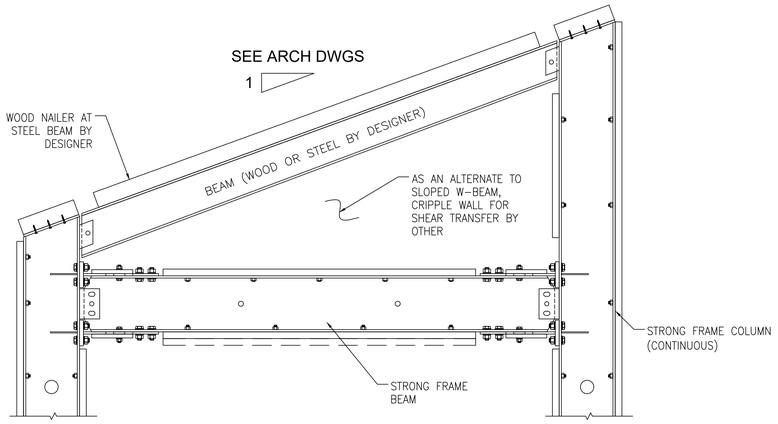
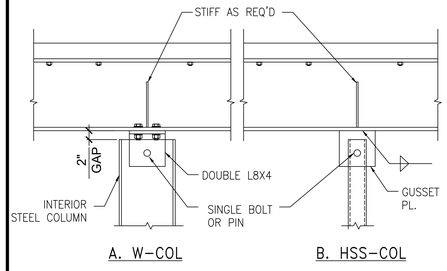
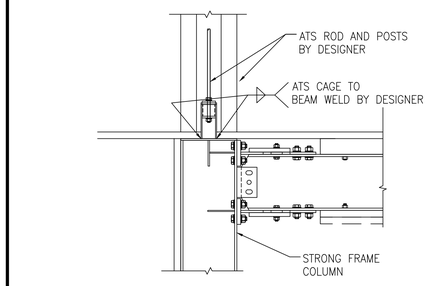


SST SMF WITH SLOPED ROOF BEAM | 1



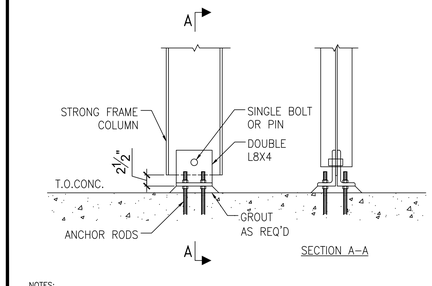
A. W-COL B. HSS-COL

INTERIOR PINNED BEARING COL. | 2



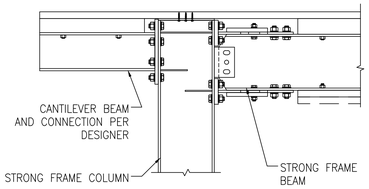
NOTE:
1. COORDINATE WITH SIMPSON STRONG-TIE IF ADDITIONAL HARDWARE NEEDS TO BE WELDED TO THE SIMPSON STRONG FRAME.
2. SEE DETAIL 11/SMF3 FOR PROTECTED ZONE REQUIREMENTS.

ATS ROD//HD ON STEEL COLUMN | 3



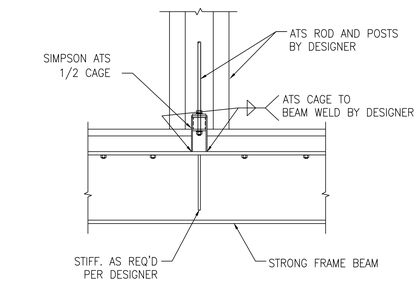
NOTES:
1. CONTACT SIMPSON STRONG-TIE FOR AVAILABLITY OF SINGLE BOLT PINNED BASE CONNECTION.

SINGLE BOLT PINNED BASE DETAIL | 4



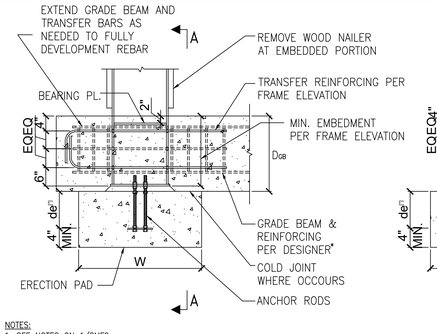
NOTE:
1. COORDINATE WITH SIMPSON STRONG-TIE IF ADDITIONAL HARDWARE NEEDS TO BE WELDED TO THE SIMPSON STRONG FRAME
2. SEE DETAIL 11/SMF3 FOR PROTECTED ZONE REQUIREMENTS.

CANTILEVER BEAM TO COLUMN | 5



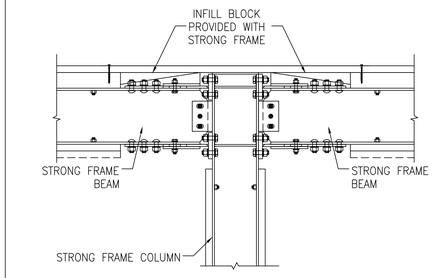
NOTE:
1. COORDINATE WITH SIMPSON STRONG-TIE IF ADDITIONAL HARDWARE NEEDS TO BE WELDED TO THE SIMPSON STRONG FRAME

ATS ROD ON STEEL BEAM | 6



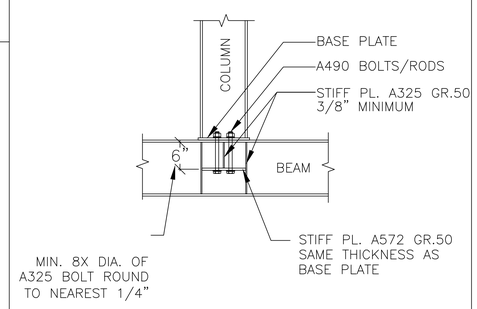
NOTES:
1. SEE NOTES ON 1/SMF2
2. ACTUAL FOOTING/GRADE BEAM SIZE, REINFORCING, AND DETAILING PER DESIGNER

FIXED BASE CONNECTION | 11

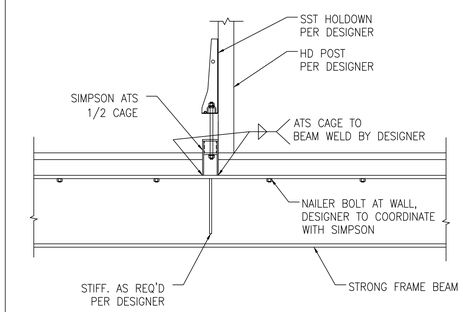


NOTE:
1. FOR FLOOR JOIST TO BEAM CONNECTION, SEE 1/SMF3 OR 4/SMF3

INT. COL WITH BEAMS ON EA. SIDE | 8

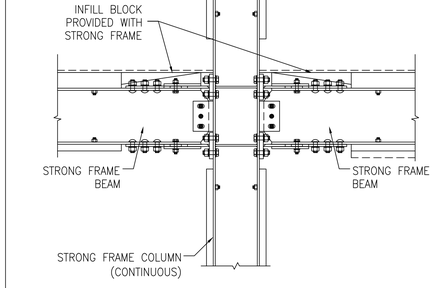


SMF COLUMN ON STEEL BEAM | 9



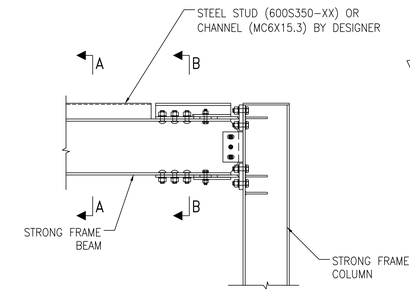
NOTE:
1. COORDINATE WITH SIMPSON STRONG-TIE IF ADDITIONAL HARDWARE NEEDS TO BE WELDED TO THE SIMPSON STRONG FRAME

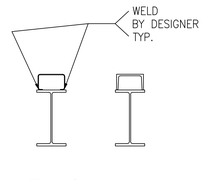
SHEAR WALL HD ON STEEL BEAM | 10



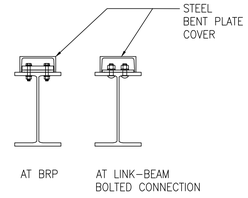
NOTE:
1. FOR FLOOR JOIST TO BEAM CONNECTION, SEE 1/SMF3 OR 4/SMF3

MULTI-STORY COLUMNS (2 BEAMS) | 12



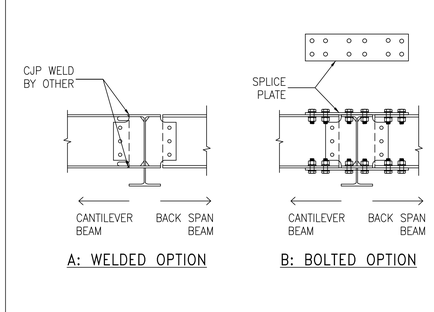


A. BEAM TOP CONNECTION



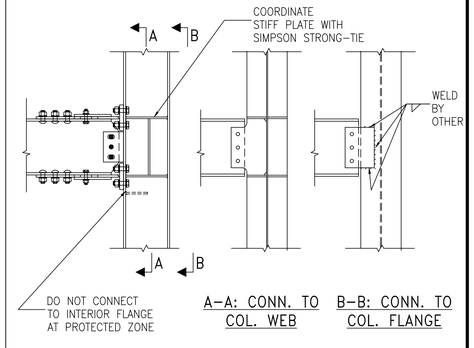
B. BEARING CONN AT LINK REGION

SMF BEAM ATTACHEMENT FOR COLD-FORMED STEEL CONSTRUCTION | 16



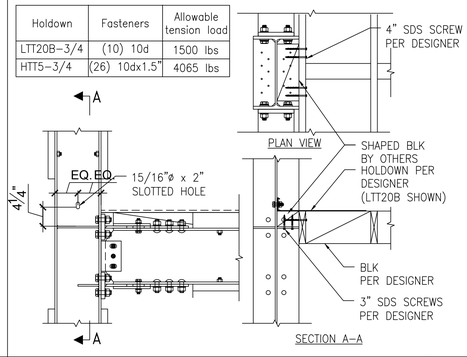
A: WELDED OPTION B: BOLTED OPTION

CANTILEVER STEEL BEAM CON. | 13

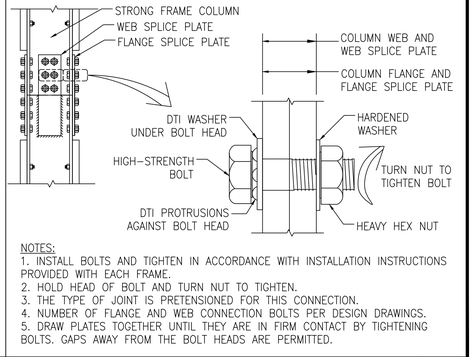


BEAM CONNECTION TO COLUMN | 17

Holdown	Fasteners	Allowable tension load
LTT20B-3/4	(10) 10d	1500 lbs
HTT5-3/4	(26) 10dx1.5"	4065 lbs



COL. BRACING AT FLOOR LEVEL | 14



NOTES:
1. INSTALL BOLTS AND TIGHTEN IN ACCORDANCE WITH INSTALLATION INSTRUCTIONS PROVIDED WITH EACH FRAME.
2. HOLD HEAD OF BOLT AND TURN NUT TO TIGHTEN.
3. THE TYPE OF JOINT IS PRETENSIONED FOR THIS CONNECTION.
4. NUMBER OF FLANGE AND WEB CONNECTION BOLTS PER DESIGN DRAWINGS.
5. DRAW PLATES TOGETHER UNTIL THEY ARE IN FIRM CONTACT BY TIGHTENING BOLTS. GAPS AWAY FROM THE BOLT HEADS ARE PERMITTED.

BOLTED COLUMN SPLICE | 18

REVISIONS

NO.	DATE	REVISIONS

REGISTERED PROFESSIONAL ENGINEER BRANDON D. WITTEN C 76578 CIVIL STATE OF CALIFORNIA

SIMPSON STRONG-TIE, CO. INC.
• 5956 W. Las Positas Blvd. Pleasanton, CA 94588
• Tel: (800) 999-5099
• Fax: (925) 847-15977
• Web site: www.strongtie.com

SIMPSON Strong-Tie ≠ THERE IS NO EQUAL

STRONG-FRAME®

SMF INSTALLATION DETAILS
ENGINEERED DESIGN
NILAND FIRE STATION

NAME: B.W.
DATE: 06/04/2019
SCALE: N.T.S.
SHEET:

SMF4

JOB NO. ES-191923

AIR CONDITIONER SCHEDULE

WT	MARK	MFR. & MODEL NO.	DESIGN OUTSIDE AIR ENTERING DB	DESIGN OUTSIDE AIR ENTERING WB	COOLING CAPACITY BTUH	COOLING CAPACITY SEER / EER	FILTER	HEATING CAPACITY TYPE	HEATING CAPACITY INPUT	HEATING CAPACITY OUTPUT	HEATING CAPACITY Air Temp Rise	FAN SYSTEM SUPPLY	FAN SYSTEM MIN. OSA	FAN SYSTEM MAX OSA	FAN SYSTEM ESP	FAN SYSTEM RPM	FAN SYSTEM DRIVE	FAN SYSTEM BHP	REFRIG. TYPE	UNIT ELECTRICAL V-PH-HZ	UNIT ELECTRICAL AMPS	MCA	MOCP	OPR. WT WITH ACCESSORIES (LBS)	POWERED EXHAUST/ ECONOMIZER ELECTRICAL V-PH-HZ	POWERED EXHAUST/ ECONOMIZER ELECTRICAL HP	POWERED EXHAUST/ ECONOMIZER ELECTRICAL AMPS	FACTORY ACCESSORIES / REMARKS
AC	1	TRANE PRECEDENT YHC060E3R	110	72	62400	12.0	Merv-8	GAS	60,000 Btu/h	48,000 Btu/h	25-55°F	2000 CFM	290	385 CFM	0.56 in-wg	1019	BELT	0.93	R-410A	230ȝØ-60Hz	13.2	30 A	45 A	1076	230-3Ø-60Hz	1/2	5.8	100% MODULATING POWER EXHAUST, ECONOMIZER W/ DRY BULB CONTROL, DEMAND VENTILATION CONTROL, WELDED ISO CURB
AC	2	TRANE PRECEDENT YHC060E3R	110	72	62400	12.0	Merv-8	GAS	60,000 Btu/h	48,000 Btu/h	25-55°F	2000 CFM	290	385 CFM	0.56 in-wg	1019	BELT	0.93	R-410A	230-3Ø-60Hz	13.2	30 A	45 A	1076	230-3Ø-60Hz	1/2	5.8	100% MODULATING POWER EXHAUST, ECONOMIZER W/ DRY BULB CONTROL, DEMAND VENTILATION CONTROL, WELDED ISO CURB
AC	3	TRANE PRECEDENT YHC048E3R	110	72	49800	12	Merv-8	GAS	60,000 Btu/h	48,000 Btu/h	25-55°F	1600 CFM	320	320 CFM	0.56 in-wg	931	BELT	.63	R-410A	230-3Ø-60Hz	21.1	21 A	30 A	940	N/A	N/A	N/A	WELDED ISO CURB
AC	4	TRANE PRECEDENT YHC048E3R	110	72	49800	12	Merv-8	GAS	60,000 Btu/h	48,000 Btu/h	25-55°F	1600 CFM	320	320 CFM	0.56 in-wg	931	BELT	.63	R-410A	230-3Ø-60Hz	21.1	21 A	30 A	940	N/A	N/A	N/A	WELDED ISO CURB
AC	5	TRANE HORIZON OABD060A3	110	72	64700	10.2	Merv-8	GAS	100,000 Btu/h	80,000 Btu/h	15-45°F	1600 CFM	0	0 CFM	1.60 in-wg	1858	BELT	.95	R-410A	230-3Ø-60Hz	26.6	31 A	45 A	1425	N/A	N/A	N/A	100% MODULATING POWER EXHAUST, ECONOMIZER W/ DRY BULB CONTROL, WELDED ISO CURB
AC	6	TRANE HORIZON OABD060A3	110	72	64700	10.2	Merv-8	GAS	100,000 Btu/h	80,000 Btu/h	15-45°F	1600 CFM	0	0 CFM	1.60 in-wg	1858	BELT	.95	R-410A	230-3Ø-60Hz	26.6	31 A	45 A	1425	N/A	N/A	N/A	100% MODULATING POWER EXHAUST, ECONOMIZER W/ DRY BULB CONTROL, WELDED ISO CURB

NOTES:
ECONOMIZER SEQUENCE OF OPERATION:

PROVIDE WITH HONEYWELL JADE CONTROLLER

MAS SET: 53°F
LOW T LOCK: 38°F
DRYBULB SET: 71°F (ADJUSTS SLIGHTLY FOR PARTICULAR CLIMATE)
DCV SET: 600 PPM (MC TO CONFIRM CO2 RESPONDS TO PPM LEVEL OF 1,000)
VENTMAX: 4.0V - MUST BE TAB CONFIRMED AND MODIFIED APPROPRIATELY TO MATCH CONSTRUCTION DOCUMENT SPECIFIED AIRFLOWS
VENTMIN: 2.8V - REPRESENTS 10%OA - FINALIZED VIA TBA
EXH1 SET: 20%

CONDENSING UNIT SCHEDULE

TYPE	MARK	MFR	MODEL	COOLING DATA TOTAL	COOLING DATA SENSIBLE	COOLING DATA SEER	ELECTRICAL DATA VOLTAGE	ELECTRICAL DATA PHASE	ELECTRICAL DATA Hz	ELECTRICAL DATA FLA	ELECTRICAL DATA MCA	ELECTRICAL DATA MOCP	WEIGHT	DESCRIPTION
CU	1	Mitsubishi Electric	MUZ-JP12NA	12,200 Btu/h	12,000 Btu/h	17	120 V	1	60 Hz	0.70 A	14 A	15 A	73	LOW AMBIENT KIT, ISOLATION PADS, Drain Socket Assembly Part #MAC-860DS

FAN COIL UNIT SCHEDULE

TYPE	MARK	MFR	MODEL	AIR FLOW SUPPLY	AIR FLOW ESP	ELECTRICAL DATA MOTOR HP	VOLTAGE	PHASE	Hz	FLA	MCA	MOCP	WEIGHT LBS.	ACCESSORIES
FC	1	Mitsubishi Electric	MSZ-GL18 NA-U1	400 CFM	0.20 in-wg	1/20	120 V	1	60 Hz	2 A	1 A	0 A	22	

EXHAUST FAN SCHEDULE

TYPE	MARK	MFR	MODEL	AIR FLOW CFM	AIR FLOW ESP	FAN RPM	MOTOR HP	ELECTRICAL VOLT	ELECTRICAL PHASE	ELECTRICAL Hz	ELECTRICAL WATTS	WEIGHT LBS.	ACCESSORIES
EF	1	GREENHECK	ACE-B 100C2B	530 CFM	0.50 in-wg	1725	1/6	120 V	1	60 Hz	506 W	38	ROOF CURB, BACKDRAFT DAMPER
EF	3	GREENHECK	ACE-D 90C15DH	3146 CFM	0.30 in-wg	899	3/4	120 V	1	60 Hz	347 W	68	ROOF CURB, BACKDRAFT DAMPER
EF	4	GREENHECK	ACE-D 90C15DH	3146 CFM	0.30 in-wg	899	3/4	120 V	1	60 Hz	347 W	68	ROOF CURB, BACKDRAFT DAMPER
EF	5	GREENHECK	GC-148	70 CFM	0.30 in-wg	772	N/A	120 V	1	60 Hz	31 W	14	BACKDRAFT DAMPER
EF	6	GREENHECK	GC-242	96 CFM	0.30 in-wg	1483	N/A	120 V	1	60 Hz	25 W	16	BACKDRAFT DAMPER
EF	7	GREENHECK	GC-242	96 CFM	0.30 in-wg	1483	N/A	120 V	1	60 Hz	25 W	16	BACKDRAFT DAMPER
EF	8	GREENHECK	GC-148	50 CFM	0.30 in-wg	772	N/A	120 V	1	60 Hz	25 W	14	BACKDRAFT DAMPER
EF	9	NEDERMAN	NCF30/25	400 CFM	1.00 in-wg	2600	5.5	120 V	1	60 Hz	4000 W	13	ROOF CURB, BACKDRAFT DAMPER

NOTES:
1. RESIDENTIAL BATHROOM EXHAUST FANS TO BE ENERGY STAR RATED
2. RESIDENTIAL BATHROOM EXHAUST FANS TO BE CONTROLLED BY HUMIDISTAT

KITCHEN EQUIP. SCHEDULE

TAG	MFR. & MODEL NO.	VENT LENGTH	CFM	SP	DUCT OUTLET	VELOCITY	V-PH-HZ	ACCESSORIES
KH 1	BROAN BCDJ136BL	31'-6"	390	0.50	7"Ø	1460 FT/MIN	120-1Ø-60HZ	ADA WIRING KIT, 7"Ø ROUND DAMPER

CEILING FAN SCHEDULE

TAG	MFR & MODEL	BLADE FAN DIAMETER	ELECTRICAL V-PH-HZ	ELECTRICAL HP	ACCESSORIES	OPER WT (LBS)
CF 1	MACROAIR AIRVOLUTION D370	96"	120V-1Ø-60HZ	1/4	CONTROLLER 4 (CONTROLS UP TO 4 UNITS)	-
CF 2	MACROAIR AIRVOLUTION D370	96"	120V-1Ø-60HZ	1/4	CONTROLLER 4 (CONTROLS UP TO 4 UNITS)	-
CF 3	MACROAIR AIRVOLUTION D370	96"	120V-1Ø-60HZ	1/4	CONTROLLER 4 (CONTROLS UP TO 4 UNITS)	-

NOTES: PROVIDE CONTROLLER 4 WITH REMOTE TEMPERATRUE SENSOR

DRYER SCHEDULE

TAG	MFR & MODEL	DIMINSIONS	VENT LENGTH MAX LENGTH	VENT LENGTH ELBOWS
D 1	GE GFD45ESSMWW	39-3/8"x33"x27"	45'-0"	2

HVAC LEGEND

SYMBOLS	ABBREVIATIONS	DESCRIPTIONS
		SQ., RECT., OR ROUND DUCT SIZE AS NOTED
		DUCT WITH ACOUSTICAL LINER
		EXISTING DUCT OR EQUIPMENT TO REMAIN
		EXISTING DUCT OR EQUIPMENT TO BE REMOVED
		FLEXIBLE DUCT
	CD	*CEILING DIFFUSER, SUPPLY*
	CR / CE	*CEILING REGISTER, RETURN / EXHAUST*
		SECTION THROUGH DUCT
		DUCT DOWN
		RECTANGULAR TO ROUND TRANSITION
		MITERED DUCT ELBOW WITH TURNING VANES
	SFD	*SMOKE FIRE DAMPER WITH ACCESS DOOR*
	MVD	*MANUAL VOLUME DAMPER, LOCKING QUADRANT TYPE FOR ROUND DUCT OR OPPOSED BLADE TYPE FOR RECT DUCT.*
EF 1A		*EQUIPMENT DESIGNATION AND NUMBER*
T	*T'STAT*	*THERMOSTAT*
H		*HUMIDISTAT*
DD		*DUCT DETECTOR*
RS		*REMOTE SENSOR*
	CFM	*CUBIC FEET OF AIR PER MINUTE*
	CFMS	*CFM SUPPLY*
	CFMR	*CFM RETURN*
	CFME	*CFM EXHAUST*
	(E) or EXIST.	*EXISTING*
	(N)	*NEW*
	30"x10"	*INDICATES RECTANGULAR DUCT SIZE: WIDTH x HEIGHT*
	12"Ø	*INDICATES ROUND DUCT SIZE: DIAMETER*
	POC	*POINT OF CONNECTION*
	POD	*POINT OF DEMOLITION*

MECHANICAL GENERAL NOTES

1. THE TOTAL INSTALLATION SHALL COMPLY WITH ANY AND ALL REQUIREMENTS OF THE LEGALLY CONSTITUTED AUTHORITIES HAVING JURISDICTION INCLUDING 2016 CBC (CALIFORNIA BUILDING CODE), 2016 CMC/CPC (CALIFORNIA MECHANICAL AND PLUMBING CODE) AND THE 2016 TITLE 24 ENERGY CODE.
2. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BID AND SHALL THOROUGHLY FAMILIARIZE THEMSELVES WITH THE EXISTING CONDITIONS UNDER WHICH HE WILL BE REQUIRED TO WORK.
3. ALL INDICATED DIMENSIONS ARE APPROXIMATE AND ARE GIVEN FOR ESTIMATE PURPOSES ONLY. BEFORE PROCEEDING WITH THE WORK THIS CONTRACTOR SHALL CAREFULLY CHECK AND VERIFY ALL DIMENSIONS, SIZES, REQUIRED CLEARANCES AND SHALL ASSUME FULL RESPONSIBILITY FOR THE FITTING OF ALL EQUIPMENT AND MATERIALS HEREIN REQUIRED TO OTHER PARTS OF THE WORK OF OTHER TRADES. DUCT DIMENSIONS SHOWN ON PLANS ARE NET INSIDE CLEAR.
4. THE DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC TO THE EXTENT THAT ALL OFFSETS, BENDS, SPECIAL FITTINGS AND LOCATIONS ARE NOT EXACTLY LOCATED. ALL DUCTWORK DIMENSIONS SHOWN ON THE DRAWINGS ARE NET INSIDE DIMENSIONS. DO NOT FABRICATE DUCTWORK FROM THESE DRAWINGS. THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR SUPPLYING SHOP DRAWINGS WHICH REFLECT THE PROPOSED INSTALLATION. THE SHOP DRAWINGS MUST BE APPROVED BY THE ENGINEER PRIOR TO ANY SHEET METAL FABRICATION. THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING ACCURATE AS-BUILT DRAWINGS AT THE COMPLETION OF THE PROJECT AND SUBMITTING THEM TO THE ENGINEER AND OWNER.
5. IN THE PREPARATION OF THESE DOCUMENTS, CERTAIN ASSUMPTIONS ARE MADE REGARDING EXISTING CONDITIONS. SOME OF THESE ASSUMPTIONS MAY NOT BE VERIFIABLE WITHOUT EXPENDING ADDITIONAL SUMS OF MONEY OR DESTROYING OTHERWISE ADEQUATE OR SERVICEABLE PORTIONS OF EXISTING BUILDINGS AND/OR EQUIPMENT. THEREFORE, THE ENGINEER SHALL NOT BE HELD RESPONSIBLE FOR ANY CHANGES OR ADDITIONAL COSTS INCURRED DUE TO EXISTING CONDITIONS.
6. THE CONTRACTOR SHALL COMPLY WITH ALL CONTRACT DOCUMENTS IN LAYING OUT HIS WORK AND EQUIPMENT. HE SHALL COORDINATE THE WORK OF THIS SECTION WITH THE WORK OF OTHER TRADES AND ALL JOB CONDITIONS.
7. THE INSTALLATION OF ACCESS PANELS OR OTHER INDICATING EQUIPMENT OR SPECIALTIES REQUIRING READING, ADJUSTMENT, INSPECTION, REPAIRS, REMOVAL OR REPLACEMENT SHALL BE CONVENIENTLY LOCATED WITH REFERENCE TO THE FINISHED BUILDING.
8. WHERE MATERIAL IS SHOWN ON THE DRAWINGS BUT NOT SPECIFIED, IT SHALL BE OF THE SAME TYPE AND QUALITY AS EXISTING MATERIAL.
9. PROVIDE MANUAL VOLUME DAMPERS AT UPSTREAM PORTION OF ALL TERMINAL AIR BRANCHES. THESE SHALL BE OF THE LOCKING QUADRANT TYPE. WHERE LOCATED OVER SLOPED OR HARD CEILINGS, PROVIDE DURO-DYNE ANGLE GEAR DRIVE OR BOWDEN CABLE CONTROL SYSTEM OR PROVIDE UNITED ENERTECH POWER/BALANCE SYSTEM. REMOTE PLATE LOCATIONS TO BE LOCATED AS DETERMINED BY ARCHITECT.
10. PROVIDE MINIMUM 1" ACOUSTICAL LINING IN ALL DUCTWORK WITHIN 10 FEET OF ALL AIR MOVING EQUIPMENT. PROVIDE DURO-DYNE FLEXIBLE CONNECTION AT ALL DUCT AT EQUIPMENT LOCATIONS.
11. DUCTS IN AN UNCONDITIONED SPACE OR EXTERIOR DUCT WORK SHALL HAVE A R-8 INSULATION. ALL EXTERIOR DUCTS SHALL HAVE INTERNAL DUCT INSULATION.
12. WHERE NOT SPECIFICALLY INDICATED OTHERWISE, ALL DUCTWORK AND EQUIPMENT SHALL BE SUPPORTED PER THE SMACNA GUIDELINES FOR SEISMIC RESTRAINT AND CURRENT APPLICABLE UNIFORM MECHANICAL CODE.
13. WHEN A FIRE ALARM SYSTEM WITH FULL COVERAGE SMOKE DETECTORS ARE PROVIDED, DUCT SMOKE DETECTORS MAY BE ELIMINATED. FIRE ALARM CONTRACTOR SHALL WIRE SMOKE/FIRE DAMPER ACTIVATORS TO AREA SMOKE DETECTORS.
14. TESTING, ADJUSTING, AND BALANCING (TAB) OF THE AIR CONDITIONING SYSTEMS AND RELATED ANCILLARY EQUIPMENT WILL BE PERFORMED BY A CERTIFIED, INDEPENDENT THIRD PARTY, AABC AGENCY PROCURED BY THE MECHANICAL CONTRACTOR. A COMPLETE AIR BALANCE REPORT TO BE SUBMITTED TO THE ADMINISTRATIVE AUTHORITY AND TO THE MECHANICAL ENGINEER AND APPROVED PRIOR TO FINAL PAYMENT.
15. AIR HANDLING DUCT SYSTEMS SHALL BE CONSTRUCTED, INSTALLED AND INSULATED AS PROVIDED IN CHAPTER 6 OF 2016 CMC.
16. MATERIALS EXPOSED WITHIN DUCTS OR PLENUMS SHALL BE NONCOMBUSTIBLE OR SHALL HAVE FLAME SPREAD INDEX NOT GREATER THAN 25 AND A SMOKE DEVELOPED INDEX NOT GREATER THAN 50 (2016 CMC SECTION 602.2).
17. UNLESS OTHERWISE STATED, MAXIMUM LENGTH FOR FLEXIBLE DUCTWORK SHALL NOT EXCEED FIVE FEET (5'-0"). ALUMINUM FLEX DUCTWORK WILL NOT BE ALLOWED ON ANY PORTION OF THE DUCTWORK SYSTEM.
18. ANY SUBSTITUTION MADE BY THE CONTRACTOR THAT IS DIFFERENT FROM WHAT IS SPECIFIED ON THE DRAWINGS SHALL BE CLEARLY INDICATED ON THE SUBMITTAL AS TO ALL THAT IS BEING SUBSTITUTED.
19. THERMOSTATS SHALL COMPLY WITH THE 2016 ENERGY COMMISSION.
20. HVAC, REFRIDGERATION AND FIRE SUPPRESSION SYSTEMS WILL NOT CONTAIN CFC'S OR HALONS, PER CGC 5.508.1
21. FOR REGULARLY OCCUPIED AREA OUTSIDE AND RETURN AIR SHALL BE PROVIDED WITH AIR FILTRATION MEDIA THAT PROVIDES AT LEAST A MINIMUM EFFICIENCY REPORTING VALUE (MERV) OF 8. FILTERS MUST BE INSTALLED PRIOR TO OCCUPANCY, PER CGC 5.504.3.

ANCHORAGE AND BRACING NOTES

1. PIPES, DUCTS AND CONDUITS SHALL BE SUPPORTED AND BRACED PER THE SMACNA "GUIDELINES FOR SEISMIC RESTRAINTS OF MECHANICAL SYSTEMS AND PLUMBING SYSTEMS", THE "SUPERSTRUT SEISMIC RESTRAINT SYSTEM" FOR PIPES AND CONDUITS ONLY.

MECHANICAL SHEET INDEX

Sheet #	Sheet Name
M-0.1	MECHANICAL LEGEND, NOTES & SCHEDULES
M-0.2	TITLE 24 DOCUMENTS
M-0.3	TITLE 24 DOCUMENTS
M-0.4	TITLE 24 DOCUMENTS
M-1.1	FIRST FLOOR MECHANICAL PLAN
M-2.1	ROOF MECHANICAL PLAN
M-3.1	MECHANICAL DETAILS
M-3.2	MECHANICAL DETAILS

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DESIGN WEST ENGINEERING
MECHANICAL • ELECTRICAL • ENERGY CONSULTANTS

STAMPS:
REGISTERED PROFESSIONAL ENGINEER STEVEN M. JOHNSON No. 23289 EXP. 06-30-2019 MECHANICAL STATE OF CALIFORNIA

PROJECT:
NILAND PUBLIC SAFETY FACILITY
8071 LUXOR AVE.
NILAND CA 92257

CLIENT:
IMPERIAL COUNTY CALIFORNIA 1907

MARK	DATE	DESCRIPTION
	04/09/19	PLAN CHECK SUBMITTAL #1
1	05/14/19	PLAN CHECK SUBMITTAL #2
2	06/11/19	PLAN CHECK SUBMITTAL #3

PROJECT NO.: TGH.012
DRAWN BY: L.C.
CHK'D BY: S.J.
ORIGINAL DATE:

SHEET TITLE:
MECHANICAL LEGEND, NOTES & SCHEDULES

SHEET No.:
M-0.1

19-022

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C:\Users\lilev\Documents\19-022 Niland Public Safety Building_MEP_Central_LeilaniMK437.rvt

Project Name:	Nonresidential Building	NRCC-PRF-01-E	Page 1 of 24
Project Address:	8071 Luxor Ave Niland 92257	Calculation Date/Time:	10:15, Tue, May 14, 2019
Compliance Scope:	NewComplete	Input File Name:	19-022 Niland Public Safety Building.cibd16x

A. PROJECT GENERAL INFORMATION

1.	Project Location (city)	Niland	8.	Standards Version	Compliance2016
2.	CA Zip Code	92257	9.	Compliance Software (version)	EnergyPro 7.2
3.	Climate Zone	15	10.	Weather File	IMPERIAL_747185_CZ2010.epw
4.	Total Conditioned Floor Area in Scope	7,356 ft²	11.	Building Orientation (deg)	(E) 90 deg
5.	Total Unconditioned Floor Area	0 ft²	12.	Permitted Scope of Work	NewComplete
6.	Total # of Stories (Habitable Above Grade)	1	13	Building Type(s)	Nonresidential
7.	Total # of dwelling units	0	14	Gas Type	NaturalGas

B. COMPLIANCE RESULTS FOR PERFORMANCE COMPONENTS (Annual TDV Energy Use, kBtu/ft ^{2}-yr) § 140.1

BUILDING COMPLIES

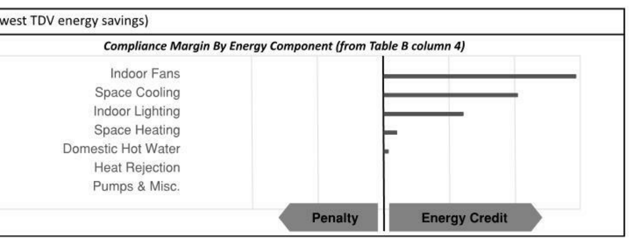
1. Energy Component	2. Standard Design (TDV)	3. Proposed Design (TDV)	4. Compliance Margin (TDV)	5. Percent Better than Standard
Space Heating	28.35	23.97	4.38	15.4%
Space Cooling	204.85	158.70	46.15	22.5%
Indoor Fans	116.12	49.75	66.37	57.2%
Heat Rejection	--	--	--	--
Pumps & Misc.	--	--	--	--
Domestic Hot Water	5.22	3.76	1.46	28.0%
Indoor Lighting	45.83	18.49	27.34	59.7%
COMPLIANCE TOTAL	**400.37**	**254.67**	**145.70**	**36.4%**
Receptacle	100.89	100.89	0.0	0.0%
Process	2.51	2.51	0.0	0.0%
Other Ltg	--	--	--	--
Process Motors	--	--	--	--
TOTAL	**503.77**	**358.07**	**145.7**	**28.9%**

Project Name:	Nonresidential Building	NRCC-PRF-01-E	Page 2 of 24
Project Address:	8071 Luxor Ave Niland 92257	Calculation Date/Time:	10:15, Tue, May 14, 2019
Compliance Scope:	NewComplete	Input File Name:	19-022 Niland Public Safety Building.cibd16x

C. PRIORITY PLAN CHECK/ INSPECTION ITEMS (in order of highest to lowest TDV energy savings)

1st	Indoor Fans: Check envelope and mechanical
2nd	Space Cooling: Check envelope and mechanical
3rd	Indoor Lighting: Check lighting
4th	Space Heating: Check envelope and mechanical
5th	Domestic Hot Water: Check mechanical
6th	Heat Rejection: Check envelope and mechanical
7th	Pumps & Misc.: Check mechanical

Compliance Margin By Energy Component (from Table B column 4)



D. EXCEPTIONAL CONDITIONS

The aged solar reflectance and aged thermal emittance must be listed in the Cool Roof Rating Council database of certified products. For projects where initial reflectance is used, the initial reflectance must be listed, and the aged reflectance is calculated by the software program and used in the compliance model.

This project uses the Simplified Geometry Performance Modeling Approach which is not capable of modeling daylighting controls and assumes the prescriptive Secondary Daylit Control requirements are met. PRESCRIPTIVE COMPLIANCE documentation (form NRCC-LTI-02-E) for the requirements of section 140.6(d) Automatic Daylighting Controls in Secondary Daylit Zones is required.

This project includes Domestic Hot Water in the analysis. Please verify that Domestic Hot Water is included in the design for the permitted scope of work.

E. HERS VERIFICATION

This Section Does Not Apply

F. ADDITIONAL REMARKS

None Provided

Project Name:	Nonresidential Building	NRCC-PRF-01-E	Page 3 of 24
Project Address:	8071 Luxor Ave Niland 92257	Calculation Date/Time:	10:15, Tue, May 14, 2019
Compliance Scope:	NewComplete	Input File Name:	19-022 Niland Public Safety Building.cibd16x

G. COMPLIANCE PATH & CERTIFICATE OF COMPLIANCE SUMMARY

Identify which building components use the performance or prescriptive path for compliance. "NA"= not in project

For components that utilize the performance path, indicate the sheet number that includes mandatory notes on plans.

Building Component	Compliance Path	Compliance Forms *(required for submittal)*	Location of Mandatory Notes on Plans
Envelope	☒ Performance	NRCC-PRF-ENV-DETAILS (section of the NRCC-PRF-01-E)	
	☐ Prescriptive	NRCC-ENV-01 / 02 / 03 / 04 / 05 / 06-E	
	☐ NA		
Mechanical	☒ Performance	NRCC-PRF-MCH-DETAILS (section of the NRCC-PRF-01-E)	
	☐ Prescriptive	NRCC-MCH-01 / 02 / 03 / 04 / 05 / 06 / 07-E	
	☐ NA		
Domestic Hot Water	☒ Performance	NRCC-PRF-PLB-DETAILS (section of the NRCC-PRF-01-E)	
	☐ Prescriptive	NRCC-PLB-01-E	
	☐ NA		
Lighting (Indoor Conditioned)	☒ Performance	NRCC-PRF-LTI-DETAILS (section of the NRCC-PRF-01-E)	
	☐ Prescriptive	NRCC-LTI-01 / 02 / 03 / 04 / 05-E	
	☐ NA		
Covered Process: Commercial Kitchens	☐ Performance	S2 (section of the NRCC-PRF-01-E)	
	☐ Prescriptive	NRCC-PRC-01/ 03-E	
	☒ NA		
Covered Process: Computer Rooms	☒ Performance	S3 (section of the NRCC-PRF-01-E)	
	☐ Prescriptive	NRCC-PRC-01/ 04-E	
	☐ NA		
Covered Process: Laboratory Exhaust	☐ Performance	S4 (section of the NRCC-PRF-01-E)	
	☐ Prescriptive	NRCC-PRC-01/ 09-E	
	☒ NA		

Project Name:	Nonresidential Building	NRCC-PRF-01-E	Page 4 of 24
Project Address:	8071 Luxor Ave Niland 92257	Calculation Date/Time:	10:15, Tue, May 14, 2019
Compliance Scope:	NewComplete	Input File Name:	19-022 Niland Public Safety Building.cibd16x

G. COMPLIANCE PATH & CERTIFICATE OF COMPLIANCE SUMMARY

The following building components are only eligible for prescriptive compliance. Indicate which are relevant to the project.				*The following building components may have mandatory requirements per Part 6. Indicate which are relevant to the project.*			
Yes	NA	Prescriptive Requirement	Compliance Forms	Yes	NA	Mandatory Requirement	Compliance Forms
☐	☒	Lighting (Indoor Unconditioned) §140.6	NRCC-LTI-01 / 02 / 03 / 04 / 05-E	 ☐ ☐	 ☒ ☒	Commissioning: §120.8 Simple Systems Complex Systems	 NRCC-CXR-01 / 02 / 03 / 05-E NRCC-CXR-01 / 02 / 04 / 05-E
☒	☐	Lighting (Outdoor) §140.7	NRCC-LTO-01 / 02 / 03-E	☐	☒	Electrical: §130.5	NRCC-ELC-01-E
☐	☒	Lighting (Sign) §140.8	NRCC-LTS-01-E	☐	☒	Solar Ready: §110.10	NRCC-SRA-01 / 02-E
☐	☒	Solar Thermal Water Heating: §140.5	NRCC-STH-01-E	☒ ☐ ☐ ☒ ☐	☐ ☒ ☒ ☐ ☒	Covered Process: §120.6 Parking Garage Commercial Refrigeration Warehouse Refrigeration Compressed Air Process Boilers	NRCC-PRC-01-E NRCC-PRC-02-E NRCC-PRC-05-E NRCC-PRC-06/07/08-E NRCC-PRC-10-E NRCC-PRC-11-E

Project Name:	Nonresidential Building	NRCC-PRF-01-E	Page 5 of 24
Project Address:	8071 Luxor Ave Niland 92257	Calculation Date/Time:	10:15, Tue, May 14, 2019
Compliance Scope:	NewComplete	Input File Name:	19-022 Niland Public Safety Building.cibd16x

H. CERTIFICATE OF INSTALLATION, CERTIFICATE OF ACCEPTANCE & CERTIFICATE OF VERIFICATION SUMMARY (NRCI/NRCA/NRCV) –
Documentation Author to indicate which Certificates must be submitted for the features to be recognized for compliance
(Retain copies and verify forms are completed and signed to post in field for Field Inspector to verify).
See Tables G. and H. in MCH and LTI Details Sections for Acceptance Tests and forms by equipment.

Building Component	Compliance Forms *(required for submittal)*	Confirmed Pass	Confirmed Fail
Envelope	☒ NRCI-ENV-01-E - For all buildings	☐	☐
	☒ NRCA-ENV-02-F- NFRC label verification for fenestration	☐	☐
Mechanical	☒ NRCI-MCH-01-E - For all buildings with Mechanical Systems	☐	☐
	☒ NRCA-MCH-02-A- Outdoor Air	☐	☐
	☒ NRCA-MCH-03-A – Constant Volume Single Zone HVAC	☐	☐
	☐ NRCA-MCH-04-H- Air Distribution Duct Leakage	☐	☐
	☒ NRCA-MCH-05-A- Air Economizer Controls	☐	☐
	☒ NRCA-MCH-06-A- Demand Control Ventilation	☐	☐
	☐ NRCA-MCH-07-A – Supply Fan Variable Flow Controls	☐	☐
	☐ NRCA-MCH-08-A- Valve Leakage Test	☐	☐
	☐ NRCA-MCH-09-A – Supply Water Temp Reset Controls	☐	☐
	☐ NRCA-MCH-10-A- Hydronic System Variable Flow Controls	☐	☐
	☐ NRCA-MCH-11-A – Auto Demand Shed Controls	☐	☐
	☒ NRCA-MCH-12-A- Packaged Direct Expansion Units	☐	☐
	☐ NRCA-MCH-13-A- Air Handling Units and Zone Terminal Units	☐	☐
	☐ NRCA-MCH-14-A- Distributed Energy Storage	☐	☐
	☐ NRCA-MCH-15-A – Thermal Energy Storage	☐	☐
	☐ NRCA-MCH-16-A- Supply Air Temp Reset Controls	☐	☐
	☐ NRCA-MCH-17-A – Condensate Water Temp Reset Controls	☐	☐
	☐ NRCA-MCH-18-A- Energy Management Controls Systems	☐	☐
	☐ NRCV-MCH-04-H- Duct Leakage Test	☐	☐

Project Name:	Nonresidential Building	NRCC-PRF-01-E	Page 6 of 24
Project Address:	8071 Luxor Ave Niland 92257	Calculation Date/Time:	10:15, Tue, May 14, 2019
Compliance Scope:	NewComplete	Input File Name:	19-022 Niland Public Safety Building.cibd16x

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Documentation Author to indicate which Certificates must be submitted for the features to be recognized for compliance
(Retain copies and verify forms are completed and signed to post in field for Field Inspector to verify).
See Tables G. and H. in MCH and LTI Details Sections for Acceptance Tests and forms by equipment.

Building Component	Compliance Forms *(required for submittal)*	Confirmed Pass	Confirmed Fail
Plumbing	☒ NRCI-PLB-01-E - For all buildings with Plumbing Systems	☐	☐
	☐ NRCI-PLB-02-E - required on central systems in high-rise residential, hotel/motel application.	☐	☐
	☐ NRCI-PLB-03-E - Single dwelling unit systems in high-rise residential, hotel/motel application.	☐	☐
	☐ NRCI-PLB-21-E - HERS verified central systems in high-rise residential, hotel/motel application.	☐	☐
	☐ NRCI-PLB-22-E - HERS verified single dwelling unit systems in high-rise residential, hotel/motel application.	☐	☐
	☐ NRCV-PLB-21-H- HERS verified central systems in high-rise residential, hotel/motel application.	☐	☐
	☐ NRCV-PLB-22-H - HERS verified single dwelling unit systems in high-rise residential, hotel/motel application.	☐	☐
	☐ NRCI-STH-01-E - Any solar water heating	☐	☐
Indoor Lighting	☒ NRCI-LTI-01-E - For all buildings	☐	☐
	☐ NRCI-LTI-02-E - Lighting control system, or for an Energy Management Control System (EMCS)	☐	☐
	☐ NRCI-LTI-03-E - Line-voltage track lighting integral current limiter, or for a supplementary overcurrent protection panel used to energize only line-voltage track lighting	☐	☐
	☐ NRCI-LTI-04-E - Two interlocked systems serving an auditorium, a convention center, a conference room, or a theater	☐	☐
	☐ NRCI-LTI-05-E - Lighting Control Credit Power Adjustment Factor (PAF)	☐	☐
	☐ NRCI-LTI-06-E - Additional wattage installed in a video conferencing studio	☐	☐
	☒ NRCA-LTI-02-A - Occupancy sensors and automatic time switch controls.	☐	☐
	☒ NRCA-LTI-03-A - Automatic daylighting controls	☐	☐
	☐ NRCA-LTI-04-A - Demand responsive lighting controls	☐	☐
Outdoor Lighting	☒ NRCI-LTO-01-E – Outdoor Lighting	☐	☐
	☒ NRCI-LTO-02-E- EMCS Lighting Control System	☐	☐
	☒ NRCA-LTO-02-A - Outdoor Lighting Control	☐	☐
Sign Lighting	☐ NRCI-LTS-01-E – Sign Lighting	☐	☐
Electrical	☐ NRCI-ELC-01-E - Electrical Power Distribution	☐	☐
Photovoltaic	☐ NRCI-SPV-01-E Photovoltaic Systems	☐	☐

Project Name:	Nonresidential Building	NRCC-PRF-01-E	Page 7 of 24
Project Address:	8071 Luxor Ave Niland 92257	Calculation Date/Time:	10:15, Tue, May 14, 2019
Compliance Scope:	NewComplete	Input File Name:	19-022 Niland Public Safety Building.cibd16x

H. CERTIFICATE OF INSTALLATION, CERTIFICATE OF ACCEPTANCE & CERTIFICATE OF VERIFICATION SUMMARY (NRCI/NRCA/NRCV) –
Documentation Author to indicate which Certificates must be submitted for the features to be recognized for compliance
(Retain copies and verify forms are completed and signed to post in field for Field Inspector to verify).
See Tables G. and H. in MCH and LTI Details Sections for Acceptance Tests and forms by equipment.

Building Component	Compliance Forms *(required for submittal)*	Confirmed Pass	Confirmed Fail
Covered Process	☐ NRCI-PRC-01-E Covered Processes	☐	☐
	☒ NRCA-PRC-01-F- Compressed Air Systems	☐	☐
	☐ NRCA-PRC-02-F- Kitchen Exhaust	☐	☐
	☒ NRCA-PRC-03-F- Garage Exhaust	☐	☐
	☐ NRCA-PRC-04-F- Refrigerated Warehouse- Evaporator Fan Motor Controls	☐	☐
	☐ NRCA-PRC-05-F- Refrigerated Warehouse- Evaporative Condenser Controls	☐	☐
	☐ NRCA-PRC-06-F- Refrigerated Warehouse- Air Cooled Condenser Controls	☐	☐
	☐ NRCA-PRC-07F- Refrigerated Warehouse- Variable Speed Compressor	☐	☐
	☐ NRCA-PRC-08-F- Electrical Resistance Underslab Heating System	☐	☐

I. ENVELOPE GENERAL INFORMATION (See NRCC-PRF-ENV-DETAILS for more information)

						Confirmed Pass	Confirmed Fail
1.	Total Conditioned Floor Area	7,356 ft²	5.	Number of Floors Above Grade	1		
2.	Total Unconditioned Floor Area	0 ft²	6.	Number of Floors Below Grade	0		
3.	Addition Conditioned Floor Area	0 ft²					
4.	Addition Unconditioned Floor Area	0 ft²					

7. Opaque Surfaces & Orientation	8. Total Gross Surface Area	9. Total Fenestration Area	10. Window to Wall Ratio	Pass	Fail
North Wall	756 ft²	54 ft²	07.1%	☐	☐
East Wall	933 ft²	54 ft²	05.8%	☐	☐
South Wall	962 ft²	0 ft²	00.0%	☐	☐
West Wall	843 ft²	26 ft²	03.1%	☐	☐
Total	**3,494 ft²**	**134 ft²**	**03.8%**	☐	☐
Roof	7,356 ft²	0 ft²	00.0%	☐	☐

Project Name:	Nonresidential Building	NRCC-PRF-01-E	Page 8 of 24
Project Address:	8071 Luxor Ave Niland 92257	Calculation Date/Time:	10:15, Tue, May 14, 2019
Compliance Scope:	NewComplete	Input File Name:	19-022 Niland Public Safety Building.cibd16x

J. FENESTRATION ASSEMBLY SUMMARY § 110.6

1. Fenestration Assembly Name / Tag or I.D.	2. Fenestration Type / Product Type / Frame Type	3. Certification Method[1]	4. Assembly Method	5. Area ft²	6. Overall U-factor	7. Overall SHGC	8. Overall VT	9. Status[2]	Confirmed Pass	Confirmed Fail
T24 Compliant	VerticalFenestration FixedWindow N/A	NFRC Rated	Manufactured	134	0.36	0.25	0.50	N	☐	☐

[1] *Newly installed fenestration shall have a certified NFRC Label Certificate or use the CEC default tables found in Table 110.6-A and Table 110.6-B. Center of Glass (COG) values are for the glass-only, determined by the manufacturer, and are shown for ease of verification. Site-built fenestration values are calculated per Nonresidential Appendix NA6 and are used in the analysis.*
[2] *Status: N - New, A – Altered, E – Existing*

Taking compliance credit for fenestration shading devices? (if "Yes", see NRCC-PRF-ENV-DETAILS for more information)	No

K. OPAQUE SURFACE ASSEMBLY SUMMARY § 120.7/ § 140.3

1. Surface Name	2. Surface Type	3. Area (ft²)	4. Framing Type	5. Cavity R-Value	6. Continuous R-Value	7. U-Factor / F-Factor / C-Factor	8. Status[1]	Confirmed Pass	Confirmed Fail
Space SOG8	UndergroundFloor	7356	NA	0	NA	F-Factor: 0.730	N	☐	☐
R-30 Roof No Attic10	Roof	7356	Wood	30	NA	U-Factor: 0.034	N	☐	☐
Niland Exterior Wall12	InteriorWall	10	Wood	21	NA	U-Factor: 0.066	N	☐	☐
Niland Exterior Wall121	ExteriorWall	3494	Wood	21	NA	U-Factor: 0.069	N	☐	☐
R-0 Wall32	InteriorWall	210	NA	0	NA	U-Factor: 0.337	N	☐	☐
R-13 Wall139	InteriorWall	180	Wood	13	NA	U-Factor: 0.095	N	☐	☐

[1] *Status: N - New, A – Altered, E – Existing*

L. ROOFING PRODUCT SUMMARY § 140.3

1. Product Type	2. Product Density (lb/ft²)	3. Aged Solar Reflectance	4. Thermal Emittance	5. SRI	6. Cool Roof Credit	7. Roofing Product Description	Confirmed Pass	Confirmed Fail
R-30 Roof No Attic10	5.813	0.63	0.85	Not Provided	Yes	CRRC Prod. ID: R-30 Roof No Attic	☐	☐

Project Name:	Nonresidential Building	NRCC-PRF-01-E	Page 9 of 24
Project Address:	8071 Luxor Ave Niland 92257	Calculation Date/Time:	10:15, Tue, May 14, 2019
Compliance Scope:	NewComplete	Input File Name:	19-022 Niland Public Safety Building.cibd16x

M. HVAC SYSTEM SUMMARY (see NRCC-PRF-MCH-DETAILS for more information) § 110.1 / § 110.2

Dry System Equipment [1] (Fan & Economizer info included below in Table N)

1. Equip Name	2. Equip Type	3. System Type (Simple [2] or Complex [3])	4. Qty	5. Total Heating Output (kBtu/h)	6. Supp Heat Source (Y/N)	7. Supp Heat Output (kBtuh)	8. Total Cooling Output (kBtu/h)	9. Efficiency Cooling	9. Efficiency Heating	10. Acceptance Testing Required? (Y/N) [4]	11. Status[5]	Confirmed Pass	Confirmed Fail
Cooling Center	SZAC (Packaged3Phase)	Simple	2	60	No	0	60	SEER-13.00 / EER-11.50	AFUE-81.0	Yes	N	☐	☐
Office Space	SZAC (Packaged3Phase)	Simple	1	60	No	0	48	SEER-13.00 / EER-11.00	AFUE-81.0	Yes	N	☐	☐
Apparatus Room	SZAC (Packaged3Phase)	Simple	2	80	No	0	62	SEER-13.00 / EER-11.00	AFUE-81.0	Yes	N	☐	☐
Private Living Space	SZAC (Packaged3Phase)	Simple	1	60	No	0	48	SEER-13.00 / EER-11.00	AFUE-81.0	Yes	N	☐	☐
IT RM	SZHP (Split3Phase)	Simple	1	13	Yes	3	12	SEER-17.00 / EER-9.90	HSPF-9.00	Yes	N	☐	☐

[1] *Dry System Equipment includes furnaces, air handling units, heat pumps, etc.*
[2] *Simple Systems must complete NRCC-CXR-03-E commissioning design review form*
[3] *Complex Systems must complete NRCC-CXR-04-E commissioning design review form*
[4] *A summary of which acceptance tests are applicable is provided in NRCC-PRF-MCH-DETAILS*
[5] *Status: N - New, A – Altered, E – Existing*

Wet System Equipment [1] 12. Equip Name	13. Equip Type	14. Qty	15. Vol (gal)	16. Rated Capacity (kBtu/h)	17. Efficiency	18. Standby Loss	19. Tank Ext. R Value	*Pumps* 20. Qty	21. GPM	22. HP	23. VSD (Y/N)	24. Status[2]	Confirmed Pass	Confirmed Fail
A O Smith Water Products2	Storage	1	100.00	150	Thrml. Eff.: 0.76	SBLF: 0.009	NA		NA		No	N	☐	☐

[1] *Wet System Equipment includes boilers, chillers, cooling towers, water heaters, etc.*
[2] *Status: N - New, A – Altered, E – Existing*

Discrepancy between modeled and designed equipment sizing? (if "Yes", see Table F. "Additional Remarks" for an explanation)	No

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STAMPS:
REGISTERED PROFESSIONAL ENGINEER
STEVEN M. JOHNSON
No 33209
EXP 9-30-2019
MECHANICAL
STATE OF CALIFORNIA

PROJECT:

NILAND PUBLIC SAFETY FACILITY

8071 LUXOR AVE.
NILAND CA 92257

CLIENT:

MARK	DATE	DESCRIPTION
	04/09/19	PLAN CHECK SUBMITTAL #1
1	05/14/19	PLAN CHECK SUBMITTAL #2
2	06/11/19	PLAN CHECK SUBMITTAL #3

PROJECT NO.: TGH.012
DRAWN BY: L.C.
CHK'D BY: S.J.
ORIGINAL DATE:

SHEET TITLE:

TITLE 24 DOCUMENTS

SHEET No.:

M-0.2

19-022

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Project Name:	Nonresidential Building	NRCC-PRF-01-E	Page 10 of 24
Project Address:	8071 Luxor Ave Niland 92257	Calculation Date/Time:	10:15, Tue, May 14, 2019
Compliance Scope:	NewComplete	Input File Name:	19-022 Niland Public Safety Building.cibd16x

N. ECONOMIZER & FAN SYSTEMS SUMMARY[1] — § 140.4 — Confirmed

1. Equip Name	2. Outside Air CFM	3. Supply Fan CFM	HP	BHP	TSP (inch WC)	Control	4. Return Fan CFM	HP	BHP	TSP (inch WC)	Control	5. Economizer Type (if present)	Pass	Fail
Cooling Center	325	2000	0.539	0.539	1.03	ConstantVolume	NA	NA	NA	NA	NA	DifferentialDryBulb	☐	☐
Office Space	362	1600	0.365	0.365	0.72	ConstantVolume	NA	NA	NA	NA	NA	DifferentialDryBulb	☐	☐
Apparatus Room	1600	1600	0.602	0.602	1.19	ConstantVolume	NA	NA	NA	NA	NA	NoEconomizer	☐	☐
Private Living Space	289	1600	0.365	0.365	0.72	ConstantVolume	NA	NA	NA	NA	NA	DifferentialDryBulb	☐	☐
IT RM	16	399	0.023	0.023	0.19	ConstantVolume	NA	NA	NA	NA	NA	NoEconomizer	☐	☐

[1] *Mechanical ventilation calculations and exhaust fans are included in the NRCC-PRF-MCH-DETAILS section*

O. EQUIPMENT CONTROLS — § 120.2 — Confirmed

1. Equip Name	2. Equip Type	3. Controls	Pass	Fail
Cooling Center	SZAC	2 Zones With CO2Sensor Vent. Control Differential Drybulb Economizer No Supply Air Temp. Control No Optimum Start No Evaporative Cooler No Heat Recovery	☐	☐
Office Space	SZAC	1 Zones With CO2Sensor Vent. Control Differential Drybulb Economizer No Supply Air Temp. Control No Optimum Start No Evaporative Cooler No Heat Recovery	☐	☐
Apparatus Room	SZAC	No DCV Controls No Economizer No Supply Air Temp. Control No Optimum Start No Evaporative Cooler No Heat Recovery	☐	☐

Project Name:	Nonresidential Building	NRCC-PRF-01-E	Page 11 of 24
Project Address:	8071 Luxor Ave Niland 92257	Calculation Date/Time:	10:15, Tue, May 14, 2019
Compliance Scope:	NewComplete	Input File Name:	19-022 Niland Public Safety Building.cibd16x

O. EQUIPMENT CONTROLS — § 120.2 — Confirmed

1. Equip Name	2. Equip Type	3. Controls	Pass	Fail
Private Living Space	SZAC	No DCV Controls Differential Drybulb Economizer No Supply Air Temp. Control No Optimum Start No Evaporative Cooler No Heat Recovery	☐	☐
IT RM	SZHP	No DCV Controls No Economizer No Supply Air Temp. Control No Optimum Start No Evaporative Cooler No Heat Recovery	☐	☐
DHW1 - SHW	Service Hot Water, Primary Only	Fixed Temperature Control, No DDC No Heat Recovery	☐	☐

P. SYSTEM DISTRIBUTION SUMMARY — § 120.4/ § 140.4(l) — Confirmed

		Dry System Distribution						
1. Equip Name	2. Equip Type	3. Duct Leakage and Sealing Required per 140.4(l)	4. Duct Leakage will be verified per NA1 and NA2	5. Ducts: Insulation R-Value	5. Ducts: Location	6. Status[1]	Pass	Fail
Cooling Center	SZAC	No	No	8.0	Unconditioned	N	☐	☐
Office Space	SZAC	No	No	8.0	Unconditioned	N	☐	☐
Apparatus Room	SZAC	No	No	8.0	Unconditioned	N	☐	☐
Private Living Space	SZAC	No	No	8.0	Unconditioned	N	☐	☐
IT RM	SZHP	No	No	8.0	Unconditioned	N	☐	☐

[1] *Status: N - New, E – Existing*

Does the Project Include Zonal Systems? (If "Yes", see NRCC-PRF-MCH-DETAILS for system information)	No
Does the Project Include a Solar Hot Water System? (If "Yes", see NRCC-PRF-MCH-DETAILS for system information)	No
Multifamily or Hotel/ Motel Occupancy? (If "Yes", see NRCC-PRF-MCH-DETAILS for DHW system information)	No

Project Name:	Nonresidential Building	NRCC-PRF-01-E	Page 12 of 24
Project Address:	8071 Luxor Ave Niland 92257	Calculation Date/Time:	10:15, Tue, May 14, 2019
Compliance Scope:	NewComplete	Input File Name:	19-022 Niland Public Safety Building.cibd16x

Q. INDOOR CONDITIONED LIGHTING GENERAL INFO (see NRCC-PRF-LTI-DETAILS for more info)[1] — § 140.6 — Confirmed

1. Occupancy Type [1]	2. Conditioned Floor Area [2] (ft^2)	3. Installed Lighting Power (Watts)	4. Lighting Control Credits (Watts)	5. Additional (Custom) Allowance: Area Category Footnotes (Watts)	5. Additional (Custom) Allowance: Tailored Method (Watts)	Pass	Fail
Lobby, Main Entry	323	113	0	0	0	☐	☐
Corridors, Restrooms, Stairs, and Support Areas	1,650	770	0	0	0	☐	☐
Civic Meeting Place Area	900	282	0	0	0	☐	☐
Office (Greater than 250 square feet in floor area)	627	314	0	0	0	☐	☐
Convention, Conference, Multipurpose and Meeting Center Area	270	135	0	0	0	☐	☐
Auto Repair Area	2,158	408	0	0	0	☐	☐
All Other	986	282	0	0	0	☐	☐
Office (250 square feet in floor area or less)	93	48	0	0	0	☐	☐
Locker/Dressing Room	142	45	0	0	0	☐	☐
Kitchen, Commercial Food Preparation	102	60	0	0	0	☐	☐
Computer Room	105	10	0	0	0	☐	☐
Building Totals:	**7,356**	**2,467**	**0**	**0**	**0**		

[1] *See Table 140.6-C*
[2] *See NRCC-LTI-01-E for unconditioned spaces*
[3] *Lighting information for existing spaces modeled is not included in the table*

Project Name:	Nonresidential Building	NRCC-PRF-01-E	Page 13 of 24
Project Address:	8071 Luxor Ave Niland 92257	Calculation Date/Time:	10:15, Tue, May 14, 2019
Compliance Scope:	NewComplete	Input File Name:	19-022 Niland Public Safety Building.cibd16x

R. INDOOR CONDITIONED LIGHTING SCHEDULE (Adapted from NRCC-LTI-01-E)[1] — § 130.0

Luminaire Schedule (includes all permanent installed lighting in conditioned space, and portable lighting over 0.3 w/ft^2 in offices) — Installed Watts (Conditioned) — Confirmed

Name or Item Tag	Complete Luminaire Description (i.e., 3-lamp fluorescent troffer, F32T8, one dimmable electronic ballast)	Watts per luminaire	How Wattage is Determined: CEC Default from NA8	How Wattage is Determined: According to §130.0(c)	Total Number Luminaires	Installed Watts	Pass	Fail
F1	F1 - 2'X4' Recessed LED W/Dim,	34	No	Yes	20	680	☐	☐
F2	F2 - 2'X2' Recessed LED W/Dim,	27	No	Yes	1	27	☐	☐
F3	F3 - 52" LED Pendant W/Dim,	18	No	Yes	14	252	☐	☐
F4	F4 - 11" Surface Mount LED Ceiling Drum	24	No	Yes	10	240	☐	☐
F5	F5 - 4' Recessed Downlight W/Dim.	15	No	Yes	60	900	☐	☐
F6	F6 - Suspended Highbay W/Dim.	8	No	Yes	6	48	☐	☐
F7	F7 - 2' Wall Mounted LED W/Dim.	60	No	Yes	5	300	☐	☐
F9	F9 - 4' Surface Mount Wrap W/Dim.	10	No	Yes	2	20	☐	☐

[1] *If lighting power densities were used in the compliance model Building Departments will need to check prescriptive forms for Luminaire Schedule details.*

S1. COVERED PROCESS SUMMARY – ENCLOSED PARKING GARAGES — § 140.9

This Section Does Not Apply

S2. COVERED PROCESS SUMMARY – COMMERCIAL KITCHENS — § 140.9

Space Name	Exhaust Hood Style	Exhaust Hood Duty	Exhaust Length (ft)	Exhaust Flow Rate (cfm)	Confirmed: Pass	Confirmed: Fail
S-16-Kitchen		Light			☐	☐
		Light			☐	☐
		Light			☐	☐
		Light			☐	☐
		Light			☐	☐

Project Name:	Nonresidential Building	NRCC-PRF-01-E	Page 14 of 24
Project Address:	8071 Luxor Ave Niland 92257	Calculation Date/Time:	10:15, Tue, May 14, 2019
Compliance Scope:	NewComplete	Input File Name:	19-022 Niland Public Safety Building.cibd16x

S3. COVERED PROCESS SUMMARY – COMPUTER ROOMS — § 140.9

This Section Does Not Apply

S4. COVERED PROCESS SUMMARY – LABORATORY EXHAUSTS — § 140.9

This Section Does Not Apply

T. UNMET LOAD HOURS

Thermal Zone Name	Cooling Unmet Load Hour Limit for Thermal Zone	Proposed Cooling Unmet Load Hours	Heating Unmet Load Hour Limit for Thermal Zone	Proposed Heating Unmet Load Hours
7-Confrence Room	150	1365	150	0
9-Bedroom	150	2313.75	150	413.25
11-Janitor/Utility Closet	150	2159.75	150	51

U. ENERGY USE SUMMARY

Energy Component	Standard Design Site (MWh)	Proposed Design Site (MWh)	Margin (MWh)	Standard Design Site (MBtu)	Proposed Design Site (MBtu)	Margin (MBtu)
Space Heating	--	--	--	122.2	113.6	8.6
Space Cooling	45.6	33.1	12.5	--	--	--
Indoor Fans	38.8	16.6	22.2	--	--	--
Heat Rejection	--	--	--	--	--	--
Pumps & Misc.	--	--	--	--	--	--
Domestic Hot Water	--	--	--	26.6	19.1	7.5
Indoor Lighting	13.8	5.6	8.2	--	--	--
COMPLIANCE TOTAL	**98.2**	**55.3**	**42.9**	**148.8**	**132.7**	**16.1**
Receptacle	31.7	31.7	0.0	3.9	3.9	0.0
Process	0.9	0.9	0.0	--	--	--
Other Ltg	--	--	--	--	--	--
Process Motors	--	--	--	--	--	--
TOTAL	**130.8**	**87.9**	**42.9**	**152.7**	**136.6**	**16.1**

Project Name:	Nonresidential Building	NRCC-PRF-01-E	Page 15 of 24
Project Address:	8071 Luxor Ave Niland 92257	Calculation Date/Time:	10:15, Tue, May 14, 2019
Compliance Scope:	NewComplete	Input File Name:	19-022 Niland Public Safety Building.cibd16x

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT — § 10-103

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

Documentation Author Name: Steven Johnson	Signature: Steven Johnson
Company: Design West Engineering	
Address: 275 W Hospitality Lane, Suite #100	Signature Date: 5/14/2019
City/State/Zip: San Bernardino CA 92408	CEA Identification (If applicable):
Phone: 909-890-3700	

RESPONSIBLE PERSON'S DECLARATION STATEMENT

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

1. I hereby affirm that I am eligible under the provisions of Division 3 of the Business and Professions Code to sign this document as the person responsible for its preparation; and that I am licensed in the State of California as a civil engineer, mechanical engineer, electrical engineer, or I am a licensed architect.
2. I affirm that I am eligible under the provisions of Division 3 of the Business and Professions Code by section 5537.2 or 6737.3 to sign this document as the person responsible for its preparation; and that I am a licensed contractor performing this work.
3. I affirm that I am eligible under Division 3 of the Business and Professions Code to sign this document because it pertains to a structure or type of work described as exempt pursuant to Business and Professions Code Sections 5537, 5538 and 6737.1.

Responsible Envelope Designer Name: Tom Howell	**Signature:**
Company: Holt Architecture	
Address: 70-225 Highway 111 Suite D	Date Signed:
City/State/Zip: Rancho Mirage CA 92270	Declaration Statement Type:
Phone:	Title: License #: C-31626
Responsible Lighting Designer Name: Leo Maya	**Signature:** Steven Johnson
Company: Design West Engineering	
Address: 275 W Hospitality Lane, Suite #100	Date Signed: 5/14/2019
City/State/Zip: San Bernardino CA 92408	Declaration Statement Type:
Phone: 9098903700	Title: License #: E19480
Responsible Mechanical Designer Name: Steven Johnson	**Signature:**
Company: Design West Engineering	
Address: 275 W Hospitality Lane, Suite #100	Date Signed: 5/14/2019
City/State/Zip: San Bernardino CA 92408	Declaration Statement Type:
Phone: 9098903700	Title: License #: 33209

Project Name:	Nonresidential Building	NRCC-PRF-01-E	Page 16 of 24
Project Address:	8071 Luxor Ave Niland 92257	Calculation Date/Time:	10:15, Tue, May 14, 2019
Compliance Scope:	NewComplete	Input File Name:	19-022 Niland Public Safety Building.cibd16x

NRCC-PRF-ENV-DETAILS -SECTION START-

A. OPAQUE SURFACE ASSEMBLY DETAILS — Confirmed

1. Surface Name	2. Surface Type	3. Description of Assembly Layers	4. Notes	Pass	Fail
Space SOG8	UndergroundFloor	Slab Type = UnheatedSlabOnGrade Insulation Orientation = None Insulation R-Value = R0		☐	☐
R-30 Roof No Attic10	Roof	Asphalt shingles - 1/4 in. Vapor permeable felt - 1/8 in. Plywood - 1/2 in. Air - Cavity - Wall Roof Ceiling - 4 in. or more Wood framed roof, 16in. OC, 11 2Sin., R-30 Gypsum Board - 1/2 in.		☐	☐
Niland Exterior Wall12	InteriorWall	Stucco - 7/8 in. Vapor permeable felt - 1/8 in. Wood framed wall, 16in. OC, 5.5in., R-21 Gypsum Board - 1/2 in.		☐	☐
Niland Exterior Wall121	ExteriorWall	Stucco - 7/8 in. Vapor permeable felt - 1/8 in. Wood framed wall, 16in. OC, 5.5in., R-21 Gypsum Board - 1/2 in.		☐	☐
R-0 Wall32	InteriorWall	Stucco - 7/8 in. Vapor permeable felt - 1/8 in. Air - Cavity - Wall Roof Ceiling - 4 in. or more Gypsum Board - 1/2 in.		☐	☐
R-13 Wall139	InteriorWall	Stucco - 7/8 in. Vapor permeable felt - 1/8 in. Wood framed wall, 16in. OC, 3.5in., R-13 Gypsum Board - 1/2 in.		☐	☐

B. OVERHANG DETAILS (Adapted from NRCC-ENV-02-E)

This Section Does Not Apply

Project Name:	Nonresidential Building	NRCC-PRF-01-E	Page 17 of 24
Project Address:	8071 Luxor Ave Niland 92257	Calculation Date/Time:	10:15, Tue, May 14, 2019
Compliance Scope:	NewComplete	Input File Name:	19-022 Niland Public Safety Building.cibd16x

C. OPAQUE DOOR SUMMARY — Confirmed

1. Opaque Door Assembly Name / Tag or I.D.	2. Door Type	3. Certification Method	4. Operation	5. Area	6. Overall U-factor	7. Status[1]	Pass	Fail
Metal Door16	MetalUninsulatedDoubleLayerDoor	DefaultPerformance	Swinging	537	0.700	N	☐	☐

[1] *Status: N - New, A – Altered, E – Existing*

NRCC-PRF-MCH-DETAILS -SECTION START-

A. MECHANICAL VENTILATION AND REHEAT *(Adapted from 2016-NRCC-MCH-03-E)* — Confirmed

CONDITIONED ZONE NAME	1. DESIGN AIR FLOWS: HEATING/COOLING SYSTEM ID	DESIGN PRIMARY AIR FLOW (CFM)	DESIGN PRIMARY MINIMUM AIR FLOW (CFM)	MINIMUM PRIMARY AIR FLOW FRACTION	MAXIMUM HEATING AIR FLOW (CFM)	MAXIMUM HEATING AIR FLOW FRACTION	DCV CONTROL (Y/N)	2. VENTILATION (§ 120.1): VENT SYSTEM ID	CONDITIONED AREA (ft2)	MIN. VENT PER AREA (CFM/ft2)	MIN. VENT PER PERSON (CFM/person)	DESIGN NUM. OF PEOPLE	MIN. VENT PER PERSON (CFM)	REQ'D VENT AIR FLOW (CFM)	DESIGN VENT AIR FLOW (CFM)	TRANSFER AIR FLOW (CFM)	DCV (Y/N)	Operable Window Interlock § 140.4(c) (Y/N)	Pass	Fail
1-Lobby	Cooling Center	869	NA	0.00	NA	NA	N	Cooling Center	323	NA	10.77	15.00	162	162	NA	Y	NA		☐	☐
2-Restroom	Cooling Center	708	NA	0.00	NA	NA	N	Cooling Center	263	NA	2.22	17.78	39	39	NA	N	NA		☐	☐
3-Cooling Center	Cooling Center	2,423	NA	0.00	NA	NA	N	Cooling Center	900	NA	30.00	15.00	450	450	NA	Y	NA		☐	☐
4-Office	Office Space	596	NA	0.00	NA	NA	N	Office Space	627	NA	3.13	30.00	94	94	NA	N	NA		☐	☐
5-Cooridor	Office Space	502	NA	0.00	NA	NA	N	Office Space	528	NA	2.64	30.00	79	79	NA	N	NA		☐	☐
6-Restroom	Office Space	245	NA	0.00	NA	NA	N	Office Space	258	NA	1.00	38.70	39	39	NA	N	NA		☐	☐
7-Confrence Room	Office Space	257	NA	0.00	NA	NA	N	Office Space	270	NA	10.00	15.00	150	150	NA	Y	NA		☐	☐

Project Name:	Nonresidential Building	NRCC-PRF-01-E	Page 18 of 24
Project Address:	8071 Luxor Ave Niland 92257	Calculation Date/Time:	10:15, Tue, May 14, 2019
Compliance Scope:	NewComplete	Input File Name:	19-022 Niland Public Safety Building.cibd16x

A. MECHANICAL VENTILATION AND REHEAT *(Adapted from 2016-NRCC-MCH-03-E)* — Confirmed

CONDITIONED ZONE NAME	1. DESIGN AIR FLOWS: HEATING/COOLING SYSTEM ID	DESIGN PRIMARY AIR FLOW (CFM)	DESIGN PRIMARY MINIMUM AIR FLOW (CFM)	MINIMUM PRIMARY AIR FLOW FRACTION	MAXIMUM HEATING AIR FLOW (CFM)	MAXIMUM HEATING AIR FLOW FRACTION	DCV CONTROL (Y/N)	2. VENTILATION (§ 120.1): VENT SYSTEM ID	CONDITIONED AREA (ft2)	MIN. VENT PER AREA (CFM/ft2)	MIN. VENT PER PERSON (CFM/person)	DESIGN NUM. OF PEOPLE	MIN. VENT PER PERSON (CFM)	REQ'D VENT AIR FLOW (CFM)	DESIGN VENT AIR FLOW (CFM)	TRANSFER AIR FLOW (CFM)	DCV (Y/N)	Operable Window Interlock § 140.4(c) (Y/N)	Pass	Fail
8-Apparatus Room	Apparatus Room	3,200	NA	0.00	NA	NA	N	Apparatus Room	2,158	NA	10.79	300.00	3,237	3,237	NA	N	NA		☐	☐
9-Bedroom	Private Living Space	309	NA	0.00	NA	NA	N	Private Living Space	372	NA	1.86	30.00	56	56	NA	N	NA		☐	☐
10-Office	Private Living Space	77	NA	0.00	NA	NA	N	Private Living Space	93	NA	0.47	30.00	14	14	NA	N	NA		☐	☐
11-Janitor/Utility Closet	Private Living Space	46	NA	0.00	NA	NA	N	Private Living Space	55	NA	0.28	30.00	8	8	NA	N	NA		☐	☐
12-Restroom	Private Living Space	171	NA	0.00	NA	NA	N	Private Living Space	206	NA	2.00	15.45	31	31	NA	N	NA		☐	☐
13-Locker Room	Private Living Space	118	NA	0.00	NA	NA	N	Private Living Space	142	NA	1.42	15.00	21	21	NA	N	NA		☐	☐
14-Cooridor	Private Living Space	328	NA	0.00	NA	NA	N	Private Living Space	395	NA	1.98	30.00	59	59	NA	N	NA		☐	☐
15-Living Area	Private Living Space	465	NA	0.00	NA	NA	N	Private Living Space	559	NA	2.79	30.00	84	84	NA	N	NA		☐	☐

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MECHANICAL • ELECTRICAL • ENERGY CONSULTANTS

STAMPS:

REGISTERED PROFESSIONAL ENGINEER STEVEN M. JOHNSON No. E19480 EXP. 06-30-2019 MECHANICAL STATE OF CALIFORNIA

PROJECT:

NILAND PUBLIC SAFETY FACILITY

8071 LUXOR AVE.
NILAND CA 92257

CLIENT:

IMPERIAL COUNTY 1907 CALIFORNIA

MARK	DATE	DESCRIPTION
	04/09/19	PLAN CHECK SUBMITTAL #1
1	05/14/19	PLAN CHECK SUBMITTAL #2
2	06/11/19	PLAN CHECK SUBMITTAL #3

PROJECT NO.: TGH.012
DRAWN BY: L.C.
CHK'D BY: S.J.
ORIGINAL DATE:

SHEET TITLE:

TITLE 24 DOCUMENTS

SHEET No.:

M-0.3

19-022

Project Name:	Nonresidential Building	NRCC-PRF-01-E	Page 19 of 24
Project Address:	8071 Luxor Ave Niland 92257	Calculation Date/Time:	10:15, Tue, May 14, 2019
Compliance Scope:	NewComplete	Input File Name:	19-022 Niland Public Safety Building.cibd16x

A. MECHANICAL VENTILATION AND REHEAT *(Adapted from 2016-NRCC-MCH-03-E)* — Confirmed

CONDITIONED ZONE NAME	1. DESIGN AIR FLOWS: HEATING/COOLING SYSTEM ID	DESIGN PRIMARY AIR FLOW (CFM)	DESIGN PRIMARY MINIMUM AIR FLOW (CFM)	MINIMUM PRIMARY AIR FLOW FRACTION	MAXIMUM HEATING AIR FLOW (CFM)	MAXIMUM HEATING AIR FLOW FRACTION	DDC CONTROL (Y/N)	2. VENTILATION (§ 120.1): VENT SYSTEM ID	CONDITIONED AREA (ft2)	MIN. VENT PER AREA (CFM/ft2)	DESIGN NUM. OF PEOPLE	MIN. VENT PER PERSON (CFM/person)	REQ'D VENT AIR FLOW (CFM)	DESIGN VENT AIR FLOW (CFM)	TRANSFER AIRFLOW (CFM)	DCV (Y/N)	Operable Window Interlock § 140.4(n) (Y/N)	Pass	Fail
16-Kitchen	Private Living Space	85	NA	0.00	NA	NA	N	Private Living Space	102	NA	0.26	60.00	15	15	NA	N	NA	☐	☐
17-Computer Room	IT RM	399	NA	0.00	NA	NA	N	IT RM	105	NA	0.16	100.00	16	16	NA	N	NA	☐	☐
								TOTAL	7,356		81.77		4,554	4,554	NA			☐	☐

B. ZONAL SYSTEM AND TERMINAL UNIT SUMMARY — § 140.4

1. System ID	2. System Type	3. Qty	4. Rated Capacity (kBtuh) Heating	Cooling	5. Economizer	6. Zone Name	7. Airflow (cfm) Design	Min.	Min. Ratio	8. Fan BHP	Cycles	ECM Motor	Confirmed Pass	Fail
3-Cooling Center-Trm	Uncontrolled	2	NA	NA	NA	3-Cooling Center	2423	NA	0.00	NA	NA	☐	☐	☐
2-Restroom-Trm	Uncontrolled	2	NA	NA	NA	2-Restroom	708	NA	0.00	NA	NA	☐	☐	☐
1-Lobby-Trm	Uncontrolled	2	NA	NA	NA	1-Lobby	869	NA	0.00	NA	NA	☐	☐	☐
7-Confrence Room-Trm	Uncontrolled	1	NA	NA	NA	7-Confrence Room	257	NA	0.00	NA	NA	☐	☐	☐
6-Restroom-Trm	Uncontrolled	1	NA	NA	NA	6-Restroom	245	NA	0.00	NA	NA	☐	☐	☐
5-Cooridor-Trm	Uncontrolled	1	NA	NA	NA	5-Cooridor	502	NA	0.00	NA	NA	☐	☐	☐
4-Office-Trm	Uncontrolled	1	NA	NA	NA	4-Office	596	NA	0.00	NA	NA	☐	☐	☐

Project Name:	Nonresidential Building	NRCC-PRF-01-E	Page 20 of 24
Project Address:	8071 Luxor Ave Niland 92257	Calculation Date/Time:	10:15, Tue, May 14, 2019
Compliance Scope:	NewComplete	Input File Name:	19-022 Niland Public Safety Building.cibd16x

B. ZONAL SYSTEM AND TERMINAL UNIT SUMMARY — § 140.4

1. System ID	2. System Type	3. Qty	4. Rated Capacity (kBtuh) Heating	Cooling	5. Economizer	6. Zone Name	7. Airflow (cfm) Design	Min.	Min. Ratio	8. Fan BHP	Cycles	ECM Motor	Confirmed Pass	Fail
8-Apparatus Room-Trm	Uncontrolled	2	NA	NA	NA	8-Apparatus Room	3200	NA	0.00	NA	NA	☐	☐	☐
16-Kitchen-Trm	Uncontrolled	1	NA	NA	NA	16-Kitchen	85	NA	0.00	NA	NA	☐	☐	☐
15-Living Area-Trm	Uncontrolled	1	NA	NA	NA	15-Living Area	465	NA	0.00	NA	NA	☐	☐	☐
14-Cooridor-Trm	Uncontrolled	1	NA	NA	NA	14-Cooridor	328	NA	0.00	NA	NA	☐	☐	☐
13-Locker Room-Trm	Uncontrolled	1	NA	NA	NA	13-Locker Room	118	NA	0.00	NA	NA	☐	☐	☐
12-Restroom-Trm	Uncontrolled	1	NA	NA	NA	12-Restroom	171	NA	0.00	NA	NA	☐	☐	☐
11-Janitor/Utility Closet-Trm	Uncontrolled	1	NA	NA	NA	11-Janitor/Utility Closet	46	NA	0.00	NA	NA	☐	☐	☐
10-Office-Trm	Uncontrolled	1	NA	NA	NA	10-Office	77	NA	0.00	NA	NA	☐	☐	☐
9-Bedroom-Trm	Uncontrolled	1	NA	NA	NA	9-Bedroom	309	NA	0.00	NA	NA	☐	☐	☐
17-Computer Room-Trm	Uncontrolled	1	NA	NA	NA	17-Computer Room	399	NA	0.00	NA	NA	☐	☐	☐

C. EXHAUST FAN SUMMARY

This Section Does Not Apply

D. DHW EQUIPMENT SUMMARY – *(Adapted from NRCC-PLB-01)* — § 110.3 — Confirmed

1. DHW Name	2. Heater Element Type	3. Tank Type	4. Qty	5. Tank Vol (gal)	6. Rated Input (kBtu/h)	7. Efficiency	8. Tank Insulation R-value (Int/Ext)	9. Standby Loss Fraction	10. Heat Pump Type	11. Tank Location or Ambient Condition	Pass	Fail
A O Smith Water Products2	Gas	Storage	1	100.00	150	Thrml. Eff.: 0.76	NA	SBLF: 0.009	NA	NA	☐	☐

Project Name:	Nonresidential Building	NRCC-PRF-01-E	Page 21 of 24
Project Address:	8071 Luxor Ave Niland 92257	Calculation Date/Time:	10:15, Tue, May 14, 2019
Compliance Scope:	NewComplete	Input File Name:	19-022 Niland Public Safety Building.cibd16x

E. MULTI-FAMILY CENTRAL DHW SYSTEM DETAILS

This Section Does Not Apply

F. SOLAR HOT WATER HEATING SUMMARY (Adapted from NRCC-STH-01)

This Section Does Not Apply

G. MECHANICAL HVAC ACCEPTANCE TESTS & FORMS *(Adapted from 2016-NRCC-MCH-01-E)* — § RA4

Declaration of Required Acceptance Certificates (NRCA) – Acceptance Certificates that may be submitted. (Retain copies and verify forms are completed and signed to post in field for Field Inspector to verify).

Test Description		MCH-02A	MCH-03A	MCH-04A	MCH-05A	MCH-06A	MCH-07A	MCH-08A	MCH-09A	MCH-10A	MCH-11A	MCH-12A	MCH-13A	MCH-14A	MCH-15A	MCH-16A	MCH-17A	MCH-18A	Confirmed	
Equipment Requiring Testing or Verification	# of units	Outdoor Air	Single Zone Unitary	Air Dist. Ducts	Economizer Controls	DCV	Supply Fan VAV	Valve leakage	Supply Water Temp. Reset	Hyd. Variable Flow Control	Auto Demand Shed Control	FDD for DX Units	Auto FDD for Air & Zone	Dist. Energy Storage DX AC	TES Systems	Supply Air Temp. Reset	Condenser Water Reset Controls	ECMS	Pass	Fail
DHW1 - SHW	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	☐	☐
Cooling Center	2	X	X	--	X	X	--	--	--	--	--	X	--	--	--	--	--	--	☐	☐
Office Space	1	X	X	--	X	X	--	--	--	--	--	--	--	--	--	--	--	--	☐	☐
Apparatus Room	2	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	☐	☐
Private Living Space	1	X	X	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	☐	☐
IT RM	1	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	☐	☐

H. EVAPORATIVE COOLER SUMMARY

This Section Does Not Apply

Project Name:	Nonresidential Building	NRCC-PRF-01-E	Page 22 of 24
Project Address:	8071 Luxor Ave Niland 92257	Calculation Date/Time:	10:15, Tue, May 14, 2019
Compliance Scope:	NewComplete	Input File Name:	19-022 Niland Public Safety Building.cibd16x

NRCC-PRF-LTI-DETAILS -SECTION START-

A. INDOOR CONDITIONED LIGHTING CONTROL CREDITS (Adapted from NRCC-LTI-02-E) — § 140.6

This Section Does Not Apply

B. INDOOR CONDITIONED LIGHTING MANDATORY LIGHTING CONTROLS (Adapted from NRCC-LTI-02-E) — § 130.1

This Section Does Not Apply

§130.1(a) = Manual area controls; §130.0(b) = Multi Level; §130.1(c) = Auto Shut-Off; §130.1(d) = Mandatory Daylight; §130.1(e) = Demand Responsive

C. TAILORED METHOD CONDITIONED LIGHTING POWER ALLOWANCE SUMMARY AND CHECKLIST (Adapted from NRCC-LTI-04-E)	§ 140.6
General lighting power (see Table D)	0
General lighting power from special function areas (see Table E)	NA
Additional "use it or lose it" (See Table G)	0
Total watts	0

D. GENERAL LIGHTING POWER (Adapted from NRCC-LTI-04-E) — § 140.6-D

This Section Does Not Apply

E. GENERAL LIGHTING FROM SPECIAL FUNCTION AREAS (Adapted from NRCC-LTI-04-E) — § 140.6(c) 3H

Room Number	Primary Function Area	Illuminance Value (LUX)	Room Cavity Ratio (Table G)	Allowed LPD	Floor Area (ft²)	Allowed Watts	Confirmed Pass	Fail
NA	NA	NA	NA	NA	NA	NA	☐	☐

Note: Tailored Method for Special Function Areas is not currently implemented

F. ROOM CAVITY RATIO (Adapted from NRCC-LTI-04-E)

Rectangular Spaces

Room Number	Task/Activity Description	Room Length (ft)	Room Width (ft)	Room Cavity Height (ft)	RCR	Confirmed Pass	Fail
NA	NA	NA	NA	NA	NA	☐	☐

Non-Rectangular Spaces

This Section Does Not Apply

Project Name:	Nonresidential Building	NRCC-PRF-01-E	Page 23 of 24
Project Address:	8071 Luxor Ave Niland 92257	Calculation Date/Time:	10:15, Tue, May 14, 2019
Compliance Scope:	NewComplete	Input File Name:	19-022 Niland Public Safety Building.cibd16x

Note: All applicable spaces are listed under the Non-Rectangular Spaces table

G. ADDITIONAL "USE IT OR LOSE IT" (Adapted from NRCC-LTI-04-E)

1. Wall Display	2. Combined Floor Display and Task Lighting	3. Combined Ornamental and Special Effects Lighting	4. Very Valuable Merchandise	Allowed Watts	Confirmed Pass	Fail
0	0	0	0	**0**	☐	☐

5. Wall Display

This Section Does Not Apply

6. Floor Display and Task Lighting

This Section Does Not Apply

7. Combined Ornamental and Special Effects Lighting

This Section Does Not Apply

8. Very Valuable Merchandise

This Section Does Not Apply

H. INDOOR & OUTDOOR LIGHTING ACCEPTANCE TESTS & FORMS (Adapted from NRCC-LTI-01-E and NRCC-LTO-01-E) — § 130.4

Declaration of Required Acceptance Certificates (NRCA) –Acceptance Certificates that must be verified in the field. (Retain copies and verify forms are completed and signed to post in field for Field Inspector to verify).

Test Description		Indoor NRCA-LTI-02-A	Indoor NRCA-LTI-03-A	Indoor NRCA-LTI-04-A	Outdoor NRCA-LTO-02-A	Confirmed	
Equipment Requiring Testing or Verification	# of units	Occ Sensors / Auto Time Switch	Auto Daylight	Demand Responsive	Outdoor Controls	Pass	Fail
Occupant Sensors	29	☒	☐	☐	☐	☐	☐
Automatic Time Switch	0	☒	☐	☐	☐	☐	☐
Automatic Daylighting	0	☐	☒	☐	☐	☐	☐
Demand Responsive	0	☐	☐	☐	☐	☐	☐
Outdoor Controls	1	☐	☐	☐	☒	☐	☐

Project Name:	Nonresidential Building	NRCC-PRF-01-E	Page 24 of 24
Project Address:	8071 Luxor Ave Niland 92257	Calculation Date/Time:	10:15, Tue, May 14, 2019
Compliance Scope:	NewComplete	Input File Name:	19-022 Niland Public Safety Building.cibd16x

ENVELOPE MANDATORY MEASURES: NONRESIDENTIAL — ENV-MM

Project Name: *Niland Public Safety Facility* — Date: *5/14/2019*

DESCRIPTION

Building Envelope Measures:

§110.8(a):	Installed insulating material shall have been certified by the manufacturer to comply with the California Quality Standards for insulating material, Title 20 Chapter 4, Article 3.
§110.8(c):	All Insulating Materials shall be installed in compliance with the flame spread rating and smoke density requirements of Sections 2602 and 707 of Title 24, Part 2.
§110.8(g):	Heated slab floors shall be insulated according to the requirements in Table 110.8-A.
§110.7(a):	All Exterior Joints and openings in the building that are observable sources of air leakage shall be caulked, gasketed, weatherstripped or otherwise sealed.
§110.6(a):	Manufactured fenestration products and exterior doors shall have air infiltration rates not exceeding 0.3 cfm/ft.² of window area, 0.3 cfm/ft.² of door area for residential doors, 0.3 cfm/ft.² of door area for nonresidential single doors (swinging and sliding), and 1.0 cfm/ft.² for nonresidential double doors (swinging).
§110.6(a):	Fenestration U-factor shall be rated in accordance with NFRC 100, or the applicable default U-factor.
§110.6(a) :	Fenestration SHGC shall be rated in accordance with NFRC 200, or NFRC 100 for site-built fenestration, or the applicable default SHGC.
§110.6(b):	Site Constructed Doors, Windows and Skylights shall be caulked between the unit and the building, and shall be weatherstripped (except for unframed glass doors and fire doors).
§120.7(a):	The opaque portions of the roof/ceiling that separates conditioned spaces from unconditioned spaces or ambient air shall meet the applicable U-Factor requirements as follows: **Metal Building-** The weighted average U-factor of the roof assembly shall not exceed 0.098. **Wood Framed and Others-** The weighted average U-factor of the roof assembly shall not exceed 0.075.
§120.7(b):	The opaque portions of walls that separate conditioned spaces from unconditioned spaces or ambient air shall meet the applicable U-factor as follows: **Metal Building-** The weighted average U-factor of the wall assembly shall not exceed 0.113. **Metal Framed-** The weighted average U-factor of the wall assembly shall not exceed 0.151. **Light Mass Walls-** A 6 inch or greater Hollow Core Concrete Masonry Unit shall have a U-factor not to exceed 0.440. **Heavy Mass Walls-** An 8 inch or greater Hollow Core Concrete Masonry Unit shall have a U-factor not to exceed 0.690. **Wood Framed and Others-** The weighted average U-factor of the wall assembly shall not exceed 0.110. **Spandrel Panels and Opaque Curtain Wall-** The weighted average U-factor of the spandrel panels and opaque curtain wall assembly shall not exceed 0.280. **Demising Walls-**. The opaque portions of framed demising walls shall meet the requirements of Item A or B below: A. Wood framed walls shall be insulated to meet a U-factor not greater than 0.099. B. Metal Framed walls shall be insulated to meet a U-factor not greater than 0.151.
§120.7(c):	The opaque portions of floors and soffits that separate conditioned spaces from unconditioned spaces or ambient air shall meet the applicable U-Factor requirements as follows: **Raised Mass Floors-** Shall have a minimum of 3 inches of lightweight concrete over a metal deck or the weighted average U-factor of the floor assembly shall not exceed 0.269. **Other Floors-**The weighted average U-factor of the floor assembly shall not exceed 0.071.

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REGISTERED PROFESSIONAL ENGINEER STEVEN M. JOHNSON No. 33209 EXP. 9-30-2019 MECHANICAL STATE OF CALIFORNIA

PROJECT:

NILAND PUBLIC SAFETY FACILITY

8071 LUXOR AVE.
NILAND CA 92257

CLIENT:

IMPERIAL COUNTY CALIFORNIA 1907

MARK	DATE	DESCRIPTION
	04/09/19	PLAN CHECK SUBMITTAL #1
1	05/14/19	PLAN CHECK SUBMITTAL #2
2	06/11/19	PLAN CHECK SUBMITTAL #3

PROJECT NO.:	TGH.012
DRAWN BY:	L.C.
CHK'D BY:	S.J.
ORIGINAL DATE:	

SHEET TITLE:

TITLE 24 DOCUMENTS

SHEET No.:

M-0.4

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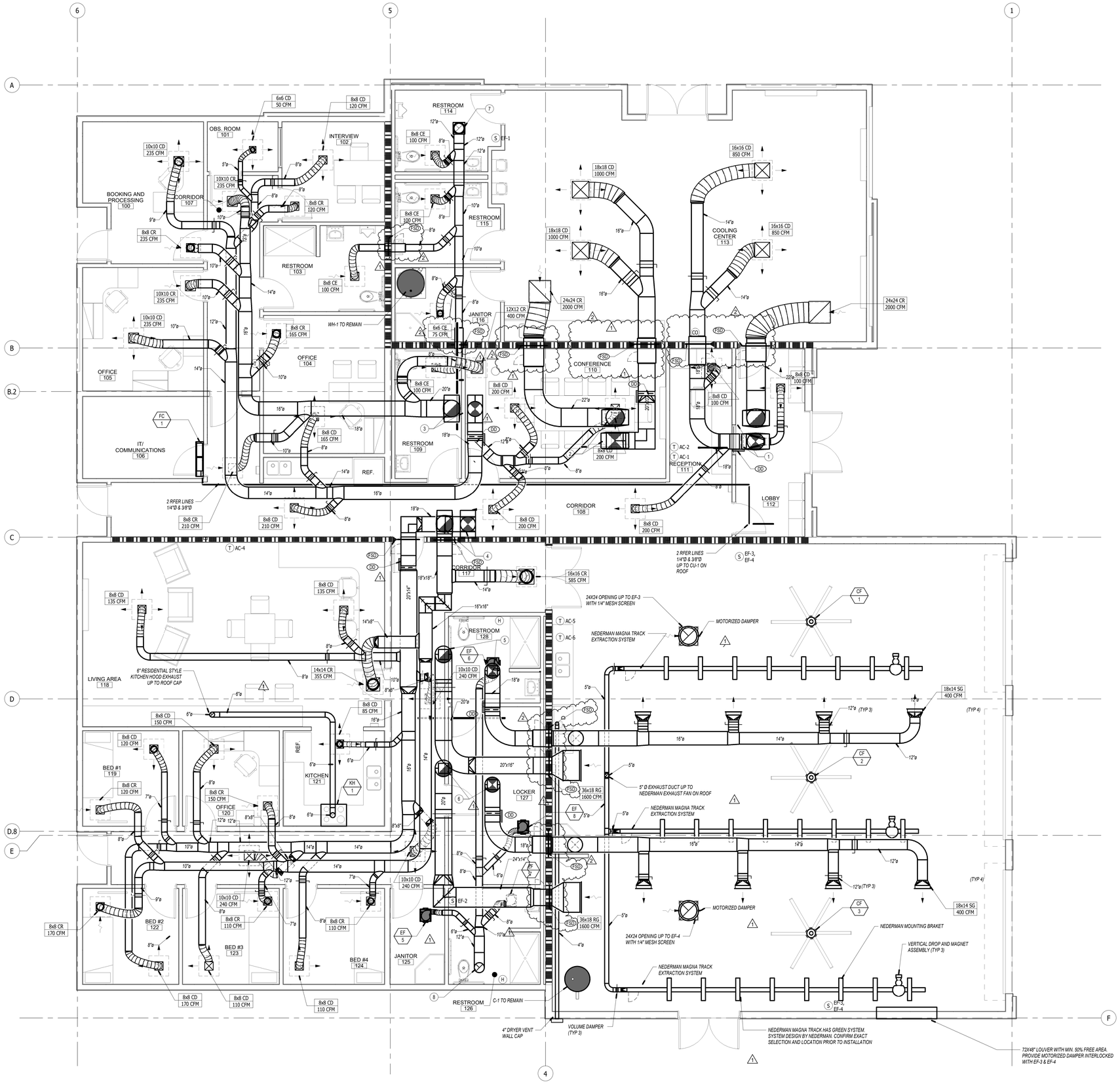

MECHANICAL FLOOR PLAN | 1/4" = 1'-0" | 1

GENERAL NOTES

1. FOR LINE TYPES, SYMBOLS & ABBREVIATIONS SEE LEGEND ON SHEET M0.1.
2. ALL SPIN-IN OR TAP TYPE DUCT CONNECTIONS SHALL BE PROVIDED WITH AN EXTRACTOR.
3. T-STATS SHALL NOT BE MOUNTED IN DIRECT LINE OF ANY SUPPLY DIFFUSER OR NEAR ANY HEAT REJECTION EQUIPMENT.
4. DUCT DIMENSIONS ARE INSIDE CLEAR, ADD AN ADDITIONAL 3" MINIMUM FOR R-8 DUCT INSULATION. SIZES MAY CHANGE PER MANUFACTURE
5. ALL DUCTWORK SHALL BE HARD DUCT. FLEX DUCT MAY BE USED ONLY AT SUPPLY & RETURN OUTLETS AT A MAX. LENGTH OF 5'-0".
6. ALL VENTING SHALL HAVE A MIN. OF 10' CLEARANCE FROM ANY FORCED AIR INLET W/ A MIN. OF 3' CLEARANCE ABOVE & A MIN OF 4' CLEARANCE FROM ANY PROPERTY LINE EXCEPT A PUBLIC WAY. PER SEC. 906
7. ALL DUCTWORK SHALL BE MOUNTED HIGH AND TIGHT TO ROOF STRUCTURE AS POSSIBLE.
8. PROVIDE 1" ACOUSTICAL LINING IN ALL DUCTWORK WITHIN 10 FEET OF ALL AIR MOVING EQUIPMENT. PROVIDE DURO-DYNE FLEXIBLE CONNECTION AT ALL DUCT AT EQUIPMENT LOCATIONS.
9. CONTRACTOR TO PROVIDE 22 G.A. DUCT FOR ALL DUCTWORK THAT IS PASSING THRU AND LOCATED WITH IN A RATED AREA AND THAT DOES NOT HAVE ANY AIR DISTRIBUTION INTO THE RATED AREA. FIRE SEAL AROUND DUCT AT EACH PENETRATION THROUGH RATED WALLS. PER CBC SEC. 709 & 710.
10. SMOKE FIRE DAMPERS AND FIRE DAMPERS SHALL BE TIED INTO THE EXISTING FIRE ALARM SYSTEM. REFER TO ELECTRICAL FIRE ALARM DRAWINGS FOR CONNECTIONS.
11. ALL THERMOSTATS SHALL BE PROGRAMMED TO RUN IN FAN MODE WORK DURING OCCUPIED HOURS AND SHALL COORDINATE HOURS WITH OWNER. COOLING/ HEATING MODE SHALL RUN AS NEED, PER TEMPERATURE SET POINT AND OCCUPANT LOAD.
12. CONTRACTOR SHALL COORDINATE DUCT RUNS WITH FIRE SPRINKLER CONTRACTOR.
13. ALL RESTROOM DOORS SHALL HAVE A 1" UNDERCUT.
14. CONTRACTOR TO PROVIDE 22 G.A. DUCT THRU RATED WALL AND FIRE SEAL AROUND DUCT PER UBC SEC. 709 & 710.
15. ALL SUPPLY AND RETURN DUCTS/GRILLES SHALL HAVE MERV-8 AIR FILTERS INSTALLED ON ALL OPENINGS DURING CONSTRUCTION.
16. CONTRACTOR SHALL COORDINATE WITH GENERAL CONTRACTOR FOR BUILDING TO BE PURGED UPON COMPLETION AND PRIOR TO OCCUPANCY. FILTERS SHALL BE REPLACED BEFORE PURGE AND UPON COMPLETION OF PURGE CYCLE.
17. AT ALL HARD LID CEILINGS, CONTRACTOR SHALL PROVIDE FOR "MAT" CABLE DRIVEN DAMPERS. MODEL RT-150. CABLE SHALL BE ROUTED BEHIND GRILLE OPENING AND INSTALLED PER MANUFACTURERS REQUIREMENTS.

CONSTRUCTION NOTES

1. 20"Ø SUPPLY AND 22"Ø RETURN DUCT UP TO AC-1 ON ROOF. TRANSITION TO FULL SIZE OF HEADER
2. 20"Ø SUPPLY AND 22"Ø RETURN DUCT UP TO AC-2 ON ROOF. TRANSITION TO FULL SIZE OF HEADER
3. 18"Ø SUPPLY AND 16"Ø RETURN DUCT UP TO AC-3 ON ROOF. TRANSITION TO FULL SIZE OF HEADER
4. 18"Ø SUPPLY AND 16"Ø RETURN DUCT UP TO AC-4 ON ROOF. TRANSITION TO FULL SIZE OF HEADER
5. 18"Ø SUPPLY AND 20"ØRETURN DUCT UP TO AC-5 ON ROOF. TRANSITION TO FULL SIZE OF HEADER
6. 18"Ø SUPPLY AND 20"ØRETURN DUCT UP TO AC-6 ON ROOF. TRANSITION TO FULL SIZE OF HEADER
7. 12"Ø EXHAUST DUCT UP TO EF-1 ON ROOF. TRANSITION TO FULL SIZE OF HEADER
8. 12"Ø EXHAUST DUCT UP TO APPROVED ROOF CAP ON ROOF.

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FIRST FLOOR MECHANICAL PLAN

SHEET No.:

M-1.1

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