2016 NFPA 13, STANDARD FOR THE INSTALLATION OF SPRINKLER

NOT WITHIN THE SCOPE OF THIS PROJECT.

2016 NFPA 72, NATIONAL FIRE ALARM CODE AND SIGNALING CODE, 2015 Edition NOTE: SOME CODES MAY NOT APPLY IF WORK REGULATED BY SUCH CODES IS

ABBREVIATIONS

SUBSTITUTIONS AFFECTING DSA REGULATIONS SHALL BE SUBMITTED AS A

FABRICATION AND INSTALLATION

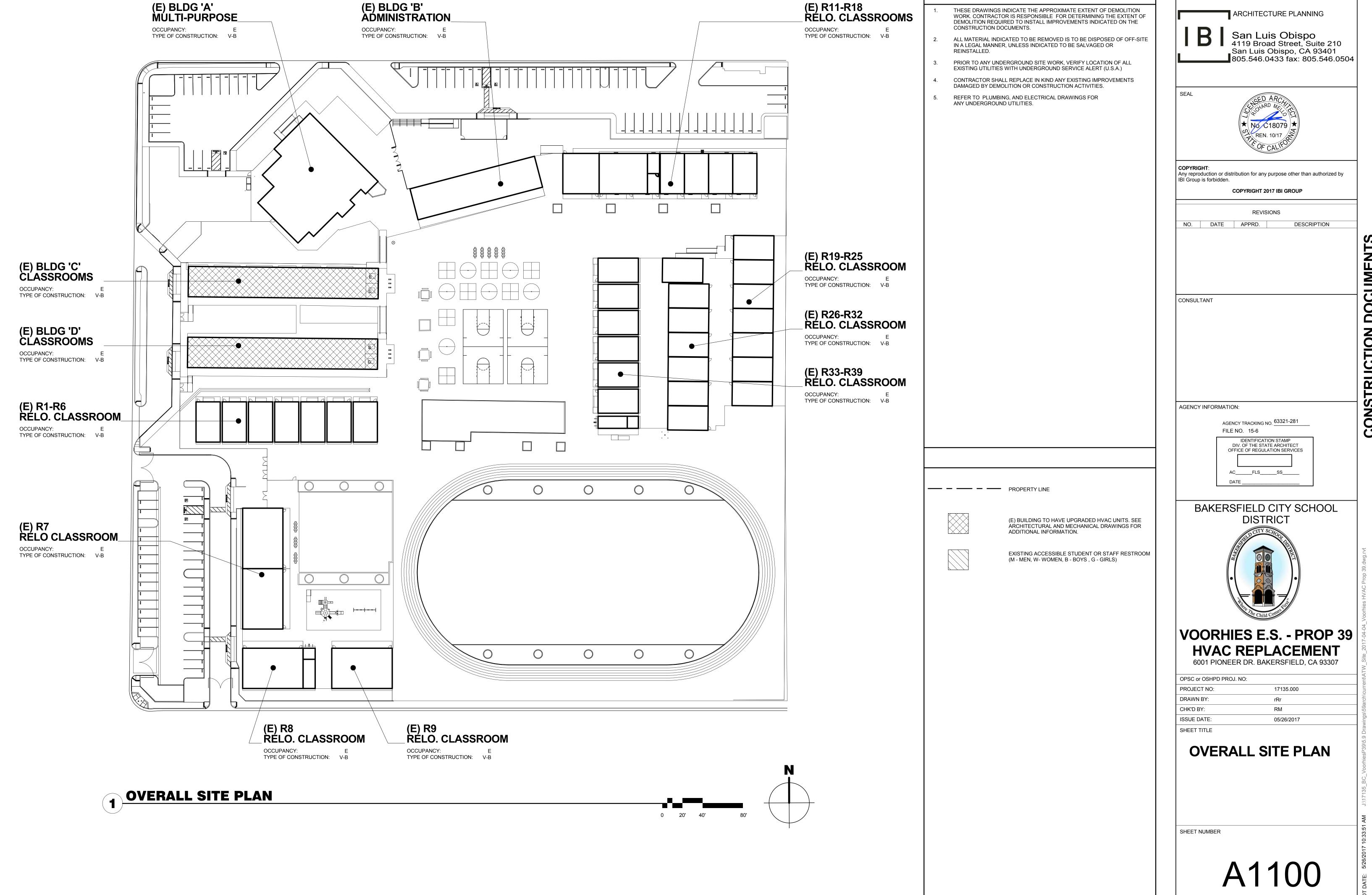
CONSTRUCTION CHANGE DOCUMENT OR ADDENDA AND APPROVED BY DSA PRIOR TO

SYMBOLS LEGEND

STRUCTION DOCUMENTS

PRIME CONSULTANT

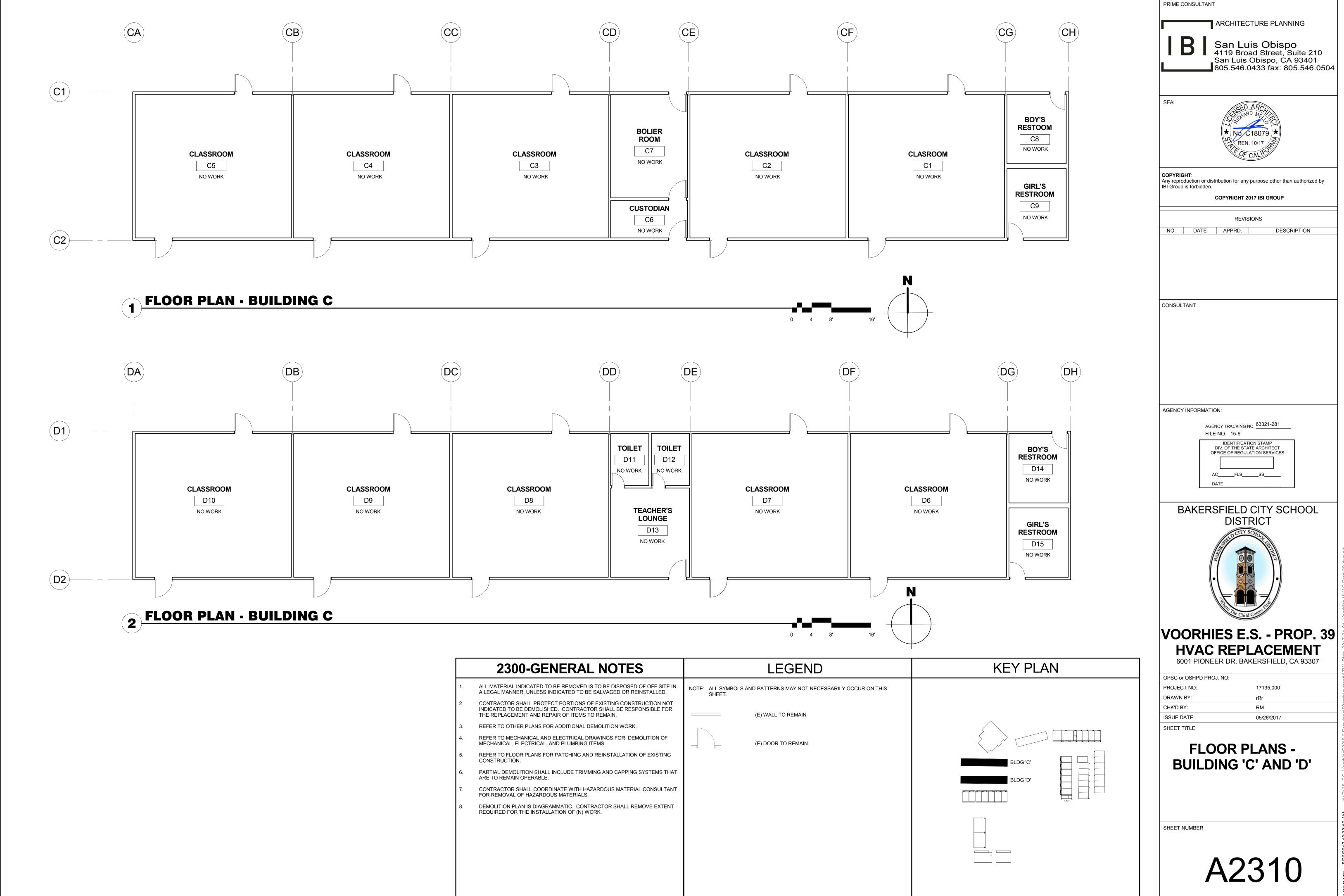
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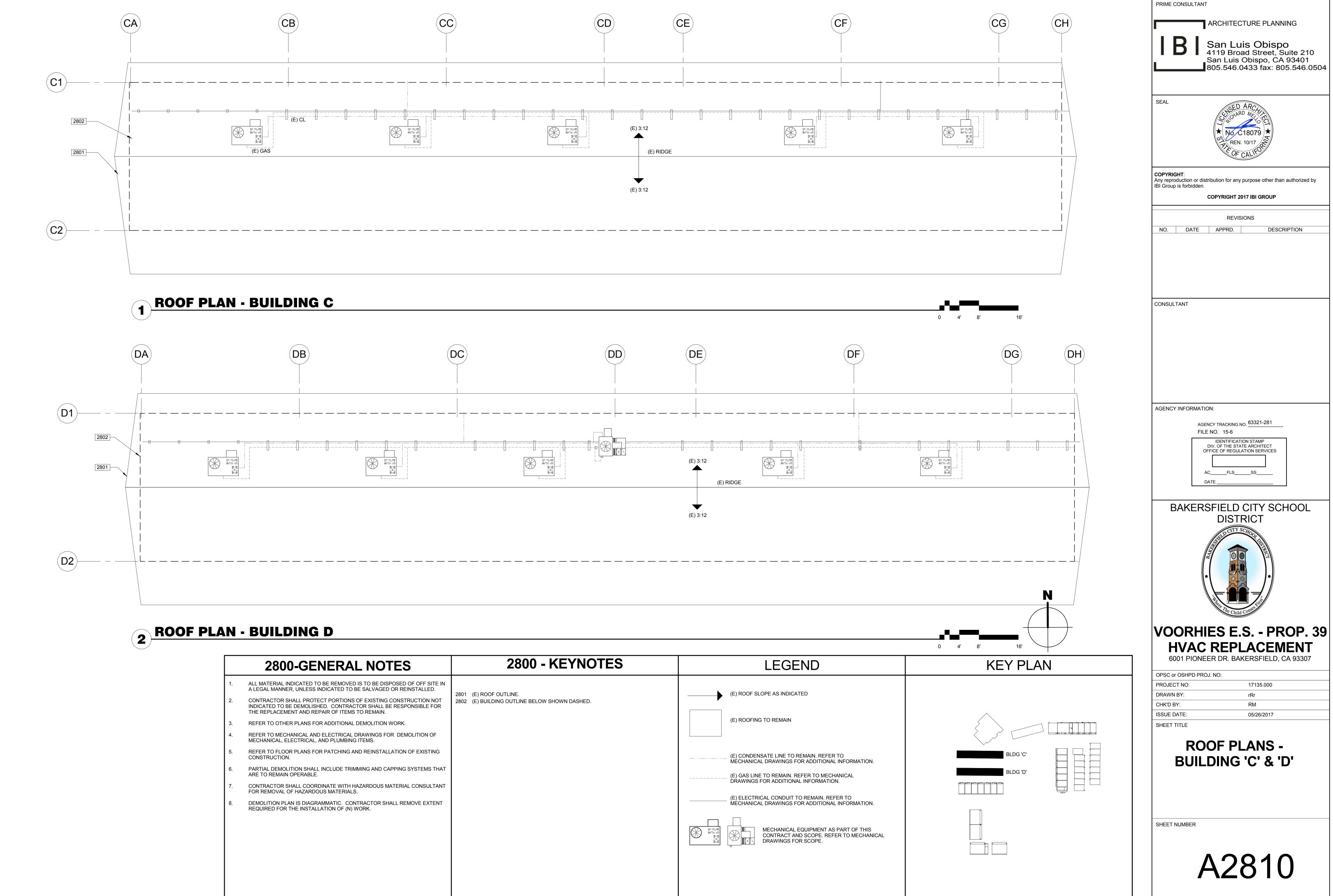
CONSTRUCTION DOCUMENTS

1000-GENERAL NOTES

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CONSTRUCTION DOCUMENTS



CONSTRUCTION DOCUMENTS

STRUCTURAL NOTES

GENERAL NOTES

- 1. The following notes, typical details and schedules shall apply to all phases of this project unless otherwise shown or noted.
- 2. Specific notes and details shall take precedence over general notes and typical details.
- 3. All materials and workmanship shall conform to the minimum standards of the 2016 edition of the California Building Code (CBC) and such other regulating agencies exercising authority over any portion of the work. The contractor shall have a current copy of the CBC on the job
- 4. The "contract or construction documents" shall consist of these notes, details, schedules, plans, and drawings, as well as attached specifications.
- 5. All specifications, including but not limited to materials and products, shall be those put forth in the "contract or construction documents". No substitutions shall be permitted to be used or assumed to be used in the bidding or construction process without written approval by the Engineer of Record.
- 6. The contractor shall examine the "contract or construction documents" and shall notify the Architect or Engineer of any discrepancies he may find before proceeding with the work.
- 7. All information on existing conditions shown on drawings are based on best present knowledge available, but without guarantee of accuracy. The Contractor shall verify and be responsible for all dimensions and conditions at the site and shall notify the Architect or Engineer of any discrepancies between actual site conditions and information shown on or in the "contract or construction documents" before proceeding with work.
- 8. The Contractor shall immediately notify the Architect or Engineer of any condition which in his opinion might endanger the stability of the structure or cause distress of the structure.
- 9. All work shall conform to the best practice prevailing in the various trades comprising work. The Contractor shall be responsible for coordinating the work of all trades.
- 10. These "contract or construction documents" represent the finished structure, and do not indicate the method of construction. The Contractor shall supervise and direct the work and shall be solely responsible for construction means, methods, techniques, sequences and procedures.
- 11. Inspection and approval for fabricator's shops used for fabrication of structural load bearing members, components, materials or assemblies shall conform to CBC Section 1704A.2.5.
- A. Labeling (as required or specified) shall be provided in accordance with CBC Section
- B. Evaluation and follow-up inspection services (as required or specified), shall conform to
- 12. The Contractor shall refer to the specifications for information not covered by these drawings and General Notes.
- 13. The Contractor shall provide temporary bracing and shoring for all structural members as required for structural stability of the structure during all phases of construction.
- 14. The Contractor shall take all steps necessary to ensure proper alignment of the structure after the installation of all structural and finish materials. This shall include any necessary preloading of the structure to determine final position of the completed work.
- 15. Observation visits to the project site by field representatives of Architect and/or Engineer (support services) shall not include inspections of safety or protective measures. nor construction procedures, techniques or methods. Any support services performed by Architect or Engineer during any phase of construction, shall be distinguished from continuous and detailed inspection services (as required by any regulating governmental agency, e.g. local Authority Having Jurisdiction) provided by others, these support services, whether of material or work, are performed solely for the purpose of assisting in quality control and in achieving conformance with contract documents, but do not guarantee contractor's performance and shall not be construed as supervision of construction.
- 16. Provide openings and supports as required per typical details and notes for mechanical, plumbing, and electrical equipment, vents, ducts, piping, etc. All mechanical, plumbing and electrical equipment shall be properly "sway braced" against lateral forces.
- 17. These notes, details, drawings and specifications (contract or construction documents) do not carry necessary provisions for construction safety. These documents and all phases of construction hereby contemplated are to be governed, at all times, by applicable provisions of the current California Occupational Safety and Health Act.
- 18. Where any conflict occurs between the requirements of federal, state and local laws, codes, ordinances, rules and regulations, the most stringent shall govern.
- 19. Refer to Architectural Drawings to coordinate with Structural Drawings. Any discrepancy between these drawings shall be referred to the Architect or Engineer for clarification before
- 20. Written dimensions shall have precedence over scaled dimensions.
- 21. Drawings (notes, schedules, details and plans) shall have precedence over Structural Calculations.
- 22. In the event that certain features of the construction are not fully shown on the drawings or called for in the General Notes or Specifications, then their construction shall be of the same character as for similar conditions that are shown or called for.
- 23. Contractor shall have a copy of project soils/geotechnical/foundation investigation on the
- 24. ASTM designation and all standards refer to the latest amendments.
- 25. These structural "contract or construction documents" shall not be modified without prior written approval of the Engineer of Record.
- 26. Only structural working drawings approved by the AHJ are permitted to be used for construction on this project. All other drawings or documents are obsolete and are not permitted on the job site, nor shall they be used for any construction purposes. Contractors using unapproved drawings or documents are solely responsible for all work not performed in accordance with the "approved" drawings.
- 27. See Architectural Drawings for all fire protection requirements.

SHOP DRAWING AND CONTRACTOR SUBMITTAL REVIEW

- Shop Drawings or Contractor Submittals should be provided for the fabrication (or mixing) of the following (but not limited to) components or elements.
- A. Substitute or alternate materials.
- 2. Project Contractor shall be responsible for production and approval of all shop drawings
- 3. When Project Contractor submits shop drawings or other submittals to Architect/Engineer for review, submittal package shall contain sufficient copies that Architect/Engineer may retain a complete copy of submittal package. In addition, Project Contractor shall allow sufficient time to thoroughly review submittal package (10 working days, minimum).
- . Review of Shop Drawings or Contractor Submittal by Architect/Engineer does not in any way constitute approval of submittal package. Architect/Engineer's review is for general conformance with the design concept and contract documents. Review shall not be construed as relieving Project Contractor from compliance with the contract documents.

DEMOLITION NOTES

- A. It is solely the Contractors responsibility to comply with the pertinent sections, as they apply to this project, of the "construction safety orders" issued by the state of California. latest edition, and all O.S.H.A. Requirements.
- B. The Architect, Structural Engineer, and the Owner do not accept any responsibility for
- the Contractor's failure to comply with these requirements. C. The Contractor shall be responsible for adequate design and construction of all forms. Forms shall also be adequately braced and shored.
- Shore beams where necessary to maintain the structural integrity of the existing structure.

3. Notify the Structural Engineer of any discrepancies between the plans and existing structure.

- Contractor is responsible for the design and location of all shoring.

STRUCTURAL STEEL AND WELDING

- All structural steel construction shall conform to AISC 360-10 and AISC 341-10.
- Fabrication of all structural steel shall be done in the shop of an approved fabricator. Inspection and approval for fabricator's shops used for fabrication of structural load bearing members, components, materials or assemblies shall conform to CBC Section
- 2. All structural steel shall conform to the following specifications:
- A. Angles, channels, plates, bars, rounds, and other miscellaneous shapes shall conform to ASTM A36 and shall have a minimum yield stress (F_v) of 36 ksi.
- B. Wide-flange shapes shall conform to ASTM A992 and shall have a minimum yield stress
- C. Steel pipe columns shall be welded seamless pipe conforming to ASTM, A53, Grade B, and shall have a minimum yield stress (F_v) of 35 ksi.
- D. Structural tube columns shall be ASTM A500, Grade B, and shall have a minimum yield stress (v) of 46 k.s.i.
- Special Inspection shall be provided for all structural steel and welding, in accordance with
- All structural steel shall be fabricated, erected and welded in accordance with AISC Specifications for Structural Steel Buildings (AISC 360-10) and Code of Standard Practice for
- All welding shall be done by qualified and certified welders.

Steel Buildings and Bridge (AISC 303-10).

6. No field welding permitted, unless specifically noted otherwise.

- Shop drawings for the fabrication of any structural steel shall be approved by Contractor and submitted to Architect or Engineer for his review, prior to fabrication.
- No holes other than those specifically detailed shall be allowed through structural steel members. Burning of holes is not permitted.
- All structural steel shall be painted one shop coat and field touched-up, as necessary, with approved "Zinc Rich" or other high quality exterior primer.
- 10. All bolts shall conform to ASTM, A307 (U.N.O.)
- 11. All welding shall conform to 'AWS D1.1 and D1.8' specifications for welding. (E-70XX Electrodes).
- 12. All headed studs (for concrete anchorage) shall be manufactured by 'Nelson' or approved
- 13. Where fillet weld size is not indicated, use 'AWS' minimum size based on the thickness of the thinner part being welded, as specified in AISC Specifications for Structural Steel Buildings
- 14. All butt welds to be complete joint penetration, unless specifically noted otherwise.
- 15. Welder qualification requirements, welding procedure and welding electrodes for all structural steel (except structural sheet steel, see steel decking) shall conform to CBC Sections 1705A.2.1 and 2204A.1.
- 16. Provide hot dip galvanizing or 3" minimum concrete cover around all structural steel below
- 17. Structural steel embedded into concrete or masonry shall be unpainted.

Lumber grades, minimum (UNO): Douglas Fir-Larch

2x studs, blocking & plates: bearing walls #2 or better non-bearing walls Construction or better 2x joists #2 or better 4x beams #1 or better 6x beams:

Select Structural better exposed (int/ext) #1 or better non-exposed #2 or better #1 or better 6x posts

- Foundation sill plates shall be California Redwood (close grain) or preservative-treated (see CBC Section 2303A.1.8) Douglas Fir. See shear wall schedules and foundation plan for anchor bolt size and spacing. See wood fasteners Note #9 and Carpentry/Framing Note #5.
- 3. Plywood shall be Structural I with exterior glue, as graded by the APA. Plywood shall conform to CBC Section 2303.1.5 and United States Product Standard PS 1 OR PS 2 (for OSB).
- . All sawn lumber or timber shall conform to CBC Section 2303.1.1.
- 5. Maximum moisture content for all structural members shall not exceed 19% (unless specifically noted otherwise).
- 6. Treat ends of all cut preservative treated lumber.

- Nailing for framing shall be with 'common' nails (U.N.O.).
- Lag screws shall be screwed into predrilled holes. Clearance hole for the shank portion and lead hole for threaded portion shall be drilled in accordance with NDS-15 Section 12.1.4.
- 3. Bolts (bolt head and nut) shall have standard cast iron malleable iron washers (unless used with metal side plates or angles).
- 4. Bolt holes through lumber shall be drilled $\frac{1}{16}$ larger than bolt diameter.
- All bolts shall conform to ASTM A307.
- 6. Bolt tightening: take up snug and re-tighten at the latest practicable time during

WOOD FASTENERS (CONT.)

- Nails shall not be driven closer than ½ of their length, not closer to the edge of the member than $\frac{1}{4}$ length, except for sheathing.
- Sub-bore when nails tend to split wood. sub-bore for 20d and larger nails. Drill diameter shall be 0.75 times nail diameter.
- Fasteners in preservative-treated lumber shall be stainless steel, silicon bronze, copper or hot-dip zinc coated galvanized steel fasteners. A. Zinc-coated fasteners shall conform to ASTM A153.

CARPENTRY/FRAMING

- 1. Carpentry and framing shall conform to CBC Section 2308. A. See fastener schedule included in the Structural Notes
- 2. Metal framing angles, anchors, clips, straps, ties, holdowns, etc. shall be manufactured by 'Simpson Strong-Tie Co' or an approved (See CBC Section 1715A.1) equal.
- Plywood used in roofs, floors and decks, shall be placed with face grain perpendicular to supports. Plywood sheets shall be staggered.
- 4. Face nail all double (and triple) 2x studs and joists together with 16d at 12" o.c., Stagger nails

Unless otherwise noted, the minimum sill plate bolting shall be $\frac{5}{8}$ " diameter x 10" anchor

- bolt @ 4'-0" o.c.. There shall be a minimum of two bolts per plate with one bolt within 6" to 12" of each end of plate. See wood note #2 and wood fasteners Note #9. Interior non-bearing, non-shear, stud wall sill plates may be secured to concrete slabs with
- "Hilti" type X-U (with 1" minimum embedment) shot pins @ 16" o.c. with steel washers. Installation shall conform to ICC-ES ESR-2269.
- In general, plywood panel edges (for shear walls, roofs, floors and decks) shall bear on framing members (2x minimum) and butt along their center lines.
- 8. Place beams with natural camber upward.
- Provide continuous double 2x wall width (2x4, min) plates at top of all bearing walls and 2x wall width bottom or sill plate at bottom of wall. Unless otherwise specifically noted or detailed splices in continuous double 2x top plates shall be lapped 4'-0" (min.) with 16d at 3"
- 10. Where wood stud walls abut concrete or masonry walls, the end stud (PTDF or Redwood) shall be bolted to concrete/masonry with \%" diameter A.B. (with embedment of \% wall thickness) 12" from top and bottom of stud and at 4'-0" o.c.
- 11. Provide 2x solid blocking between all joists and rafters at all supports and under all partitions. Provide double 2x joists directly below all interior partition where framing is parallel. Provide 2x solid blocking (or approved bridging) at 8'-0" o.c. between 2x12 and larger joist and rafters. Blocking shall be full depth of joists and rafters.
- No structural members (joists, plates, studs, beams, columns, girder, post, truss, etc.) shall be notched, cut or drilled (except for those holes required for bolting) unless specifically noted (see Note #13 & #14) or detailed otherwise, or with written approval from

13. Holes and notches in joists:

- A. Notching at the ends of roof or ceiling joists shall not exceed one-fourth the joist depth. Notches in the top & bottom of joists (2x, sawn lumber) shall not exceed one sixth the depth and shall not be located in the middle third of the span.
- B. Holes bored in joists shall not exceed one third of joist depth and shall be located within middle ¾ of span and within the middle third of joists depth (2" minimum clear top and
- 14. Holes and notches in studs, plates and sills: Bored holes may be placed in studs, plates and sills provided they are accurately centered about stud, spaced a minimum of 12" apart and hole diameter does not exceed 25% of stud width. Studs may be notched provided notch depth does not exceed 25% of stud width. When bored hole exceeds 25% of stud width. reinforce plate, sill or studs as follows:
- A. Plates: $1\frac{1}{2}$ " x $\frac{1}{8}$ " strap each side of plate nailed with 6-16d nails each side of hole. Holes over 40% of the plate width are not permitted in any plate. Any pipe or conduit requiring a hole larger than 40% of the plate width shall be brought to the attention of
- the engineer immediately. B. Sills: Splice in a manner similar to plates above, at holes between 25% and 40% of sill width. Sills may be completely cut on each side of a pipe or conduit provided an additional anchor bolt or 6-16d is placed within 9" of the end of the sill, each side of the pipe or conduit
- C. Studs: Block on each side of stud with block of same material and dimension as stud; extend 2 stud widths each side of hole and provide 3-16d nails to stud each side of hole. Bored holes greater than 40%, but less than 60% of the width of the stud are permitted, where each stud is doubled and not more than two successive double studs are so bored and each bored stud is reinforced as above.
- D. Bored holes shall not be located at the same section of stud as a cut or notch.
- 15. Plywood shear walls shall be constructed in accordance with CBC Section 2306.3. No openings are allowed in shear walls, unless specifically noted or detailed.
- 16. Provide $3"x3"x\frac{1}{4}"$ steel plate washers at anchor bolts at all structural walls.
- 17. Framing around flues and chimneys shall conform to CBC Section 2304A.5.
- 18. Pipes in walls shall conform to CBC Section 2308.5.8.

SEISMIC RESTRAINT AND ANCHORAGE NOTES:

All equipment (see ASCE 7-10 Section 13.3.1 and Table 13.6-1) shall be seismically restrained and anchored. The restraining and anchorage shall conform to requirements within this section, as well as notes and details within project construction documents.

Equipment anchorage:

Attachments of equipment weighing less than 400# and supported directly on the floor or roof structure, furniture or temporary or movable equipment and equipment weighing less than 20# that is supported by vibration isolation devices or suspended from the roof, wall or floor need not be detailed on the plans. (CBC Section 1615a.1.12 exemption). However, such equipment must be supported and anchored to resist the forces prescribed by ASCE 7-10 Section 13.3.1 as adopted by CBC Chapter 16A and the anchorage shall be approved by the Structural Engineer of Record and D.S.A. The Inspector of Record shall assure that the above requirements are enforced.

Cabinet anchorage:

Vertical load req. CBC 1607A.1 Lateral force req. ASCE 7-10 Section 13.3.1

Provide bracing and anchorage details for wall hung cabinets and floor support storage racks, cabinets and book stacks over five feet in height. Design supporting partitions and walls to resist forces applied by cabinet anchorages.

4. Pipe and duct support:

Pipes, ducts and conduits shall be supported and braced per ASCE 7-10 Chapter 13.

STRUCTURAL DESIGN VALUES

Gravity Design Data		Value
Dead Loads:		7 011 01 0
Roof Dead Load	N/A	
Floor Dead Load		N/A
Exterior Wall Dead Load		N/A
Interior Wall Dead Load		N/A
Live Loads:		
Roof Live Load (Reducible)		N/A
Floor Live Load		N/A
Snow Loads:		
Ground Snow Load, Pg		0 psf
Deflection Criteria:		
Roof, Total Load		ℓ/240
Roof, Live Load		ℓ/360
Floor, Total Load		ℓ/240
Floor, Live Load	ℓ/360	
Wind Design Data	Value	
Design Wind Speed (3-sec gust), V	110 mph	
Design Wind Speed (3-sec gust), V	85 mph	
Risk Category	I	
Exposure Category		В
Applicable Internal Pressure Coef	ficient	± 0.18
Design Wind Pressure(s) for Comp (Not specifically designed by the Registe by applicable factors per ASCE 7)	ponents & Cladding red Design Professional, and to be modified	$q_z = 16.4 \text{ ps}$
Earthquake Design Data		Value
Risk Category		П
Importance Factor, I _e		1.15
Mapped Spectral Response Accele	erations	S _s = 1.11 g S ₁ = 0.406 g
Site Class		D
Spectral Response Coefficients	$S_{DS} = 0.78 \text{ g}$ $S_{D1} = 0.43 \text{ g}$	
Seismic Design Category		D
Analysis Procedure Used		
Basic Seismic-Force Resisting System	Bearing wall systems: Wall sheathed structural panels	l with wood
Response Modifications Factor	or	R= N/A
Seismic Response Coefficient		Cs= N/A
Design Base Shear		$V = C_S w_D$

ABBREVIATIONS

A.B.	Anchor Bolt	ID	Inside Dia
A.B. ABV.		IN.	
	Above		Inch, Inch
ACI	American Concrete Institute	INT.	Interior
AHJ	Authority Having Jurisdiction	ICI	T
AISC	American Institute of Steel	JST.	Joist
	Construction		1
AITC	American Institute of Timber	LL	Live Load
	Construction	LW	Lightweig
AOR	Architect of Record	LSL	Laminate
APA	American Plywood Association	LVL	Laminate
APPROX.	Approximate(ly)		
ASCE	American Society of Civil	MAX.	Maximun
	Engineers	MB	Machine
ARCH.	Architect, Architecture	MBM	Metal Bui
ASTM	American Society of Testing	MECH.	Mechanio
7101111	and Materials	MSE	Mechanic
ATR	All Thread Rod	MFR.	Manufact
		MIN.	Minimum
AWS	American Welding Society	MPH	
DIDG	D 41.16		Miles per Metal
BLDG.	Building	MTL.	Metai
BLK.	Block	(NT)	NT
BLKD.	Blocked	(N)	New
BLK'G	Blocking	N.T.S.	Not to Sc
BM.	Beam		0 0
B.O.	Bottom of	O.C.	On Cente
BOT.	Bottom	ο/	Over
BRG.	Bearing	OD	Outside I
b/t	Between	OSB	Oriented
		OSHPD	Office of
CAC	California Administrative Code		and Deve
CANT.	Cantilever		
CBC	California Building Code	PEN.	Penetrati
CIP	Cast-in-place	PL.	Plate
CJ	Control Joint	PLYWD.	Plywood
CJ CJP		PJP	Partial Joi
	Complete Joint Penetration	PSI	
Ç.	Centerline		Pounds p
CLG.	Ceiling	PSF	Pounds p
CLR.	Clear	PSL	Parallel S
CMU	Concrete Masonry Unit		(Paralam)
COL.	Column	PEMB	Pre-Engin
CONC.	Concrete	PERF.	Perforate
CONN.	Connection	PTDF	Pressure '
CONST.	Construction	PW	Puddle W
CONT.	Continue, Continuous		
		Q.D.	Quality A
Ø	Diameter	Q.C.	Quality C
d	Penny	•	
DBL.	Double	RBS	Reduced
DCW	Demand Critical Weld	RDWD	Redwood
DET.	Detail	REBAR	Reinforci
DEMO	Demolition	REINF.	Reinforce
DF	Douglas Fir	RET.	Retaining
DIAG.		REQ'D	Required
	Diagonal	rrd n	Required
DL	Dead Load	S.F.	Square Fe
DSA	Division of State Architect	S.F. SHT.	Sheet
DWGS.	Drawings		
	- 1	SHT'G	Sheathing
EA.	Each	SIM.	Similar
ELEC.	Electric, Electrical	SLRS	Seismic L
ELEV.	Elevation	SQ.	Square
EMBED.	Embedded, Embedment	SS	Select Str
E.N.	Edge Nailing	STAGG'D	Staggere
EOR	Engineer of Record	STD.	Standard
EQ.	Equal	STL.	Steel
EQUIP.	Equipment	SW	Shearwal
E.W.	Each Way	SEOR	Structura
(E)	Existing	SIP	Structura
EXT.	Exterior		
		T&₁R	Ton and l

ed Strand Lumber ed Veneer Lumber

uilding Manufacturer ically Stabilized Earth ctured, Manufacturer r Hour

Diameter d Strand Board f State Health Planning elopment

oint Penetration per Square Inch per Square Foot Strand Lumber ineered Metal Building e Treated Douglas Fir Weld Assurance

Beam Section ing Bar

Load Resisting System tructural al Engineer of Record al Insulated Panel

Tongue and Groove THR'D Threaded T.O. Top of TYP. Typical UNBLKD. Unblocked U.N.O. **Unless Noted Otherwise**

Unreinforced Masonry

Welded Steel Stud

Weight

Top and bottom

VERT. Vertical Galvanized VIF Verify in Field Geotechnical Engineer of Glued-Laminated Beam WD. Wood Gypsum Board **Working Point** W.S.M.F. Welded Steel Moment Frame

WSS

WT.

URM

Horizontal WWM Welded Wire Mesh **Hollow Steel Section** Height **International Building Code**

International Code Council

Insulated Concrete Form

Fabricated

Foundation

Finish floor

Face of _

Framing

Foot, Feet

Footing

Header

Holdown

Floor

FAB.

FDN.

F.F.

FLR.

F.O.

FTG.

GA.

GALV.

GEOR

GYP. BD.

GLB

HDR.

HD.

HSS

HT.

ICC

HORIZ.

FRMG.

CONSULTANT Control SMITH STRUCTURAL GROUP, LLP 811 El Capitan Way, Suite 240 | **805.439.2110** an Luis Obispo, CA 93401 i smithstructural.com DATE SIGNED: 05.25.17 AGENCY INFORMATION: AGENCY TRACKING NO. _ FILE NO. IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT OFFICE OF REGULATION SERVICES

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4119 Broad Street, Suite 210

San Luis Obispo, CA 93401

805.546.0433 fax: 805.546.0504

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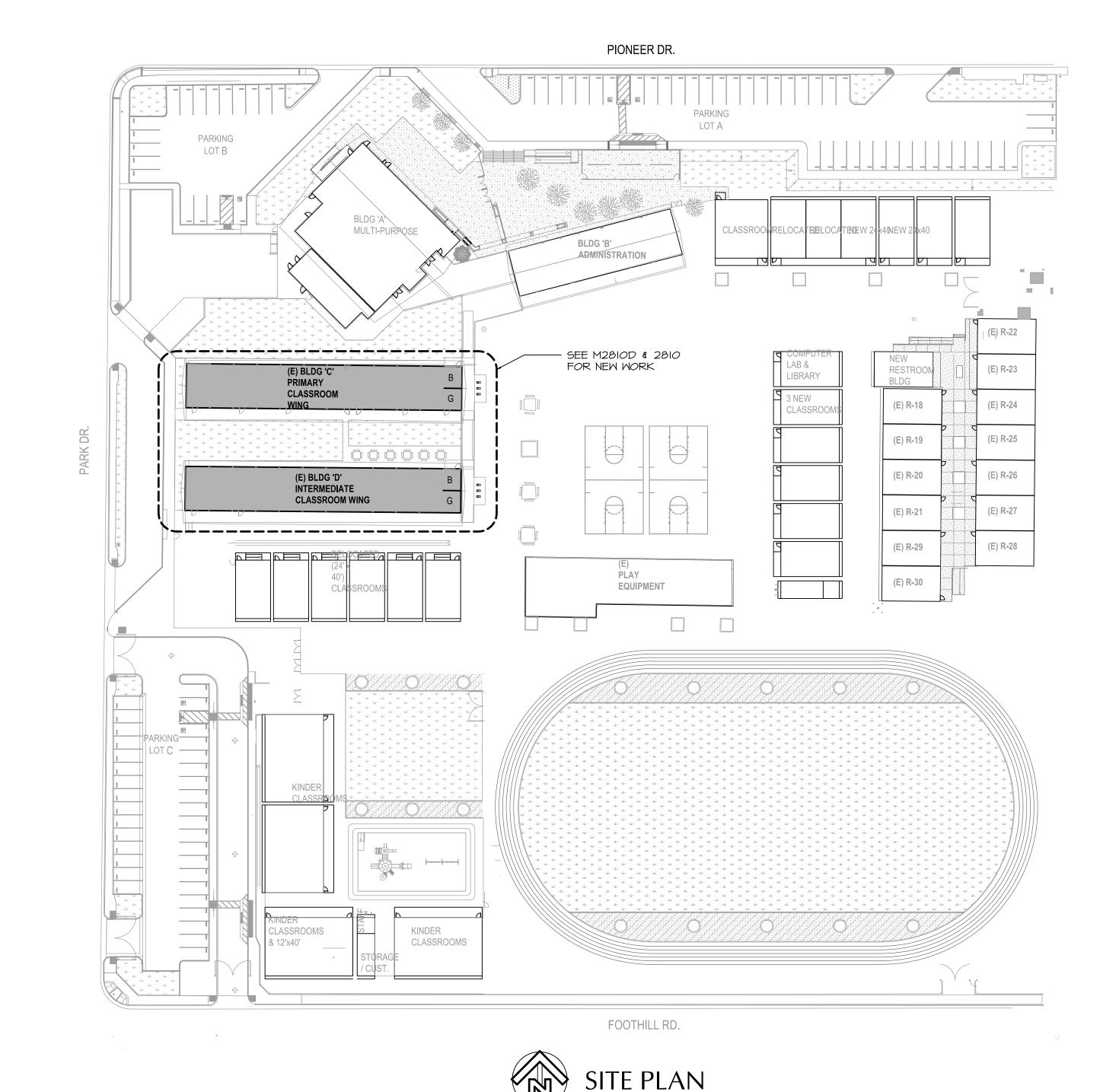
VOORHIES E.S. - PROP 39 HVAC REPLACEMENT

OPSC or OSHPD PROJ. NO:	
PROJECT NO:	17135.000
DRAWN BY:	JMM
CHK'D BY:	MEP
ISSUE DATE:	05/26/2017

SHEET TITLE

STRUCTURAL NOTES

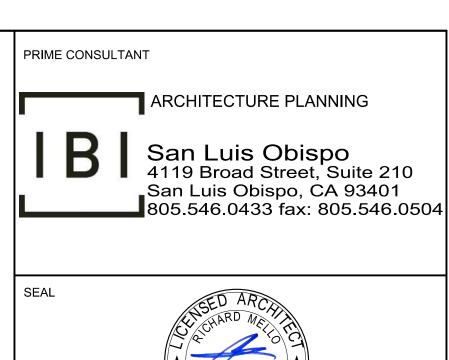
SHEET NUMBER



SYMBOL	ABBR.	ITEM	SYMBOL	ABBR.	ITEM
STIVIDOL	A.C.		STIVIDGE		
	A.C. A.D.	Air Conditioning		H.M.R. H.M.S.	Heating Water Return
\square	A.F.F.	Access Door Above Finished Floor		INT.	Heating Water Supply Internal
	A.F.F. A.H.			LOC.	
B	А. п . В.Т.	Air Handler		M.O.	Location Makes Openshad
	Б.1. В.V.	Bypass Timer		(N)	Motor Operated
	6.V. 6.D.	Butterfly Valve Condensate Drain		N.C.	New Nemally Clased
	C.E.			N.C. N.I.C.	Normally Closed Not in Contract
	C.E. C.W.R.	Ceiling Exhaust Register		N.I.C. N.O.	
	C.M.R. C.M.S.	Condensor Water Return Condensor Water Supply		0.S.A.	Normally Open Outside Air
	C.H.M.R.	Chilled/Hot Water Return		0.5.A. 0.B.D.	
	C.H.M.S.		700	P.O.C.	Opposed Blade Damper
	C.H.M.S. COMB.	Chilled/Hot Water Supply	— X	P.O.C. P.P	Point of Connection
	COMB.	Combustion		PROV.	Petes Plug
		Connection			Provide
	CONT.	Continuation		P.R.V.	Pressure Reducing Valve
\square	C.R.	Ceiling Return Register		SIM.	Similar
	CLG.	Ceiling	—-— ≜ S.F.D.	S.F.D.	Smoke / Fire Damper w/ access panel
	C.S.	Ceiling Supply Register		S.M.	· '
	C.V.	Check Valve			Sheet Metal
	D.C.M.	Domestic Cold Water		5.0.V.	Shut Off Valve
	DIA.	Diameter	M	S.P.S.T.	Single Pole Single Throw
—	D.L.	Door Louver	\cup	STAT	Thermostat
	DN.	Down		SURF.	Surface
	D.P.D.T.	Double Pole Double Throw		(TYP)	Typical
	D.T.R.	Duct Thru Roof		U.G.	Underground
	(E)	Existing	1	U.N.O.	Unless Noted Otherwise
	E.F.	Exhaust Fan		V.D.	Volume Damper
	E.M.S.	Energy Management System		W	With
	EXH.	Exhaust	 	M.R.	Wall Return Register
—-— ≜ F.D.	F.D.	Fire Damper w/acc. panel	<u> </u>	M.S.	Mall Supply Register
	Flex. Conn	Flexible Connection			Duct w/ Acoustic Lining
	FLR.	Floor))))	T. ∨ .	Turning Vanes
	F.T.R.	Flue Thru Roof	I		Extractor
	Furn.	Furnace			
	GA.	Gauge			
	GAL.	Gallon			CO2 SENSOR
	GALV.	Galvanized			
	G.P.M.	Gallons per Minute	──		Union
	GRD.	Grade			
\bowtie	<i>6</i> .∨.	Gate Valve	—		Reducer or Increaser

Air Conditioning Legend





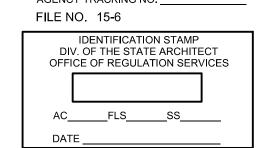
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AGENCY INFORMATION: AGENCY TRACKING NO. 63321-281



BAKERSFIELD CITY SCHOOL



VOORHIES E.S. - PROP 39 HVAC REPLACEMENT

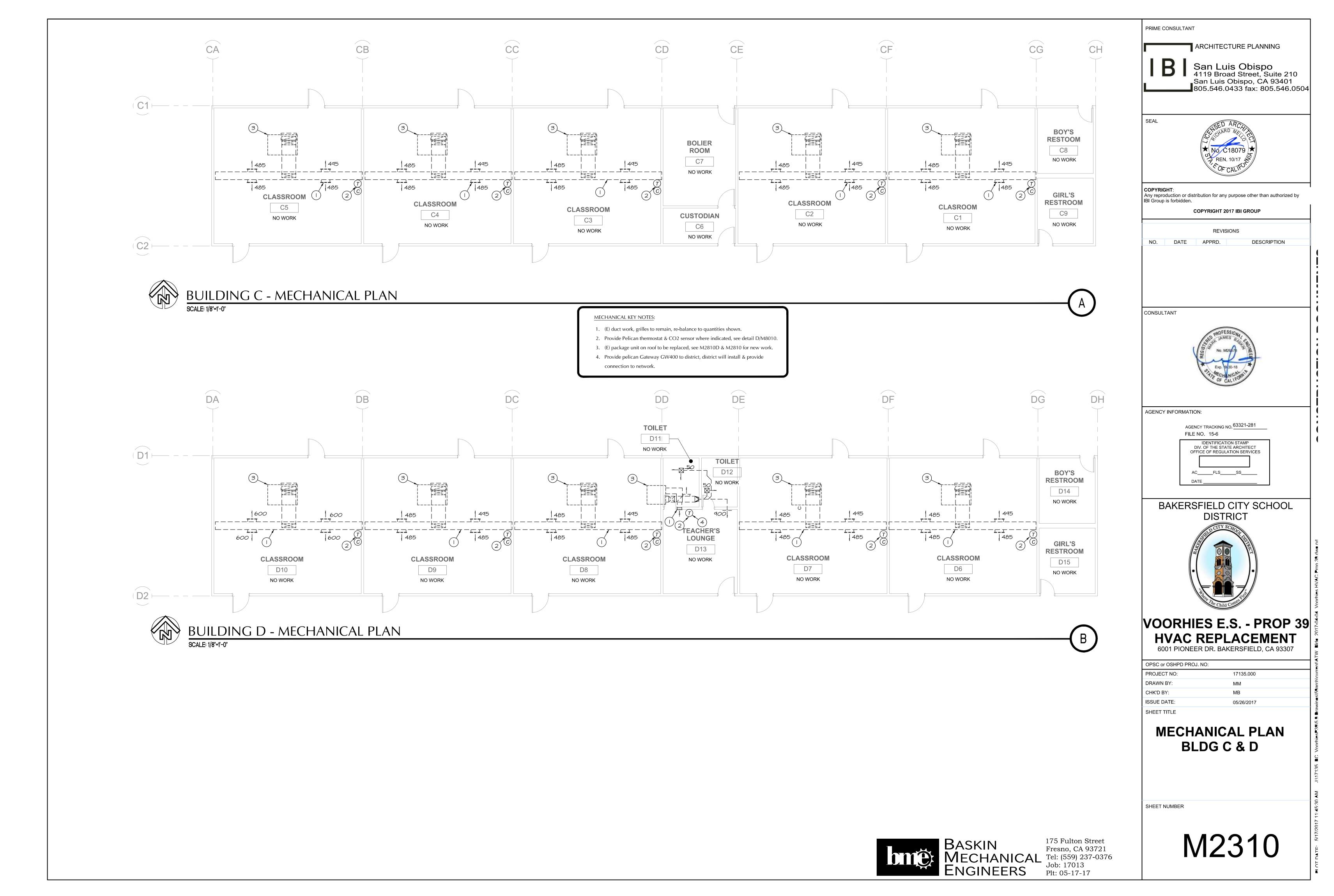
6001 PIONEER DR. BAKERSFIELD, CA 93307

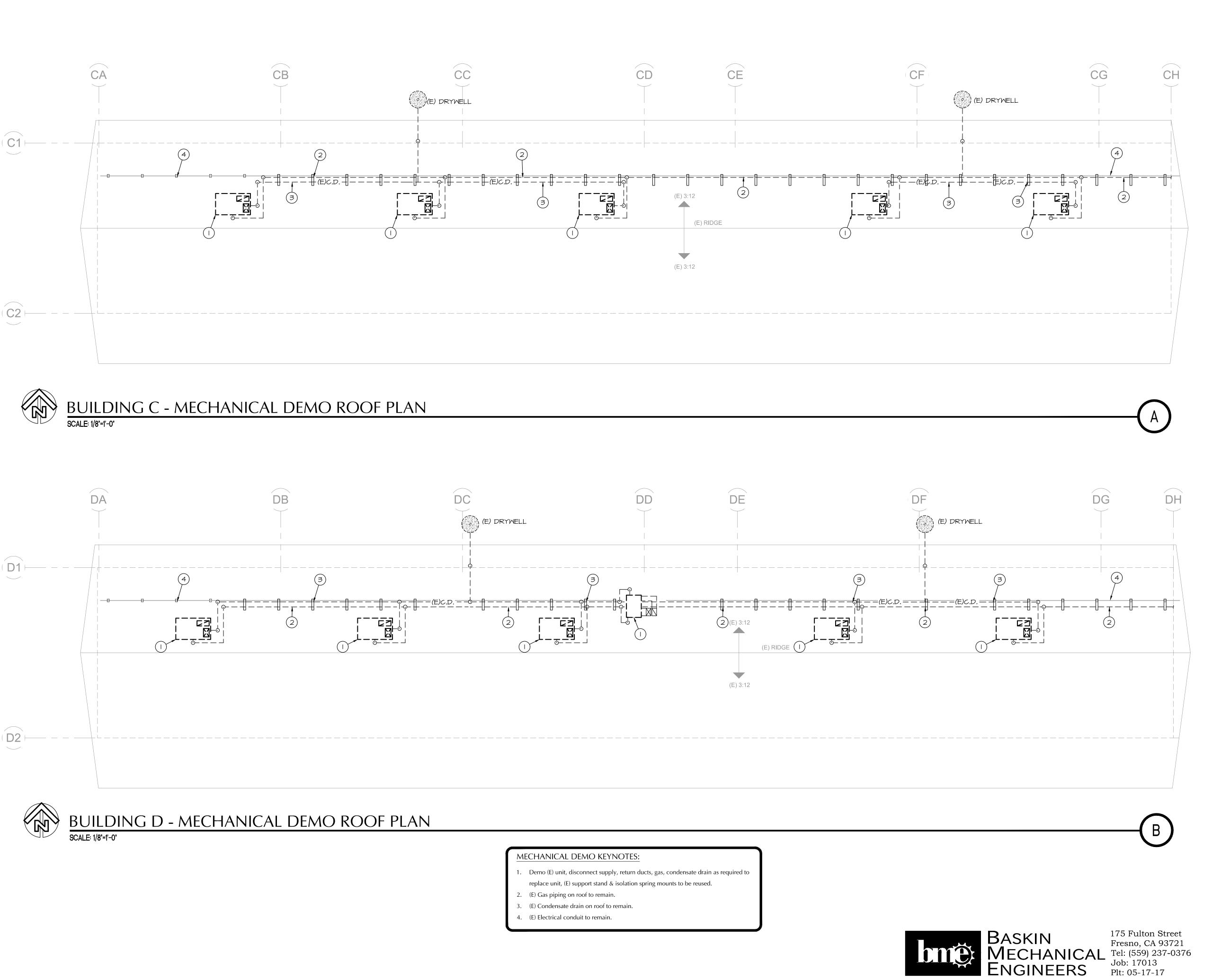
OPSC or OSHPD PROJ. NO: ISSUE DATE: 05/26/2017 SHEET TITLE

> **MECHANICAL** SITE PLAN

SHEET NUMBER

M1100





ARCHITECTURE PLANNING

San Luis Obispo
4119 Broad Street, Suite 210
San Luis Obispo, CA 93401
805.546.0433 fax: 805.546.0504

No C18079

REN. 10/17

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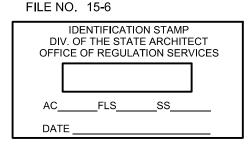
NO. DATE APPRD. DESCRIPTION

CONSULTANT



AGENCY INFORMATION:

AGENCY TRACKING NO. 63321-281
FILE NO. 15-6



BAKERSFIELD CITY SCHOOL DISTRICT



VOORHIES E.S. - PROP 39
HVAC REPLACEMENT

OPSC or OSHPD PROJ. NO:

PROJECT NO: 17135.000

DRAWN BY: MM

CHK'D BY: MB

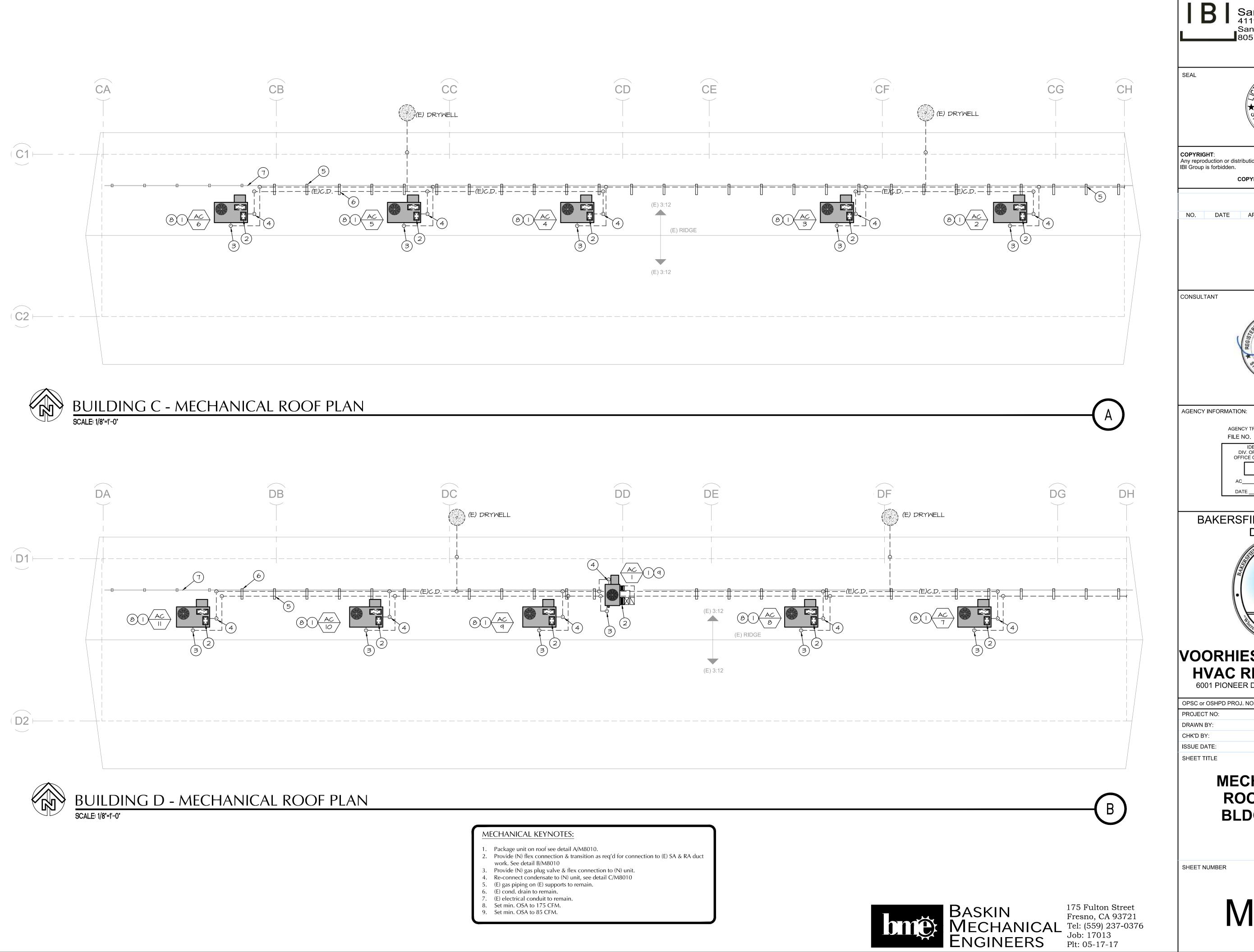
ISSUE DATE: 05/26/2017

SHEET TITLE

MECHANICAL DEMO ROOF PLAN BLDG. C & D

SHEET NUMBER

M2810 D



PRIME CONSULTANT ARCHITECTURE PLANNING San Luis Obispo 4119 Broad Street, Suite 210 San Luis Obispo, CA 93401 805.546.0433 fax: 805.546.0504

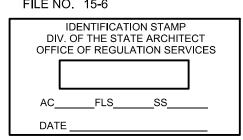
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AGENCY TRACKING NO. 63321-281 FILE NO. 15-6



BAKERSFIELD CITY SCHOOL DISTRICT



VOORHIES E.S. - PROP 39 HVAC REPLACEMENT

OPSC or OSHPD PROJ. NO: 17135.000 05/26/2017

> **MECHANICAL ROOF PLAN** BLDG. C & D

M2810

Equipment Anchorage Notes:

All Mechanical, Plumbing, and Electrical components shall be anchored and installed per the details on the DSA approved construction documents. Where no detail is indicated, the following components shall be anchored or braced to meet the force and displacement requirements prescribed in the 2013 CBC, Sections 1616A.1.18 through 1616A.1.26 and ASCE 7-10 Chapter 13, 26 and 30.

1. All permanent equipment and components.

- 2. Temporary or movable equipment that is permanently attached (E.G. hard wired) to the building utility services such as electricity, gas or water.
- 3. Moveable equipment which is stationed in one place for more than 8 hours and heavier than 400 pounds or has a center mass located 4 feet or more above the adjacent floor or roof level that directly support the component are required to be anchored with temporary attachments.

The following Mechanical and Electrical components shall be positively attached to the structure, but the attachment need not be detailed on the plans. These components shall have flexible connections provided between the component and associated ductwork, piping and conduit.

- A. Components weighing less than 400 pounds and have a center of mass located 4 feet or less above the adjacent floor or roof level that directly support the component.
- B. Components weighing less than 20 pounds, or in the case of distributed systems, less than 5 pounds per foot, which are suspended from a roof or floor or hung from a wall.

For those elements that do not require details on the approved drawings, the installation shall be subject to the approval of the design professional in general responsible charge or structural engineer delegated responsibility and the DSA District Structural Engineer. The project inspector will verify that all components and equipment have been anchored in accordance with above requirements.

Piping, Ductwork, and Electrical Distribution System Bracing Note:

Piping, ductwork, and Electrical distribution systems shall be braced to comply with the forces and displacements prescribed in ASCE 7-10 Section 13.3 as defined in ASCE 7-10 Section 13.6.5.6, 13.6.7, 13.6.8, and 2016 CBC, Sections 1616A.1.23, 1616A.1.24, 1616A.1.25 and 1616A.1.26.

The method of showing bracing and attachments to the structure for the identified distribution system are as noted below. When bracing and attachments are based on a pre-approved installation guide (e.g., SMACNA or OSHPD OPM), copies of the bracing system installation guide or manual shall be available on the jobsite prior to the start of and during the hanging and bracing of the distribution systems. The Structural Engineer of Record shall verify the adequacy of the structure to support the hanger and brace loads.

Mechanical Piping (MP), Mechanical Ducts (MD), Plumbing Piping (PP),

Electrical Distribution Systems (E):

Option 1: Detailed on the approved drawings with project specific notes and details

MP MD D Option 2: Shall comply with the applicable OSHPD Pre-Approval (OPM#)

PP ☑ E □ #<u>043</u>

Option 3: Shall comply with the SMACNA Seismic Restraint Manual, OSHPD Edition (2009), Including any addenda. Fasteners and other attachments not specifically identied in the SMACNA Seismic Restraint Manual, OSHPD Edition, are detailed on the approved drawings with project specific notes and details. the details shall account for the applicable Seismic Hazard Level ____ and Connection Level ____ for the project and conditions

Codes:

California Code of Regulations (C.C.R)

Part 1 - 2016 California Standards Administrative Code, Title 24, C.C.R.

Part 2 - 2016 California Building Code (C.B.C.), Title 24, C.C.R. Volumes 1-3.

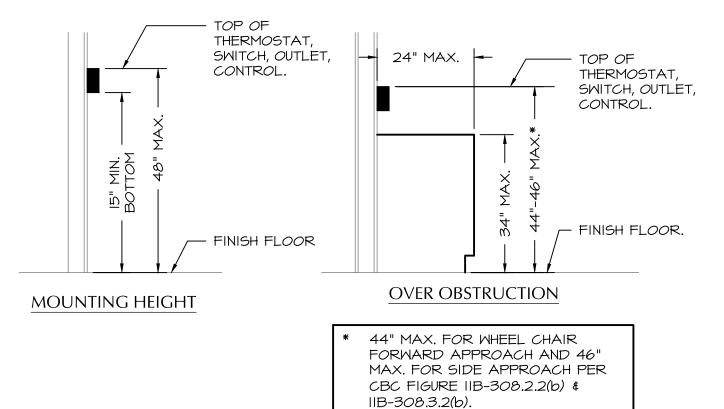
Part 3 - 2016 California Electrical Code, Title 24, C.C.R. Part 4 - 2016 California Mechanical Code (C.M.C.), Title 24, C.C.R.

Part 5 - 2016 California Plumbing Code (C.P.C.), Title 24, C.C.R.

Part 6 - 2016 California Energy Code, Title 24, C.C.R. Part 9 - 2016 California Fire Code, Title 24, C.C.R.

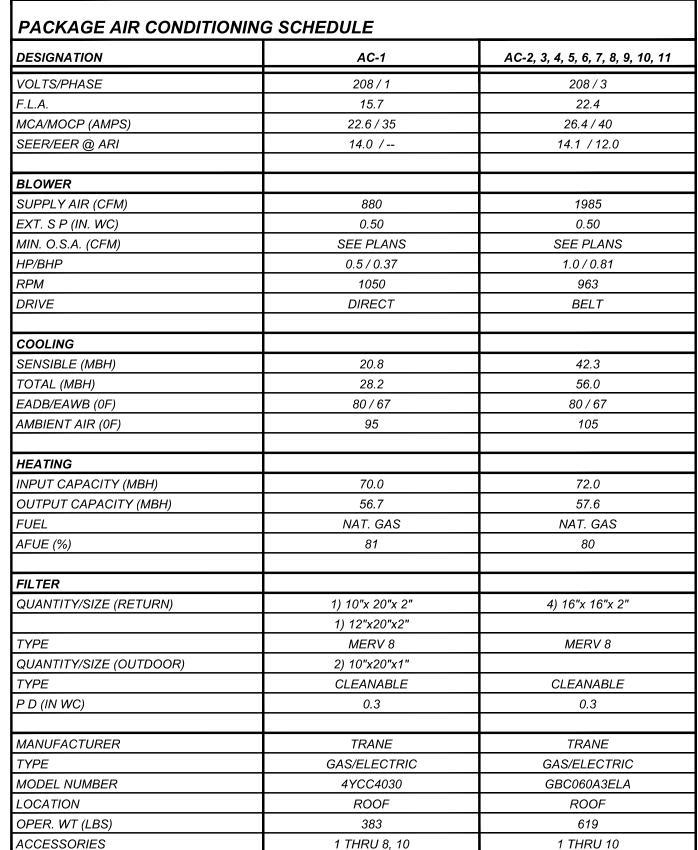
Standards and Guides:

ADAAG - American with Disabilities Act, Accessibility Guidelines. Fixtures - Plumbing fixtures to comply with table 5.303.6 of the California Green Building Standards - 2016 Edition.



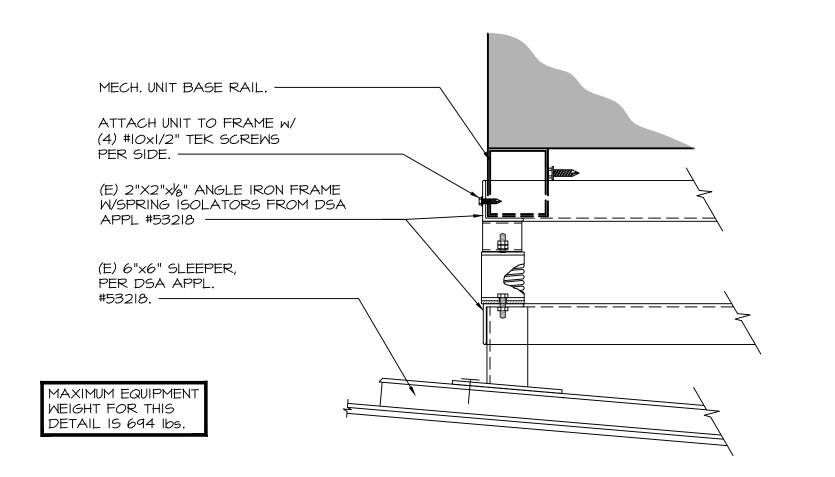
THERMOSTAT MOUNTING LOCATION

NO SCALE:

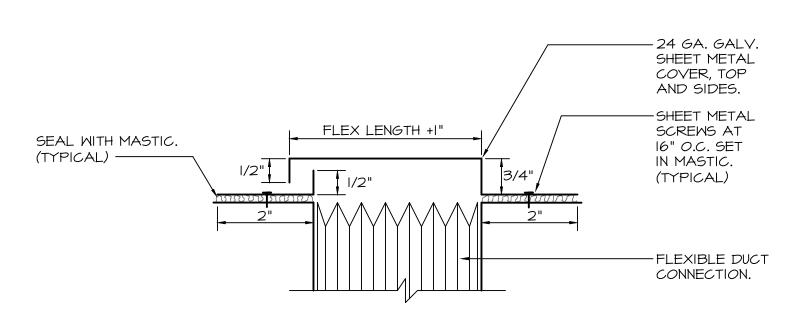


- 1. PROVIDE MICROMETL ECONOMIZER WITH BELIMO ACTUATORS W/BAROMETRIC RELIEF.
- 2. HINGED ACCESS DOORS WITH 1/4 TURN LATCHES AND TIEBACKS.
- 3. INTERNAL HIGH AND LOW PRESSURE COMPRESSOR PROTECTION.
- 4. TXV REFRIGERANT METERING DEVICE ON EACH CIRCUIT.
- 5. TIME GUARD II ANTI-RECYCLE KIT.
- 6. ECONOMIZERS SHALL MEET ALL REQUIREMENTS PER T24, 2016 ENERGY EFFICIENCY STANDARDS, 140.4. (e).
- 7. FIELD PROVIDE AND INSTALL "PELICAN" PEARL ECONOMIZER CONTROLLER WITH DRY
- BULB CONTROLS AND FDD (FAULT DETECTION AND DIAGNOSTICS PER T-24 120.2 (i)) 8. PROVIDE PELICAN PROGRAMMABLE THERMOSTAT
- 9. PROVIDE WALL MOUNTED CO2 SENSOR TO OVERIDE ECONOMIZER CONTROL FOR DEMAND CONTROL VENTILATION, 10. PROVIDE 60 AMP 230V DISCONNECT W/APPROIATE SIZE FUSES SEE SCHEDULE

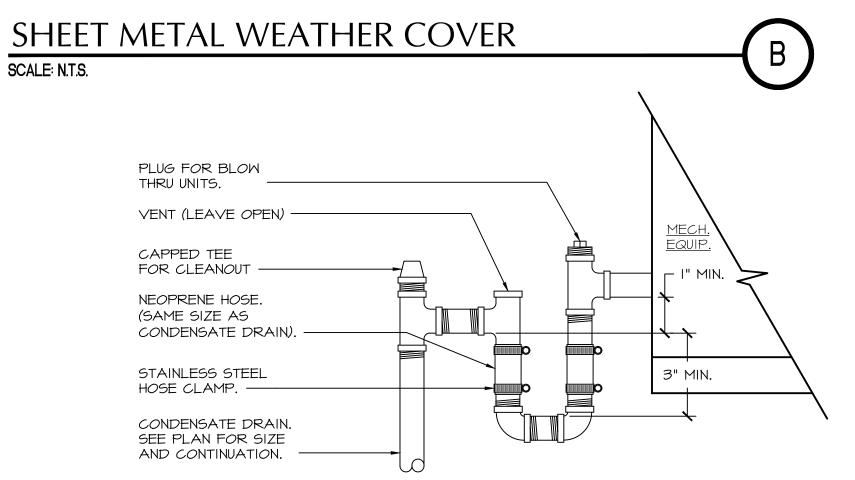
		PACKAGE UNITS						
UNIT TAG	ROOM#	ORIGINAL SCHEDULED WEIGHT	(E)UNIT DIMENSIONS LxWxH (IN)	(N) UNIT DIMENSIONS LxWxH (IN)	NEW UNIT WEIGHT	ECONOMIZER WEIGHT	TOTAL UNIT WEIGHT	CHANGE IN WEIGHT (%)
AC-2	1	590	73-11/16x45x33-5/16	74-3/8x46-3/4x41-3/8	586	33	619	5%
AC-3	2	590	73-11/16x45x33-5/16	74-3/8x46-3/4x41-3/8	586	33	619	5%
AC-4	3	590	73-11/16x45x33-5/16	74-3/8x46-3/4x41-3/8	586	33	619	5%
AC-5	4	590	73-11/16x45x33-5/16	74-3/8x46-3/4x41-3/8	586	33	619	5%
AC-6	5	590	73-11/16x45x33-5/16	74-3/8x46-3/4x41-3/8	586	33	619	5%
AC-7	6	590	73-11/16x45x33-5/16	74-3/8x46-3/4x41-3/8	586	33	619	5%
AC-8	7	590	73-11/16x45x33-5/16	74-3/8x46-3/4x41-3/8	586	33	619	5%
AC-9	8	590	73-11/16x45x33-5/16	74-3/8x46-3/4x41-3/8	586	33	619	5%
AC-10	9	590	73-11/16x45x33-5/16	74-3/8x46-3/4x41-3/8	586	33	619	5%
AC-11	10	650	73-11/16x45x33-5/16	74-3/8x44-3/4x41-3/8	586	33	619	-5%
AC-1	STUDENT STORE	470	48x32.625x45.75	48-3/16x44-1/8x44-3/4	336	47	383	-19%



PACKAGE UNIT ON ROOF

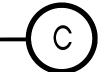


NOTES: DETAIL TO BE INSTALLED ON ALL DUCT FLEXIBLE CONNECTIONS EXPOSED TO WEATHER. 2. SHEET METAL SHALL COMPLETELY COVER THE TOP AND BOTH SIDES.



CONDENSATE DRAIN CONNECTION

SCALE: N.T.S.



BASKIN
MECHANICAL
ENGINEERS

175 Fulton Street
Fresno, CA 93721
Tel: (559) 237-0376
Job: 17013
Plt: 05-17-17

PRIME CONSULTANT ARCHITECTURE PLANNING San Luis Obispo 4119 Broad Street, Suite 210 San Luis Obispo, CA 93401 805.546.0433 fax: 805.546.0504

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AGENCY INFORMATION:

AGENCY TRACKING NO. 63321-281 FILE NO. 15-6 IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT OFFICE OF REGULATION SERVICES AC____FLS___SS____

BAKERSFIELD CITY SCHOOL



VOORHIES E.S. - PROP 39 HVAC REPLACEMENT

6001 PIONEER DR. BAKERSFIELD, CA 93307

OPSC or OSHPD PROJ. NO: PROJECT NO: 17135.000 DRAWN BY: CHK'D BY: ISSUE DATE: 05/26/2017 SHEET TITLE

> **MECHANICAL DETAILS & SCHEDULES**

SHEET NUMBER

M8010

REQUIRED ACCEPTANCE TESTS DEC-NRCC-MCH-04-E (Revised 01/16)	CALIFORNIA ENERGY COMMISSION		
CERTIFICATE OF COMPLIANCE	NRCC-MCH-04-E		
Required Acceptance Tests	(Page 1 of 3)		
Project Name: Voorhies School Prop 39	Date Prepared: 4/26/2017		
A. MECHANICAL COMPLIANCE FORMS & WORKSHEETS			
(indicate if worksheet is included)			
For detailed instructions on the use of this and all Energy Standards compliance document	ts, refer to the 2016 Nonresidential Manual		

			iance documents to be incorporated onto the building plans. The NRCC-MCH-04-E and NRCC-MECH-05-E are alternative H-02-E and NRCC-MCH-03-E for projects using only single zone packaged HVAC systems.
YES	NO	Form	Title
1		NRCC-MCH-04-E (1 of 2)	Certificate of Compliance. Required on plans when used.
/		NRCC-MCH-04-E (2 of 2)	Mechanical Acceptance Tests. Required on plans when used.
1		NRCC-MCH-05-E (1 of 2)	HVAC Prescriptive Requirements. It is required on plans when used.
1		NRCC-MCH-05-E (2 of 2)	Mechanical SWH Equipment Summary is required for all submittals with service water heating, pools or spas. It is required on plans where applicable.

viject Name: Voorhies School Prop 39 Date Prepared: 4/26/2017 This compliance document is to be used by the designer and attached to the plans. Listed below are all the acceptance tests for mechanical systems. The designer is required to check the applicable boxes by all acceptance tests that apply and list all equipment that require an acceptance test. If all equipment of a certain type requires a test, list the equipment description and the number of systems. The NA number designates the Section in the Appendix of the Nonresidential Reference Appendices Manual that describes the test. Since this compliance document will be part of the plans, completion of this section will allow the responsible party to budget for the scope of work appropriately. Systems Acceptance. Before occupancy permit is granted for a newly constructed building or space, or a new space-conditioning system serving a building or space is operated for normal use, all control devices serving the building or space shall be certified as meeting the Acceptance Requirements for Code Compliance. Sustains Acceptance, Refore occupancy permit is granted. All newly installed HVAC equipment must be tested using the Acceptance Requirements

STATE OF CALIFORNIA

CEC-NRCC-MCH-04-E (Revised 01/16 CERTIFICATE OF COMPLIANCE

Required Acceptance Tests

REQUIRED ACCEPTANCE TESTS

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance

EC-NRCC-MCH-05-E (Revised 01.

Heating Equipment Efficiency

Cooling Equipment Efficiency

Furnace Standby Loss Contr

Occupant Sensor Ventilation Co

Outdoor Air and Exhaust Damper Control

hutoff and Reset Controls

PRESCRIPTIVE MEASURES

Duct Leakage Sealing and Te

the units as specified.

capabilities of the thermostat as scheduled.

140.4 (a & b)

Low Leakage AHU

CERTIFICATE OF COMPLIANCE

Project Name: Voorhies School Prop 39

Requirements for Packaged Single-Zone Units

NRCC-MCH-05-E

REQUIREMENTS FOR PACKAGED SINGLE ZONE UNITS

110.2(b), 110.2(c)

120.1(b)

120.1(c)5, 120.2(e)3

he NRCC-MC he equipmen nust be condi ubmitted to t	H-04-E cont requiring treducted. The build Title 24	ompliance do ng testing, po he following ing departme	ocument is n erson perfor checked-off ent that certi	ming the test (forms are requiries plans, spe	a completed of Example: HVA uired for ALL n cifications, ins	document an AC installer, T newly installe stallation cert	d is not to be AB contracted d and replac tificates, and	e accepted b or, controls o ed equipmen operating a	y the buildin ontractor, P nt. In addition nd maintena	ig department E in charge of on a Certificat ance informat	t unless the corr project) and wh e of Acceptance ion meet the rec	ect boxes are checked at Acceptance test documents shall be quirements of Section final occupancy. Test Performed By:
Equipment Requiring Testing or Verification	# of Units	Outdoor Air	Single Zone Unitary	Air Distribution Ducts	Economizer Controls	Demand Control Ventilation (DCV)	Supply Fan VAV	Automatic Demand Shed Control	FDD for Packaged DX Units	Distributed Energy Storage DX AC Systems	Energy Management Control System	rest renormed by.
arrier Corp	5	~							/			
,												

Required Acceptance Tests Name: Voorhies School Prop 39 Date Prepared: 4/26/2017 DOCUMENTATION AUTHOR'S DECLARATION STATEMENT I certify that this Certificate of Compliance documentation is accurate and con umentation Author Signature: ntation Author Name: Mike Mundschau P.E. Baskin Mechanical Engineers re Date: 4/26/2017 5500 Ming Ave., Suite 251 Bakersfield, California 93309 (661)397-2114 RESPONSIBLE PERSON'S DECLARATION STATEMENT ertify the following under penalty of perjury, under the laws of the State of California: The information provided on this Certificate of Compliance is true and correct. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations. 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. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to th building owner at occupancy. Responsible Designer Signature: Mark Baskin ite Signed: 04/26/17 Baskin Mechanical Engineers 5500 Ming Avenue, Suite 251 Bakersfield, California 93309 (661)397-2114

NRCC-MCH-04-E

NRCC-MCH-05-E

e Prepared: 4/26/2017

STATE OF CALIFORNIA

CEC-NRCC-MCH-04-E (Revised 01/16

CERTIFICATE OF COMPLIANCE

REQUIRED ACCEPTANCE TESTS

REQUIREMENTS FOR PACKAGED SINGLE ZONE UNITS EC-NRCC-MCH-05-E (Revised 0 CERTIFICATE OF COMPLIANCE uirements for Packaged Single-Zone Units roject Name: Voorhies School Prop 39

	HOR'S DECLARATION STATEMENT	and the second second				
	ertificate of Compliance documentation is accurate					
Documentation Author Name	Mike Mundschau P.E.	Documentation Author Signature:				
Company:	Baskin Mechanical Engineers	Signature Date: 4/26/2017				
Address:	5500 Ming Ave., Suite 251	CEA/HERS Certification Identification (if applicable):				
City/State/Zip:	Bakersfield, California 93309	Phone: (661)397-2114				
RESPONSIBLE PERSON	S DECLARATION STATEMENT					
I certify the follow	ing under penalty of perjury, under the laws of the	e State of California:				
1. The information p	rovided on this Certificate of Compliance is true an	nd correct.				
2. I am eligible under	Division 3 of the Business and Professions Code to	o accept responsibility for the building design or system design identified on this Certificate of Compliance (responsib				
designer).						
3. The energy feature	es and performance specifications, materials, com	ponents, and manufactured devices for the building design or system design identified on this Certificate of Compliar				
	quirements of Title 24, Part 1 and Part 6 of the Cali					
		this Certificate of Compliance are consistent with the information provided on other applicable compliance docume				

5. I will ensure that a	completed signed copy of this Certificate of Com cable inspections. I understand that a completed	enforcement agency for approval with this building permit application. pliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to
Responsible Designer Name:	Mark Baskin	Responsible Designer Signature:
Company:	Baskin Mechanical Engineers	Date Signed: 04/26/17
Address:	5500 Ming Avenue, Suite 251	License: M26578
City/State/Zip:	Bakersfield , California 93309	Phone: (661)397-2114

Project Name: Voorhies School Prop 39 Prepared: 4/26/2017
 Requirement³
 As Scheduled³
 Requirement³
 As Scheduled³
 Requirement³
 As Scheduled³

 78% AFUE
 82% AFUE
 78% AFUE
 82% AFUE
 82% AFUE

 13 SEER
 14.1 SEER / 12
 13 SEER
 14.1 SEER / 12
 13 SEER
 Heating Equipment Efficiency Cooling Equipment Efficienc 110.2(b), 110.2(c) Furnace Standby Loss Conti Low Leakage AHU Occupant Sensor Ventilation (utoff and Reset Control Outdoor Air and Exhaust Damper Control

PRESCRIPTIVE MEASURES
 44,354 Btu/hr
 48,130 Btu/hr
 42,937 Btu/hr
 48,100 Btu/hr
 42,937 Btu/hr
 48,100 B 140.4 (a & b) Duct Leakage Sealing and Te

Provide equipment tags (e.g. AC1 or AC1 to 10). Multiple units of the same make and model with the same application and accessories can be grouped together. Enter the following information as appropriate: Unit Manufacturer; Unit Model Number (including all accessories); Description of the unit (e.g. gas-pack or heat pump; rated heating capacity (enter "N/A" if no heating); and, rated cooling capacity (enter "N/A" if no cooling). For unit capacities include the units (e.g. kBtuh or tons). For each requirement, enter the minimum requirement from the Standard In the left column (under "Standard Requirement"). In the right column (under "As Scheduled") enter the value for the units as specified.

Where there is more than one requirement (e.g. full and part load efficiency) enter both with the appropriate labels (e.g. COP and IEER). In the left column identify the thermostatic requirements from the standard (e.g. programmable setback thermostat or heat pump with electric heat), . In the right column indicate the capabilities of the thermostat as scheduled.

If the unit has a furnace which is rated at ≥225,000 Btuh of capacity, indicate the rated standby loss and ignition source (e.g. IID). If there is no furnace or the unit is rated for <225,000 Btuh In the left column, enter both the required ventilation value from Table 120.1A and for the number of occupants times 15 cfm/person. In the right column enter the actual minimum

ventilation as scheduled. If the space is naturally ventilated enter "N/A" in the left column and "the space is naturally ventilated" in the right column

If the space is required to have either DCV or Occupant Sensor Ventilation Control indicate "required" in the left column (otherwise indicate "N/A" in the left column). If either DCV or Occupan Sensor Ventilation Control is provided indicate "provided" in the right column (otherwise indicate "N/A" in the right column)

In the left column indicate the required time controls from the standard. In the right column identify the device that provides this functionality (e.g. EMCS or programmable timeclock). 10. Enter N/A if there is no electric heating. If the system has electric heating indicate which exception to 140.4(g) applies. 11. If duct leakage sealing and testing is required, a MCH-04-A compliance document must be submitted.

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance

CEC-NRCC-MCH-05-E (Revised 0)

CERTIFICATE OF COMPLIANCE

Requirements for Packaged Single-Zone Units

REQUIREMENTS FOR PACKAGED SINGLE ZONE UNITS

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance January 2016

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance

9. In the left column indicate the required time controls from the standard. In the right column identify the device that provides this functionality (e.g. EMCS or programmable timeclock).

Enter the following information as appropriate: Unit Manufacturer; Unit Model Number (including all accessories); Description of the unit (e.g. gas-pack or heat pump; rated heating capacity

For each requirement, enter the minimum requirement from the Standard In the left column (under "Standard Requirement"). In the right column (under "As Scheduled") enter the value for

If the unit has a furnace which is rated at ≥225,000 Btuh of capacity, indicate the rated standby loss and ignition source (e.g. IID). If there is no furnace or the unit is rated for <225,000 Btuh

If the space is required to have either DCV or Occupant Sensor Ventilation Control indicate "required" in the left column (otherwise indicate "N/A" in the left column). If either DCV or Occupant

5. In the left column identify the thermostatic requirements from the standard (e.g. programmable setback thermostat or heat pump with electric heat), . In the right column indicate the

In the left column, enter both the required ventilation value from Table 120.1A and for the number of occupants times 15 cfm/person. In the right column enter the actual minimum

1. Provide equipment tags (e.g. AC1 or AC1 to 10). Multiple units of the same make and model with the same application and accessories can be grouped together.

ventilation as scheduled. If the space is naturally ventilated enter "N/A" in the left column and "the space is naturally ventilated" in the right column

(enter "N/A" if no heating); and, rated cooling capacity (enter "N/A" if no cooling). For unit capacities include the units (e.g. kBtuh or tons).

Where there is more than one requirement (e.g. full and part load efficiency) enter both with the appropriate labels (e.g. COP and IEER).

Sensor Ventilation Control is provided indicate "provided" in the right column (otherwise indicate "N/A" in the right column)

10. Enter N/A if there is no electric heating. If the system has electric heating indicate which exception to 140.4(g) applies.

11. If duct leakage sealing and testing is required, a MCH-04-A compliance document must be submitted.

42,937 Btu/hr 48,100 Btu/hr 42,937 Btu/hr 48,100 Btu/h Req Diff. Temp (Intel Req Diff. Temp (

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance

PRIME CONSULTANT ARCHITECTURE PLANNING San Luis Obispo 4119 Broad Street, Suite 210 San Luis Obispo, CA 93401 805.546.0433 fax: 805.546.0504

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NRCC-MCH-04-E

NRCC-MCH-05-E

(Page 3 of 3)



AGENCY INFORMATION:

AGENCY TRACKING NO. 63321-281 FILE NO. 15-6 **IDENTIFICATION STAMP** DIV. OF THE STATE ARCHITECT OFFICE OF REGULATION SERVICES AC____FLS___SS____

BAKERSFIELD CITY SCHOOL



VOORHIES E.S. - PROP 39 HVAC REPLACEMENT

6001 PIONEER DR. BAKERSFIELD, CA 93307

OPSC or OSHPD PROJ. NO: 17135.000 DRAWN BY: MM CHK'D BY: ISSUE DATE: 05/26/2017 SHEET TITLE

> **BLDG C TITLE 24 REPORT**

SHEET NUMBER



BASKIN
MECHANICAL
ENGINEERS

175 Fulton Street
Fresno, CA 93721
Tel: (559) 237-0376
Job: 17013
Plt: 05-17-17

Note: The Enforcement Agency may require all compliance documents to be incorporated onto the building plans. The NRCC-MCH-04-E and NRCC-MECH-05-E are alternative compliance documents to NRCC-MCH-01-E, NRCC-MCH-02-E and NRCC-MCH-03-E for projects using only single zone packaged HVAC systems. NRCC-MCH-04-E (1 of 2) Certificate of Compliance. Required on plans when used. 1 NRCC-MCH-04-E (2 of 2) Mechanical Acceptance Tests. Required on plans when used. NRCC-MCH-05-E (1 of 2) HVAC Prescriptive Requirements. It is required on plans when used. Mechanical SWH Equipment Summary is required for all submittals with service water heating, pools or spas. It is NRCC-MCH-05-E (2 of 2) required on plans where applicable.

Enter the following information as appropriate: Unit Manufacturer; Unit Model Number (including all accessories); Description of the unit (e.g. gas-pack or heat pump; rated heating capacity

For each requirement, enter the minimum requirement from the Standard In the left column (under "Standard Requirement"). In the right column (under "As Scheduled") enter the value for

If the unit has a furnace which is rated at ≥225,000 Btuh of capacity, indicate the rated standby loss and ignition source (e.g. IID). If there is no furnace or the unit is rated for <225,000 Btuh

If the space is required to have either DCV or Occupant Sensor Ventilation Control indicate "required" in the left column (otherwise indicate "N/A" in the left column). If either DCV or Occupan

In the left column identify the thermostatic requirements from the standard (e.g. programmable setback thermostat or heat pump with electric heat), . In the right column indicate the

In the left column, enter both the required ventilation value from Table 120.1A and for the number of occupants times 15 cfm/person. In the right column enter the actual minimum

This compliance document is to be used by the designer and attached to the plans. Listed below are all the acceptance tests for mechanical systems. The designer is required to check the applicable boxes by all acceptance tests that apply and list all equipment that require an acceptance test. If all equipment of a certain type requires a test, list the equipment description and the number of systems. The NA number designates the Section in the Appendix of the Nonresidential Reference Appendices Manual that describes the test. Since this compliance document will be part of the plans, completion of this section will allow the responsible party to budget for the scope of work appropriately. Systems Acceptance. Before occupancy permit is granted for a newly constructed building or space, or a new space-conditioning system serving a building or space is operated for normal use, all control devices serving the building or space shall be certified as meeting the Acceptance Requirements for Code Compliance. Systems Acceptance. Before occupancy permit is granted. All newly installed HVAC equipment must be tested using the Acceptance Requirements. The NRCC-MCH-04-E compliance document is not considered a completed document and is not to be accepted by the building department unless the correct boxes are checked. The equipment requiring testing, person performing the test (Example: HVAC installer, TAB contractor, controls contractor, PE in charge of project) and what Acceptance test must be conducted. The following checked-off forms are required for ALL newly installed and replaced equipment. In addition a Certificate of Acceptance documents shall be submitted to the building department that certifies plans, specifications, installation certificates, and operating and maintenance information meet the requirements of Section 10-103(b) and Title 24 Part 6. The building inspector must receive the properly filled out and signed compliance documents before the building can receive final occupancy. MCH-02-A MCH-03-A MCH-04-A MCH-05-A MCH-06-A MCH-07-A MCH-11-A MCH-12-A MCH-14-A MCH-18-A FDD for Testing or Ventilation Shed Packaged Storage DX (DCV) Fan VAV DX Units AC Systems

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance January 2016

REQUIREMENTS FOR PACKAGED SINGLE ZONE UNITS EC-NRCC-MCH-05-E (Revised CERTIFICATE OF COMPLIANCE NRCC-MCH-05-E quirements for Packaged Single-Zone Units te Prepared: 4/26/2017 me: Voorhies School Prop 39

Equipment Tag(s) ¹		AC-11		AC-10		AC-9		Equipment Tag(s) ¹		AC-1		AC-8		AC-7	
MANDATORY MEASURES	T-24 Sections	Requirement ³	As Scheduled ³	Requirement ³	As Scheduled ³	Requirement ³	As Scheduled ³	MANDATORY MEASURES	T-24 Sections	Requirement ³	As Scheduled ³	Requirement ³	As Scheduled ³	Requirement ³	As S
Heating Equipment Efficiency ⁴	110.1 or 110.2(a)	78% AFUE	82% AFUE	78% AFUE	82% AFUE	78% AFUE	82% AFUE	Heating Equipment Efficiency ⁴	110.1 or 110.2(a)	78% AFUE	81% AFUE	78% AFUE	82% AFUE	78% AFUE	82%
Cooling Equipment Efficiency ⁴	110.1 or 110.2(a)	11.0 EER	11.0 EER	13 SEER	14.1 SEER / 12	13 SEER	14.1 SEER / 12.2	Cooling Equipment Efficiency ⁴	110.1 or 110.2(a)	13 SEER	14.0 SEER / 12	13 SEER	14.1 SEER / 12	13 SEER	14.1 5
Thermostats ⁵	110.2(b), 110.2(c)	Setback	Setback	Setback	Setback	Setback	Setback	Thermostats ⁵	110.2(b), 110.2(c)	Setback	Setback	Setback	Setback	Setback	Setba
Furnace Standby Loss Control ⁶	110.2(d)	n/a		n/a		n/a	j	Furnace Standby Loss Control ⁶	110.2(d)	n/a		n/a		n/a	
Low Leakage AHU	110.2(f)	NR	none	NR	none	NR	none	Low Leakage AHU	110.2(f)	NR	none	NR	none	NR	none
Ventilation ⁷	120.1(b)	347	173	347	173	347	173	Ventilation ⁷	120.1(b)	152	83	347	173	347	173
Demand Control Ventilation ⁸	120.1(c)4	NR	Yes	NR	Yes	NR	Yes	Demand Control Ventilation ⁸	120.1(c)4	NR	Yes	NR	Yes	NR	Yes
Occupant Sensor Ventilation Control ⁸	120.1(c)5, 120.2(e)3							Occupant Sensor Ventilation Control ⁸	120.1(c)5, 120.2(e)3						
Shutoff and Reset Controls ⁹	120.2(e)	Req	Programmable	Req	Programmable	Req	Programmable S	Shutoff and Reset Controls ⁹	120.2(e)	Req	Programmable	Req	Programmable	Req	Progr
Outdoor Air and Exhaust Damper Control	120.2(f)	Req	Auto	Req	Auto	Req	Auto	Outdoor Air and Exhaust Damper Control	120.2(f)	Req	Auto	Req	Auto	Req	Auto
Automatic Demand Shed Controls	120.2(h)	NR	none	NR	none	NR	none	Automatic Demand Shed Controls	120.2(h)	NR	none	NR	none	NR.	none
Economizer FDD	120.2(i)	Req		Req		Req		Economizer FDD	120.2(i)	NR		Req		Req	
Duct Insulation	120.4	R-8	R-8.0	R-8	R-8.0	R-8	R-8.0	Duct Insulation	120.4	R-8	R-8.0	R-8	R-8.0	R-8	R-8.0
PRESCRIPTIVE MEASURES								PRESCRIPTIVE MEASURES							
Equipment is sized in conformance with 140.4 (a & b)	140.4(a & b)	20,459 Btu/hr 45,808 Btu/hr	59,000 Btu/hr 57,116 Btu/hr	19,051 Btu/hr 42,937 Btu/hr	59,000 Btu/hr 48,100 Btu/hr	19,051 Btu/h 42,937 Btu/h		Equipment is sized in conformance with 140.4 (a & b)	140.4(a & b)	8,434 Btu/hr 18,069 Btu/hr	33,000 Btu/hr 21,131 Btu/hr	19,051 Btu/hr 42,937 Btu/hr	59,000 Btu/hr 48,100 Btu/hr	19,051 Btu/hr 42,937 Btu/hr	59,00 48,10
Economizer	140.4(e)	Req	Diff. Temp (Inte	Req	Diff. Temp (Inte	Req	Diff. Temp (Integ	Economizer	140.4(e)	NR	Diff. Temp (Into	Req	Diff. Temp (Inte	Req	Diff. T
Electric Resistance Heating 10	140.4(g)	No	No	No	No	No	No	Electric Resistance Heating ¹⁰	140.4(g)	No	No	No	No	No	No
Duct Leakage Sealing and Testing. 11	140.4(I)	NR	No	NR	No	NR	No	Duct Leakage Sealing and Testing. 11	140.4(I)	NR	No	NR	No	NR	No
Notes: 1. Provide equipment tags (e.g. AC1 or AC1	to 10). Multiple units of the s	ame make and mod	lel with the same ap	plication and acce	ssories can be group	ed together.		Notes: 1. Provide equipment tags (e.g. AC1 or AC1	to 10). Multiple units of the	same make and mod	lel with the same ap	plication and acce	essories can be group	oed together.	

January 2016

NRCC-MCH-05-E

te Prepared: 4/26/2017

STATE OF CALIFORNIA

EC-NRCC-MCH-04-E (Revised 01/1

Required Acceptance Tests

CERTIFICATE OF COMPLIANCE

REQUIRED ACCEPTANCE TESTS

Vame: Voorhies School Prop 39

- 1. Provide equipment tags (e.g. AC1 or AC1 to 10). Multiple units of the same make and model with the same application and accessories can be grouped together. Enter the following information as appropriate: Unit Manufacturer; Unit Model Number (including all accessories); Description of the unit (e.g. gas-pack or heat pump; rated heating capacity (enter "N/A" if no heating); and, rated cooling capacity (enter "N/A" if no cooling). For unit capacities include the units (e.g. kBtuh or tons).
- For each requirement, enter the minimum requirement from the Standard In the left column (under "Standard Requirement"). In the right column (under "As Scheduled") enter the value for the units as specified.
- Where there is more than one requirement (e.g. full and part load efficiency) enter both with the appropriate labels (e.g. COP and IEER). 5. In the left column identify the thermostatic requirements from the standard (e.g. programmable setback thermostat or heat pump with electric heat), . In the right column indicate the
- capabilities of the thermostat as scheduled. If the unit has a furnace which is rated at ≥225,000 Btuh of capacity, indicate the rated standby loss and ignition source (e.g. IID). If there is no furnace or the unit is rated for <225,000 Btuh
- In the left column, enter both the required ventilation value from Table 120.1A and for the number of occupants times 15 cfm/person. In the right column enter the actual minimum
- ventilation as scheduled. If the space is naturally ventilated enter "N/A" in the left column and "the space is naturally ventilated" in the right column If the space is required to have either DCV or Occupant Sensor Ventilation Control indicate "required" in the left column (otherwise indicate "N/A" in the left column). If either DCV or Occupant
- Sensor Ventilation Control is provided indicate "provided" in the right column (otherwise indicate "N/A" in the right column) 9. In the left column indicate the required time controls from the standard. In the right column identify the device that provides this functionality (e.g. EMCS or programmable timeclock).
- In the left column indicate the required time controls from the standard. In the right column identify the device that provides this functionality (e.g. EMCS or programmable timeclock). 10. Enter N/A if there is no electric heating. If the system has electric heating indicate which exception to 140.4(g) applies.

11. If duct leakage sealing and testing is required, a MCH-04-A compliance document must be submitted.

10. Enter N/A if there is no electric heating. If the system has electric heating indicate which exception to 140.4(g) applies. 11. If duct leakage sealing and testing is required, a MCH-04-A compliance document must be submitted.

(enter "N/A" if no heating); and, rated cooling capacity (enter "N/A" if no cooling). For unit capacities include the units (e.g. kBtuh or tons).

ventilation as scheduled. If the space is naturally ventilated enter "N/A" in the left column and "the space is naturally ventilated" in the right column

Where there is more than one requirement (e.g. full and part load efficiency) enter both with the appropriate labels (e.g. COP and IEER).

Sensor Ventilation Control is provided indicate "provided" in the right column (otherwise indicate "N/A" in the right column)

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance

CEC-NRCC-MCH-05-E (Revised

CERTIFICATE OF COMPLIANCE

the units as specified.

capabilities of the thermostat as scheduled.

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance

Project Name: Voorhies School Prop 39

uirements for Packaged Single-Zone Units

REQUIREMENTS FOR PACKAGED SINGLE ZONE UNITS

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance

STATE OF CALIFORNIA **REQUIRED ACCEPTANCE TESTS** EC-NRCC-MCH-04-E (Revised 01/1 CERTIFICATE OF COMPLIANCE

Required Acceptance Tests (Page 3 of 3) Name: Voorhies School Prop 39 Date Prepared: 4/26/2017 DOCUMENTATION AUTHOR'S DECLARATION STATEMENT I certify that this Certificate of Compliance documentation is accurate and com mentation Author Signature: ation Author Name: Mike Mundschau P.E. Baskin Mechanical Engineers e Date: 4/26/2017

(661)397-2114

Bakersfield, California 93309 RESPONSIBLE PERSON'S DECLARATION STATEMENT ertify the following under penalty of perjury, under the laws of the State of California:

5500 Ming Ave., Suite 251

NRCC-MCH-04-E

Date Prepared: 4/26/2017

- The information provided on this Certificate of Compliance is true and correct. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible
- The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
- 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. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement

agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the

Responsible Designer Name:	Mark Baskin, P.E., LEED AP	Responsible Designer Signature:
Company:	Baskin Mechanical Engineers	Date Signed: 04/26/17
Address:	5500 Ming Avenue, Suite 251	License:
City/State/Zip:	Bakersfield, California 93309	Phone: (661)397-2114

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance January 2016

REQUIREMENTS FOR PACKAGED SINGLE ZONE UNITS CERTIFICATE OF COMPLIANCE NRCC-MCH-05-E irements for Packaged Single-Zone Units Voorhies School Prop 39 Date Prepared: 4/26/2017

1. I certify that this Cer	tificate of Compliance documentation is accurate	and complete.	
Documentation Author Name:	Mike Mundschau P.E.	Documentation Author Signature:	
Company:	Baskin Mechanical Engineers	Signature Date: 4/26/2017	
Address:	5500 Ming Ave., Suite 251	CEA/HERS Certification Identification (if applicable):	
City/State/Zip:	Bakersfield, California 93309	Phone: (661)397-2114	

- I certify the following under penalty of perjury, under the laws of the State of California: The information provided on this Certificate of Compliance is true and correct.
- I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible
- The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
- 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.
- I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to

the building owner at occupancy.		
Responsible Designer Name:	Mark Baskin, P.E., LEED AP	Responsible Designer Signature:
Company:	Baskin Mechanical Engineers	Date Signed: 04/26/17
Address:	5500 Ming Avenue, Suite 251	License:
City/State/Zip:	Bakersfield, California 93309	Phone: (661)397-2114

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance

PRIME CONSULTANT ARCHITECTURE PLANNING San Luis Obispo 4119 Broad Street, Suite 210 San Luis Obispo, CA 93401 805.546.0433 fax: 805.546.0504

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DESCRIPTION

CONSULTANT

SEAL



AGENCY INFORMATION:

AGENCY TRACKING NO. 63321-281 FILE NO. 15-6 **IDENTIFICATION STAMP** DIV OF THE STATE ARCHITECT OFFICE OF REGULATION SERVICES AC____FLS___SS____

BAKERSFIELD CITY SCHOOL



VOORHIES E.S. - PROP 39 HVAC REPLACEMENT

6001 PIONEER DR. BAKERSFIELD, CA 93307

OPSC or OSHPD PROJ. NO: 17135.000 DRAWN BY: MM CHK'D BY: ISSUE DATE: 05/26/2017 SHEET TITLE

> **BLDG D TITLE 24 REPORT**

SHEET NUMBER

BASKIN
Fresno, CA 93721
Tel: (559) 237-0376
Job: 17013
Plt: 05-17-17

