90	76	65	56	49	43	38	34	30	27
		Deflection	93	70	54	42	34	28	23	19	16	14	12
	20	Stress	143	118	99	85	73	64	56	49	44	40	36
		Deflection	115	87	67	53	42	34	28	23	20	17	14
	18	Stress	195	161	136	115	100	87	76	68	60	54	49
		Deflection	158	119	92	72	58	47	39	32	27	23	20
	16	Stress	247	205	172	146	126	110	97	86	76	69	62
		Deflection	199	149	115	90	72	59	49	40	34	29	25
DOUBLE SPAN	22	Stress	119	98	82	70	60	53	46	41	37	33	30
		Deflection	119	98	82	70	60	53	46	41	37	33	28
	20	Stress	150	124	104	89	76	66	58	52	46	41	37
		Deflection	150	124	104	89	76	66	58	52	46	41	35
	18	Stress	204	169	142	121	104	91	80	71	63	57	51
		Deflection	204	169	142	121	104	91	80	71	63	56	48
	16	Stress	252	209	175	149	129	112	99	87	78	70	63
		Deflection	252	209	175	149	129	112	99	87	78	70	60
TRIPLE SPAN	22	Stress	148	122	103	88	76	66	58	51	46	41	37
		Deflection	148	122	102	80	64	52	43	36	30	26	22
	20	Stress	187	155	130	111	95	83	73	65	58	52	47
		Deflection	187	155	126	99	79	65	53	44	37	32	27
	18	Stress	255	211	177	151	130	113	100	88	79	71	64
		Deflection	255	211	173	136	109	89	73	61	51	44	37
	16	Stress	315	261	219	187	161	140	123	109	97	87	79
		Deflection	315	261	217	171	137	111	92	76	64	55	47

1. Stress based on allowable flexural stress of 22.8 ksi.
2. Deflection based on maximum deflection of L/240.
3. Adequate bearing must be provided.
4. See page 31 for General Notes.

ASC STEEL DECK INFORMATION SHEET

13 S-1.4 GENERAL DETAIL

ASC Steel Deck

B-36 Roof Deck

ASC Steel Deck – Leading the way… A BlueScope Steel Company

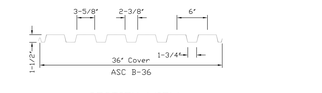
B-36 Allowable Diaphragm Shear (q) and Flexibility Factor (F)

Gauge	Seam Attachment	No. Puddle Welds		Span 5'0"	6'0"	7'0"	8'0"	9'0"	10'0"
22	Button Punch	12" O.C.	4 q	320	320	320	320	310	280
			F	14.5 + 222R	14.7 + 185R	14.8 + 159R	15.0 + 139R	15.2 + 123R	15.4 + 111R
		24" O.C.	4 q	260	260	260	250	250	220
			F	17.4 + 222R	17.6 + 185R	17.9 + 159R	18.1 + 139R	18.4 + 123R	18.6 + 111R
	Top Seam Weld	12" O.C.	4 q	360	360	360	360	360	360
			F	6.9 + 222R	6.1 + 185R	5.7 + 159R	5.4 + 139R	5.1 + 123R	4.9 + 111R
		24" O.C.	4 q	280	280	270	270	270	270
			F	8.1 + 222R	7.2 + 185R	6.6 + 159R	6.2 + 139R	5.8 + 123R	5.6 + 111R
	Side Seam Weld	12" O.C.	4 q	519	492	473	458	447	438
			F	7.1 + 222R	6.6 + 185R	6.2 + 159R	5.9 + 139R	5.7 + 123R	5.5 +111R
		24" O.C.	4 q	337	309	290	276	264	256
			F	9.5 + 222R	8.9 + 185R	8.4 + 159R	8.0 + 139R	7.7 + 123R	7.4 + 111R
	Button Punch	12" O.C.	7 q	570	570	560	500	450	410
			F	13.8 + 56R	14.1 + 46R	14.3 + 39R	14.6 + 34R	14.8 + 31R	15.1 + 28R
		24" O.C.	7 q	510	500	500	450	400	360
			F	15.2 + 56R	15.5 + 46R	15.8 + 39R	16.2 + 34R	16.5 + 31R	16.8 + 28R
	Top Seam Weld	12" O.C.	7 q	700	700	690	690	620	560
			F	12.5 + 56R	11.1 + 46R	10.0 + 39R	9.2 + 34R	8.6 + 31R	8.2 + 28R
		24" O.C.	7 q	610	610	600	600	540	490
			F	13.9 + 56R	12.3 + 46R	11.1 + 39R	10.2 + 34R	9.5 + 31R	9.0 + 28R
	Side Seam Weld	12" O.C.	7 q	596	555	525	504	487	473
			F	6.9 + 56R	6.5 + 46R	6.2 + 39R	6.0 + 34R	5.7 + 31R	5.6 + 28R
		24" O.C.	7 q	414	372	343	321	304	291
			F	8.8 + 56R	8.4 + 46R	8.1 + 39R	7.8 + 34R	7.5 + 31R	7.3 + 28R
20	Button Punch	12" O.C.	4 q	420	420	410	410	380	350
			F	11.0 + 129R	11.2 + 107R	11.3 + 92R	11.5 + 80R	11.7 + 71R	11.8 +64R
		24" O.C.	4 q	340	340	340	330	310	280
			F	13.0 + 129R	13.2 + 107R	13.4 + 92R	13.6 + 80R	13.8 + 71R	14.1 + 64R
	Top Seam Weld	12" O.C.	4 q	450	450	450	440	440	440
			F	5.4 + 129R	5.0 + 107R	4.6 + 92R	4.4 + 80R	4.1 + 71R	4.0 + 64R
		24" O.C.	4 q	340	340	340	340	340	340
			F	6.4 + 129R	5.8 +107R	5.3 + 92R	5.0 + 80R	4.7 + 71R	4.5 + 64R
	Side Seam Weld	12" O.C.	4 q	805	756	721	694	674	658
			F	5.9 + 129R	5.5 + 107R	5.3 + 92R	5.0 + 80R	4.8 + 71R	4.6 + 64R
		24" O.C.	4 q	543	494	458	432	412	395
			F	7.7 + 129R	7.3 + 107R	6.9 + 92R	6.6 + 80R	6.4 + 71R	6.2 + 64R
	Button Punch	12" O.C.	7 q	740	740	710	630	560	500
			F	10.4 + 32R	10.6 + 27R	10.8 + 23R	11.0 + 20R	11.3 + 18R	11.5 + 16R
		24" O.C.	7 q	670	660	640	560	500	450
			F	11.3 + 32R	11.6 + 27R	11.8 + 23R	12.1 + 20R	12.4 + 18R	12.6 + 16R
	Top Seam Weld	12" O.C.	7 q	900	890	880	840	750	680
			F	9.6 + 32R	8.5 + 27R	7.8 + 23R	7.2 + 20R	6.7 + 18R	6.4 + 16R
		24" O.C.	7 q	790	780	770	740	660	600
			F	10.6 + 32R	9.4 + 27R	8.5 + 23R	7.9 + 20R	7.4 + 18R	7.0 + 16R
	Side Seam Weld	12" O.C.	7 q	939	865	812	773	742	718
			F	5.7 + 32R	5.4 + 27R	5.2 + 23R	5.0 + 20R	4.8 + 18R	4.7 + 16R
		24" O.C.	7 q	677	602	549	510	479	455
			F	7.0 + 32R	6.8 + 27R	6.6 + 23R	6.4 + 20R	6.2 + 18R	6.0 + 16R

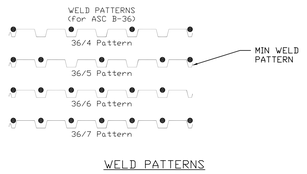
1. The allowable diaphragm shears "q" are listed in pounds per linear foot (plf).
2. See page 31 for General Notes.

ASC STEEL DECK WELD INFORMATION SHEET
(SEE DTL 5/S-1.4 FOR WELD PATTERN)

15 S-1.4 GENERAL DETAIL

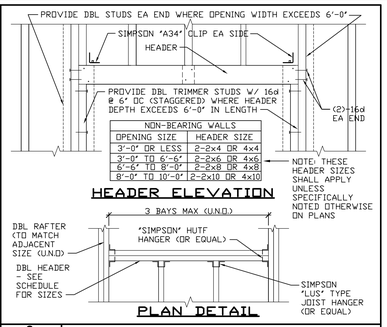


SECTION VIEW

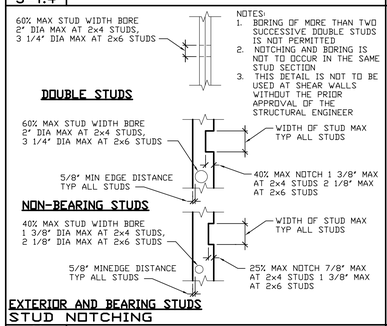


WELD PATTERNS

5 S-1.4 GENERAL DETAIL



6 S-1.4 GENERAL DETAIL



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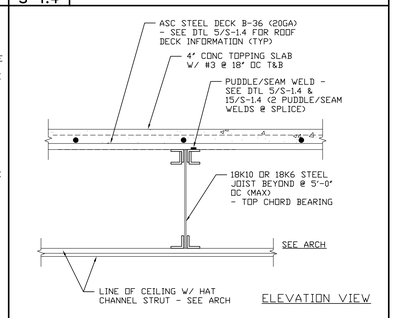
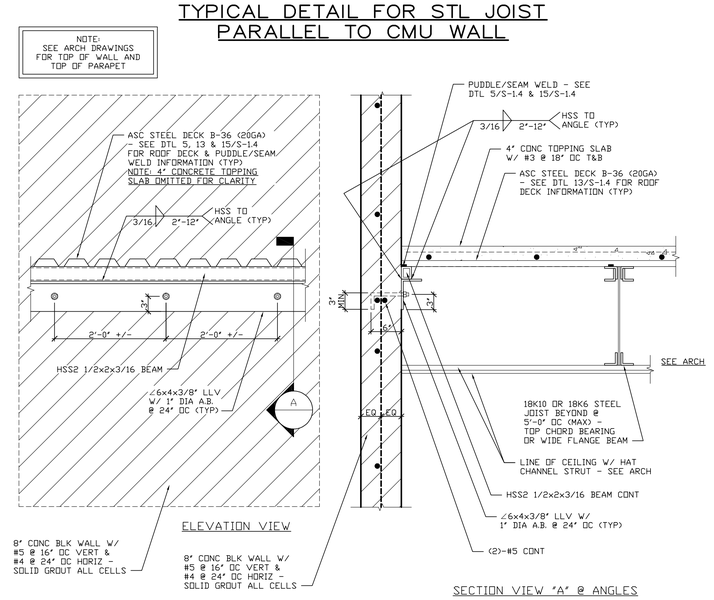


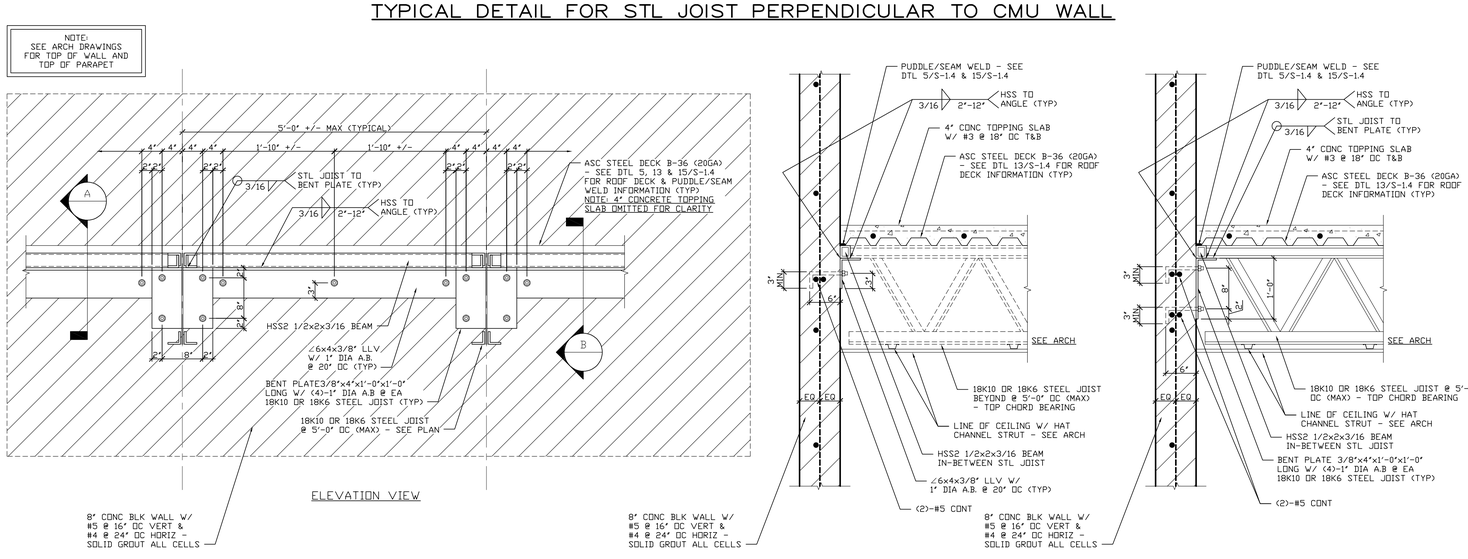
12 S-1.4 GENERAL DETAIL

TYPICAL DETAIL FOR STL JOIST PARALLEL TO CMU WALL



23 S-1.4 GENERAL DETAIL

TYPICAL DETAIL FOR STL JOIST PERPENDICULAR TO CMU WALL



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29 S-1.4 GENERAL DETAIL

30 S-1.4 BG DISCLAIMER

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A CUSTOM RESIDENCE FOR:
Torchia
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GENERAL DETAILS

DRAWN	S.C.
CHECKED	
DATE	04-08-2022
SCALE	N.T.S.
BG JOB #	875.53
SHEET NO.	S-1.4

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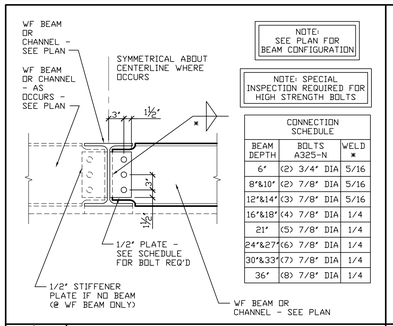
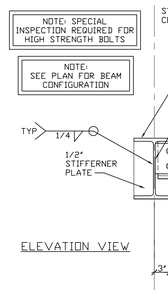


NOTE: SEE PLAN FOR BEAM CONFIGURATION

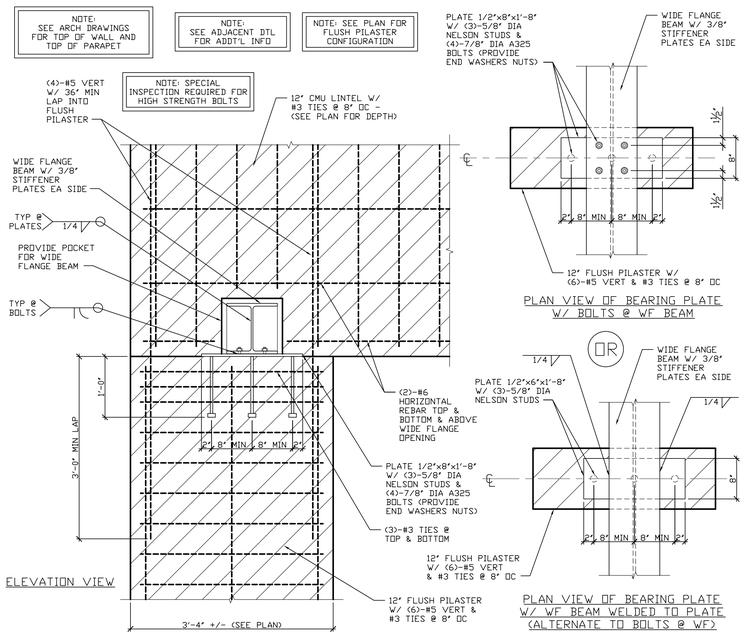
NOTE: SPECIAL INSPECTION REQUIRED FOR HIGH STRENGTH BOLTS

CONNECTION SCHEDULE		
BEAM DEPTH	BOLTS A325-N	WELD ▼
6"	(2) 3/4" DIA	5/16
8"&10"	(2) 7/8" DIA	5/16
12"&14"	(3) 7/8" DIA	5/16
16"&18"	(4) 7/8" DIA	1/4
21"	(5) 7/8" DIA	1/4
24"&27"	(6) 7/8" DIA	1/4
30"&33"	(7) 7/8" DIA	1/4
36"	(8) 7/8" DIA	1/4

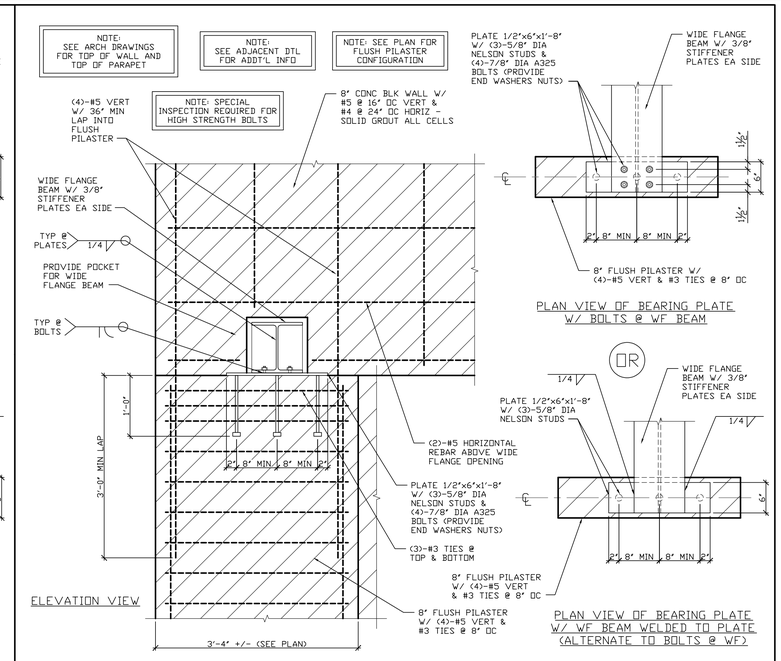
1 S-1.5 CONNECTION DETAIL



2 S-1.5 CONNECTION DETAIL



9 S-1.5 CONNECTION DETAIL



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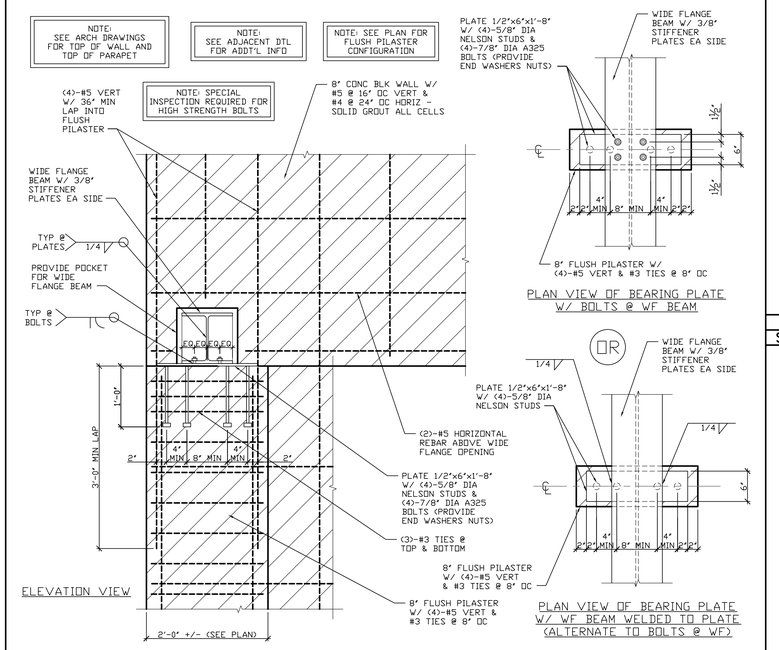

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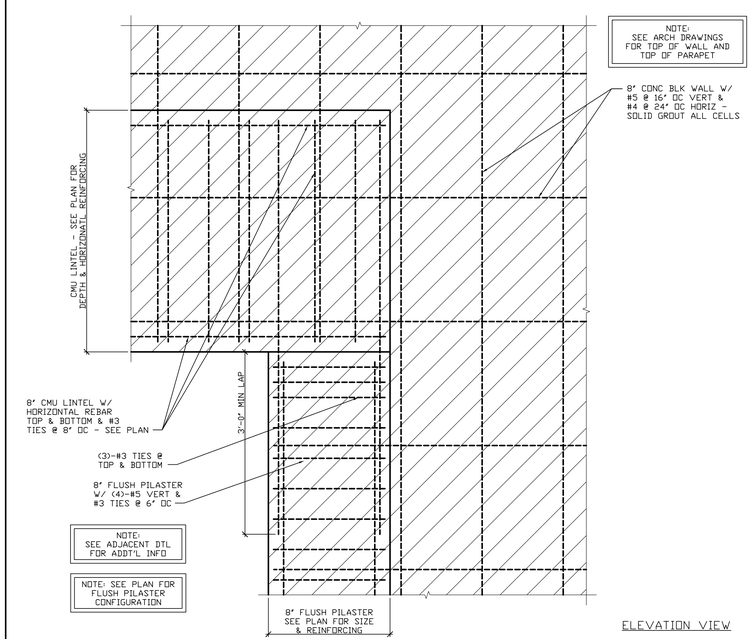

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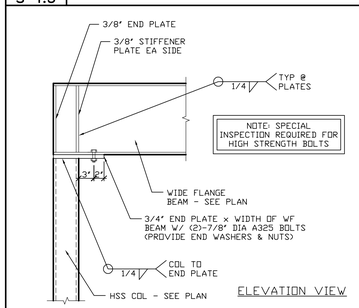

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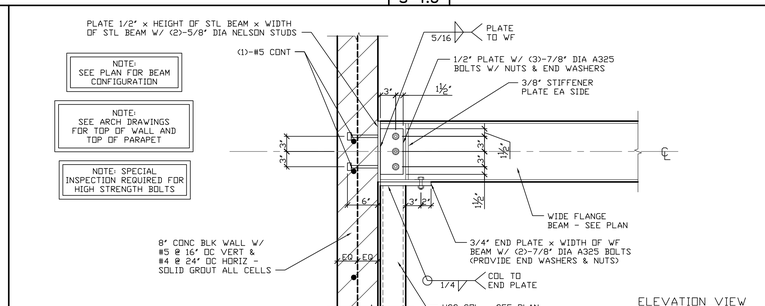

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30 S-1.5 BG DISCLAIMER

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1	Plan Check #1 May 31, 2022

RESIDENTIAL DESIGN BY
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BRIAN GOTTLIEB - CIVIL ENGINEER
(760) 568-3553
EMAIL: Cad@bgstructural.com
45-535 VIA CORONA, INDIAN WELLS, CA 92210

A CUSTOM RESIDENCE FOR:
Torchia
Palm Springs, California

CONNECTION DETAILS

DRAWN	S.C.
CHECKED	
DATE	04-08-2022
SCALE	N.T.S.
BG JOB #	875.53
SHEET NO.	S-1.5

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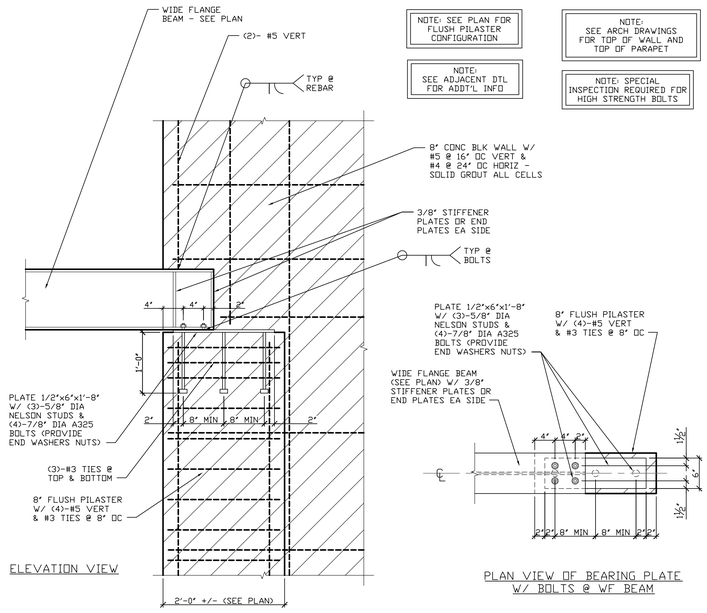


ELEVATION VIEW

NOTE: SEE PLAN FOR FLUSH PILASTER CONFIGURATION

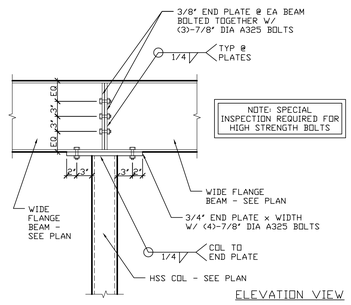
NOTE: SEE ADJACENT DTL FOR ADDT'L INFO

NOTE: SEE ARCH DRAWINGS FOR TOP OF WALL AND TOP OF PARAPET

NOTE: SPECIAL INSPECTION REQUIRED FOR HIGH STRENGTH BOLTS

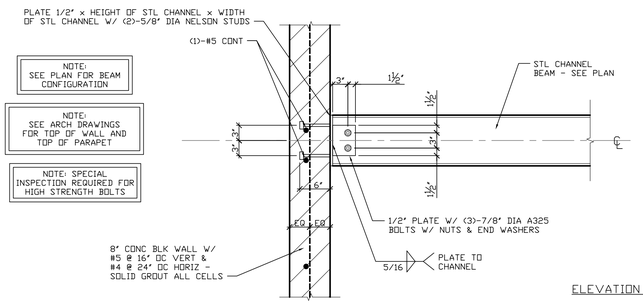
PLAN VIEW OF BEARING PLATE W/ BOLTS @ WF BEAM

7 S-1.6 CONNECTION DETAIL



ELEVATION VIEW

3 S-1.6 CONNECTION DETAIL



ELEVATION VIEW

4 S-1.6 CONNECTION DETAIL

6 S-1.6 CONNECTION DETAIL

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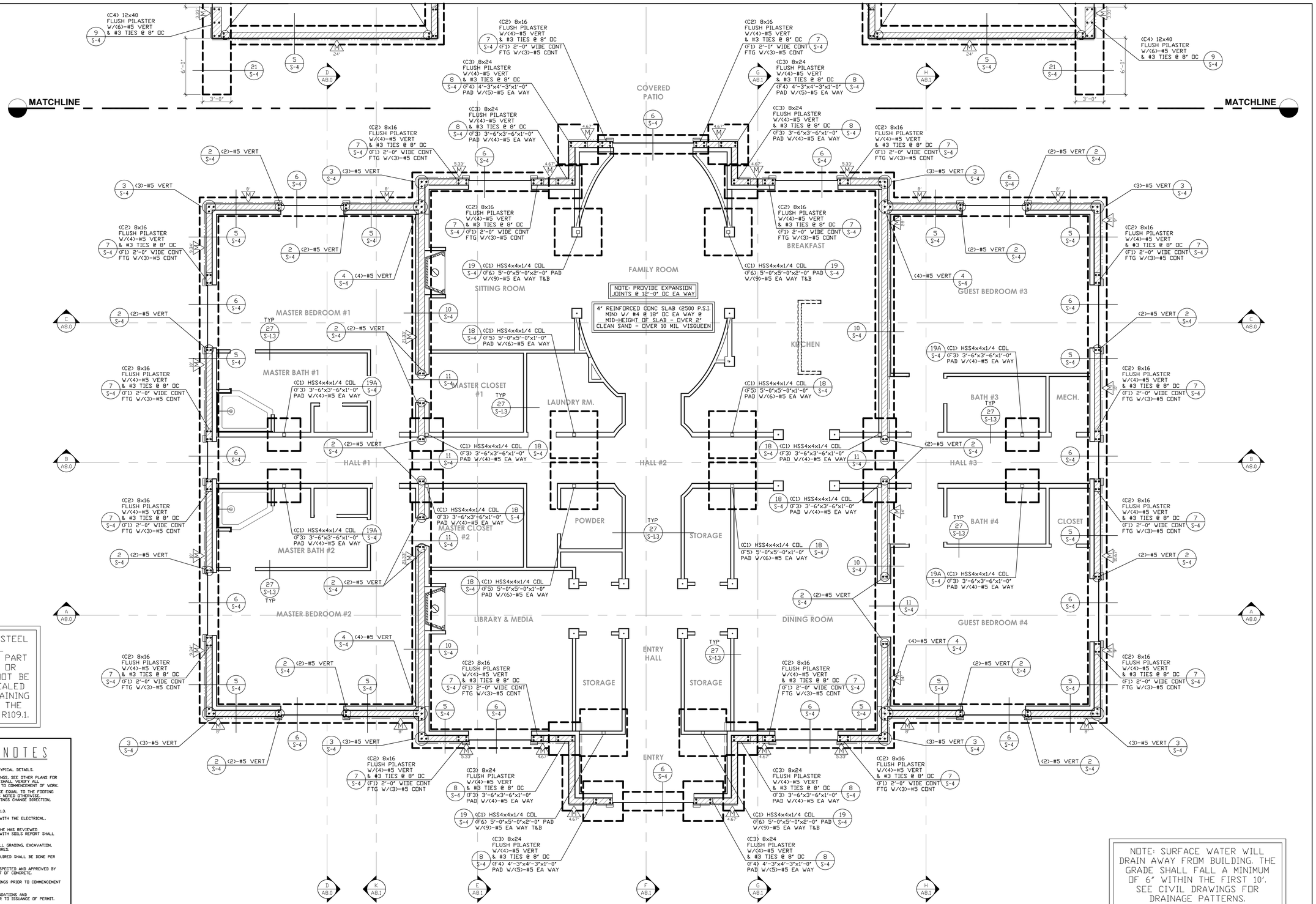

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TORCHIA RESIDENCE - (PARTIAL) FOUNDATION PLAN

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

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SEE DTL 16/S-1.3 FOR TYPICAL MASONRY NOTES

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REGISTERED PROFESSIONAL ENGINEER BRIAN GOTTLIEB No. C33047 CIVIL

A CUSTOM RESIDENCE FOR:
Torchia
Palm Springs, California

DRAWN	S.C.
CHECKED	
DATE	04-08-2022
SCALE	AS NOTED
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SHEET NO.	1

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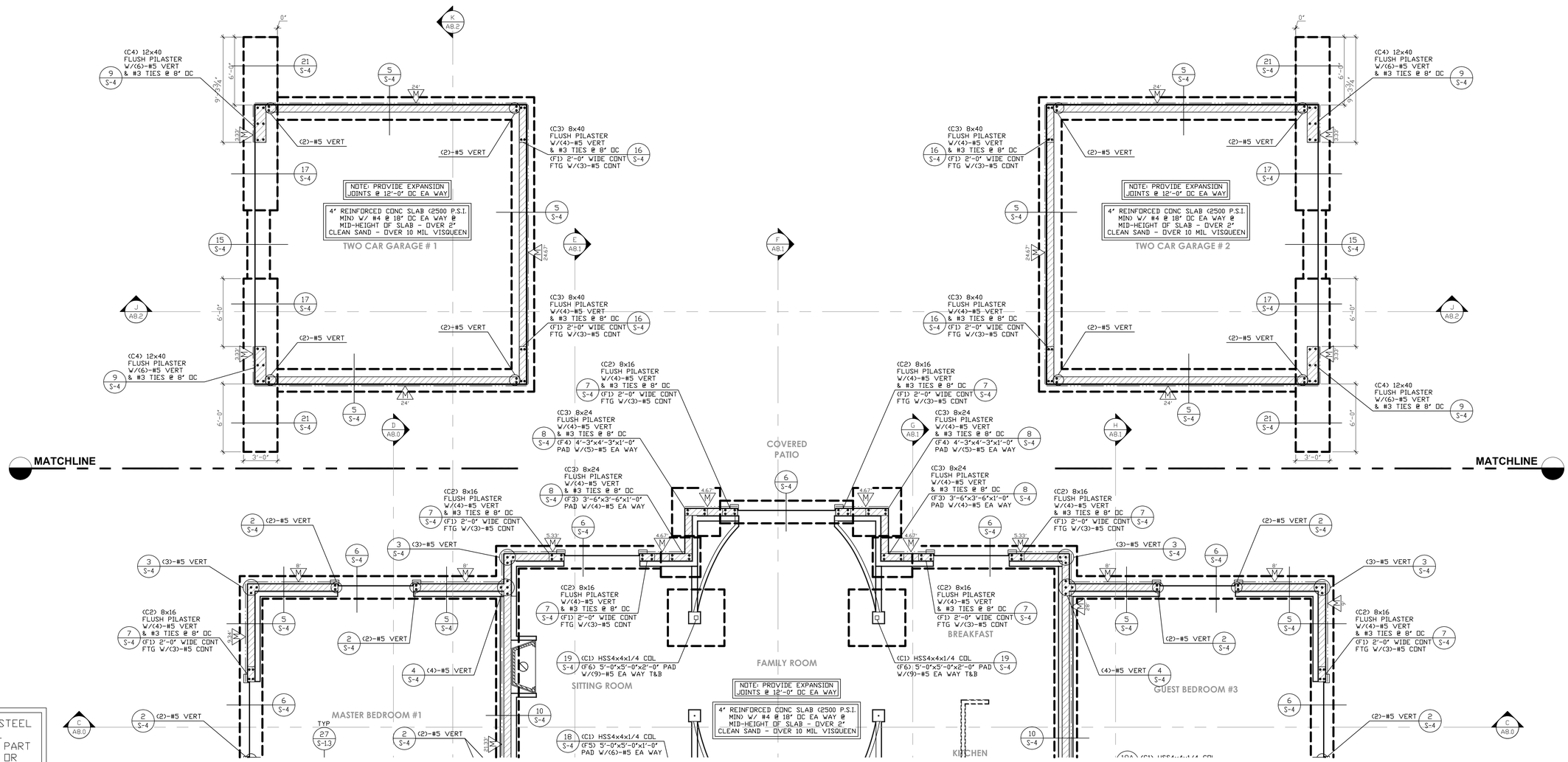

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45-535 VIA CORONA, INDIAN WELLS, CA 92210

A CUSTOM RESIDENCE FOR:
Torchia
Palm Springs, California

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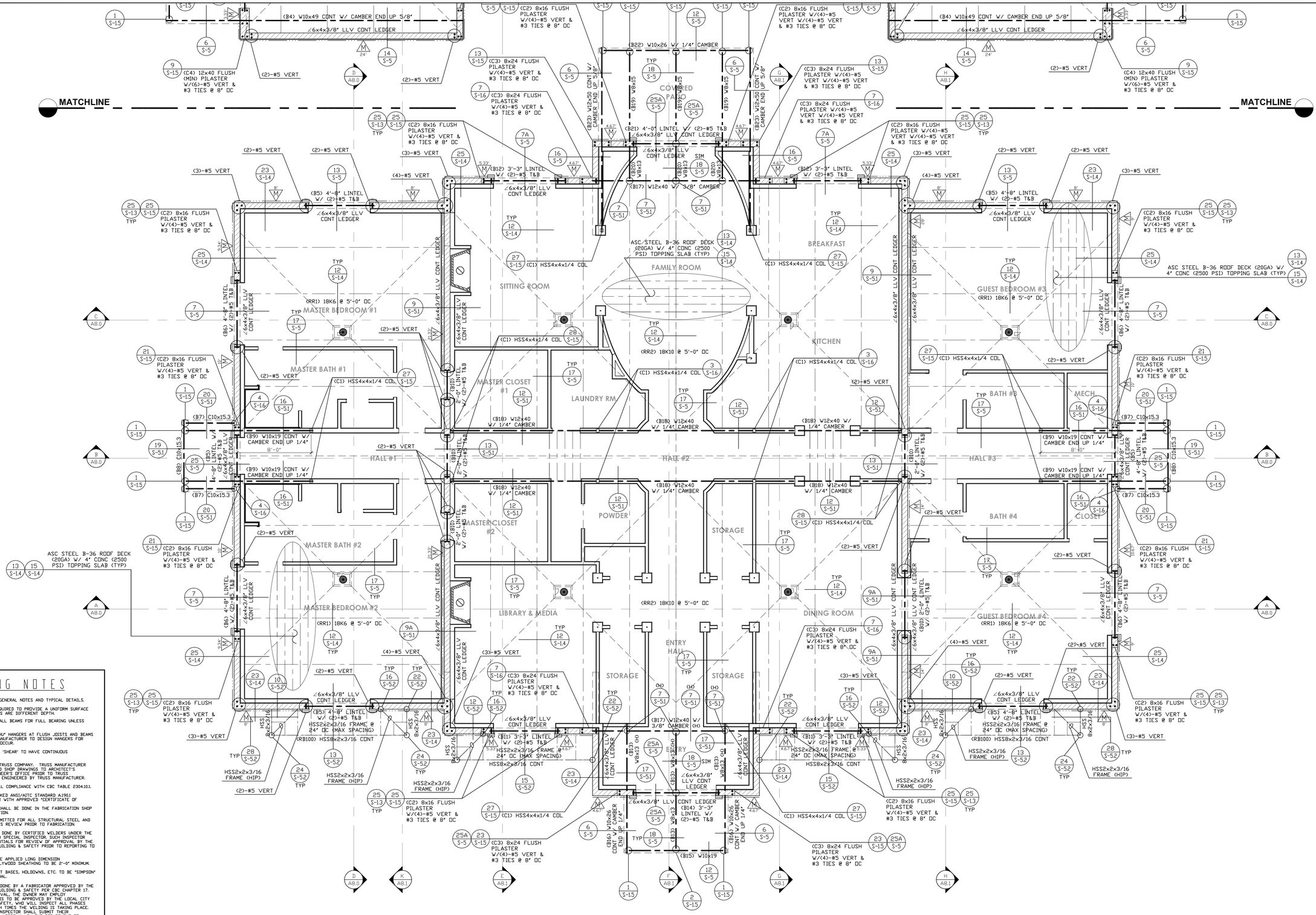

FRAMING NOTES

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6. TRUSSES TO BE DESIGNED BY TRUSS COMPANY. TRUSS MANUFACTURER TO PROVIDE CALCULATIONS AND SHOP DRAWINGS TO ARCHITECT'S OFFICE AND STRUCTURAL ENGINEER'S OFFICE PRIOR TO TRUSS FABRICATION. TRUSSES TO BE ENGINEERED BY TRUSS MANUFACTURER.
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TORCHIA RESIDENCE - (PARTIAL) FRAMING PLAN

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

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VERIFY ALL DIMENSIONS AND ELEVATIONS WITH ARCHITECTURAL PLANS

ROOF LOADS		
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REVISIONS

1	Plan Check #1 May 31, 2022

RESIDENTIAL DESIGN BY
JONATHAN PELEZZARE

B.G. STRUCTURAL ENGINEERING, INC.
LIC. NO. C33047
BRIAN GOTTLIEB - CIVIL ENGINEER
(760) 568-3553
EMAIL: Cad@bgstructural.com
45-535 VIA CORONA, INDIAN WELLS, CA 92210

REGISTERED PROFESSIONAL ENGINEER BRIAN GOTTLIEB No. C33047 CIVIL

A CUSTOM RESIDENCE FOR:
Torchia
Palm Springs, California

DRAWN	S.C.
CHECKED	
DATE	04-08-2022
SCALE	AS NOTED
BG JOB #	875.53
SHEET NO.	1

FRAMING PLAN

S-3

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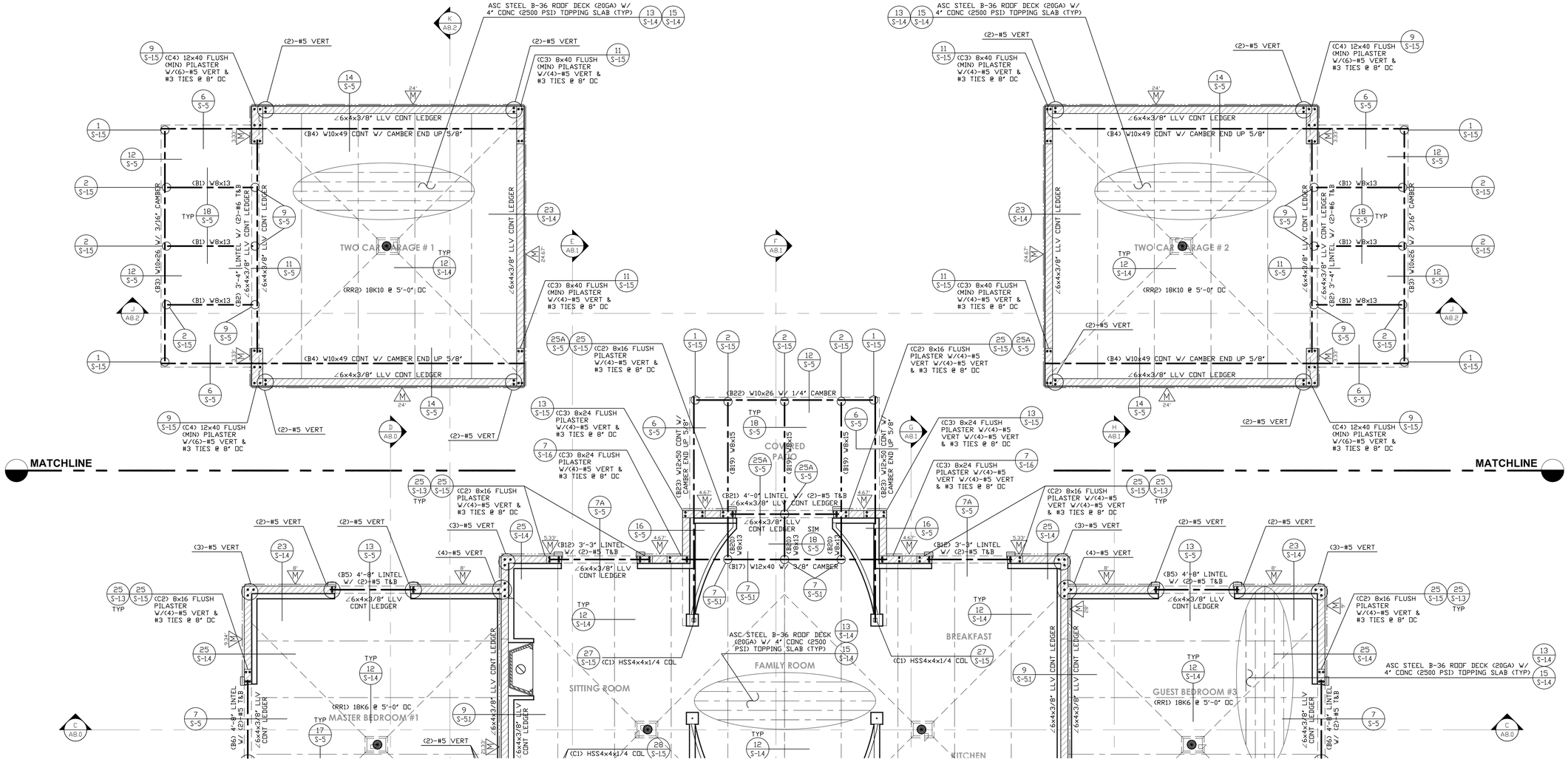

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FRAMING PLAN

S-3.1

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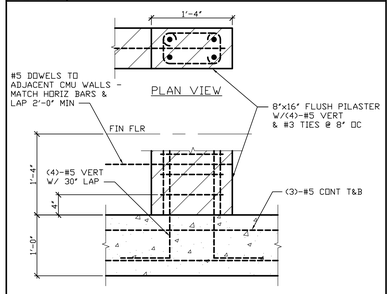
MASONRY WALL NOTES

1. GROUT ALL CELLS SOLID WHEN BELOW GRADE. CEMENT PER ASTM C-150.
2. REINFORCEMENT STEEL fs = 24,000 PSI ASTM A615 GRADE 40.
3. MASONRY fm = 1500 PSI v = 19 PSI u = 70 PSI.
4. CONCRETE f'c = 2,500 PSI @ 28 DAYS. TYPE 5 PCC.
5. POUR FOOTING AGAINST NATURAL UNDISTURBED EARTH.
6. FOOTING TO BE INSPECTED & CERTIFIED IN WRITING PRIOR TO PLACEMENT OF CONCRETE BY SOILS ENGINEER.
7. BACKFILL TO BE INSPECTED & CERTIFIED IN WRITING BY SOILS ENGINEER.
8. ALL WALLS TO HAVE APPROVED WATERPROOFING (SEE ARCH SPECIFICATIONS).
9. WEEP HOLES TO BE PROVIDED @ SITE WALLS BY OMITTING HEAD JOINT IN FIRST COURSE @ 32" O.C.

1 S-4 FOUNDATION DETAIL



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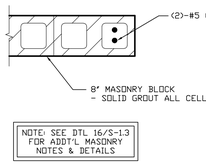

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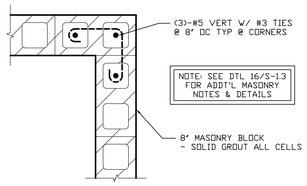

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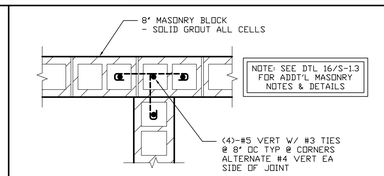

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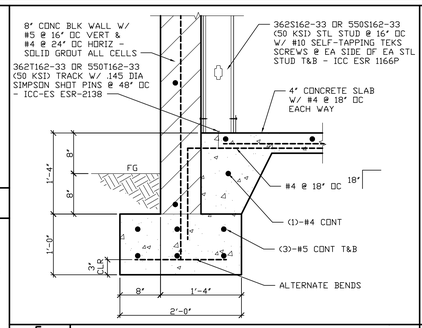

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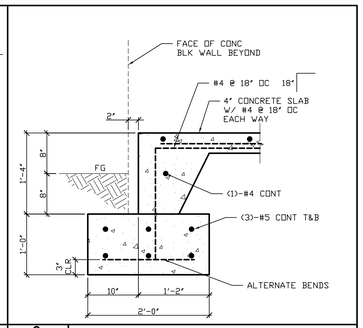

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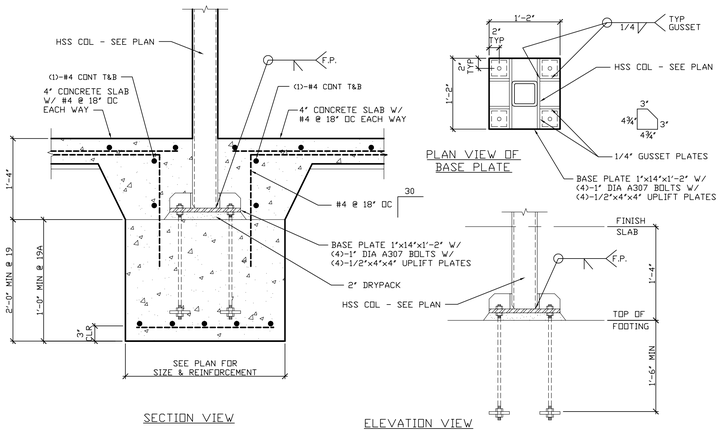

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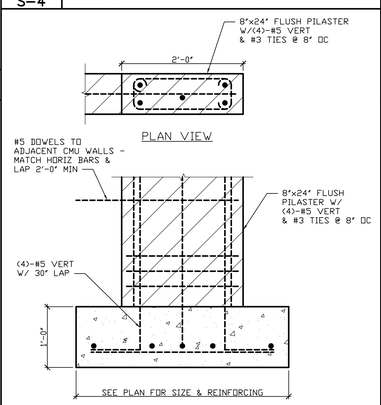

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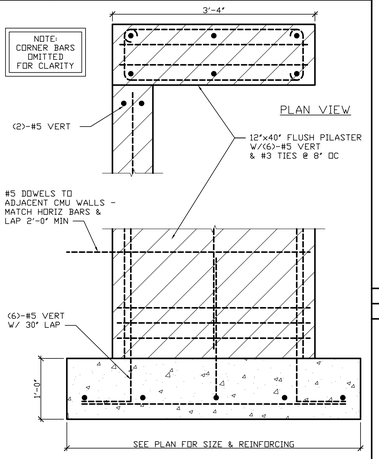

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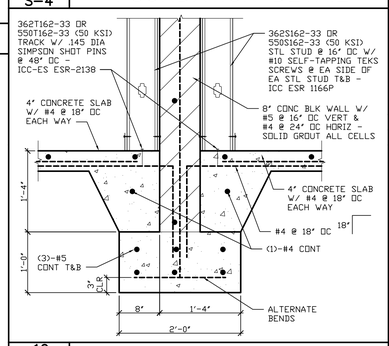

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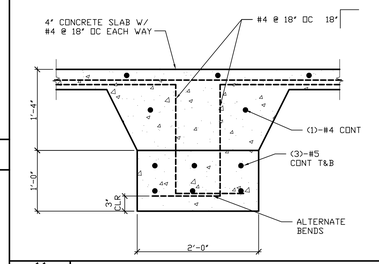

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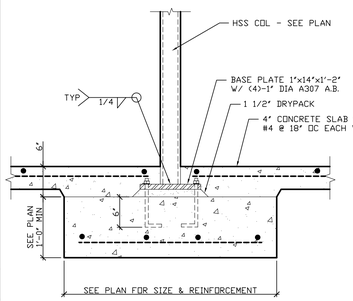

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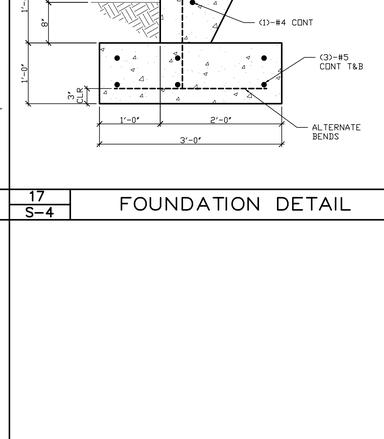

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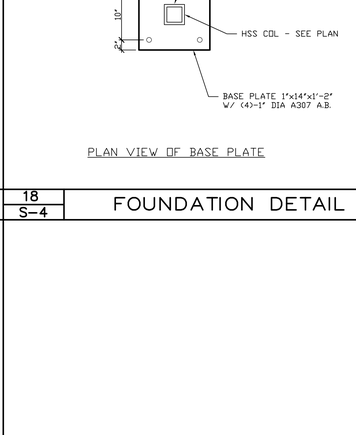

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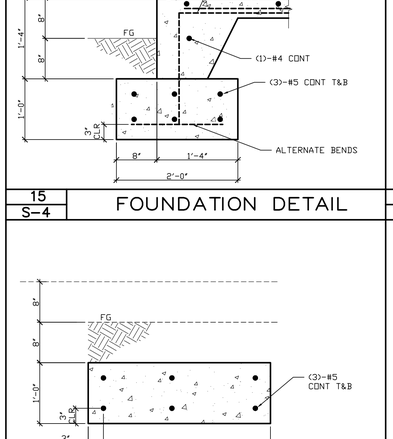

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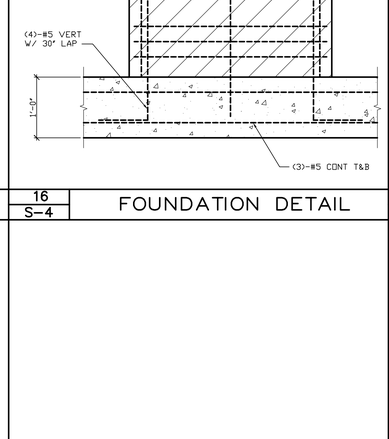

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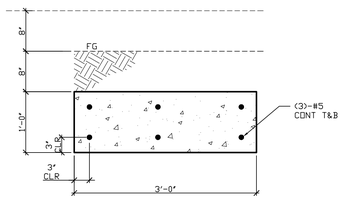

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29 S-4 FOUNDATION DETAIL

30 S-4 BG DISCLAIMER

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REVISIONS

1	Plan Check #1 May 31, 2022

RESIDENTIAL DESIGN BY
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REGISTERED PROFESSIONAL ENGINEER BRIAN GOTTLIEB No. C33047 CIVIL CALIFORNIA

A CUSTOM RESIDENCE FOR:
Torchia
Palm Springs, California

DRAWN	S.C.
CHECKED	
DATE	04-08-2022
SCALE	N.T.S.
BG JOB #	875.53
SHEET NO.	S-4

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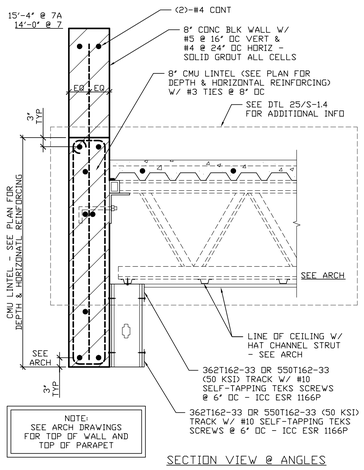
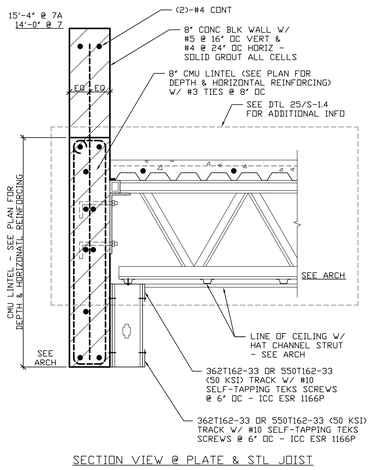
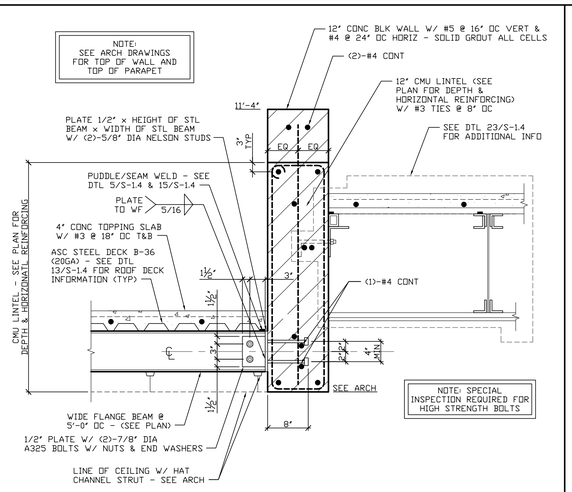


SECTION VIEW @ ANGLES



SECTION VIEW @ PLATE & STL JOIST

7 / S-5 FRAMING DETAIL



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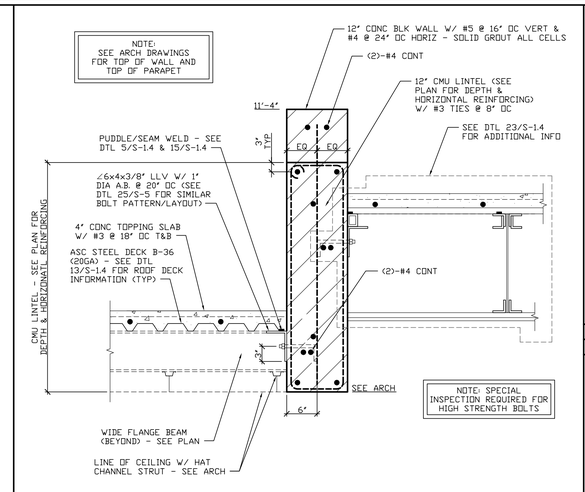

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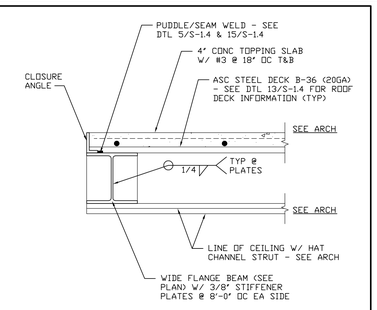

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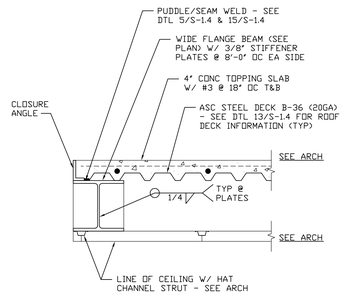

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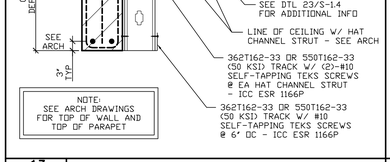

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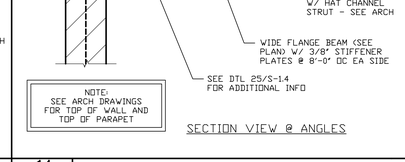

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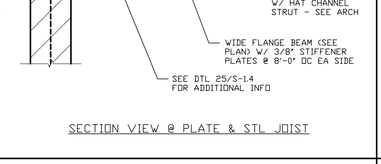

SECTION VIEW @ PLATE & STL JOIST

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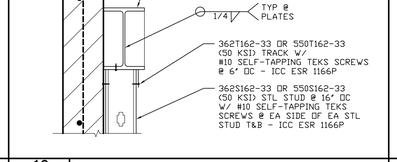
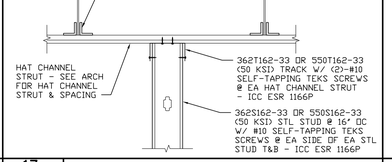


16 / S-5 FRAMING DETAIL

TYPICAL FRAMING OF NON-BEARING WALLS



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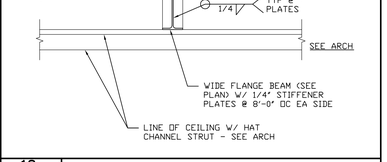
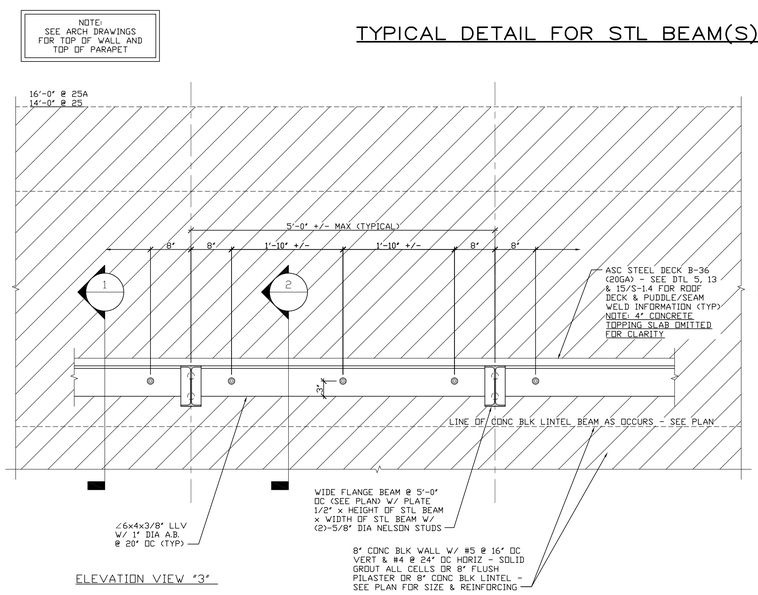
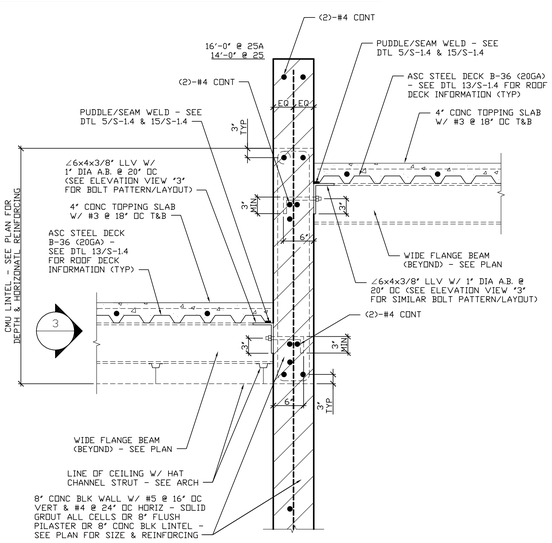


18 / S-5 FRAMING DETAIL

TYPICAL DETAIL FOR STL BEAM(S) PERPENDICULAR TO CMU WALL



ELEVATION VIEW "3"



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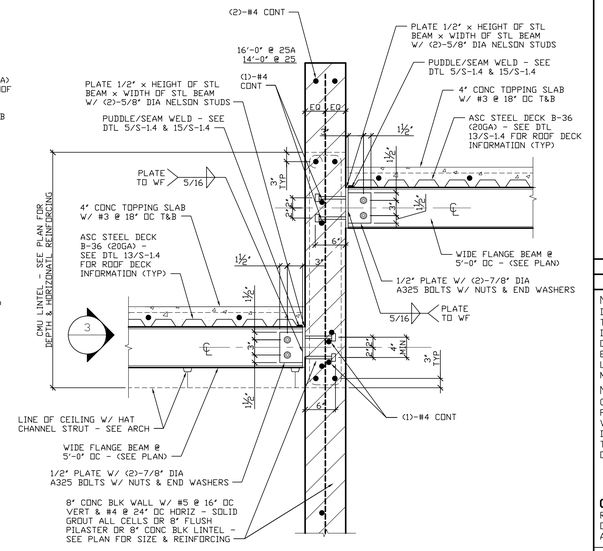

SECTION VIEW "2" @ STL BEAM(S) & END PLATES

25 / S-5 FRAMING DETAIL

24 / S-5 FRAMING DETAIL

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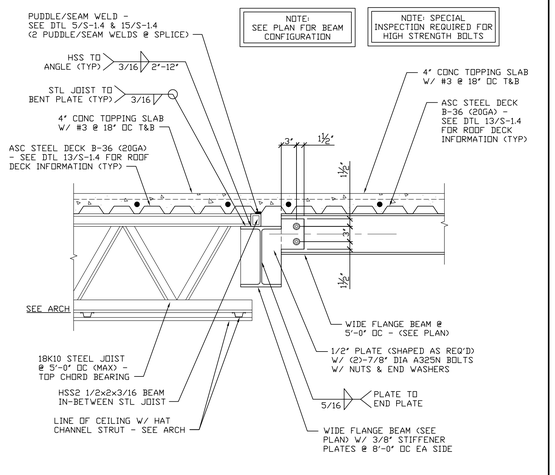

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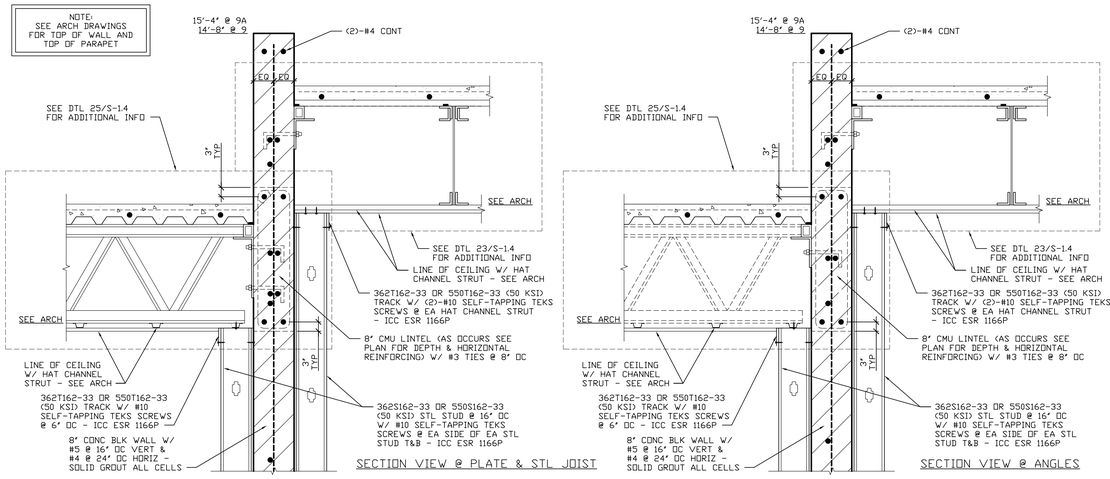

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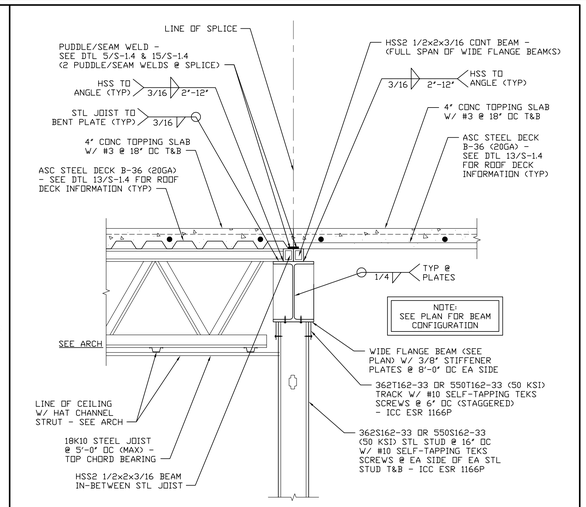

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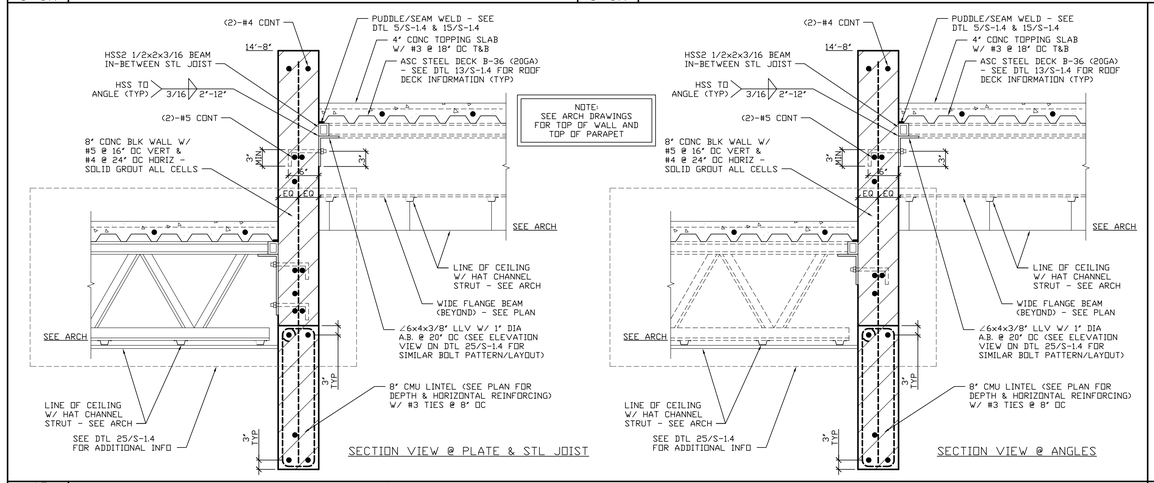

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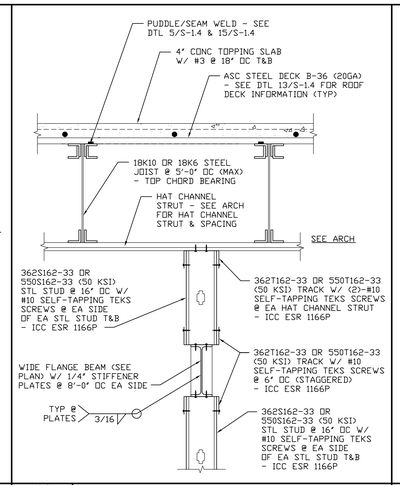

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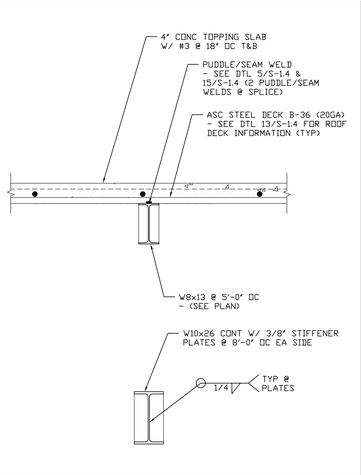

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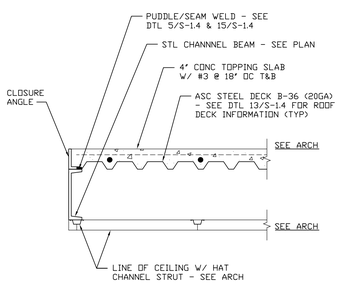

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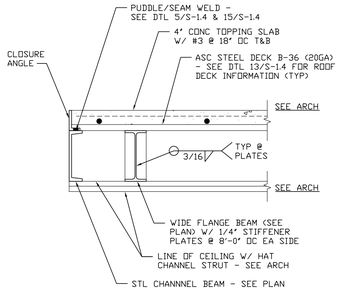

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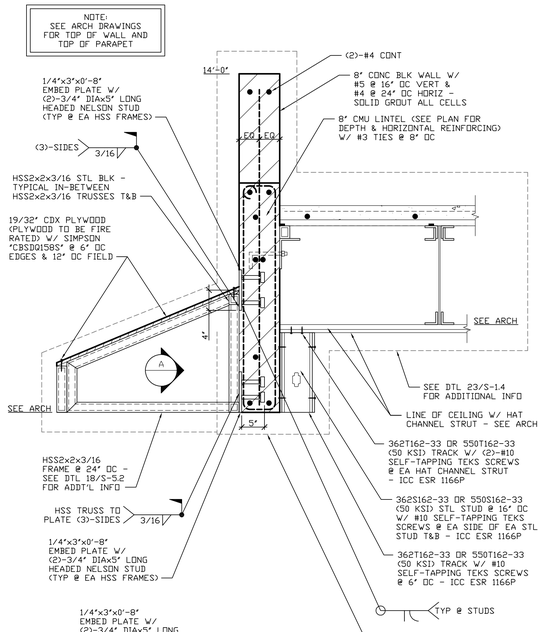

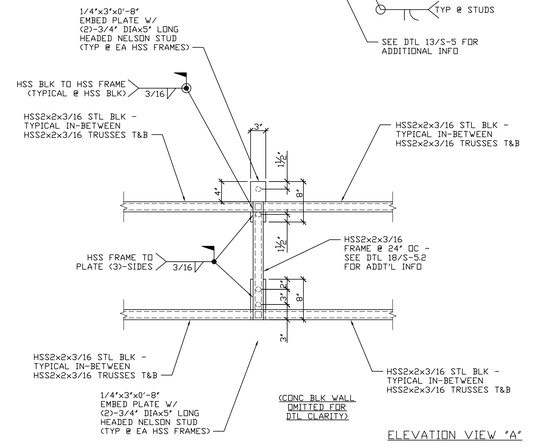

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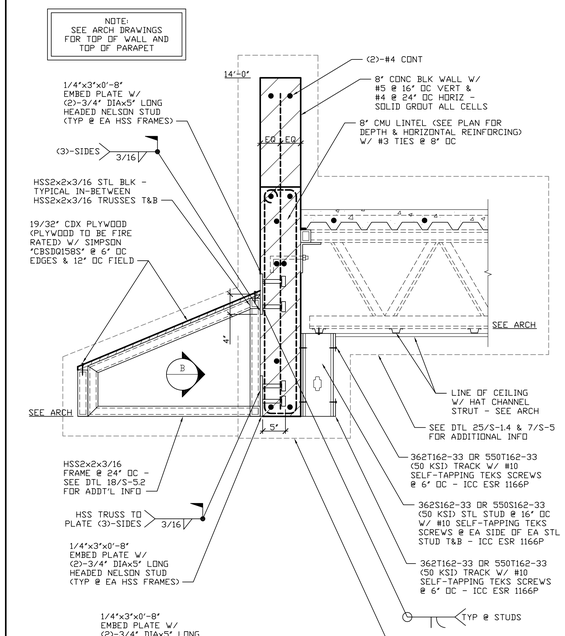

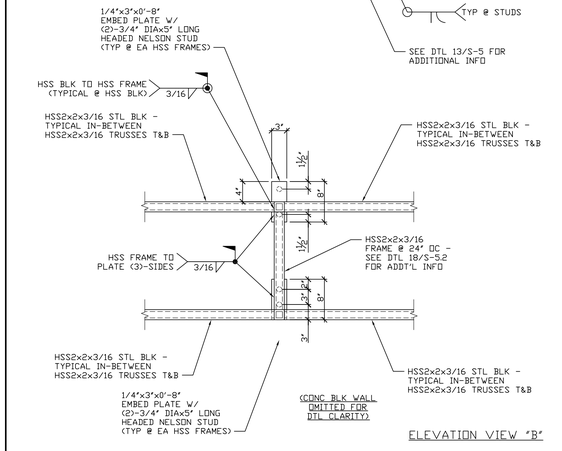

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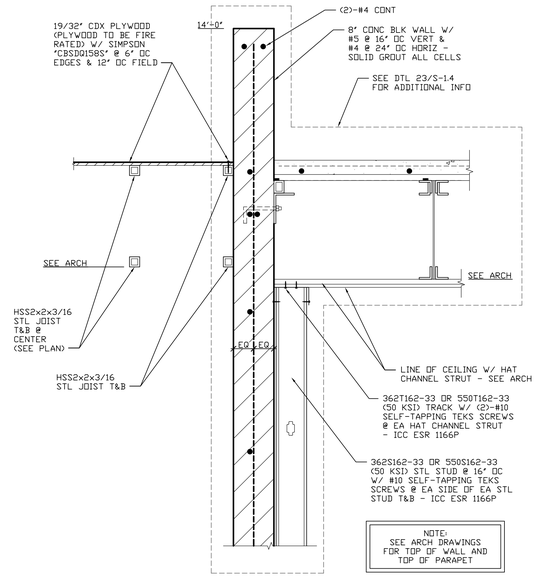

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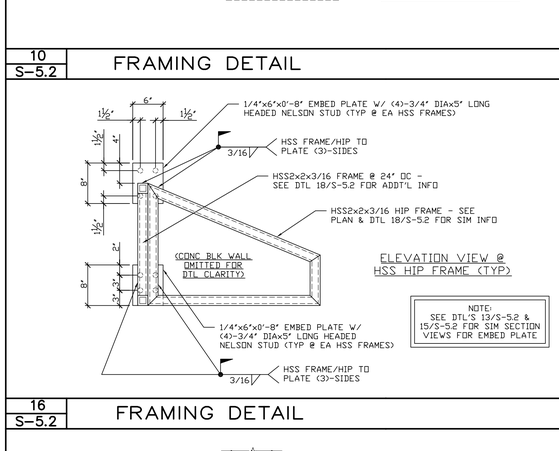

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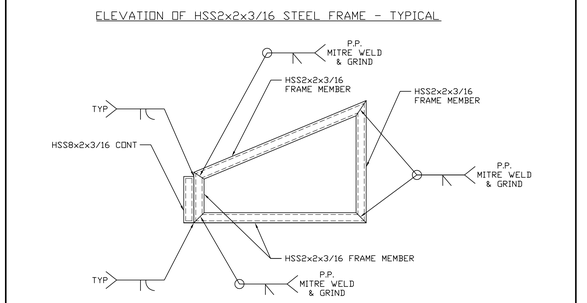

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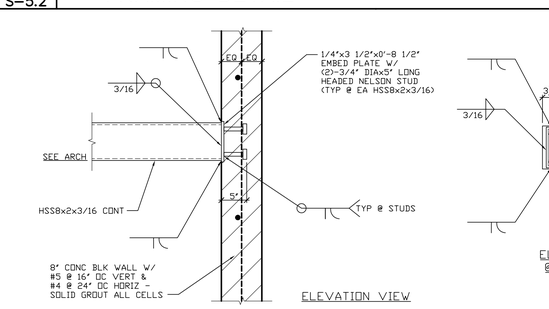

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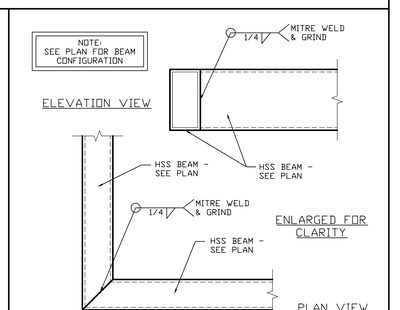

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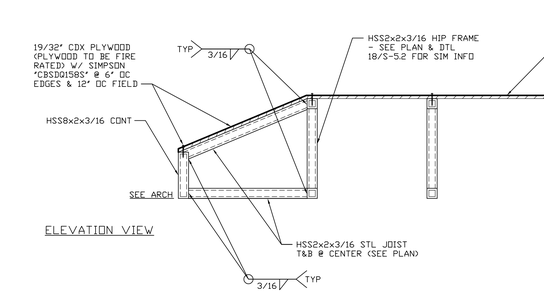

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30 S-5.2 BG DISCLAIMER

25 S-5.2 FRAMING DETAIL

26 S-5.2 FRAMING DETAIL

27 S-5.2 FRAMING DETAIL

REVISIONS

1	Plan Check #1 May 31, 2022

RESIDENTIAL DESIGN BY
JONATHAN PELEZZARE

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A CUSTOM RESIDENCE FOR: Torchia
Palm Springs, California

DRAWN	S.C.
CHECKED	
DATE	04-08-2022
SCALE	N.T.S.
BG JOB #	875.53
SHEET NO.	S-5.2

FRAMING DETAILS

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