

LEGEND AND ABBREVIATIONS

	4-HOUR BY PASS TIMER	D	DRAIN
	THERMOSTAT	DB	DRY BULB
	RECTANGULAR DUCT W/SIZE OF SIDE SHOWN INDICATED FIRST	DL	DOOR LOUVER
	SECTION THRU RECTANGULAR SUPPLY DUCT	DN	DOWN
	SECTION THRU RECTANGULAR RETURN DUCT	DTR	DOWN THRU ROOF
	SECTION THRU RECTANGULAR EXHAUST DUCT	EA	EXHAUST AIR
	FLEXIBLE CONNECTION, (F.C.)	(E)	EXISTING
	DUCT RISE IN DIRECTION OF FLOW	EG	EXH GRILLE
	DUCT DROP IN DIRECTION OF FLOW	ENT	ENTERING
	CEILING DIFFUSER W/DIRECTION OF THROW INDICATED, (3-WAY BLOW SHOWN)	EXH	EXHAUST
	MANUAL VOLUME DAMPER, (MVD)	F.A.	FACE AREA
	AUTOMATIC FIRE DAMPER, (AFD)	F	FAHRENHEIT
	MODULATING DAMPER, (MOD)	FLA	FULL LOAD AMPS
	BACKDRAFT DAMPER, (BDD)	FPI	FINS PER INCH
	STATIC PRESSURE DAMPER	FPM	FEET PER MINUTE
	COMBINATION FIRE/SMOKE DAMPER	FLEX	FLEXIBLE
	SOUND LINED (SL) DUCT W/INTERNAL INSULATION DUCT SIZES SHOWN ARE NET INSIDE DIMENSION.	GALV.	GALVANIZED
	SOUND TRAP (ST)	GA	GAUGE
	TURNING VANES	HP	HORSEPOWER
	FLEXIBLE DUCT TO CEILING DIFFUSER OR REGISTER	IN	INCH
	SINGLE LINE RIGID SHEET METAL DUCTWORK FURNISHED & INSTALLED BY MECH. CONTRACTOR	ISOL	ISOLATOR
	FURNISHED & INSTALLED BY MECH. CONTRACTOR	LBS	POUNDS
	FURNISHED & INSTALLED BY MECH. CONTRACTOR, WIRED BY ELECT. CONTRACTOR	LVG	LEAVING
	FURNISHED BY ELECT. CONTRACTOR, INSTALLED BY MECH. CONTRACTOR, WIRED BY ELECT. CONTRACTOR	M.A.	MIXED AIR
	CLOSING COIL IN MAGNETIC STARTER	MAX	MAXIMUM
ABV	ABOVE	MBH	1000 BTU'S PER HOUR
BEL	BELOW	MIN	MINIMUM
BTU	BRITISH THERMAL UNIT	MOD	MODULATING DAMPER
CAP	CAPACITY	MVD	MANUAL VOLUME DAMPER
CD	CEILING DIFFUSER	NTS	NOT TO SCALE
CFM	CUBIC FEET PER MINUTE	OPER. WT.	OPERATING WEIGHT
CG	CEILING GRILLE	OPG	OPENING
CONC	CONCRETE	OSA	OUTSIDE AIR
COND	CONDENSATE	PD	PRESSURE DROP
CONN	CONNECTION	PH	PHASE
CONT	CONTINUATION	PRESS	PRESSURE
CR	CEILING REGISTER	POC	POINT OF CONNECTION
CER	CEILING EXH REGISTER	PSI	POUNDS PER SQUARE INCH
		RA	RETURN AIR
		RAR	RETURN AIR REGISTER
		REQ'D	REQUIRED
		RLA	RATED LOAD AMPS
		RPM	REVOLUTIONS PER MINUTE
		~	ROUND DUCT
		SA	SUPPLY AIR
		SP	STATIC PRESSURE
		SF	SQUARE FEET
		SWR	SIDEWALL REGISTER
		SL	SOUND LINED
		TEMP	TEMPERATURE
		T'STAT	THERMOSTAT
		TYP	TYPICAL
		UTR	UP THRU ROOF
		V	VOLT
		W/	WITH
		WB	WET BULB
		W.G.	WATER GAUGE
		(E)	EXISTING
		(N)	NEW

AIR CONDITIONING REQUIREMENTS

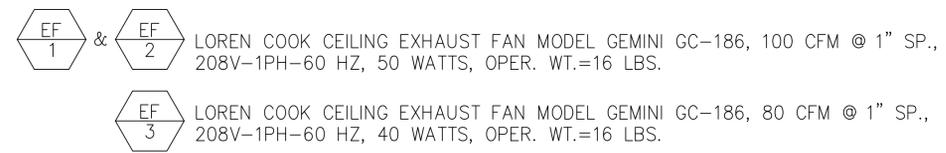
- FURNISH ALL LABOR, SUPERVISION, MATERIALS, EQUIPMENT AND FACILITIES NECESSARY TO FURNISH, FABRICATE, DELIVER, STORE AND INSTALL ALL WORK NOTED ON THE DRAWINGS AND/OR SPECIFIED HEREIN.
 - THE CONTRACTOR SHALL FURNISH AND INSTALL ALL WORK NECESSARY TO MAKE A COMPLETE SYSTEM WHETHER OR NOT SUCH DETAILS ARE MENTIONED IN THESE SPECIFICATIONS OR SHOWN ON THE PLANS, BUT WHICH ARE OBVIOUSLY NECESSARY TO MAKE A COMPLETE SYSTEM, EXCEPTING ONLY THOSE PORTIONS THAT ARE SPECIFICALLY MENTIONED HEREIN OR PLAINLY MARKED ON THE ACCOMPANYING DRAWINGS AS BEING INSTALLED UNDER ANOTHER SECTION OF THE SPECIFICATIONS.
- WORKMANSHIP: THE WORK SHALL BE ACCOMPLISHED IN A THOROUGH AND WORKMAN-LIKE MANNER SATISFACTORY TO AND MEETING THE APPROVAL OF THE OWNER.
- MATERIALS: ALL MATERIALS, APPLIANCES AND EQUIPMENT SHALL BE NEW AND THE BEST OF THEIR RESPECTIVE KIND, FREE FROM ALL DEFECTS AND OF THE MAKE, BRAND AND QUALITY SPECIFIED.
- SITE INSPECTION: CONTRACTOR SHALL VISIT THE SITE OF WORK PRIOR TO SUBMISSION OF HIS BID AND THOROUGHLY FAMILIARIZE HIMSELF WITH THE WORKING CONDITIONS & EXACT NATURE OF THE WORK. SUBMISSION OF A BID ACKNOWLEDGES FULL RESPONSIBILITY FOR FURNISHING A COMPLETE AND FUNCTIONAL SYSTEM. NO CHANGES IN CONTRACT WILL BE MADE TO ACCOMMODATE OR ALLOW EXTRA FUNDS FOR ANY OMISSION WHICH RESULTS FROM A FAILURE TO THOROUGHLY MAKE THE EXAMINATION.
- CODES AND PERMITS: ALL MECHANICAL EQUIPMENT, INSTALLATION, ETC., SHALL CONFORM TO CALIFORNIA MECHANICAL CODE (CMC 2013) AND OTHER APPLICABLE CODES. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS AND INSPECTIONS. COPIES OF ALL PERMITS AND INSPECTION REPORTS SHALL BE SUBMITTED TO THE ARCHITECT.
- AS-BUILTS: CONTRACTOR SHALL PROVIDE A COMPLETE SET OF AS-BUILTS TRANSPARENTS WITH ALL CHANGES NOTED THEREON AT THE COMPLETION OF THE PROJECT AND PRIOR TO FINAL ACCEPTANCE.
- GUARANTEE: CONTRACTOR SHALL UNCONDITIONALLY GUARANTEE ALL LABOR AND MATERIALS ON ALL WORK AGAINST DEFECTS IN WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE YEAR.
- SUBMITTALS: CATALOG INFORMATION AND CUTS OF ALL MECHANICAL EQUIPMENT AND DEVICES SHALL BE SUBMITTED FOR REVIEW (SIX COPIES OF EACH).
- COORDINATION: THE DRAWINGS ARE DIAGRAMMATIC AND INTENDED TO SHOW SCOPE. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH OTHER TRADES TO PROVIDE BEST ARRANGEMENT OF ALL DUCTS, PIPES, CONDUIT, ETC. LOCATION OF EXISTING PIPING AND DUCTWORK SHOWN IS APPROXIMATE; CONTRACTOR SHALL VERIFY THEIR LOCATION PRIOR TO BEGINNING WORK OF THIS SECTION AND SHALL MAKE MODIFICATIONS AND ADJUSTMENTS REQUIRED TO INSTALL THE WORK OF THIS SECTION.
- CUTTING AND PATCHING: ALL CUTTING AND PATCHING REQUIRED OF THE EXISTING STRUCTURE SHALL BE PROVIDED UNDER OTHER SECTIONS OF THE WORK. PROVIDE NECESSARY REQUIREMENTS TO THE PROJECT SUPERINTENDENT.
- CLEANUP: UPON COMPLETION OF THE WORK UNDER THIS SECTION, THE CONTRACTOR SHALL REMOVE ALL SURPLUS MATERIALS, EQUIPMENT AND DEBRIS INCIDENTAL TO THIS WORK AND LEAVE THE PREMISES CLEAN AND ORDERLY.
- DUCTWORK:
 - DUCTWORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH 2013 CALIFORNIA MECHANICAL CODE AND SMACNA STANDARDS.
 - DUCTWORK SHALL BE GALVANIZED STEEL.
 - DOUBLE THICKNESS TURNING VANES SHALL BE USED ON ALL DUCT TURNS OF 90°
 - ALL DUCT JOINTS SHALL BE SEALED AIR TIGHT WITH APPROVED SEALER & DUCT TAPE.
 - FLEXIBLE DUCT USED FOR CONDITIONED AIR SHALL BE U.L. APPROVED, VINYL COATED, WIRE REINFORCED FIBERGLASS, WITH MAXIMUM CONDUCTANCE OF .30 AND A MAXIMUM LENGTH OF SEVEN FEET.
 - FLEXIBLE DUCT SIZING SHALL BE PER DIFFUSER SCHEDULE - SAME SIZE AS DIFFUSER NECK. TRANSITION AS NEEDED FROM SMALLER DIAMETER HARD DUCT TO LARGER DIAMETER FLEX DUCT.
 - MANUAL VOLUME DAMPERS, U.O.N. AS OPPOSED BLADE DAMPERS, SHALL BE INSTALLED AS A MEANS TO BALANCE AIR FLOW AT ALL DIFFUSERS AND REGISTERS.
- FILTERS:
 - FILTERS SHALL BE U.L. APPROVED. SEE SCHEDULE.
 - RIGID/SUPPORTED FILTER SHALL OPERATE ON THE PRINCIPLES OF IMPINGEMENT, STRAINING, AND DIFFUSION.
 - ALL FILTERS SHALL BE CERTIFIED BY THE MANUFACTURER AND INSTALLED IN COMPLIANCE WITH 2013 EDITION OF THE CMC.
- INSULATION:
 - INSULATION SHALL BE U.L. LISTED IN COMPLIANCE WITH FLAME-SPREAD RATING AND SMOKE DENSITY REQUIREMENTS OF THE UNIFORM BUILDING CODE. INSTALLATION SHALL BE IN ACCORDANCE WITH THE STATE OF CALIFORNIA ENERGY COMMISSION REQUIREMENTS.
 - ALL SUPPLY AND RETURN DUCTS SHALL BE LINED DUCTWORK. DUCT DIMENSIONS SHOWN ARE FREE INTERNAL DIMENSIONS.
 - CONDENSATE PIPING SHALL BE INSULATED WITH 3/8" FOAM PLASTIC.
 - COLD AIR DUCTS SHALL BE INSULATED TO PREVENT CONDENSATION PROBLEM.
- PIPING:
 - PROVIDE HANGERS AND SUPPORTS AS REQUIRED. PLUMBERS TAPE AND WIRE ARE NOT ACCEPTABLE.
 - CONDENSATE PIPING SHALL BE TYPE "M" COPPER.
- CONTRACTOR SHALL AFFIX A MAINTENANCE LABEL TO ALL EQUIPMENT REQUIRING ROUTINE MAINTENANCE AND SHALL PROVIDE THREE COPIES OF MAINTENANCE AND OPERATING MANUALS TO THE OWNER.
- ROUGH-IN AND CONNECT EQUIPMENT PROVIDED UNDER OTHER SECTIONS OF THE WORK.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AVAILABLE SPACE FOR INSTALLATION OF NEW WORK.
- HIGH VOLTAGE CONDUIT AND WIRE AND LOW VOLTAGE CONDUIT SHALL BE UNDER ELECTRICAL SECTION OF THE WORK. LOW VOLTAGE WIRING SHALL BE UNDER THIS SECTION OF THE WORK.
- BALANCING AND ADJUSTING: ALL AIR SYSTEMS SHALL BE ADJUSTED BY AN INDEPENDENT BALANCING CONTRACTOR THAT IS A MEMBER OF THE AABC'S NATIONAL STANDARDS FOR TOTAL SYSTEM BALANCE (6TH ED.). SUBMIT BALANCE REPORT TO OWNER. ADDITIONAL BALANCING DAMPERS AND/OR PULLEY CHANGES SHALL BE PROVIDED AS REQUIRED TO BALANCE SYSTEMS, AT NO INCREASE IN CONTRACT PRICE.
- BEFORE STARTING ANY WORK, THE CONTRACTOR FOR THIS SECTION OF THE WORK SHALL EXAMINE A COMPLETE SET OF DRAWINGS FOR ALL TRADES, INCLUDING ARCHITECTURAL, HVAC, ELECTRICAL, FIRE PROTECTION AND PLUMBING. DIMENSIONS, SPACE REQUIREMENTS AND POINTS OF CONNECTION TO ALL EQUIPMENT SHALL BE VERIFIED, AND ANY MINOR ADJUSTMENTS NECESSARY TO AVOID CONFLICT WITH THE BUILDING STRUCTURE AND THE WORK OF THE OTHER TRADES SHALL BE MADE.
- PERMANENT ACCESS TO ALL EQUIPMENT INCLUDING FIRE DAMPERS & SMOKE FIRE DAMPERS SHALL BE PROVIDED.
- EQUIPMENT SHALL BE SECURELY FASTENED TO VIBRATION ISOLATORS AND EARTHQUAKE RESTRAINTS PER BUILDING CODE REQUIREMENTS.
- EACH PIECE OF EQUIPMENT AND ALL SYSTEMS SHALL BE ADJUSTED AND RE-ADJUSTED TO INSURE PROPER FUNCTION OF ALL CONTROLS, MAINTENANCE OF TEMPERATURE, ELIMINATION OF NOISE AND VIBRATION, AND SHALL BE LEFT IN PROPER OPERATING CONDITION.
- NO COMBUSTIBLE MATERIALS SHALL BE INSTALLED IN RETURN AIR PLENUMS.
- ACCESS DOORS: WHERE NECESSARY IN DUCTWORK OR CASINGS, SUITABLE ACCESS DOORS AND FRAMES TO PERMIT INSPECTION, OPERATION AND MAINTENANCE OF ALL CONTROLS, MOTOR BEARINGS, OR OTHER APPARATUS CONCEALED BEHIND THE SHEET METAL WORK SHALL BE PROVIDED. ACCESS DOORS IN DUCTS MAY BE OF SINGLE PANEL CONSTRUCTION OF NOT LESS THAN NO. 18 GAUGE, GALVANIZED, AND SHALL HAVE SPONGE RUBBER GASKETS WITH HINGES AND LATCHES.
- A MINIMUM OF 30" CLEAR WORKING SPACE IN FRONT OF ACCESS PANELS TO THE COMPRESSOR, BLOWER ASSEMBLY AND AIR FILTER SECTION SHALL BE PROVIDED.

- ALL VENT PIPING SHALL TERMINATE NOT LESS THAN TEN (10) FEET FROM ANY AIR INTAKE OR VENT SHAFT.
- ANCHORAGE AND SUPPORTING STRUCTURAL ELEMENTS FOR AIR DUCTS SHALL BE DESIGNED TO WITHSTAND THE LATERAL FORCES AS REQUIRED BY THE CALIFORNIA BUILDING CODE.
- PROVIDE AUTOMATIC SHUT OFF BY DETECTION OF SMOKE IN MAIN SUPPLY AIR DUCT AS REQUIRED BY 2013 CMC 609.0.
- PRIOR TO MECHANICAL FINAL INSPECTION, A SMOKE DETECTOR SHUT-OFF TEST WILL BE REQUIRED PER 2013 CMC.
- CENTRAL AIR HANDLING SYSTEMS SHALL BE MAINTAINED IN CLEAN CONDITION DURING CONSTRUCTION AND SHALL BE CLEANED AS NECESSARY PRIOR TO REPLACEMENT OF TEMPORARY FILTER USED DURING CONSTRUCTION TO ENSURE THAT CLEAN AIR WILL BE DELIVERED TO THE OCCUPIED SPACE.
- ANCHORAGE AND SUPPORTING STRUCTURAL ELEMENTS FOR AIR DUCTS SHALL BE DESIGNED TO WITHSTAND THE LATERAL FORCE AS REQUIRED BY THE 2013 CALIFORNIA BUILDING CODE.
- FLEXIBLE DUCT NO MORE THAN 10 FEET IN LENGTH MAY BE USED TO CONNECT SUPPLY, RETURN OR EXHAUST AIR TERMINAL DEVICES TO RIGID DUCT SYSTEMS. 2010 CMC.
- A COPY OF AIR BALANCE REPORT SHALL BE PROVIDED TO MECHANICAL SECTION FOR FINAL REVIEW BEFORE CLINIC CERTIFICATION.
- VENTILATION SYSTEM SHALL BE BALANCED IN ACCORDANCE WITH THE LATEST EDITION OF STANDARDS PUBLISHED BY THE ASSOCIATED AIR BALANCE COUNCIL (AABC) OR THE NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB).
- OUTDOOR AIR INTAKES SHALL BE LOCATED AT LEAST 10 FEET FROM EXHAUST OUTLETS OF VENTILATING SYSTEMS, COMBUSTION EQUIPMENT STACKS, MEDICAL-SURGICAL VACUUM SYSTEMS, COOLING TOWERS AND AREAS THAT MAY COLLECT VEHICULAR EXHAUST OR OTHER NOXIOUS FUMES. THE BOTTOM OF OUTDOOR AIR INTAKES SHALL BE LOCATED NOT LESS THAN 10 FEET ABOVE GROUND LEVEL OR 18 INCHES ABOVE ROOF LEVEL.
- EXHAUST OUTLETS SHALL BE LOCATED A MINIMUM OF 10 FEET ABOVE ADJOINING GRADE AND 10 FEET FROM DOORS, OCCUPIED AREAS AND OPERABLE WINDOWS.
- ALL WORK TO COMPLY WITH 2013 CALIFORNIA MECHANICAL CODE.
- PROVIDE AIR BALANCE REPORT TO VERIFY THE PROPER AMOUNT OF OUTSIDE AIR TO COMPLY WITH THE TITLE 24 CALCULATIONS, BEFORE THE APPROVAL OF THIS PROJECT.
- AIR HANDLING DUCT SYSTEMS SHALL BE CONSTRUCTED, INSTALLED AND INSULATED AS PROVIDED IN 2013 CMC.
- A 7 DAY, 24-HOUR TIME CLOCK OR A PROGRAMMABLE THERMOSTAT SHALL BE PROVIDED ON HVAC UNIT THAT AUTOMATICALLY SHUT DOWN DURING PERIODS OF NON-USE. THERMOSTAT SHALL BE MOUNTED BETWEEN 3 AND 4 FEET ABOVE FINISHED FLOOR.
- ALL NEW DUCTS AND OTHER NEW RELATED AIR DISTRIBUTION COMPONENTS OPENINGS SHALL BE COVERED WITH TAPE, PLASTIC OR SHEETMETAL UNTIL THE FINAL STARTUP OF THE HEATING, COOLING AND VENTILATING EQUIPMENT.
- AN AIR BALANCE TEST WILL BE REQUIRED TO VERIFY THE MINIMUM VOLUME OF OUTSIDE AIR TO COMPLY WITH THE T-24 CALCULATIONS, BEFORE THE FINAL APPROVAL OF THIS PROJECT.
- ONLY CO2 SENSORS THAT DIRECTLY TRACK THE CO2 LEVEL IN THE BREATHING ZONE ARE PERMITTED BY CEC FOR USE IN THE DEMAND CONTROLLED VENTILATION REQUIREMENT FOR T-24 COMPLIANCE.

MECHANICAL SHEET INDEX	
SHEET NUMBER	DESCRIPTION
M-1	LEGENDS, NOTES, SCHEDULES & DETAILS
M-2	FLOOR PLAN
M-3	ROOF PLAN
M-4	DETAILS

FIELD VERIFICATION

- SITE INSPECTION: CONTRACTOR SHALL VISIT THE SITE OF WORK AND THOROUGHLY FAMILIARIZE HIMSELF WITH THE WORKING CONDITIONS AND EXACT NATURE OF THE WORK PRIOR TO SUBMISSION OF HIS BID. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS. SHOULD ANY CONDITION ARISE WHERE THE INTENT OF THE DRAWING IS IN DOUBT OR WHERE THERE IS A DISCREPANCY BETWEEN THE DRAWINGS AND FIELD CONDITIONS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IN WRITING FOR CLARIFICATION PRIOR TO SUBMISSION OF HIS BID. SUBMISSION OF A BID ACKNOWLEDGES FULL RESPONSIBILITY FOR FURNISHING A COMPLETE AND FUNCTIONAL SYSTEM. NO CHANGES IN CONTRACT WILL BE MADE TO ACCOMMODATE OR ALLOW EXTRA FUNDS FOR ANY OMISSION WHICH RESULTS FROM A FAILURE TO THOROUGHLY MAKE THE EXAMINATION.
- AS-BUILTS: CONTRACTOR SHALL PROVIDE A COMPLETE SET OF AS-BUILT FULL SIZE BLACKLINE PRINTS WITH ALL CHANGES NOTED THEREON AT THE COMPLETION OF THE PROJECT AND PRIOR TO FINAL ACCEPTANCE AND PAYMENT.



Designed	06/16
Drawn	06/16
Lead	-/-
Regional	-/-
Director	-/-

Victorville 1
Options for Youth
Address: 14725 Seventh St., Victorville, Ca. 92392

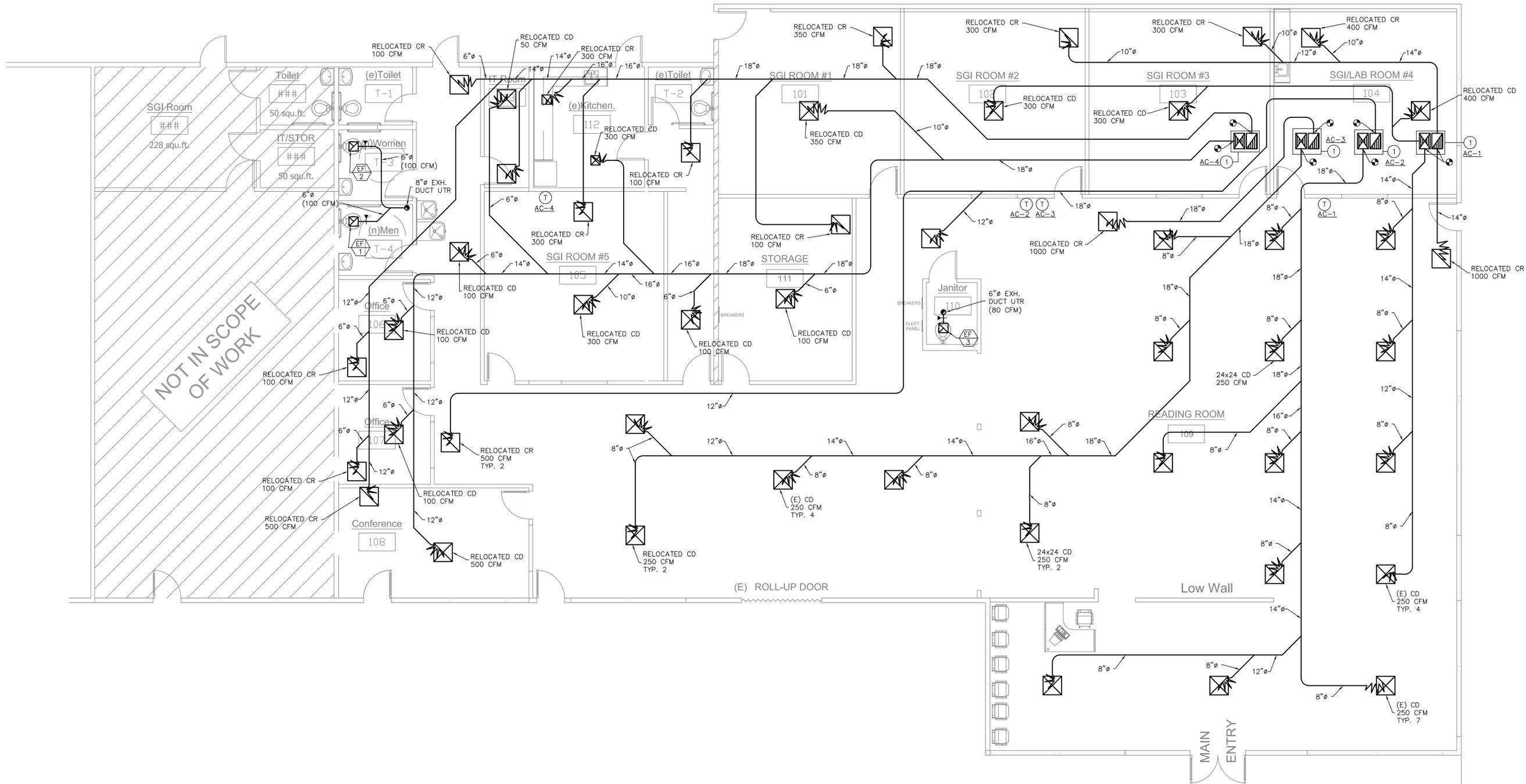


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REVISIONS	
Date	Description

NUMBERED NOTES:

- 1 (E) SA & RA DUCTS UTR



1 Proposed Floor Plan
Scale: 3/16"=1'-0"



Designed	KA	06/16
Drawn	DRA	06/16
Lead	-/-	-/-
Regional	-/-	-/-
Director	-/-	-/-

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FLOOR PLAN



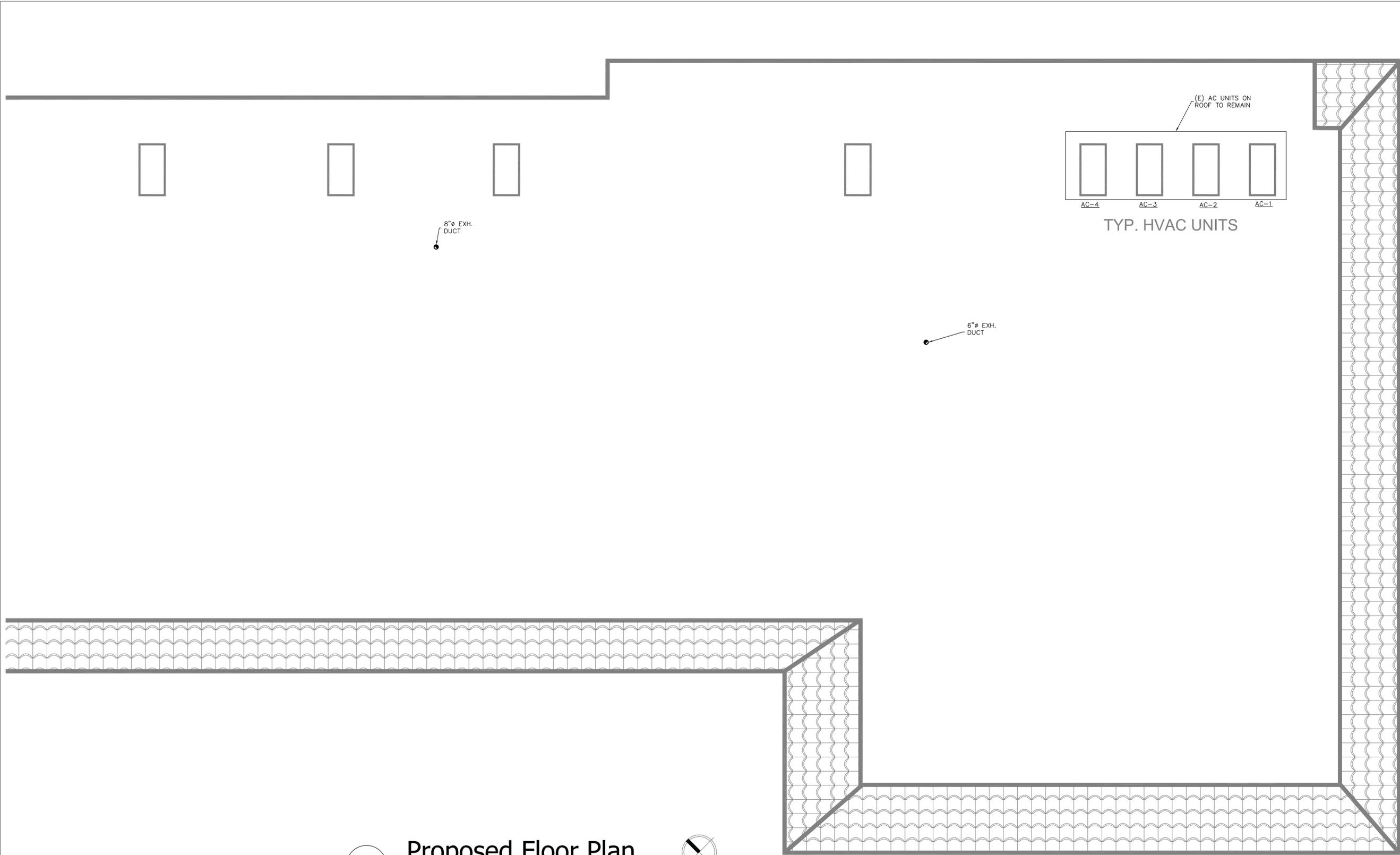
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REVISIONS

Date	Description

Sheet

M-2



1

Proposed Floor Plan

Scale: 3/16"=1'-0"



North

Designed	KA	06/16
Drawn	DRA	06/16
Lead	-/-	-/-
Regional	-/-	-/-
Director	-/-	-/-

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Options for Youth

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FLOOR PLAN



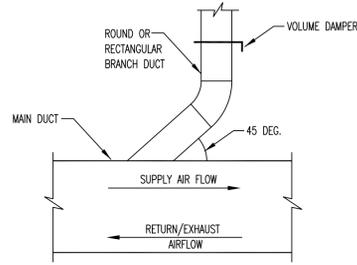
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REVISIONS

Date	Description

Sheet

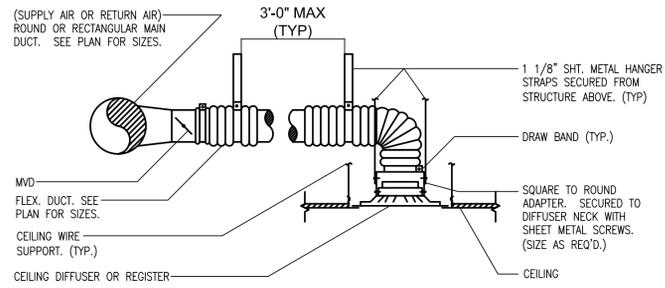
M-3



NOTES:

FURNISH THIS TYPE CONNECTION WHEN SINGLE LINE DUCTWORK IS INDICATED AS THIS (L) FOR BRANCHES WITH LESS THAN 25% OF THE TOTAL AIR FLOW

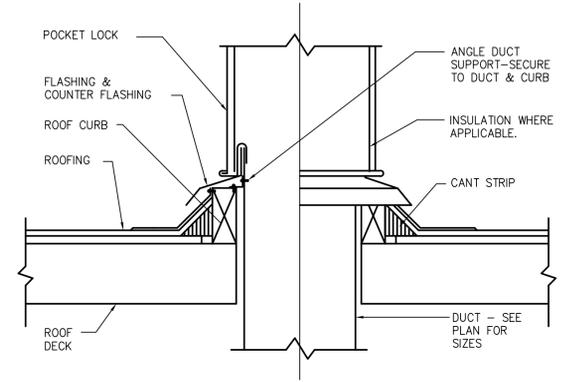
1 ROUND OR RECTANGULAR DUCT BRANCH CONNECTION DETAIL



2 FLEXIBLE DUCT TO CD OR CR

NOTES:

1. DUCT ADAPTER SHALL BE SAME MANUFACTURER AS CEILING DIFFUSER OR REGISTER.
2. FLEX DUCT SHALL BE INSTALLED PER SMACNA MANUAL USING DRAWBAND & INSULATION SHALL BE FITTED OVER THE CORE AND SUPPLEMENTARY SECURED WITH A DRAWBAND.
3. CEILING DIFFUSERS AND REGISTER SHALL MATCH CEILING.



3 DUCT THRU ROOF DETAIL



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REVISIONS

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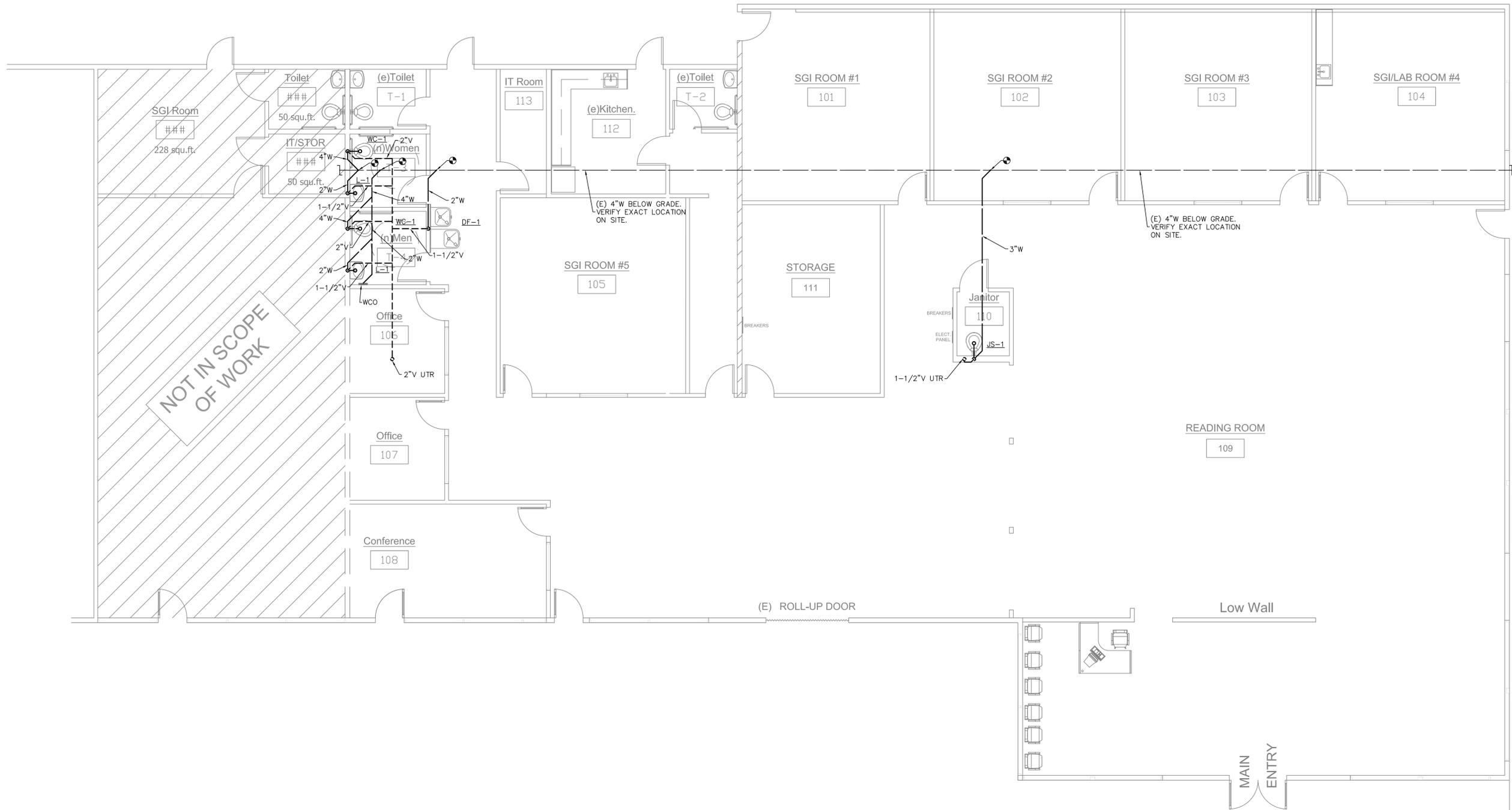
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M-4

Victorville 1
 Options for Youth
 Address: 14725 Seventh St., Victorville, Ca. 92392

DETAILS

Designed	KA	06/16
Drawn	DRA	06/16
Lead	-/-	-/-
Regional	-/-	-/-
Director	-/-	-/-



1 W & V Floor Plan
 Scale: 3/16"=1'-0"
 North

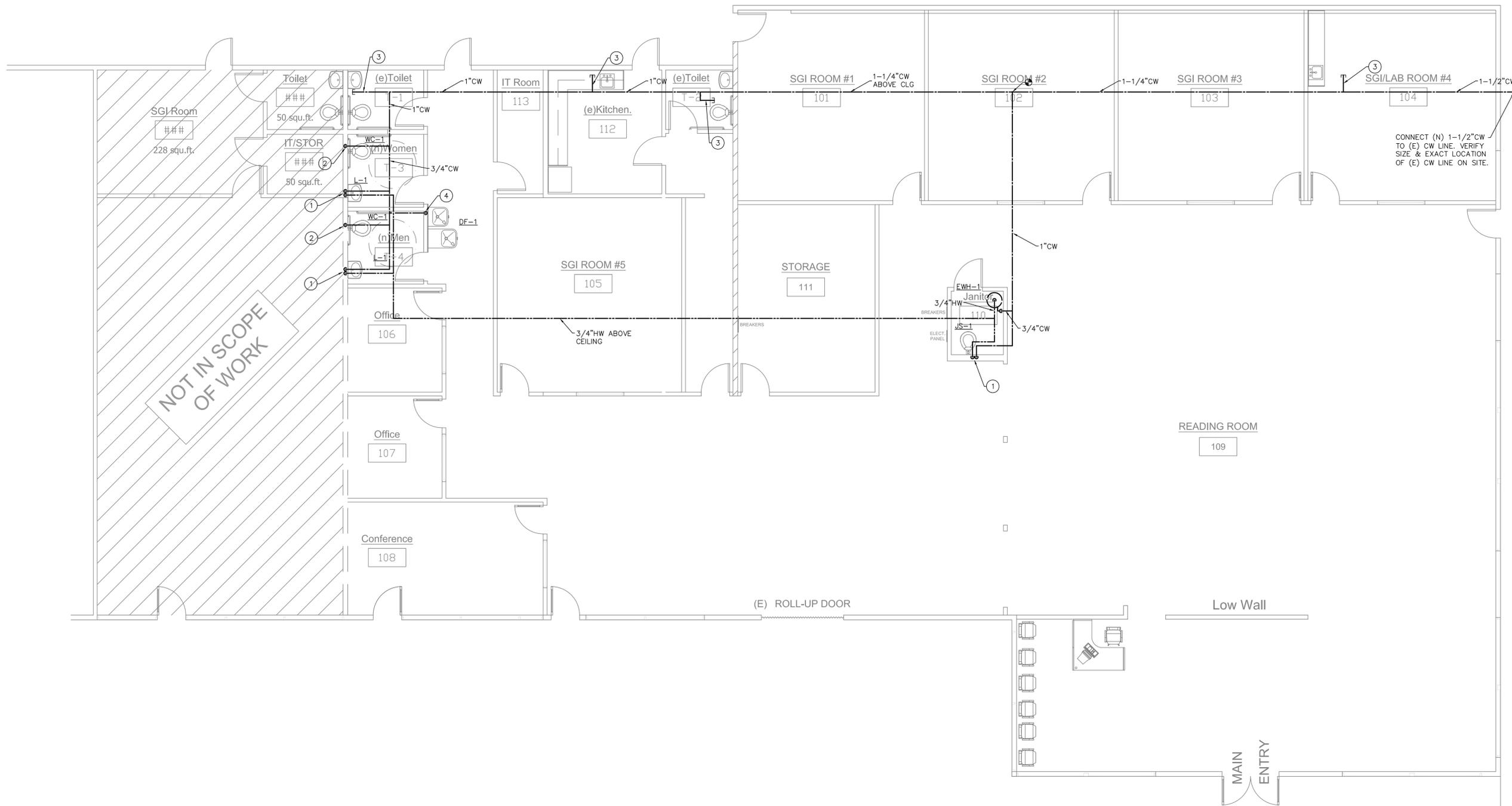
Designed	KA	06/16
Drawn	DRA	06/16
Lead	-/-	-/-
Regional	-/-	-/-
Director	-/-	-/-

Victorville 1
 Options for Youth
 Address: 14725 Seventh St., Victorville, Ca. 92392
 W & V FLOOR PLAN



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REVISIONS	
Date	Description



NOT IN SCOPE OF WORK

1 CW & HW Floor Plan
 Scale: 3/16"=1'-0"
 North

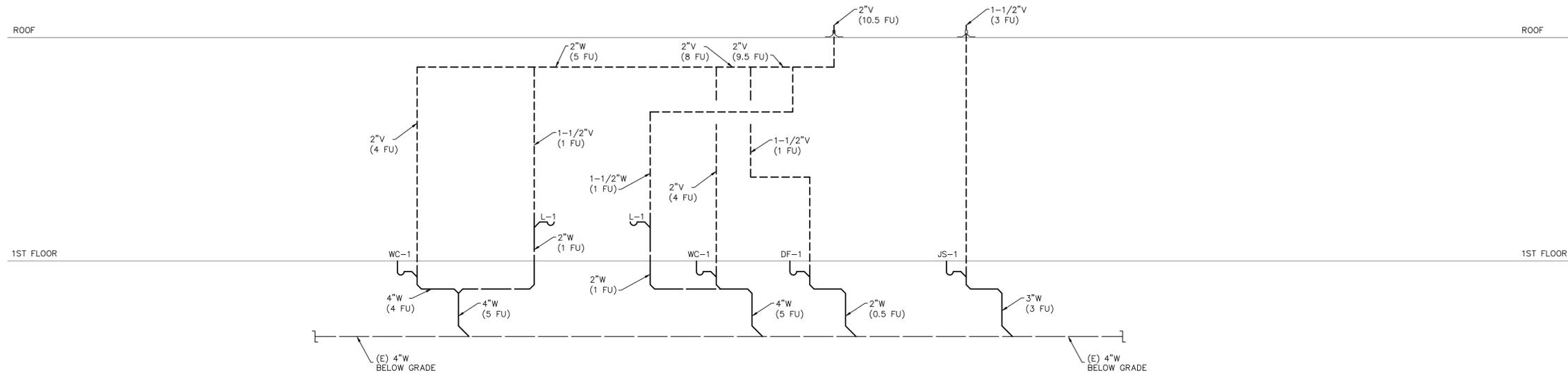
Designed	KA	06/16
Drawn	DRA	06/16
Lead	-/-	-/-
Regional	-/-	-/-
Director	-/-	-/-

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 CW & HW FLOOR PLAN



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REVISIONS	
Date	Description



LEGEND

WC (PUBLIC)	4 FU
L (PUBLIC)	1 FU
JS	3 FU
DF	0.5 FU

NOTE:

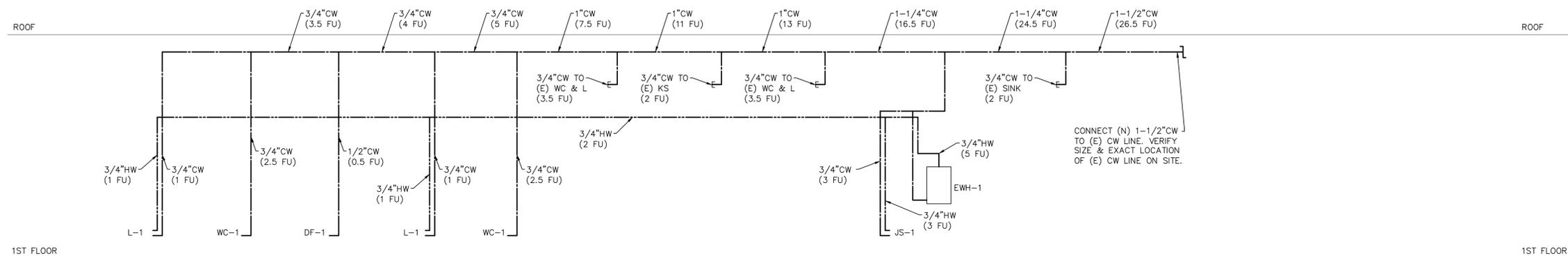
1. SLOPE WASTE PIPING AT 2% UNLESS IMPRACTICAL DUE TO SEWER DEPTH OR STRUCTURAL IMPEDIMENTS. APPROVAL FROM BUILDING OFFICIAL MUST BE OBTAINED TO REDUCE SLOPE TO 1% FOR PIPE SIZES 4" AND LARGER. SEE MAXIMUM FIXTURE UNIT LOADING.

MAXIMUM FIXTURE UNIT LOADING:

	1% (1/8" PER FOOT)	2% (1/4" PER FOOT)
4"	172	216
6"	576	720
8"	2,112	2,640

1 W & V RISER DIAGRAM

Scale: NTS



LEGEND

WC (PUBLIC)	2.5 FU	DF	0.5 FU
L (PUBLIC)	1 FU	KS	1.5 FU
JS	3 FU	S	2 FU

2 CW & HW RISER DIAGRAM

Scale: NTS

Designed	KA	06/16
Drawn	DRA	06/16
Lead	-/-	-/-
Regional	-/-	-/-
Director	-/-	-/-

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REVISIONS

Date	Description

REV.	DATE	BY	DESCRIPTION
1	X	X	
2	X	X	
3	X	X	



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OPTIONS FOR YOUTH
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PROJECT



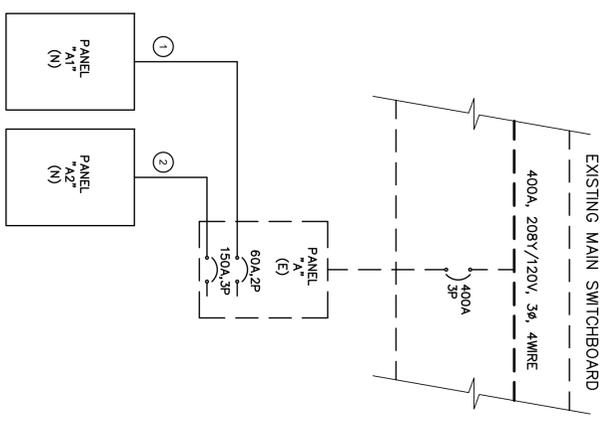
Henry K. Akbar
REGISTERED PROFESSIONAL ELECTRICAL ENGINEER
NO. 13984
EXP. 3-30-18
STATE OF CALIFORNIA
DIVISION OF CALIFORNIA REGISTERED PROFESSIONAL ENGINEERS

SHEET TITLE
SINGLE LINE DIAGRAM & LOAD CALCS.

PROJECT NO.: 16-
SCALE: AS SHOWN
DATE: 06-29-16
BY: VA
CHECKED: HRA
DRAWING NO. E-2.0

SINGLE LINE DIAGRAM NOTES:

- ALL WORK SHALL BE PERFORMED PER 2013 CALIFORNIA ELECTRICAL CODE.
- ALL ELECTRICAL EQUIPMENT AND SWITCHBOARDS SHALL BE FULLY RATED.
- ALL ELECTRICAL EQUIPMENT AND SWITCHBOARDS SHALL BE SERVICED BY A LICENSED ELECTRICIAN. THE SERVICE SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL SAFETY CODE (NEC) AND THE CALIFORNIA ELECTRICAL SAFETY CODE (CESC).
- ALL ELECTRICAL EQUIPMENT, SWITCHBOARDS, ETC. TO WITHSTAND AVAILABLE FAULT CURRENT. VERIFY WITH SERVING UTILITY COMPANY.
- RECOGNIZED ELECTRICAL TESTING LABORATORY OR UL.
- PROVIDE SEISMIC BRACING FOR ALL SERVICE EQUIPMENT, SWITCHBOARDS AND OTHER FLOOR STANDING EQUIPMENT BY INSTALLING APPROVED ANCHORS TO THE BUILDING STRUCTURE FROM EACH EQUIPMENT ENCLOSURE.
- FURNISH ELECTRICAL EQUIPMENT OF THE SAME TYPE OR CLASS FROM ONE MANUFACTURER.
- EQUIP ALL DISTRIBUTION FUSEBLE SWITCHES WITH REJECTION TYPE FUSE CLIPS FOR USE WITH CURRENT LIMITING, UL CLASS R FUSES.
- PROVIDE FUSES FROM ONE MANUFACTURER OF THE FOLLOWING TYPES:
 - "RK-1" - UL CLASS "RK-1" CURRENT LIMITING FUSES.
 - "BUSSMANN" LOW-PEAK TYPE LPN-RK-SP.
 - "RKS" - UL CLASS "RKS" CURRENT LIMITING, DUAL ELEMENT FUSES, "BUSSMANN" LOW-PEAK TYPE LPN-RK-SP.
- ALL CONDUCTORS SHALL BE COPPER WITH THE "THINW/THIN" INSULATION RATED FOR 900 VOLTS.
- FEEDER LENGTHS NOTED ON DRAWINGS ARE FOR VOLTAGE DROP AND SHORT CIRCUIT CALCULATIONS ONLY AND ARE NOT TO BE USED FOR ESTIMATE OR MATERIAL TAKE-OFF.
- NO SPRING DUCTS OR EQUIPMENT FOREIGN TO ELECTRICAL EQUIPMENT SHALL BE PERMITTED TO BE LOCATED WITHIN THE DEDICATED SPACE.
- ALL TERMINALS/LUGS SHALL BE DUAL RATED 60/75° C.
- THE ELECTRICAL ROOM DOOR SHALL OPEN OUTWARD AND SHALL BE EQUIPPED WITH PANIC HARDWARE.
- THE GROUNDING CONDUCTOR SHALL BE CONNECTED TO WATER PIPE (GROUNDING ELECTRODE) WITHIN 5' FROM THE POINT OF ENTRANCE INTO THE BUILDING.
- PROVIDE SEISMIC ANCHORING AND BRACING FOR MAIN SWITCHBOARD AND ALL STANDING SECTIONS.
- ELECTRICAL GROUNDING SHALL BE EQUIPPED BY SHUNT TRIP (SEE SHEET E-2.0 FOR MORE INFO).
- INSTALL A 1" CONDUIT FROM THE MAIN SWITCHBOARD TO THE ROOM AND TERMINATE IN A 12" X 12" X 2" METAL BOX FOR FUTURE USE. THE CONDUIT FOR THE FUTURE ELECTRICAL BOX SHALL BE IDENTIFIED AS PER THE NOTES AND THE DEPARTMENT REQUIREMENTS.
- CIRCUIT BREAKERS USED AS SWITCHES IN 120 AND 277 VOLT FLUORESCENT LIGHTING CIRCUITS SHALL BE LISTED AND MARKED AS "SM" OR "HD" PANEL.
- PROVIDE A LABEL STATING "EV CAPABLE" IS A CONSPICUOUS PLACE AT THE SERVICE PANEL OR SUBPANEL AND NEXT TO THE RACEWAY TERMINATION POINT.
- CONDUCTORS OF A MULTI-WIRE BRANCH CIRCUIT SHALL CONSPICUOUSLY ORIGINATE FROM THE SAME PANELBOARD. THE BRANCH CIRCUIT SHALL BE PROVIDED WITH A MEANS THAT WILL SIMULTANEOUSLY DISCONNECT ALL GROUNDING CONDUCTORS AT THE POINT WHERE THE BRANCH CIRCUIT ORIGINATES (210.4, 240.15(B)(1)).



1 SINGLE LINE DIAGRAM
SCALE: NONE

VOLTAGE DROP SCHEDULE

DEVICE	FEEDER	BRANCH CIRCUIT		TOTAL VOLTAGE DROP
		WIRE SIZE	MAX VOLTAGE DROP	
A	#600kcmil	1.49% (CKT 1,3,5)	#10	1.49%
A1	#6	2.87% (CKT 4)	#12	2.88%
A2	#1/0	2.05% (CKT 9)	#12	2.07%

A1

ROOM MOUNTING RECESSED
FED FROM A

VOLTS 208Y/120V 3φ 4W
BUS AMPS 60
NEUTRAL 100%

AC 42,000
MAIN BRK MLO
LUGS STANDARD

CKT #	CKT BRK	CIRCUIT DESCRIPTION	LOAD KVA			CKT #	CKT BRK	CIRCUIT DESCRIPTION	LOAD KVA		
			A	B	C				A	B	C
1	20/1	OFFICE & BATHROOM FAN, LTG.	1.18	1.23	1.09	2	20/1	BUSINESS AREA LTG.	0.90	1.50	0.00
3	20/1	SGI ROOMS LTG.	0.00	0.00	0.00	4	20/1	BUSINESS AREA LTG.	0.00	0.00	0.00
5	20/1	BUSINESS AREA LTG.	0.00	0.00	0.00	6	20/1	BUSINESS AREA LTG.	0.00	0.00	0.00
7	20/1	SPACE	0.00	0.00	0.00	8	20/1	SPACE	0.00	0.00	0.00
9	20/1	SPACE	0.00	0.00	0.00	10	20/1	SPACE	0.00	0.00	0.00
11	20/1	SPACE	0.00	0.00	0.00	12	20/1	SPACE	0.00	0.00	0.00
13	20/1	SPACE	0.00	0.00	0.00	14	20/1	SPACE	0.00	0.00	0.00
15	20/1	SPACE	0.00	0.00	0.00	16	20/1	SPACE	0.00	0.00	0.00
17	20/1	SPACE	0.00	0.00	0.00	18	20/1	SPACE	0.00	0.00	0.00
19	20/1	SPACE	0.00	0.00	0.00	20	20/1	SPACE	0.00	0.00	0.00
21	20/1	SPACE	0.00	0.00	0.00	22	20/1	SPACE	0.00	0.00	0.00
23	20/1	SPACE	0.00	0.00	0.00	24	20/1	SPACE	0.00	0.00	0.00
25	20/1	SPACE	0.00	0.00	0.00	26	20/1	SPACE	0.00	0.00	0.00
27	20/1	SPACE	0.00	0.00	0.00	28	20/1	SPACE	0.00	0.00	0.00
29	20/1	SPACE	0.00	0.00	0.00	30	20/1	SPACE	0.00	0.00	0.00
31	20/1	SPACE	0.00	0.00	0.00	32	20/1	SPACE	0.00	0.00	0.00
33	20/1	SPACE	0.00	0.00	0.00	34	20/1	SPACE	0.00	0.00	0.00
35	20/1	SPACE	0.00	0.00	0.00	36	20/1	SPACE	0.00	0.00	0.00
37	20/1	SPACE	0.00	0.00	0.00	38	20/1	SPACE	0.00	0.00	0.00
39	20/1	SPACE	0.00	0.00	0.00	40	20/1	SPACE	0.00	0.00	0.00
41	20/1	SPACE	0.00	0.00	0.00	42	20/1	SPACE	0.00	0.00	0.00
TOTAL CONNECTED KVA BY PHASE			2.08	2.73	1.09	TOTAL CONNECTED KVA BY PHASE			2.08	2.73	1.09
TOTAL CONNECTED KVA			5.90	7.31	2.90	TOTAL CONNECTED KVA			5.90	7.31	2.90
BALANCED 3-PHASE AMPS			20.30			BALANCED 3-PHASE AMPS			20.30		

CONN KVA CALC KVA (125%)
LARGEST MOTOR 0.05 0.06 (125%)
OTHER MOTORS 0.15 0.15 (100%)
RECEPTACLES 0.12 0.12 (50%>10)
KITCHEN EQUIP 0.00 (N/A)

CONN KVA CALC KVA (125%)
CONTINUOUS 0.00 0.00 (125%)
HEATING 0.00 0.00 (N/A)
COOLING 0.00 0.00 (N/A)
NONCONTINUOUS 0.00 0.00 (100%)
DIVERSE 0.00 0.00 (N/A)
METERED DEMAND 0.00 0.00 (125%)

A

ROOM MOUNTING RECESSED
FED FROM MS

VOLTS 208Y/120V 3φ 4W
BUS AMPS 400
NEUTRAL 100%

AC 42,000
MAIN BRK MLO
LUGS STANDARD

CKT #	CKT BRK	CIRCUIT DESCRIPTION	LOAD KVA			CKT #	CKT BRK	CIRCUIT DESCRIPTION	LOAD KVA		
			A	B	C				A	B	C
1	30/3	(E)AC	2.17	2.17	2.17	2	30/3	(E)AC	2.17	2.17	2.17
3	30/3	(E)AC	2.17	2.17	2.17	4	30/3	(E)AC	2.17	2.17	2.17
5	30/3	(E)AC	2.17	2.17	2.17	6	30/3	(E)AC	2.17	2.17	2.17
7	30/3	(E)AC	2.17	2.17	2.17	8	30/3	(E)AC	2.17	2.17	2.17
9	30/3	(E)AC	2.17	2.17	2.17	10	30/3	(E)AC	2.17	2.17	2.17
11	30/3	(E)AC	2.17	2.17	2.17	12	30/3	(E)AC	2.17	2.17	2.17
13	30/3	(E)AC	2.17	2.17	2.17	14	30/3	(E)AC	2.17	2.17	2.17
15	30/3	(E)AC	2.17	2.17	2.17	16	30/3	(E)AC	2.17	2.17	2.17
17	30/3	(E)AC	2.17	2.17	2.17	18	30/3	(E)AC	2.17	2.17	2.17
19	30/3	(E)AC	2.17	2.17	2.17	20	30/3	(E)AC	2.17	2.17	2.17
21	30/3	(E)AC	2.17	2.17	2.17	22	30/3	(E)AC	2.17	2.17	2.17
23	30/3	(E)AC	2.17	2.17	2.17	24	30/3	(E)AC	2.17	2.17	2.17
25	30/3	(E)AC	2.17	2.17	2.17	26	30/3	(E)AC	2.17	2.17	2.17
27	30/3	(E)AC	2.17	2.17	2.17	28	30/3	(E)AC	2.17	2.17	2.17
29	30/3	(E)AC	2.17	2.17	2.17	30	30/3	(E)AC	2.17	2.17	2.17
31	30/3	(E)AC	2.17	2.17	2.17	32	30/3	(E)AC	2.17	2.17	2.17
33	30/3	(E)AC	2.17	2.17	2.17	34	30/3	(E)AC	2.17	2.17	2.17
35	30/3	(E)AC	2.17	2.17	2.17	36	30/3	(E)AC	2.17	2.17	2.17
37	30/3	(E)AC	2.17	2.17	2.17	38	30/3	(E)AC	2.17	2.17	2.17
39	30/3	(E)AC	2.17	2.17	2.17	40	30/3	(E)AC	2.17	2.17	2.17
41	30/3	(E)AC	2.17	2.17	2.17	42	30/3	(E)AC	2.17	2.17	2.17
TOTAL CONNECTED KVA BY PHASE			18.71	18.14	15.109	TOTAL CONNECTED KVA BY PHASE			18.71	18.14	15.109
TOTAL CONNECTED KVA			52.24	50.03	42.827	TOTAL CONNECTED KVA			52.24	50.03	42.827
BALANCED 3-PHASE AMPS			138.88			BALANCED 3-PHASE AMPS			138.88		

CONN KVA CALC KVA (125%)
LARGEST MOTOR 6.98 8.13 (125%)
OTHER MOTORS 19.70 19.70 (100%)
RECEPTACLES 20.46 15.23 (50%>10)
KITCHEN EQUIP 0.00 (N/A)

CONN KVA CALC KVA (125%)
CONTINUOUS 0.00 0.00 (125%)
HEATING 0.00 0.00 (N/A)
COOLING 0.00 0.00 (N/A)
NONCONTINUOUS 0.00 0.00 (100%)
DIVERSE 0.00 0.00 (N/A)
METERED DEMAND 0.00 0.00 (125%)



1 LIGHTING PLAN
SCALE: 3/16"=1'-0"

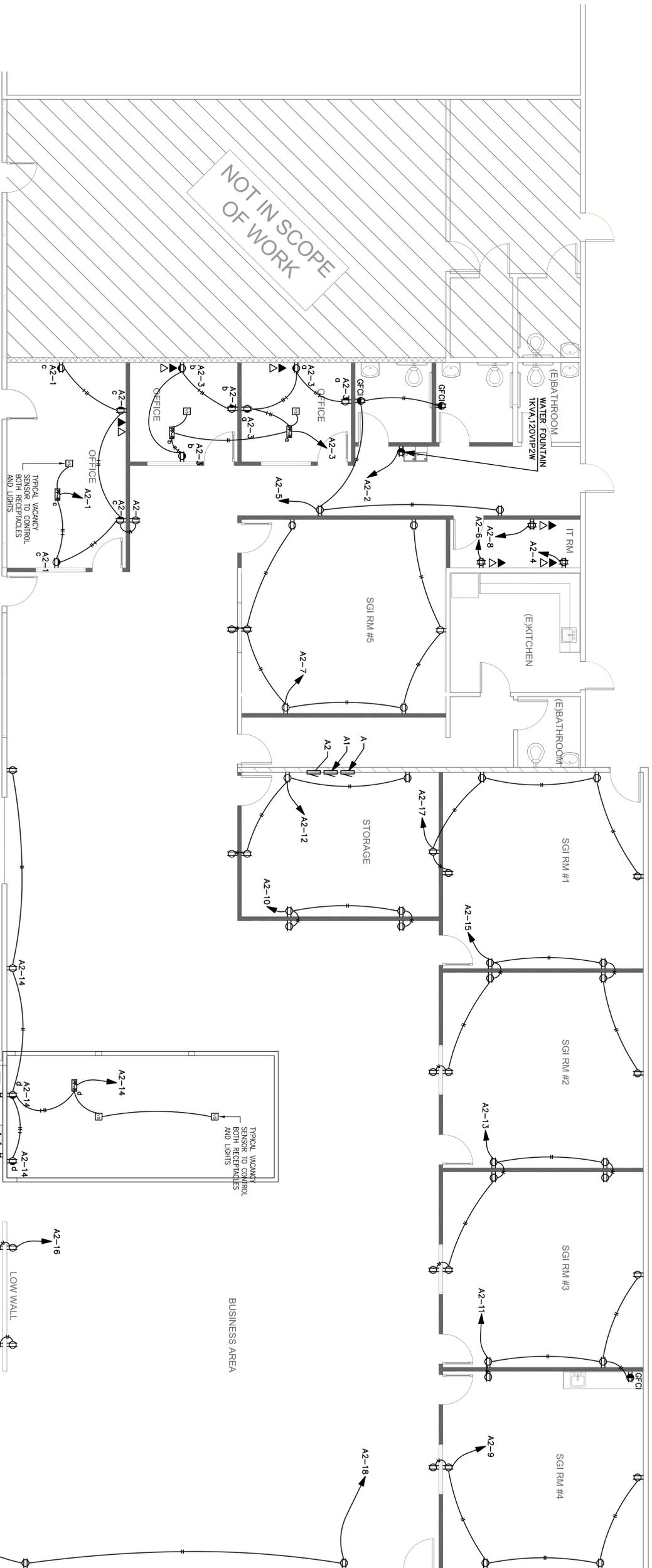
CALLOUT	SYMBOL	LAMP	DESCRIPTION	BALLAST	MOUNTING	MODEL	INPUT WATTS	VOLTS	NOTE 1
K-BUG		(2) HALOGEN	EMERGENCY LIGHT W/ 90 MIN. BATTERY BACKUP	ELECTRONIC	CEILING	LITHONIA QUANTUM ELM654 OR EQUIVALENT	40	120V 1P 2W	
K-EXBUG		(2) LED	EXIT/JUNT COMBO W/ 90 MIN. BATTERY BACKUP	ELECTRONIC	WALL/CEILING	LITHONIA QUANTUM TYPE LHQM LED OR EQUIVALENT	3	120V 1P 2W	
K-EXIT		(1) 1W LED	LUMINATED EXIT SIGN W/ 90 MIN. BATTERY BACKUP	ELECTRONIC	CEILING	LITHONIA TYPE EDGE LED OR EQUIVALENT	2	120V 1P 2W	
L1		(1) 52W LED	2X4 LED	DIMMING	CEILING	GLOBALUX RECESSED EDGE LIT	52	120V 1P 2W	0-10V DIMMING
L1-NL		(1) 52W LED	2X4 LED (NIGHT LIGHT)	DIMMING	CEILING	GLOBALUX RECESSED EDGE LIT	52	120V 1P 2W	0-10V DIMMING
L2		(1) 14.7W LED	6" RECESSED LED LIGHT	DIMMING	CEILING	DMF LIGHTING DRDH-N-6-100/ DRD2M-10-9-40/ DRD21-R-6-X-WH	14.7	120V 1P 2W	0-10V DIMMING
OS-LOW VOLTAGE			OCCUPANCY SENSOR		CEILING	nlight ncm PDT 9		120V 1P 2W	THE EXACT QUANTITY OF OCCUPANCY SENSORS SHALL BE DETERMINED BY LIGHTING SUPPLIER
PC			PHOTO CELL		CEILING	nlight ncm ADCX DZ		120V 1P 2W	VERIFY DIMMING SYSTEM MATCHES THE CORRESPONDING FIXTURE SPECIFIED IN LIGHTING SCHEDULE
PP-PD			POWER PACK W/ ONE DIMMING CONTACT		CEILING	nlight npp16 D		120V 1P 2W	

CALLOUT	SYMBOL	NOTE 1	NOTE 2	QUANTITY
DIMMER (0-10V)		0-10V	nlight DX	7
DIMMER (CAT-5)		CATS	nlight nPODM DX	10
DIMMER-W/V/S (0-10V)		0-10V	nlight WSX-D	2
POWER PACK RECEPTACLE		nlight npp16 PL T24		4
SWITCH-W/V/S		\$VS	LUTRON MS-OPSS2	8
VACANCY SENSOR		LOW VOLTAGE (CAT-5)	nlight ncm PDT 9	5

SWITCH SCHEDULE

	PROJECT	OPTIONS FOR YOUTH 14725 7TH ST., VICTORVILLE, CA 92392	<p>1713 STANDARD AVE. GLENDALE, CA 91201 W 818.956.1900 MAIL@ABRARI.COM</p>	REV.	DATE	BY	DESCRIPTION
				X			
				X			
				X			
				X			
SHEET TITLE		LIGHTING PLAN					
PROJECT NO.: 16-		SCALE: AS SHOWN					
DATE: 06-29-16		BY: VA					
CHECKED: HRA		DRAWING NO. E-3.0					

ALL IDEAS, DESIGNS, ARRANGEMENTS AND PLANS INDICATED OR REPRESENTED BY THIS DRAWING ARE OWNED BY ABRARI AND ASSOCIATES AND WERE CREATED AND DEVELOPED FOR USE AND IN CONNECTION WITH THE SPECIFIED PROJECT. NONE OF THE IDEAS, DESIGNS, ARRANGEMENTS OR PLANS SHALL BE USED BY OR DISCLOSED TO FOR ANY PURPOSE WHATSOEVER WITHOUT THE WRITTEN AUTHORIZATION OF ABRARI AND ASSOCIATES INC.



1 POWER PLAN
SCALE: 3/16"=1'-0"

REV.	DATE	BY	DESCRIPTION
X		X	
X		X	
X		X	

ABRARI ASSOCIATES
ELECTRICAL ENGINEERS

1713 STANDARD AVE.
GLENDALE, CA 91201
W 818.956.1900
MAIL@ABRARI.COM

PROJECT

OPTIONS FOR YOUTH
14725 7TH ST.,
VICTORVILLE, CA 92392

REGISTERED PROFESSIONAL ENGINEER
HARRY K. ABRARI
NO. 13984
EXPIRES 3/30/18
ELECTRICAL ENGINEER
STATE OF CALIFORNIA

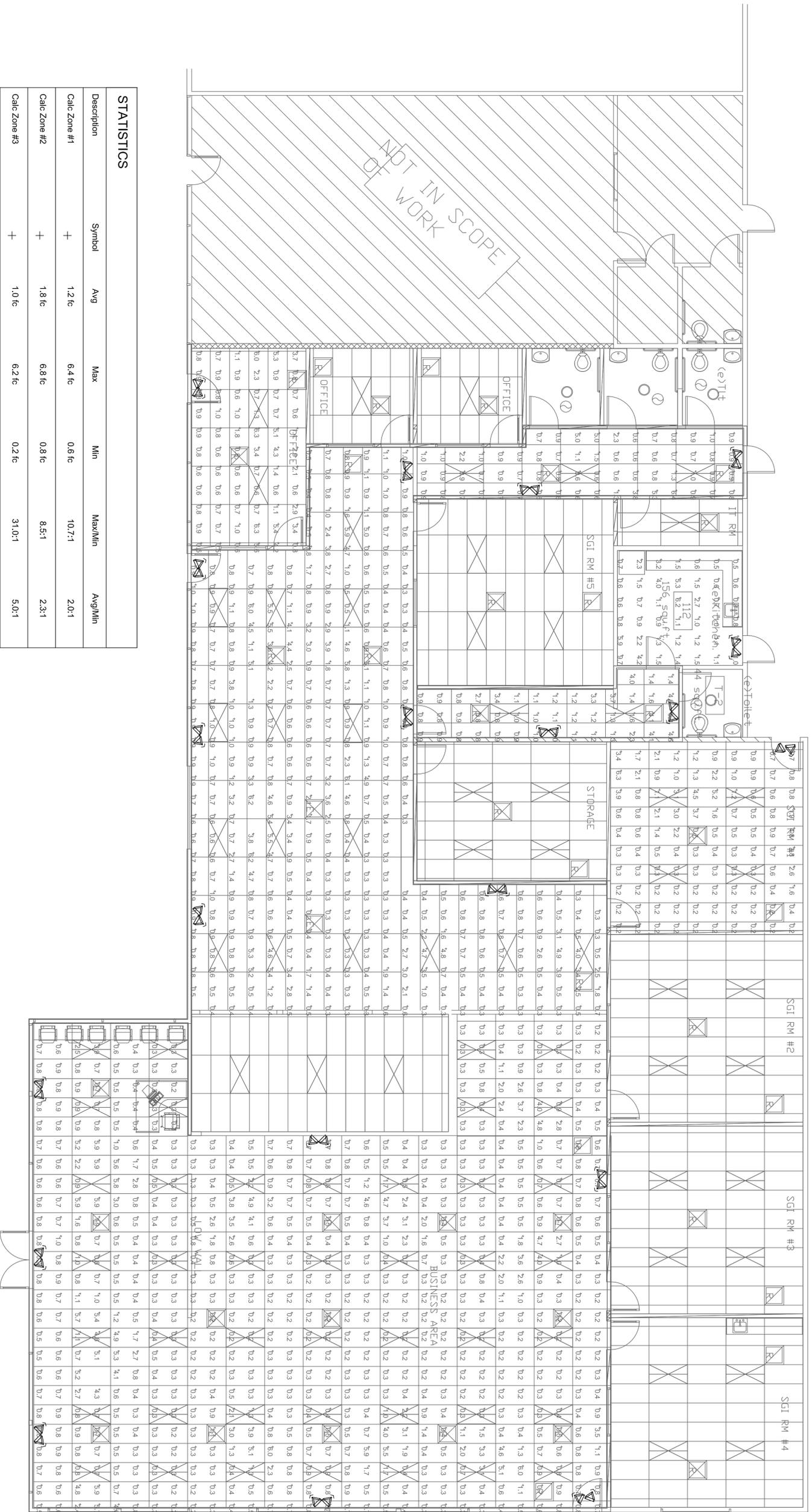
PROJECT NO.: 16-
SCALE: AS SHOWN
DATE: 06-29-16
BY: VA
CHECKED: HRA
DRAWING NO.: E-4.0

SHEET TITLE
POWER PLAN

ALL IDEAS, DESIGNS, ARRANGEMENTS AND PLANS INDICATED OR REPRESENTED BY THIS DRAWING ARE OWNED BY ABRARI AND ASSOCIATES AND WERE CREATED AND DEVELOPED FOR USE AND IN CONNECTION WITH THE SPECIFIED PROJECT. NONE OF THE IDEAS, DESIGNS, ARRANGEMENTS OR PLANS SHALL BE USED BY OR DISCLOSED TO FOR ANY PURPOSE WHATSOEVER WITHOUT THE WRITTEN AUTHORIZATION OF ABRARI AND ASSOCIATES INC.

STATISTICS						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Calc Zone #1	+	1.2 fc	6.4 fc	0.6 fc	10.7:1	20:1
Calc Zone #2	+	1.8 fc	6.8 fc	0.8 fc	8.5:1	23:1
Calc Zone #3	+	1.0 fc	6.2 fc	0.2 fc	31.0:1	50:1
Calc Zone #4	+	1.8 fc	9.7 fc	0.5 fc	19.4:1	36:1
Calc Zone #5	+	1.0 fc	6.3 fc	0.2 fc	31.5:1	50:1
Calc Zone #6	+	1.7 fc	6.3 fc	0.5 fc	12.6:1	34:1

1 PHOTOMETRIC PLAN
SCALE: 3/16"=1'-0"



REV.	DATE	BY	DESCRIPTION
X	X	X	X
X	X	X	X
X	X	X	X

ABRARI ASSOCIATES
ELECTRICAL ENGINEERS

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PROJECT

OPTIONS FOR YOUTH
14725 7TH ST.,
VICTORVILLE, CA 92392

PHOTOMETRIC PLAN

SHEET TITLE

Henry K. Akbar

REGISTERED PROFESSIONAL ENGINEER
NO. 1394
EXPIRES 3/31/18
STATE OF CALIFORNIA

PROJECT NO.: 16-
SCALE: AS SHOWN
DATE: 06-29-16
BY: VA
CHECKED: HRA
DRAWING NO.: E-5.0

ALL IDEAS, DESIGNS, ARRANGEMENTS AND PLANS INDICATED OR REPRESENTED BY THIS DRAWING ARE OWNED BY ABRARI AND ASSOCIATES AND WERE CREATED AND DEVELOPED FOR USE AND IN CONNECTION WITH THE SPECIFIED PROJECT. NONE OF THE IDEAS, DESIGNS, ARRANGEMENTS OR PLANS SHALL BE USED BY OR DISCLOSED TO FOR ANY PURPOSE WHATSOEVER WITHOUT THE WRITTEN AUTHORIZATION OF ABRARI AND ASSOCIATES INC.

STATE OF CALIFORNIA
INDOOR LIGHTING
 CEC NRCCLT-01-E (Revised 08/15) CALIFORNIA ENERGY COMMISSION
 CERTIFICATE OF COMPLIANCE NRCCLT-01-E (Page 1 of 6)
 Project Name: TENANT IMPROVEMENT (OPTIONS FOR YOUTH) Date Prepared: 06/20/16
 Indoor Lighting: (Page 1 of 6)
A. General Information
 Climate Zone: 9
 Conditioned Floor Area: 8102
 Unconditioned Floor Area: _____
 Building Type: Nonresidential High-Rise Residential Hotel/Motel
 Schools Healthcare/Public Schools Conditioned Spaces Unconditioned Spaces
 Phase of Construction: New Construction Addition Alteration
 Method of Compliance: Complete Building Area Category Tailored
 Project: 14725 7TH ST., VICTORVILLE, CA 92392
B. Lighting Compliance Documents (linked yes for each document included)
 For detailed instructions on the use of this and all Energy Efficiency Standards compliance documents, refer to the *Nonresidential Manual published by the California Energy Commission*.
 YES NO FORM TITLE
 NRCCLT-01-E Certificate of Compliance - All Pages required on plans for all submissions.
 NRCCLT-02-E Lighting Controls, Certificates of Compliance, and Power Calculation - All Pages required on plans for all submissions.
 NRCCLT-03-E Indoor Lighting Power Allowance
 NRCCLT-04-E Tailored Method Worksheets
 NRCCLT-05-E Line Voltage Track Lighting Worksheets
 CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance August 2015

Watts per Luminaire	Number of Luminaires	Installed Luminaire Watts in this office (200 x 800)	Square Foot of this office	Watts per square foot (W/sq ft)	Field Inspector	Pass/Fail
1	2	3	4	5	6	7
Total installed portable luminaire watts that are greater than 0.3 watts per square foot per office: Enter sum total of all pages into NRCCLT-01-E Page 1						

STATE OF CALIFORNIA
INDOOR LIGHTING
 CEC NRCCLT-01-E (Revised 08/15) CALIFORNIA ENERGY COMMISSION
 CERTIFICATE OF COMPLIANCE NRCCLT-01-E (Page 2 of 6)
 Project Name: TENANT IMPROVEMENT (OPTIONS FOR YOUTH) Date Prepared: 06/20/16
C. Summary of Allowed Lighting Power
 Conditioned and unconditioned space lighting must not be combined for compliance.
 Indoor Lighting Power for Unconditioned Spaces
 1. Installed Lighting NRCCLT-01-E, page 4
 2. Portable ONLY FOR OFFICES NRCCLT-01-E, page 3
 3. Minus Lighting Control Credits NRCCLT-02-E, page 2
 4. Adjusted Installed Lighting Power (row 1 plus row 2 minus row 3) = 5154.8
 5. Compliance ONLY if installed & allowed
 6. Allowed Lighting Power Unconditioned NRCCLT-03-E, page 1
 7. 7274
 8. Declaration of Required Installation Certificates
 Declare by selecting yes for all installation certificates that will be submitted. (Retain copies and verify forms are completed and signed.)
 YES NO Form/Title
 NRCCLT-01-E Must be submitted for all buildings.
 NRCCLT-02-E Must be submitted for a lighting control system, or for an Energy Management Control System (EMCS), to be recognized for compliance.
 NRCCLT-03-E Must be submitted for a line-voltage track lighting (integral control limiter, or for a supplementary component) or for a portable luminaire used in conjunction with track lighting, to be recognized for compliance.
 NRCCLT-04-E Must be submitted for a power adjustment factor (PAF) to be recognized for compliance.
 NRCCLT-05-E Must be submitted for additional wattage installed in a video conferencing studio to be recognized for compliance.
 CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance August 2015

Name or Item Tag	Complete Luminaire Description (i.e., 3 lamp fluorescent troffer, 6 recessed LED light)	Watts per Luminaire	How wattage was determined	Number of Luminaires	Total Installed Watts in this area (Watts x Hours)	Location	Field Inspector	Pass/Fail
1	2X4 LED LIGHT	52	CEC Default from NA8	98	5096	OFFICE, CLASSROOM & BUSINESS		
2	6 RECESSED LED LIGHT	14.7	According to §130.0(c)	4	58.8	BATHROOMS		
INSTALLED WATTS PAGE TOTAL: 5154.8						Enter sum total of all pages into NRCCLT-01-E Page 2		

STATE OF CALIFORNIA
INDOOR LIGHTING
 CEC NRCCLT-01-E (Revised 08/15) CALIFORNIA ENERGY COMMISSION
 CERTIFICATE OF COMPLIANCE NRCCLT-01-E (Page 3 of 6)
 Project Name: TENANT IMPROVEMENT (OPTIONS FOR YOUTH) Date Prepared: 06/20/16
D. Declaration of Required Certificates of Acceptance
 Declare by checking all of the Certificates of Acceptance that will be submitted. (Retain copies and verify forms are completed and signed.)
 YES NO Form/Title
 NRCCLT-02-A Must be submitted for occupancy sensors and automatic time switch controls.
 NRCCLT-03-A Must be submitted for automatic daylight controls.
 NRCCLT-04-A Must be submitted for demand responsive lighting controls.
 A separate Lighting Schedule Must be Filled Out for Conditioned and Unconditioned Spaces. Installed Lighting Power listed on this Lighting Schedule is only for:
 UNCONDITIONED SPACE UNCONDITIONED SPACE
F. Indoor Lighting Schedule and Field Inspector Energy Checklist
 The actual Indoor Lighting Power listed on this page and on the next page includes all installed permanent and planned portable lighting systems.
 When a Complete Building Method is used for compliance, list each different type of luminaire on separate lines.
 When Area Category Method or Tailored Method is used for compliance, list each different type of luminaire by each different function area on separate lines.
 Also include track lighting in schedule and submit the track lighting compliance form (NRCCLT-05-E) when line-voltage track lighting is installed.
 CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance August 15

REV.	DATE	BY	DESCRIPTION
X			
X			
X			

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance August 2015

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance August 2015

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance August 2015

STATE OF CALIFORNIA
INDOOR LIGHTING
 CEC NRCCLT-01-E (Revised 08/15) CALIFORNIA ENERGY COMMISSION
 CERTIFICATE OF COMPLIANCE NRCCLT-01-E (Page 4 of 6)
 Project Name: TENANT IMPROVEMENT (OPTIONS FOR YOUTH) Date Prepared: 06/20/16
H. INDOOR LIGHTING SCHEDULE and FIELD INSPECTOR ENERGY CHECKLIST
 A separate Lighting Schedule Must be Filled Out for Conditioned and Unconditioned Spaces. Installed Lighting Power listed on this Lighting Schedule is only for:
 UNCONDITIONED SPACE UNCONDITIONED SPACE

A	B	C	D	E	F	G	H
Lamp Type	Installed Watts	How wattage was determined	Number of Luminaires	Total Installed Watts in this area (Watts x Hours)	Location	Field Inspector	Pass/Fail
1	2	3	4	5	6	7	8
Total installed portable luminaire watts that are greater than 0.3 watts per square foot per office: Enter sum total of all pages into NRCCLT-01-E Page 1							

STATE OF CALIFORNIA
INDOOR LIGHTING
 CEC NRCCLT-01-E (Revised 08/15) CALIFORNIA ENERGY COMMISSION
 CERTIFICATE OF COMPLIANCE NRCCLT-01-E (Page 5 of 6)
 Project Name: TENANT IMPROVEMENT (OPTIONS FOR YOUTH) Date Prepared: 06/20/16
I. Declaration of Required Certificates of Acceptance
 Declare by checking all of the Certificates of Acceptance that will be submitted. (Retain copies and verify forms are completed and signed.)
 YES NO Form/Title
 NRCCLT-02-A Must be submitted for occupancy sensors and automatic time switch controls.
 NRCCLT-03-A Must be submitted for automatic daylight controls.
 NRCCLT-04-A Must be submitted for demand responsive lighting controls.
 A separate Lighting Schedule Must be Filled Out for Conditioned and Unconditioned Spaces. Installed Lighting Power listed on this Lighting Schedule is only for:
 UNCONDITIONED SPACE UNCONDITIONED SPACE
F. Indoor Lighting Schedule and Field Inspector Energy Checklist
 The actual Indoor Lighting Power listed on this page and on the next page includes all installed permanent and planned portable lighting systems.
 When a Complete Building Method is used for compliance, list each different type of luminaire on separate lines.
 When Area Category Method or Tailored Method is used for compliance, list each different type of luminaire by each different function area on separate lines.
 Also include track lighting in schedule and submit the track lighting compliance form (NRCCLT-05-E) when line-voltage track lighting is installed.
 CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance August 15

STATE OF CALIFORNIA
INDOOR LIGHTING
 CEC NRCCLT-01-E (Revised 08/15) CALIFORNIA ENERGY COMMISSION
 CERTIFICATE OF COMPLIANCE NRCCLT-01-E (Page 6 of 6)
 Project Name: TENANT IMPROVEMENT (OPTIONS FOR YOUTH) Date Prepared: 06/20/16
DOCUMENTATION AUTHOR'S DECLARATION STATEMENT
 I, I certify that this Certificate of Compliance documentation is accurate and complete.
 Documentation Author Name: HENRY R. ABRARI Signature Date: 06/20/16
 Company: ABRARI & ASSOCIATES
 Address: 1713 STANDARD AVE. City/State/Zip: GLENDALE, CA 91201
 Phone: (818) 956-1300
RESPONSIBLE PERSON'S
 I certify the following under penalty of perjury, under the law of the State of California:
 1. The information provided on this Certificate of Compliance is true and correct.
 2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible design).
 3. The energy features and performance specifications, methods, components and manufactured devices for the building design or system design identified on this Certificate of Compliance (responsible design) are:
 a. Certified as being in compliance with the California Green Building Code (CGBC) and the California Green Building Code (CGBC) and the California Green Building Code (CGBC).
 b. 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 a permit with this building permit application.
 5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit 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 Responsible Design Permit.
 Responsible Design Permit Number: HENRY R. ABRARI Date Signed: 06/20/16
 Company: ABRARI & ASSOCIATES
 Address: 1713 STANDARD AVE. City/State/Zip: GLENDALE, CA 91201
 Phone: (818) 956-1300
 CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance August 2015

PROJECT: OPTIONS FOR YOUTH
 14725 7TH ST.,
 VICTORVILLE, CA 92392

REGISTERED PROFESSIONAL ENGINEER
 HENRY R. ABRARI
 NO. 1394
 EXP. 3-30-18
 LICENSED BY THE STATE OF CALIFORNIA

PROJECT NO.: 16-
 SCALE: NONE
 DATE: 06-29-16
 BY: VA
 CHECKED: HRA
 DRAWING NO.: E-6.0

ABRARI ASSOCIATES
 ELECTRICAL ENGINEERS
 1713 STANDARD AVE.
 GLENDALE, CA 91201
 W 818.956.1300
 MAIL@ABRARI.COM

ALL IDEAS, DESIGNS, ARRANGEMENTS AND PLANS INDICATED OR REPRESENTED BY THIS DRAWING ARE OWNED BY ABRARI AND ASSOCIATES AND WERE CREATED AND DEVELOPED FOR USE AND IN CONNECTION WITH THE SPECIFIED PROJECT. NONE OF THE IDEAS, DESIGNS, ARRANGEMENTS OR PLANS SHALL BE USED BY OR DISCLOSED TO FOR ANY PURPOSE WHATSOEVER WITHOUT THE WRITTEN AUTHORIZATION OF ABRARI AND ASSOCIATES INC.

STATE OF CALIFORNIA INDOOR LIGHTING - LIGHTING CONTROLS		CALIFORNIA ENERGY COMMISSION NCCCLT-02-E (REVISED 05/15)	
Project Name:	TEANANT IMPROVEMENT (OPTIONS FOR YOUTH)	Date Prepared:	06/30/16
Project Number:	15241	Page:	1 of 3
A. Mandatory Lighting Control Declaration Statement (Indicate if the measure applies by checking Yes or No below.)			
YES	NO	Control Requirements	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Lighting shall be controlled by self-contained lighting control devices which are certified to the Energy Commission according to the Title 20 appliance efficiency regulations in accordance with section 110.9.	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Lighting shall be controlled by a lighting control system or energy management control system in accordance with §110.9. An installation certificate shall be submitted in accordance with section 130.4(b).	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	One or more track lighting integral current limiter shall be installed which have been certified to the Energy Commission in accordance with §110.9 and §130.0. Additionally, an installation certificate shall be submitted in accordance with section 130.4(b).	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	A track lighting supplementary/primary power on panel shall be installed in accordance with section 110.9 and section 130.0. Additionally, an installation certificate shall be submitted in accordance with section 130.4(b).	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	All lighting controls and equipment shall comply with the applicable requirements in §110.9 and shall be installed in accordance with the manufacturer's instructions in accordance with section 130.1.	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	All luminaires shall be functionally controlled with manually switched ON and OFF lighting controls in accordance with section 130.1(a).	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	General lighting shall be separately controlled from all other lighting systems in an area. Floor and wall displays, window displays, case displays, ornamental, and special effects lighting shall each be separately controlled on circuits that are 20 amps or less. When track lighting is used, general display, ornamental, and special effects lighting shall each be separately controlled in accordance with section 130.1(a)(4).	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	The general lighting of enclosed areas 300 square feet or larger, with a connected lighting load that exceeds 65 watts per square foot shall meet the multi-level lighting control requirements in accordance with section 130.1(b).	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	All installed indoor lighting shall be equipped with controls that meet the applicable shut-off control requirements in section 130.1(c).	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Lighting in all Daylight Zones shall be controlled in accordance with the requirements in section 130.1(d) and daylight zones are shown on the plans.	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Lighting power in buildings larger than 10,000 square feet shall be capable of being automatically reduced in response to a Demand Responsive Signal in accordance with section 130.1(e).	
<input type="checkbox"/>	<input type="checkbox"/>	Before an occupancy permit is granted for a newly constructed building or area, or a new lighting system serving a building, area, or site is granted for normal use, indoor lighting controls, serving the building, area, or site shall be certified as meeting the Acceptance Requirements or Code Compliance in accordance with section 130.4(a). The controls required to meet the Acceptance Requirements include automatic daylight controls, automatic shut-off controls, and demand responsive controls.	

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance August 2015

STATE OF CALIFORNIA INDOOR LIGHTING - LIGHTING CONTROLS		CALIFORNIA ENERGY COMMISSION NCCCLT-03-E (REVISED 05/15)	
Project Name:	TEANANT IMPROVEMENT (OPTIONS FOR YOUTH)	Date Prepared:	06/30/16
Project Number:	15241	Page:	1 of 4
A separate page must be filled out for Conditioned and Unconditioned Spaces. This page is only for:			
<input checked="" type="checkbox"/>	<input type="checkbox"/>	CONDITIONED SPACES	
<input type="checkbox"/>	<input type="checkbox"/>	UNCONDITIONED SPACES	
A. SUMMARY TOTALS OF LIGHTING POWER ALLOWANCES			
<input type="checkbox"/>	<input type="checkbox"/>	If using Area Category Method, Tabulated Method, or a combination of Area Category and Tabulated Method for compliance, use only the total in column (b) as the total allowed building watts.	
<input type="checkbox"/>	<input type="checkbox"/>	If using Complete Building Method for compliance, use only the total in column (a) as total allowed building watts.	
1. Complete Building Method Allowed Watts. Documented in section B of NCCCLT-03-E (below on this page)	(a)		(b)
2. Area Category Method Allowed Watts. Documented in section C-1 of NCCCLT-03-E (below on this page)			7774
3. Tabulated Method Allowed Watts. Documented in section A of NCCCLT-03-E (below on this page)			7774
TOTAL ALLOWED BUILDING WATTS. Enter number into correct cell on NCCCLT-03-E, Page 2, Row 1.			7774
<input type="checkbox"/>	<input type="checkbox"/>	Check here if building contains both conditioned and unconditioned areas.	
B. COMPLETE BUILDING METHOD LIGHTING POWER ALLOWANCE			
1	2	3	4
TYPE OF BUILDING (from §140.6 Table 140.6-A)	WATTS PER (ft ²)	COMPLETE = BLDG. AREA	ALLOWED WATTS
Total Area:			
Total Watts. Enter Total Watts into section A, row 1 (Above on this page)		Total from section C-2.	
		7774	
Total Watts. Enter Total Watts into section A, row 2 (Above on this page)		Total from section C-3.	
		7774	

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance May 2015

STATE OF CALIFORNIA INDOOR LIGHTING - LIGHTING CONTROLS		CALIFORNIA ENERGY COMMISSION NCCCLT-02-E (REVISED 05/15)																													
Project Name:	TEANANT IMPROVEMENT (OPTIONS FOR YOUTH)	Date Prepared:	06/30/16																												
Project Number:	15241	Page:	2 of 3																												
A. Prepare document must be filled out for conditioned and unconditioned spaces. This page is used only for the following:																															
<input checked="" type="checkbox"/>	<input type="checkbox"/>	AREA CATEGORY METHOD																													
<input type="checkbox"/>	<input type="checkbox"/>	COMPLETE BUILDING METHOD																													
B. Mandatory and Prescriptive Indoor Lighting Control Schedule, Pre-Calculation, and Field Inspection Checklist																															
Lighting Control Schedule		Standards Complying With 1																													
A		B		C		D		E		F		G		H		I		J		K		L		M		N		O		P	
																														Control Credit	Test Required
Location in Building		Type/Description of Lighting Control (line switch, dimmer, automatic daylight, etc.)		# of Units		§130.1(a)		§130.1(b)		§130.1(c)		§130.1(d)		§130.1(e)		§140.6(a)		§140.6(b)		Control Credit		Control Credit		Control Credit		Control Credit		Control Credit		Control Credit	
OFFICE		DIMMER		17		X		X		X		X		X		X		X		Pass		Pass		Pass		Pass		Pass			
RECEPTION		DIMMER		8		X		X		X		X		X		X		X		Pass		Pass		Pass		Pass		Pass			
CONFERENCE		DIMMER		7		X		X		X		X		X		X		X		Pass		Pass		Pass		Pass		Pass			
STORAGE		DIMMER		2		X		X		X		X		X		X		X		Pass		Pass		Pass		Pass		Pass			
OFFICES		DIMMER		5		X		X		X		X		X		X		X		Pass		Pass		Pass		Pass		Pass			
TOTAL		SUM OF COLUMN (M)																													
CONTROL CREDIT TOTAL (Sum of Column M)		ENTER SUM TOTAL OF CONTROL CREDIT FOR ALL PAGES HERE (Sum of All Column M)																													

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance May 2015

STATE OF CALIFORNIA INDOOR LIGHTING - LIGHTING CONTROLS		CALIFORNIA ENERGY COMMISSION NCCCLT-03-E (REVISED 05/15)	
Project Name:	TEANANT IMPROVEMENT (OPTIONS FOR YOUTH)	Date Prepared:	06/30/16
Project Number:	15241	Page:	2 of 4
A separate page must be filled out for Conditioned and Unconditioned Spaces. This page is only for:			
<input checked="" type="checkbox"/>	<input type="checkbox"/>	CONDITIONED SPACES	
<input type="checkbox"/>	<input type="checkbox"/>	UNCONDITIONED SPACES	
C-2 AREA CATEGORY METHOD GENERAL LIGHTING POWER ALLOWANCE			
<input type="checkbox"/>	<input type="checkbox"/>	Do not include portable lighting for offices. Portable lighting for offices shall be documented only in section B of NCCCLT-03-E.	
<input type="checkbox"/>	<input type="checkbox"/>	Separately list lighting for each primary function area as defined in §100.1 of the Standards.	
A. AREA CATEGORY (From §140.6 Table 140.6-C)			
	Primary Function on Area per Table 140.6-C	WATTS PER (ft ²)	ALLOWED WATTS
COMM. BATHROOM & STORAGE	SUPPORT	0.6	965
OFFICE	OFFICE <50	1.0	477
CLASSROOMS	CLASSROOM	1.2	2096
BUSINESS AREA	OFFICE >50	0.75	3736
WAITING AREA/RECEPTION	WAITING AREA	1.1	868
		X	=
			888.8
			D
TOTALS			7774
Enter sum total Area Category allowed watts into section C-1 of NCCCLT-03-E (this compliance form)			7774
			7774

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance May 2015

STATE OF CALIFORNIA INDOOR LIGHTING - LIGHTING CONTROLS		CALIFORNIA ENERGY COMMISSION NCCCLT-02-E (REVISED 05/15)																													
Project Name:	TEANANT IMPROVEMENT (OPTIONS FOR YOUTH)	Date Prepared:	06/30/16																												
Project Number:	15241	Page:	3 of 3																												
A. Prepare document must be filled out for conditioned and unconditioned spaces. This page is used only for the following:																															
<input checked="" type="checkbox"/>	<input type="checkbox"/>	AREA CATEGORY METHOD																													
<input type="checkbox"/>	<input type="checkbox"/>	COMPLETE BUILDING METHOD																													
B. Mandatory and Prescriptive Indoor Lighting Control Schedule, Pre-Calculation, and Field Inspection Checklist																															
Lighting Control Schedule		Standards Complying With 1																													
A		B		C		D		E		F		G		H		I		J		K		L		M		N		O		P	
																														Control Credit	Test Required
Location in Building		Type/Description of Lighting Control (line switch, dimmer, automatic daylight, etc.)		# of Units		§130.1(a)		§130.1(b)		§130.1(c)		§130.1(d)		§130.1(e)		§140.6(a)		§140.6(b)		Control Credit		Control Credit		Control Credit		Control Credit		Control Credit			
OFFICE		DIMMER		17		X		X		X		X		X		X		X		Pass		Pass		Pass		Pass		Pass			
RECEPTION		DIMMER		8		X		X		X		X		X		X		X		Pass		Pass		Pass		Pass		Pass			
CONFERENCE		DIMMER		7		X		X		X		X		X		X		X		Pass		Pass		Pass		Pass		Pass			
STORAGE		DIMMER		2		X		X		X		X		X		X		X		Pass		Pass		Pass		Pass		Pass			
OFFICES		DIMMER		5		X		X		X		X		X		X		X		Pass		Pass		Pass		Pass		Pass			
TOTAL		SUM OF COLUMN (M)																													
CONTROL CREDIT TOTAL (Sum of Column M)		ENTER SUM TOTAL OF CONTROL CREDIT FOR ALL PAGES HERE (Sum of All Column M)																													

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance May 2015

STATE OF CALIFORNIA INDOOR LIGHTING - LIGHTING CONTROLS		CALIFORNIA ENERGY COMMISSION NCCCLT-03-E (REVISED 05/15)	
Project Name:	TEANANT IMPROVEMENT (OPTIONS FOR YOUTH)	Date Prepared:	06/30/16
Project Number:	15241	Page:	4 of 4
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<input type="checkbox"/>	<input type="checkbox"/>	Separately list lighting for each primary function area as defined in §100.1 of the Standards.	
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	Primary Function on Area per Table 140.6-C	WATTS PER (ft ²)	ALLOWED WATTS
COMM. BATHROOM & STORAGE	SUPPORT	0.6	965
OFFICE	OFFICE <50	1.0	477
CLASSROOMS	CLASSROOM	1.2	2096
BUSINESS AREA	OFFICE >50	0.75	3736
WAITING AREA/RECEPTION	WAITING AREA	1.1	868
		X	=
			888.8
			D
TOTALS			7774
Enter sum total Area Category allowed watts into section C-1 of NCCCLT-03-E (this compliance form)			7774
			7774

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance May 2015

REV.	DATE	BY	DESCRIPTION
X			
X			
X			

ABRARI ASSOCIATES ELECTRICAL ENGINEERS

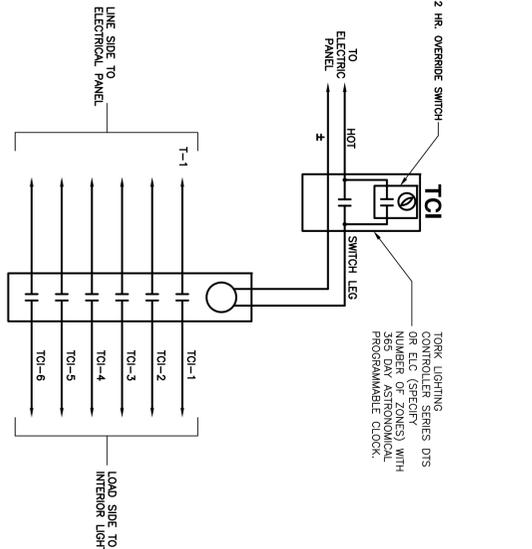
1713 STANDARD AVE.
GLENDALE, CA 91201
818.956.1900
MAIL@ABRARI.COM

PROJECT

OPTIONS FOR YOUTH
14725 7TH ST.,
VICTORVILLE, CA 92392

SHEET TITLE
TITLE 24
ENERGY
CALCULATIONS

PROJECT NO.: 16-
SCALE: NONE
DATE: 06-29-16
BY: VA
CHECKED: HRA
DRAWING NO.: E-6.1



REGISTERED PROFESSIONAL ENGINEER
HARRY K. ABRARI
NO. 1394
EXP. 3-30-18
STATE OF CALIFORNIA
LICENSED ELECTRICAL ENGINEER

REGISTERED PROFESSIONAL ENGINEER
HENRY R. ABRARI
NO. 1394
EXP. 3-30-18
STATE OF CALIFORNIA
LICENSED ELECTRICAL ENGINEER

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