

ELECTRICAL SYMBOLS

- BO CEILING LIGHT FIXTURE: UPPER CASE LETTER INDICATES TYPE.
- F □ □ □ WALL MOUNTED LIGHT FIXTURE: UPPER CASE LETTER INDICATES TYPE.
- A 5a LIGHTING FIXTURE, "5" DENOTES CIRCUIT NUMBER. LOWER CASE "a" DENOTES UPPER CASE "A" DENOTES FIXTURE TYPE.
- ⊗ EXIT SIGN WITH JUNCTION BOX APPROVED FOR THROUGH WIRING. UNIVERSAL MOUNT. DIRECTIONAL ARROW AS SHOWN ON PLAN.
- ⊗ LIGHTING FIXTURE CONNECTED TO EMERGENCY GENERATOR.
- (E) ⊗ EXISTING LIGHTING FIXTURE TO REMAIN.
- (E) ⊗ EXISTING LIGHTING FIXTURE TO REMAIN.
- ⊗ PANEL DESIGNATION, LETTER IDENTIFIES THE PANEL.
- LIGHTING PANEL. ▨ DISTRIBUTION SWITCHBOARD.
- ⊗ TIME CLOCK, +48" U.O.N.
- ⊗ JUNCTION BOX: MOUNT +18" U.O.N.
- ⊗ JUNCTION BOX: MOUNTED IN CEILING SPACE OR ON CEILING IF NO CEILING SPACE.
- ⊗ DUPLEX RECEPTACLE: 125V., 15 AMP., NEMA 5-15R. +18" U.O.N.
- ⊗ WEATHERPROOF RECEPTACLE ("GFI" TYPE): 125V., 20 AMP., NEMA 5-20R WITH WEATHERPROOF COVER. +18" U.O.N.
- ⊗ QUAD RECEPTACLE: IN A 2-GANG BOX. NEMA 5-15R. +18" U.O.N.
- ⊗ QUAD RECEPTACLE: IN A 2-GANG BOX. NEMA 5-20R +18" U.O.N.
- ⊗ DUPLEX RECEPTACLE: 125V., 20 AMP., NEMA 5-20R. +18" U.O.N.
- ⊗ DUPLEX RECEPTACLE: 125V., 20 AMP., NEMA 5-20R. FLUSH FLOOR MOUNTED ON POKE THRU BOX.
- ⊗ ELECTRICAL REEL WITH 4 RECEPTACLES "CHEMETRON" #82-31-5300
- ⊗ DUPLEX RECEPTACLE: 125V., 20 AMP., NEMA 5-20R. FLUSH CEILING MOUNTED.
- ⊗ GROUND FAULT INTERRUPTER TYPE DUPLEX RECEPTACLE: 125V, 15 AMP, NEMA 5-15R. +18" U.O.N.
- ⊗ WIREMOLD 4000 WITH DIVIDER FOR POWER AND DATA/TEL AT EACH OUTLET INDICATED, PROVIDE DEVICE BRACKET, A NEMA 5-15R DUPLEX RECEPTACLE AND A WIREMOLD PLATE FOR POWER AND BLANK COVERS FOR UN-USED OUTLETS AT ALL DEVICE BRACKETS; QUANTITY OF OUTLETS AS SHOWN ON PLANS. SPECIAL NON-STANDARD COLOR IS REQUIRED. COLOR TO BE SELECTED BY ARCHITECT. U.O.N. MOUNT AT 42" A.F.F. TO CENTERLINE OF WIREMOLD.
- ⊗ PROVIDE BLANK PLATE FOR FUTURE DATA/TEL OUTLET.
- ⊗ FUSED DISCONNECT SWITCH H.P. RATED WITH CLASS "R" FUSECLIPS.
- ⊗ COMBINATION FUSIBLE DISCONNECT SWITCH AND MAGNETIC STARTER.
- ⊗ MULTIPLE SINGLE POLE SWITCHES IN MULTIGANG BOX. NUMBER OF LOWER CASE LETTERS INDICATE NUMBER OF SWITCHES. +48" U.O.N.
- ⊗ SINGLE POLE SWITCH. S₂ TWO POLE SWITCH.
- ⊗ THREE WAY SWITCH. S₃ FOUR WAY SWITCH.
- ⊗ MANUAL MOTOR STARTER: TOGGLE TYPE WITH OVERLOADS.
- ⊗ KEY OPERATED SWITCH, +48" U.O.N.
- ⊗ POWER PACK. "WATT STOPPER" #B277E-P.
- ⊗ CEILING MTD., DUAL TECH, LOW VOLTAGE OCCUPANCY SENSOR "WATT STOPPER" DT-300L. 360 DEGREE COVERAGE. MOUNTED ON THE MIDDLE OF ROOM.
- ⊗ WALL MOUNTED LINE VOLTAGE OCCUPANCY SENSOR AT +48" A.F.F. "WATT STOPPER" W1-200.
- ⊗ WALL MOUNTED LINE VOLTAGE OCCUPANCY SENSOR WITH BUILT-IN TO SWITCHES, "WATT STOPPER" WQ-300".
- ⊗ DIMMER SWITCH; +48: A.F.F.
- ⊗ CEILING EXHAUST FAN
- (E) EXISTING.
- EOL END OF LINE RESISTOR
- GFI GROUND FAULT INTERRUPTER.
- H.P. HORSEPOWER
- N.F. NON FUSED
- (E) EXISTING
- A.F.F. ABOVE FINISHED FLOOR.
- (R) RELOCATED EXISTING DEVICE.
- (ER) REMOVE (E) DEVICE AND PROVIDE NEW.
- TSP TWISTED SHIELDED PAIR.
- LV— LOW VOLTAGE WIRING BETWEEN OCCUPANCY SENSORS SENSORS 1/2"C-3C#24AWG.
- (XR) DEMOLISH (E) DEVICE INCLUDING ASSOCIATED CONDUIT/WIRES.
- (RR) REMOVE (E)DEVICE AND RELOCATE AS INDICATED.
- G or GFI RECEPTACLE WITH THIS SUBSCRIPT SHALL BE GFI TYPE.
- A-1,3,5 HOMERUN TO PANEL "A", CIRCUITS 1, 3, 5.
- ER-- DISCONNECT (E) WIRES IN (E) CONDUIT. (E) CONDUIT TO BE RE-USED FOR NEW WORK.
- E-- (E) CONDUIT AND WIRES TO REMAIN.
- XR-- DISCONNECT AND REMOVE EXISTING CONDUIT & WIRES.
- ER-- DISCONNECT AND REMOVE EXISTING HOMERUN CONDUIT & WIRES.
- CONDUIT: EXPOSED IN UNFINISHED AREAS; CONCEALED ABOVE CEILING OR IN WALL IN FINISHED AREAS.
- CONDUIT: IN OR BELOW FLOOR OR BELOW GRADE.

ELECTRICAL SYMBOLS CONT.

- * 3/4"C,2#12 & 1#12G
- * 3/4"C,5#12 & 1#12G
- * 1"C,8#12 & 1#12G
- * 3/4"C,3#10 & 1#10G
- * 1"C,6#10 & 1#10G
- * 1"C,9#10 & 1#10G
- * --- NEW WIRES IN EXISTING CONDUIT. NUMBER OF HATCH MARKS INDICATE NUMBER OF NEW #12 WIRES. NO HATCH MARK, INDICATE 2#12 WIRES.
- * FOR ALL COMPUTER RECEPTACLE BRANCH CIRCUITS, PROVIDE SEPARATE NEUTRAL WIRE. PROVIDE GROUND WIRE IN ALL CONDUITS AND WIREMOLD RACEWAYS.
- TVTC TELEVISION TERMINAL CABINET
- CTC CLOCK TERMINAL CABINET
- STC SOUND TERMINAL CABINET
- 4" SQ TEL. J-BOX WITH 1-GANG RING WITH 3/4"C.O. STUB UP TO ACCESSIBLE CEILING SPACE. +48" A.F.F.
- 4" SQ DATA/TEL. J-BOX WITH 1-GANG RING WITH 1"C.O. STUB UP TO ACCESSIBLE CEILING SPACE. +18" A.F.F.
- ⊗ WALL MOUNTED CLOCK. +8"-0" AFF. MATCH EXISTING.
- ⊗ FLUSH CEILING MOUNTED SPEAKER. MATCH EXISTING.
- FATC FIRE ALARM TERMINAL CABINET WITH TERMINAL STRIPS.
- MFACP MAIN FIRE ALARM CONTROL PANEL.
- FA FIRE ALARM
- ⊗ DEMOLISHED (E)PA SPEAKER.
- ⊗ DEMOLISHED (E) WALL MOUNTED CLOCK.
- (E) ⊗ (E)RECEPTACLE TO REMAIN. (E) ⊗ (E)QUAD RECEPTACLE TO REMAIN.
- ⊗ EXISTING FLUSH MOUNTED OUTLET TO BE REMOVED INCLUDING ASSOCIATED CONDUITS AND WIRES. PROVIDE BLANK COVER PLATE IF NOTE BEING RE-USED.
- ⊗ DEMOLISH (E) CEILING MOUNTED DUPLEX RECEPTACLES INCLUDING ASSOCIATED CONDUIT AND WIRES.
- ⊗ DEMOLISH (E) WALL SWITCH/SENSOR INCLUDING ASSOCIATED CONDUIT AND WIRES.
- ⊗ DISCONNECT AND REMOVE (E) TEL/DATA OUTLETS.
- C— 3/4"C-3#12 CLOCK.
- 1S- 3/4"C-(1)S CABLE.
- 2S- 3/4"C-(2)S CABLES.
- 3S- 3/4"C-(3)S CABLES.
- 4S- 3/4"C-(4)S CABLES.
- "S" CABLE - WESTPENN 293, 1 PAIR #18 SHIELDED.

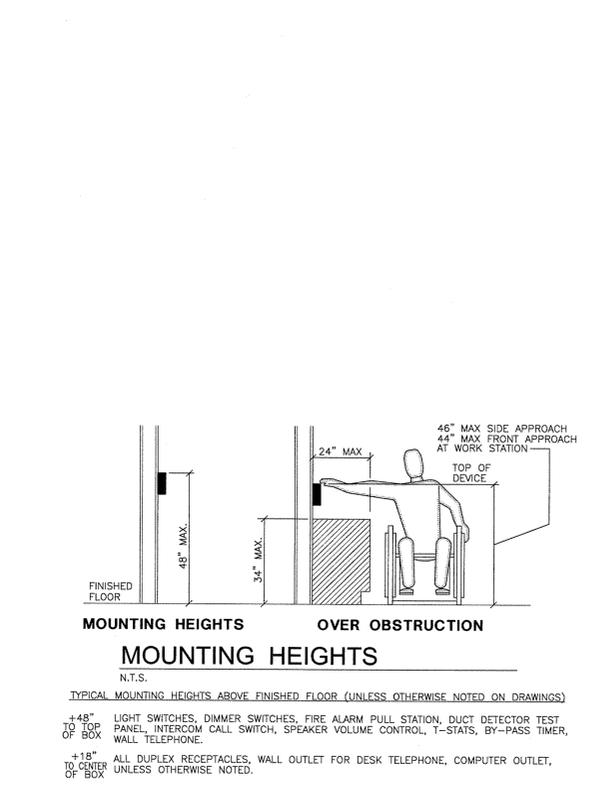
CODES, STANDARDS & GUIDES

List of 2010 California Code of Regulations (C.C.R.)
 Applicable Codes Effective January 1, 2011:
 2010 California Building Standards Administrative Code, (CAC), Part 1, Title 24 C.C.R.
 2010 California Building Code, (CBC), Part 2, Title 24 C.C.R. Volumes 1 & 2.
 (Based on 2009 Edition International Building Code with 2010 California Amendments)
 2010 California Electrical Code, (CEC), Part 3, Title 24 C.C.R.
 (Based on 2008 National Electrical Code with 2010 California Amendments)
 2010 California Mechanical Code, (CMC), Part 4, Title 24 C.C.R.
 (Based on 2009 IAPMO Uniform Mechanical Code with 2010 California Amendments)
 2010 California Plumbing Code, (CPC), Part 5, Title 24 C.C.R.
 (Based on 2009 IAPMO Uniform Plumbing Code with 2010 California Amendments)
 2010 California Energy Code, (CEC), Part 6, Title 24 C.C.R.
 (Based on 2010 Edition California Energy Commission Building Energy Efficiency Standards)
 2010 California Elevator Safety Construction Code, (CFC), Part 7, Title 24 C.C.R.
 2010 California Historical Building Code, (CFC), Part 8, Title 24 C.C.R.
 2010 California Fire Code, (CFC), Part 9, Title 24 C.C.R.
 (Based on 2009 International Fire Code with 2010 California Amendments)
 2010 California Existing Building Code, (CFC), Part 10, Title 24 C.C.R.
 (Based on 2009 International Existing Building Code with 2010 California Amendments)
 2010 California Green Building Standards Code, (CFC), Part 11, Title 24 C.C.R.
 2010 California Reference Standards, (CFC), Part 12, Title 24 C.C.R.
 (Partial List - See CBC Chapter 35 and CFC Chapter 45)
 2004 ASME A17.1 Safety Code For Elevators And Escalators

Applicable Standards and Guides:
 2010 Edition NFPA 13 Installation of Sprinkler System (California Amendments)
 2007 Edition NFPA 14 Installation of Standpipe and Hose Systems
 2002 Edition NFPA 17 Dry Chemical Extinguishing Systems
 2002 Edition NFPA 17A Wet Chemical Extinguishing Systems
 2003 Edition NFPA 20 Installation of Stationary Pumps for Fire Protection
 2003 Edition NFPA 22 Water Tanks for Private Fire Protection
 2007 Edition NFPA 24 Installation of Private Fire Service Mains and Their Appurtenances
 2006 Edition NFPA 25 Inspection, Testing, Maintenance of Water-based Fire Protection Systems
 2010 Edition NFPA 72 National Fire Alarm Code (California Amended)
 (Note see UL Standard 1971 for "Visual Devices")

2006 Edition NFPA 253 Critical Radiant Flux of Floor Covering Systems
 2004 Edition NFPA 2001 Clean Agent Fire Extinguishing Systems
 2010 Edition ICC 300 Bleachers, Folding and Telescopic Seating and Grandstands
 (ICC/ANSI 200-2002)

Federal Codes and Standards:
 Title II: Uniform Federal Accessibility Standards (UFAS) or ADA Standards for Accessible Design (Appendix A of 28 CFR, Part 36).
 Title III: ADA Standards for Accessible Design (Appendix A of 28 CFR, Part 36)



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GENERAL NOTES

- THE SPECIFICATIONS AND DRAWINGS ARE INTENDED TO COVER A COMPLETE INSTALLATION OF SYSTEMS. THE OMISSION OF EXPRESSED REFERENCE TO ANY ITEM OF LABOR OR MATERIAL FOR THE PROPER EXECUTION OF THE WORK IN ACCORDANCE WITH PRESENT PRACTICE OF THE TRADE SHALL NOT RELIEVE THE CONTRACTOR FROM PROVIDING SUCH ADDITIONAL LABOR AND MATERIALS.
- WORK INCLUDES ALL LABOR, MATERIALS, APPLIANCES, TOOLS, EQUIPMENT, FACILITIES, TRANSPORTATION AND SERVICES NECESSARY FOR AND INCIDENTAL TO PERFORMING ALL OPERATIONS IN CONNECTION WITH FURNISHING, DELIVERY AND INSTALLATION OF ELECTRICAL SYSTEM, COMPLETE, AS SHOWN ON THE DRAWINGS AND/OR SPECIFIED HEREIN.
- CONSTRUCT PROJECT IN ACCORDANCE WITH FOLLOWING CODES: REGULATIONS OF STATE AND LOCAL FIRE MARSHAL; NATIONAL ELECTRIC CODE, NATIONAL FIRE PROTECTION ASSOCIATION, EDITION IN FORCE; LOCAL CODES AND ORDINANCES; TITLE 19, 21 AND 24 CALIFORNIA ADMINISTRATIVE CODE.
- PERMITS, FEES AND INSPECTIONS: OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND FEES REQUIRED BY ANY CONSTITUTED AUTHORITY HAVING JURISDICTION INCLUDING UTILITIES. ARRANGE AND PAY FOR ALL REQUIRED INSPECTIONS OR EXAMINATIONS AND DELIVER CERTIFICATES OF INSPECTION TO ARCHITECT.
- RECORD DRAWINGS: ON COMPLETION OF WORK, OBTAIN ONE SET OF XEROX VELLUMS FROM ARCHITECT AT COST OF PRINTING, AND NOTE NEATLY IN SCALE ALL CHANGES ON RECORD SET. DELIVER COMPLETE SET OF VELLUMS TOGETHER WITH ONE SET OF BLUELINE PRINTS TO ARCHITECT TOGETHER WITH CONTRACTOR'S NAME, ADDRESS AND PHONE NUMBER. INCORRECT, NON-LEGIBLE OR NON-REPRODUCIBLE DRAWINGS WILL NOT BE ACCEPTED.
- SUBMIT A LIST OF MATERIALS AND EQUIPMENT MANUFACTURERS THAT CONTRACTOR INTENDS TO USE. SUBMIT SHOP DRAWINGS FOR: LIGHT FIXTURES, DISCONNECT SWITCHES, TRANSFORMERS, PANELBOARDS, ETC.
- THE TERM "PROVIDE" USED ON DRAWINGS SHALL BE CONSIDERED TO MEAN "FURNISH AND INSTALL".
- BEFORE PROCEEDING WITH WORK CAREFULLY CHECK AND VERIFY ALL DIMENSIONS AND SIZES AND ASSUME ALL RESPONSIBILITY FOR FITTING OF MATERIALS AND EQUIPMENT TO OTHER PARTS OF EQUIPMENT AND TO STRUCTURE. WHERE APPARATUS AND EQUIPMENT HAVE BEEN INDICATED ON DRAWINGS, DIMENSIONS HAVE BEEN TAKEN FROM TYPICAL EQUIPMENT OF CLASS INDICATED. CAREFULLY CHECK DRAWINGS AND SEE THAT EQUIPMENT WILL FIT INTO SPACES PROVIDED.
- LOCATIONS OF CONDUITS, OUTLETS, APPARATUS AND EQUIPMENT INDICATED ON DRAWINGS ARE APPROXIMATE ONLY AND SHALL BE CHANGED TO MEET ARCHITECTURAL AND STRUCTURAL CONDITIONS AS REQUIRED.
- BE CAUTIONED THAT DIAGRAMS SHOWING ELECTRICAL CONNECTIONS ARE DIAGRAMMATIC ONLY AND MUST NOT BE USED FOR OBTAINING LINEAL RUNS OF WIRING OR CONDUIT. WIRING DIAGRAMS DO NOT NECESSARILY SHOW EXACT PHYSICAL ARRANGEMENT OF EQUIPMENT.
- EXTRA WORK OR COSTS TO THIS CONTRACTOR DUE TO OTHER CONTRACTORS OR TRADES SHALL BE ADJUSTED BETWEEN THIS CONTRACTOR AND OFFENDING CONTRACTOR AT NO EXTRA COST TO OWNER. NOTIFY ARCHITECT BEFORE SUCH EXTRA WORK IS DONE.
- WHERE CONDUITS PASS THROUGH SLEEVES IN INTERIOR WALLS, FLOORS, OR CEILINGS, COMPLETELY FILL SPACE BETWEEN EACH CONDUIT AND ITS SLEEVE TO PROVIDE AN AIRTIGHT SEAL.
- USE GLASS FIBER MATERIAL, "DUXSEAL" COMPOUND, FOR ACOUSTIC SEALS.
- ALL EQUIPMENT SHALL BE BRACED AND/OR ANCHORED TO RESIST A HORIZONTAL FORCE PER TITLE 24, 2010 CBC FOR ZONE 4.
- PROVIDE RECESSED OUTLET BOXES IN FINISHED AREAS; SECURE BOXES TO INTERIOR WALL PARTITION STUDS. ACCURATELY POSITION TO ALLOW FOR SURFACE FINISH THICKNESS. USE STAMPED STEEL STUD BRIDGES FOR FLUSH OUTLETS IN HOLLOW STUD WALL, AND ADJUSTABLE STEEL CHANNEL FASTENERS FOR FLUSH CEILING OUTLET BOXES. INSTALL PLASTER RINGS TO INTERFACE WITH EQUIPMENT TO BE MOUNTED THEREON.
- ALIGN WALL-MOUNTED OUTLET BOXES FOR SWITCHES, THERMOSTATS, AND SIMILAR DEVICES.
- WHERE BOXES ARE INSTALLED IN FIRE RATED CEILING OR WALLS, BE RESPONSIBLE FOR PRESERVING INTEGRITY OF FIRE RATING AS REQUIRED.
- IN FIRE-RATED WALL, USE 4" SQUARE DEEP BOXES. DO NOT AGGREGATE MORE THAN 100 SQUARE INCHES OF BOXES FOR ANY 100 SQUARE FEET OF WALL OR PARTITIONS. SEPARATE OUTLET BOXES ON OPPOSITE SIDES OF WALLS OR PARTITION BY A MINIMUM HORIZONTAL DISTANCE OF 24 INCHES.
- PROVIDE COPPER CONDUCTORS ONLY.
- PROVIDE TYPE "THHN" OR "THWN" WIRES ONLY.
- MOUNT RECEPTACLES, TELEPHONES AND J-BOXES LOCATED IN WALL AT +18" FROM FLOOR LINE TO BOTTOM OF BOX UNLESS OTHERWISE NOTED ON PLAN.
- MOUNT LIGHT SWITCHES, T-STATS, ETC. AT +48" AT TOP OF BOX UNLESS OTHERWISE NOTED.
- PROVIDE "U.L. APPROVED" OR "U.L. LISTED" ELECTRICAL EQUIPMENT ONLY.
- USE TYPE "THHN" WIRE FOR ALL FLUORESCENT LIGHT FIXTURES MOUNTED END-TO-END.
- PROVIDE "SERIES E.T.L.-C.B.M. APPROVED" THERMALLY PROTECTED, HIGH FREQUENCY ELECTRONIC, STATE CERTIFIED, TYPE CLASS "P" FLUORESCENT BALLASTS ONLY.
- FURNISH, INSTALL AND CONNECT ALL LAMPS.
- PROVIDE WHEREVER NECESSARY ALL ADDITIONAL BACKING, BLOCKING AND SUPPORTS FOR LIGHT FIXTURES.
- USE RIGID GALVANIZED STEEL CONDUIT FOR ALL SIZES WHERE DIRECTLY EXPOSED TO WEATHER; WHERE SUBJECT TO ABNORMAL CONDITIONS OF HEAT, COLD, MOISTURE, HUMIDITY, FUMES AND HAZARDOUS ELEMENTS; WHERE INSTALLED EXPOSED BELOW 7-1/2 FEET, IN AREAS WHERE SUBJECT TO MECHANICAL INJURY INCLUDING MECHANICAL AND EQUIPMENT ROOMS; AND IN CONCRETE SLABS ON GRADE.
- EMT CONDUIT WITH COMPRESSION TYPE FITTINGS MAY BE USED FOR ALL SIZES UP TO 1-1/2 INCHES MAXIMUM TRADE SIZE IN DRY LOCATIONS AS IN STUD PARTITIONS AND FURRED CEILING SPACES. CONDUITS SHALL BE CONTINUOUS FROM OUTLET TO OUTLET TO PANEL EXCEPT WHERE RIGID STEEL CONDUIT IS REQUIRED OR INDICATED. EMT SHALL NOT BE RUN EXPOSED, IN CONCRETE, RUNS MORE THAN 100 FEET FOR POWER FEEDERS.
- USE FLEXIBLE STEEL CONDUIT ONLY WHERE INDICATED AND FOR SHORT MOTOR OR VIBRATING EQUIPMENT CONNECTIONS, MINIMUM 3/8 INCHES LONG, OR FOR CONNECTIONS TO RECESSED FIXTURES FROM JUNCTION OR PULLBOXES. MAXIMUM LENGTH FOR ANY APPLICATION SHALL BE 6 FEET. PROVIDE LIQUIDTIGHT FLEXIBLE CONDUIT WITH SEPARATE INSULATED, STRANDED COPPER EQUIPMENT GROUND CONDUCTOR FOR CONNECTIONS IN AREAS EXPOSED TO THE WEATHER, DAMP OR WET LOCATIONS AND CONNECTIONS TO MOTORS AND TRANSFORMER ENCLOSURES, REGARDLESS OF LOCATION.
- RUN EXPOSED RACEWAYS PARALLEL WITH OR AT RIGHT ANGLES TO WALLS.
- INSTALL RECESSED LIGHTING FIXTURES WITH ATTACHED ACCESSIBLE J-BOXES TO PERMIT REMOVAL AND ACCESS FROM BELOW. USE PLASTER FRAMES IN PLASTER, GYPSUM WALLBOARD OR ACOUSTIC CEILINGS. IN GRID CEILING RATED FOR LIGHT FIXTURE SUPPORT, SUPPORT RECESSED FLUORESCENT LIGHT FIXTURES DIRECTLY FROM T-BAR USING APPROVED EARTHQUAKE CLIPS AND IN ADDITION, 2 NO. 12 WIRES (SLACK WIRES), ONE AT EACH DIAGONAL END OF FIXTURE ATTACHED DIRECTLY TO A STRUCTURAL MEMBER. IF TWO OPPOSITE ENDS OF A FIXTURE DO NOT REST ON CEILING MAIN RUNNERS, PROVIDE 4 NO. 12 WIRES (SUPPORT WIRES) TO STRUCTURAL MEMBER. IN GRID CEILING NOT RATED FOR FIXTURE SUPPORT, ATTACH FIXTURE TO GRID USING APPROVED EARTHQUAKE CLIPS AND IN ADDITION 4 NO. 12 WIRES DIRECTLY TO STRUCTURAL MEMBER.
- PROVIDE A #12 PULL WIRE IN ALL CONDUITS INDICATED AS CONDUIT ONLY (C.O.) RATED 250 POUND TENSILE STRENGTH.
- WIRING DEVICES: HIGHEST SPECIFICATION GRADE, COLOR AS SELECTED BY ARCHITECT OR INTERIOR DESIGNER.
- WIRING DEVICE PLATES: COLOR-FINISH AS SELECTED BY ARCHITECT OR INTERIOR DESIGNER.
- PROVIDE ALL NECESSARY INTERMEDIATE J-BOXES AND PULL BOXES OF PROPER SIZES AS REQUIRED.
- ELECTRICAL DRAWINGS ARE DIAGRAMMATIC ONLY AND INDICATE GENERAL ARRANGEMENT OF WORK. BE RESPONSIBLE FOR CHECKING AND COORDINATING WITH OTHER TRADES AND VERIFYING SPACE IN WHICH WORK WILL BE INSTALLED.
- PROVIDE NAMEPLATES ON PANELBOARDS, DISCONNECT SWITCHES, TIME CLOCKS, CONTACTORS AND OTHER MAJOR ELECTRICAL EQUIPMENT. NAMEPLATES SHALL BE ENGRAVED THREE-LAYER LAMINATED PLASTIC, WHITE LETTERS ON A BLACK BACKGROUND. SCREW NAMEPLATES TO EQUIPMENT.
- EXISTING CONDITIONS AS INDICATED ON THESE DRAWINGS HAVE BEEN OBTAINED FROM BEST SOURCES AVAILABLE BUT CANNOT BE GUARANTEED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING CONDITIONS BEFORE PROCEEDING WITH WORK. INCLUDE AS PART OF CONTRACT ALL WORK REQUIRED TO PRODUCE THE INDICATED RESULT.
- SEAL ALL SPACE AROUND CONDUIT PENETRATION THROUGH FIRE-RATED WALL WITH A UL LISTED FIRE BARRIER COMPOUND. "3M" CAULKING OR APPROVED EQUAL.
- INCLUDE ALL ELECTRICAL DEMOLITION AS PART OF THIS CONTRACT. REFER TO ARCHITECTURAL DRAWINGS FOR EXTENT OF WALL REMOVALS, CEILING CHANGES AND ALL OTHER SIMILAR WORK. ELECTRICAL DEMOLITION SHALL INCLUDE DISCONNECTION AND REMOVAL OF AFFECTED LIGHTS, OUTLETS AND ALL OTHER ELECTRICAL DEVICES. REMOVE AND PLUG OR CAP ALL AFFECTED CONDUITS. REMOVE WIRES. IF REMOVED OUTLETS AFFECT DOWNSTREAM ACTIVE OUTLETS, PROVIDE ALL WORK NECESSARY TO REROUTE AND RECONNECT AFFECTED CIRCUITS.
- DRAWINGS DO NOT SHOW ALL THE NECESSARY J-BOXES AND PULL BOXES WHICH WILL BE REQUIRED THROUGHOUT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ALL THESE BOXES AS NECESSARY TO TERMINATE CONDUITS AND RACEWAYS. PAINT BOXES TO MATCH COLOR OF THE FINISHED SURFACE WHERE THE BOXES ARE ATTACHED.
- EXPANSION JOINT-SEISMIC SEPARATIONS BETWEEN BUILDINGS SHALL BE PROVIDED WITH COMBINATION DEFLECTION/EXPANSION FITTINGS AND SHALL COMPLY WITH SPECIFICATIONS WEATHER SHOWN ON DRAWINGS OR NOT.
- ELECTRICAL EQUIPMENT SHALL BE LISTED BY A CITY OF LOS ANGELES RECOGNIZED ELECTRICAL TESTING LABORATORY OR APPROVED BY THE DEPARTMENT.
- FUSIBLE DISCONNECT SWITCHES SHALL BE PROVIDED WITH REJECTION TYPE FUSE HOLDERS.
- ALL SWITCHES AND RECEPTACLES INCLUDING PLATES CONNECTED TO EMERGENCY PANELBOARDS SHALL BE RED IN COLOR TO MATCH EXISTING FACILITY STANDARDS.
- ALL DEMOLISHED EQUIPMENT OR DEVICES WITH SALVAGE VALUE AS DETERMINED BY OWNERS REPRESENTATIVE SHALL BE DELIVERED TO OWNERS DESIGNATED WAREHOUSE.
- ALL FLUORESCENT WITH DOUBLE ENDED LAMPS SHALL BE EQUIPPED WITH DISCONNECT MEANS PER NEC 2010 SEC 410.73 G.
- ALL ELECTRICAL WORK MUST COMPLY WITH CEC 2010, BASE ON 2008 NEC.

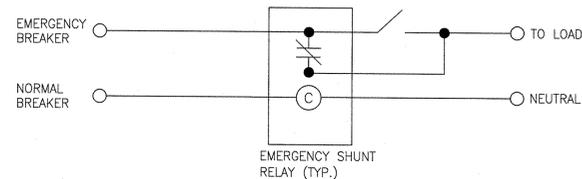
LIGHTING FIXTURE SCHEDULE

TYPE	MTG.	CLASS	MANUFACTURER AND CATALOG NUMBER	FINISH	LAMP		TOTAL WATTS	VOLT	DESCRIPTION
					NO.	TYPE			
A	REC	FL	DAYBRITE LIGHTING #2-ST-G-2-32-D-120-1/2-EBL-LPT841HL	STD	2	F32T8 SPX41	52	277	2' x 4' REC. FL. FIXT., WITH DIFFUSE ACRYLIC DIFFUSER
B	REC	FL	DAYBRITE LIGHTING #2-ST-G-2-32-D-120-1/2-EBD-LPT841HL	STD	2	F32T8 SPX41	52	277	2' x 4' REC. FL. FIXT., WITH DIFFUSE ACRYLIC DIFFUSER WITH ADVANCE MARK X ELECTRONIC DIMMING BALLAST.
C	CLG/WALL	LED	EVENLITE #CCDS-AC-G-1-WW-277	STD	-	LED	3	277	UNIVERSAL MOUNTED EXIT SIGN SINGLE FACE WITH DIRECTIONAL ARROWS AS SHOWN ON PLANS.
D	RED	FL	OMEGA #OM8-26PLT-BB-CS-120/277	STD	1	26W COMPACT FLOUR	26	277	8" DIA COMPACT FLUORESCENT RECESSED DOWNLIGHT.
F	CLG	FL	LIGHTOLIER #PC-2-P-13-T2-120-PT-CPB	STD	-	T2 SPX35	13	120	22" LONG UNDER CABINET LIGHT WITH ELECTRONIC BALLAST AND BUILT-IN SWITCH.
G	RED	FL	OMEGA #OM8-26PLT-BB-CS-DM-120/277	STD	1	26W COMPACT FLOUR	26	277	8" DIA COMPACT FLUORESCENT WITH ELECTRONIC DIMMING BALLAST.

ABBREVIATIONS:
 CLG = CEILING
 REC = RECESS
 CHN = CHAIN HUNG
 PEN = PENDANT
 SPC = SPECIAL

FL = FLUORESCENT
 INC = INCANDESCENT
 MERC = MERCURY
 MH = METAL HALIDE
 HPS = HIGH PRESS. SODIUM
 LPS = LOW PRESS. SODIUM
 STD = STANDARD

NOTES:
 1. PROVIDE HIGH EFFICIENCY ELECTRONIC, STATE CERTIFIED BALLASTS FOR ALL FLUORESCENT FIXTURES. GENERAL ELECTRIC ULTRA MAX SERIES, 0.87 BALLAST FACTOR OR EQUAL.
 2. VERIFY EXACT CEILING TYPE AND PROVIDE PROPER FIXTURES WITH ALL NECESSARY MOUNTING ACCESSORIES.
 3. LAMP TYPE CATALOG #'S INDICATED ARE "GENERAL ELECTRIC" #'S UNLESS OTHERWISE NOTED. LAMPS SHALL BE 2ND GENERATION SUPER T-8 TYPE WITH .87 BALLAST FACTOR.



NOTES:

- EMERGENCY SHUNT RELAY TO BE FACTORY MOUNTED IN A 4" X 4" JUNCTION BOX, AND 2 GANG DEEP PLASTER RING. EMERGENCY CIRCUIT WALL SWITCH SHALL MOUNT IN SAME ENCLOSURE.
- CONTRACTOR TO SUPPLY 2 GANG WALL PLATE AND SINGLE WALL SWITCH APPROPRIATELY RATED PER NEC AND ANY LOCAL ELECTRICAL CODES.
- EMERGENCY SHUNT RELAY SHALL BE ETL LISTED TO UL STD 916 AND UL 924, WITH A 16 GAGE STEEL BARRIER TO SEPARATE NORMAL AND EMERGENCY POWER. MANUFACTURED BY LC&D LIGHTING CONTROLS (800) 345-4448

EMERGENCY SHUNT RELAY USED WITH SINGLE CIRCUIT WALL SWITCH
 N.T.S.

SCALE
 N.T.S.



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No.	Revision	Date	By
A.	ISSUE FOR REVIEW	11-21-11	
B.	ISSUE FOR PLAN CHECK	12-22-11	
C.	PLAN CHECK RESUBMIT	05-15-12	

Project

TORRANCE
POLICE DEPT.
 New Forensic Science
 Laboratory

3300 Civic Center Dr.,
 Torrance, CA. 90503

Drawing Title

GENERAL NOTES &
 FIXTURE SCHEDULE

Project Number
 30257

Scale
 N.T.S.

Set

Drawing Number

E0-0.2

CERTIFICATE OF COMPLIANCE (Page 1 of 4) **LTG-1C**

Project Name: NEW FORENSIC SCIENCE LAB - TORRANCE POLICE DEPARTMENT Date: 10-10-2011
 Project Address: 3300 CIVIC CENTER DRIVE, TORRANCE, CA 90503 Climate Zone: 9 Building CFA: Unconditioned Floor Area:

General Information: Building Type: Nonresidential High-Rise Residential Hotel/Motel
 Schools Relocatable Public Schools Conditioned Spaces Unconditioned Spaces
 Phase of Construction: New Construction Addition Alteration
 Method of Compliance: Complete Building Area Category Tailored

Documentation Author's Declaration Statement: I certify that this Certificate of Compliance documentation is accurate and complete.
 Name: Y. DANNY HO Signature: [Signature] Date: 10-10-2011
 Company: PACIFIC ENGINEERS GROUP Address: 11028 VICTORY BLVD. #201
 City/State/Zip: NORTH HOLLYWOOD, CA 91606 Phone: (818) 763-9189

Principal Lighting Designer's Declaration Statement: I am eligible under Division 3 of the California Business and Professions Code to accept responsibility for the lighting design.
 This Certificate of Compliance identifies features and performance specifications required for compliance with Title 24, Part 2, and the California Code of Regulations.
 The design features represented on this Certificate of Compliance are consistent with the information provided to document this design on the other applicable compliance forms, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.

Name: Y. DANNY HO Signature: [Signature] Date: 10-10-2011
 Company: PACIFIC ENGINEERS GROUP Address: 11028 VICTORY BLVD. #201
 City/State/Zip: NORTH HOLLYWOOD, CA 91606 License #: E9130
 Date: 10-10-2011

Lighting Mandatory Measures: Indicate location on building plans of Mandatory Measures Note Block: E0-0.3
 LIGHTING COMPLIANCE FORMS & WORKSHEETS (check box if worksheet is included)
 LTG-1C Pages 1 through 4 Certificate of Compliance. All Pages required on plans for all submittals.
 LTG-2C Lighting Controls Credit Worksheet
 LTG-3C Indoor Lighting Power Allowance
 LTG-4C Tailored Method Worksheet
 LTG-5C Pages 1 and 2 Line Voltage Track Lighting Worksheet

CERTIFICATE OF COMPLIANCE (Page 2 of 4) **LTG-1C**

Project Name: NEW FORENSIC SCIENCE LAB - TORRANCE POLICE DEPARTMENT Date: 10-10-2011
 Installation Certificate, LTG-1-INST (retain a copy and verify form is complete and signed.) Field Inspector

Certificate of Acceptance, LTG-2A (retain a copy and verify form is complete and signed.) Field Inspector
 A separate Lighting Schedule Must Be filed Out for Conditioned and Unconditioned Spaces Installed Lighting Power listed on this Lighting Schedule is only for: CONDITIONED SPACE UNCONDITIONED SPACE
 The actual indoor lighting power listed below includes all installed permanent and portable lighting systems in accordance with §146(f).
 Only for offices: Up to the first 0.2 watts per square foot of portable lighting shall not be included in the calculation of actual indoor lighting power density in accordance with the exception to §146(f). All portable lighting in excess of 0.2 watts per square foot is totaled below.

A	B	C	D	E		F	G	H	
				Watts per Luminaire	How wattage was determined				
	Complete Luminaire Description (i.e. 3 lamp fluorescent troffer, F32T8, one dimmable electronic ballast)			CEC Default from NAB	According to §130 (d or e)	Number of Luminaires	Watts (W)	Field Inspector	
A	2'x4' 2-LAMPS, T-8 FLUO. FIXT.	52				20	1040		
B	2'x4' 2-LAMP T-8 WITH DIMMING BALLAST	52				4	208		
C	8' DA CFL DN LT WITH DIMMING BALLAST	26				2	52		
H	8' DA CFL DN LT	26				4	104		
INSTALLED WATTS PAGE TOTAL:							1,404		
Building total number of pages							1	Installed Watts Building Total (Sum of all pages)	1,404

1. Wattage shall be determined according to Section 130(d and e). Wattage shall be rating of light fixture, not rating of bulb.
 2. If fail then describe on Page 2 of the Inspection Checklist Form and take appropriate action to correct. Verify building plans if necessary.

CERTIFICATE OF COMPLIANCE (Page 3 of 4) **LTG-1C**

Project Name: NEW FORENSIC SCIENCE LAB - TORRANCE POLICE DEPARTMENT Date: 10-10-2011
 INDOOR LIGHTING SCHEDULE and FIELD INSPECTION ENERGY CHECKLIST

MANDATORY LIGHTING CONTROLS - FIELD INSPECTION ENERGY CHECKLIST

Type / Description	Number of Units	Location in Building	Special Features	Pass	Fail
LTG. OCCUPANCY SENSOR	6	OFFICES		<input type="checkbox"/>	<input type="checkbox"/>
LTG. OCCUPANCY SENSOR	1	CONFERENCE		<input type="checkbox"/>	<input type="checkbox"/>
LTG. OCCUPANCY SENSOR	1	VESTIBULE		<input type="checkbox"/>	<input type="checkbox"/>
LTG. OCCUPANCY SENSOR	1	STORAGE		<input type="checkbox"/>	<input type="checkbox"/>

SPECIAL FEATURES INSPECTION CHECKLIST (See Page 2 of 4 LTG-1C)
 The local enforcement agency should pay special attention to the items specified in this checklist. These items require special written justification and documentation, and special verification. The local enforcement agency determines the adequacy of the justification, and may reject a building or design that otherwise complies based on the adequacy of the special justification and documentation submitted.

Field Inspector's Notes or Discrepancies:

CERTIFICATE OF COMPLIANCE (Page 4 of 4) **LTG-1C**

Conditioned and Unconditioned space Lighting must not be combined for compliance

Indoor Lighting Power for Conditioned Spaces	Watts	Indoor Lighting Power for Unconditioned Spaces	Watts
Installed Lighting (from Conditioned LTG-1C Page 2)	1,440	Installed Lighting (from Unconditioned LTG-1C Page 2)	
Lighting Control Credit (from LTG-2C)	0	Lighting Control Credit (from LTG-2C)	
Adjusted Installed Lighting Power	1,440	Adjusted Installed Lighting Power	
Complies if Installed ≤ Allowed		Complies if Installed ≤ Allowed	
Allowed Lighting Power Conditioned Spaces (from LTG-3C)	1,529	Allowed Lighting Power Unconditioned Spaces (from LTG-3C)	

Required Acceptance Tests
 Designer: This form is to be used by the designer and attached to the plans. Listed below is the acceptance test for the Lighting system. The LTG-2A form is not considered a complete form and is not to be accepted by the enforcement agency unless the boxes are checked and/or lighting and the number of systems. The NAT Section in the Appendix of the Nonresidential Reference Appendices Manual describes the test. Since this form will be part of the plans, completion of this section will allow the responsible party to budget for the scope of work appropriately.
 Enforcement Agency: Systems Acceptance. Before Occupancy Permit is granted for a newly constructed building or space or when ever new lighting system with controls is installed in the building or space shall be certified as meeting the Acceptance Requirements.
 The LTG-2A form is not considered a complete form and is not to be accepted by the enforcement agency unless the boxes are checked and/or lighting and the number of systems. The NAT Section in the Appendix of the Nonresidential Reference Appendices Manual describes the test. Since this form will be part of the plans, completion of this section will allow the responsible party to budget for the scope of work appropriately. A copy of the LTG-2A for each different lighting luminaire control(s) must be provided to the owner of the building for their records.

Luminaires Controlled	Description	Number of Controls	Location	LTG-2A Controls and Sensors and Automatic Daylight Controls Acceptance
LTG. OCCUPANCY SENSOR	WALL/CEILING LTG SENSOR	9	REMODELED AREAS	<input checked="" type="checkbox"/>

CERTIFICATE OF COMPLIANCE **LTG-3C**

Project Name: NEW FORENSIC SCIENCE LAB - TORRANCE POLICE DEPARTMENT Date: 10-10-2011
 ALLOWED LIGHTING POWER (Choose One Method)
 A Separate LTG-3C must be filed out for Conditioned and Unconditioned Spaces Indoor Lighting Power Allowances listed on this page are only for: CONDITIONED SPACES UNCONDITIONED SPACES

COMPLETE BUILDING METHOD	WATTS PER (ft ²)	COMPLETE BLDG. AREA	ALLOWED WATTS
BUILDING CATEGORY (From §146 Table 146-E)			
TOTALS		AREA	WATTS

AREA CATEGORY METHOD - Part A	WATTS PER (ft ²)	AREA (ft ²)	ALLOWED WATTS
AREA CATEGORY (From §146 Table 146-F)			
CONFERENCE/MTG ROOMS	1.4	236	330
SCIENTIFIC LABORATORY OFFICES	1.4	810	1,134
VESTIBULE, STORAGE	0.8	109	87
TOTALS		AREA	WATTS

AREA CATEGORY METHOD - Part B	Additional Wattage Allowance (from Table 146-F Footnotes)	WATTS PER (ft ²)	AREA (ft ²)	ALLOWED WATTS
Primary Function	Sq Ft	Additional Watts Per ft ² Allowed	Wattage Allowance (B x C)	Description(s) and Quantity of Special Luminaire Types in each Primary Function Area
TOTALS - enter into Area Category Method - Part A (table above)				

1. Additional watts available only when allowed according to the footnotes on bottom of Table 146-F for chandelier or sconce; art, craft, assembly or manufacturing specialized task work; precision commercial/industrial work; or lab specialized task work.
 2. Special luminaires are light fixtures described in the Table 146-F Footnotes that are subject to an additional wattage allowance.
 TAILORED METHOD
 Total Allowed Watts using the Tailored Method taken from LTG-4C (page 1 of 4) Row 3
 The indoor lighting power allowance using the Tailored Method of compliance shall be determined using the LTG-4C set of forms. A separate of LTG-4C forms shall be filed out for CONDITIONED and UNCONDITIONED spaces

CERTIFICATE OF COMPLIANCE (Part 4 of 4) **LTG-1-C**

Project Name: NEW FORENSIC SCIENCE LAB - TORRANCE POLICE DEPARTMENT Date: 10-10-2011
 Designer: This form is to be used by the designer and attached to the plans. Listed below are all the acceptance test for lighting systems. The designer is required to check the boxes by all acceptance test that apply and list all equipment that require an acceptance test. If all equipment of a certain type requires a test, list the equipment description and the number of systems to be tested in parentheses. The NJ number designates the Section in Appendix of the Nonresidential ACM Manual that describes the test. Also indicate the person responsible for performing the test (i.e. the installing contractor, design professional or an agent selected by owner). Since this form will be part of the plans, completion of this section will allow the responsible party to budget for the scope of work appropriately.

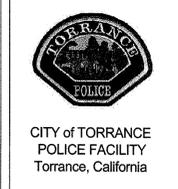
Building Departments: System Acceptance. Before an occupancy permit is granted for a newly constructed building or space, or new space-conditioning system serving a building or space is operated for normal use, all control devices serving the building of space shall be certified as meeting the Acceptance Requirements for Code Compliance. In addition a Certificate of Acceptance, MECH-1-A, Forms shall be submitted to the building department that:
 A. Certifies plans, specifications, installation certificates, and operating and maintenance information meet the requirements of §10-103(b) and Title 24 Part 6.

Test Description: LTG-2-A Lighting Control Acceptance Document
 • Occupancy Sensor Acceptance
 • Manual Daylight Control Acceptance
 • Automatic Time Switch Control Acceptance
 Equipment requiring acceptance testing: OCCUPANCY SENSOR CONTRACTOR
 LTG-3-A Automatic Daylighting Controls Acceptance Document
 Equipment requiring acceptance testing:

LIGHTING MANDATORY MEASURES **LTG-MM**

Project Name: NEW FORENSIC SCIENCE LAB - TORRANCE POLICE DEPARTMENT Date: 10-10-2011

DESCRIPTION	Designer	Enforcement
<input checked="" type="checkbox"/> 131(d) For every floor, all interior lighting systems shall be equipped with a separate automatic control to shut off the lighting. This automatic control shall meet the requirements of Section 115 and may be an occupancy sensor, automatic time switch, or other device capable of automatically shutting off the lighting.	PEG	
<input checked="" type="checkbox"/> 131(d) Override for Building Lighting Shut-off: The automatic building shut-off system is provided with a manual, accessible override switch in sight of the lights. The area of override is not to exceed 5,000 square feet.	PEG	
<input checked="" type="checkbox"/> 119(h) Automatic Control Devices Certified: All automatic control devices specified are certified; all alternate equipment shall be certified and installed as directed by the manufacturer.	PEG	
<input checked="" type="checkbox"/> 111 Fluorescent Ballast and Luminaires Certified: All fluorescent fixtures specified for the project are certified and listed in the Directory. All installed fixtures shall be certified.	PEG	
<input type="checkbox"/> 132 Tandem Wiring for One and Three Lamp Fluorescent Fixtures: All one and three lamp fluorescent fixtures are tandem wired with two lamp ballasts where required by Standards Section 132; or all one and three lamp fluorescent fixtures are specified with electronic high-frequency ballasts and are exempt from tandem wiring requirements.		
<input checked="" type="checkbox"/> 131(a) Individual Room/Area Controls: Each room and area in this building is equipped with a separate switch or occupancy sensor device for each area with floor-to-ceiling walls.	PEG	
<input checked="" type="checkbox"/> 131(b) Uniform Reduction for Individual Rooms: All rooms and areas greater than 100 square feet and more than 0.8 watts per square foot of lighting load shall be controlled with bi-level switching for uniform reduction of lighting within the room.	PEG	
<input type="checkbox"/> 131(c) Daylight Area Control: All rooms with windows and skylights that are greater than 250 square feet and that allow for the effective use of daylight in the area shall have 50% of the lamps in each daylight area controlled by a separate switch; or the effective use of daylight cannot be accomplished because the windows are continuously shaded by a building on the adjacent lot. Diagram of shading during different times of the year is included on plans.	PEG	
<input type="checkbox"/> 131(e) Display Lighting: Display lighting shall be separately switched on circuits that are 20 amps or less.		



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Drawn by: HT
 Checked by: PM
 Date: 09/19/11

No.	Revision	Date	By
A.	ISSUE FOR REVIEW	11-21-11	
B.	ISSUE FOR PLAN CHECK	12-22-11	
C.	PLAN CHECK RESUBMIT	05-15-12	

Project
TORRANCE POLICE DEPT.
 New Forensic Science Laboratory

3300 Civic Center Dr.,
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Drawing Title
TITLE 24 FORMS

Project Number: 30257
 Scale: N.T.S.
 Set:
 Drawing Number:

E0-0.3



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Date **09/09/11**

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Project

**TORRANCE
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New Forensic Science
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Drawing Title

**SINGLE LINE
DIAGRAM**

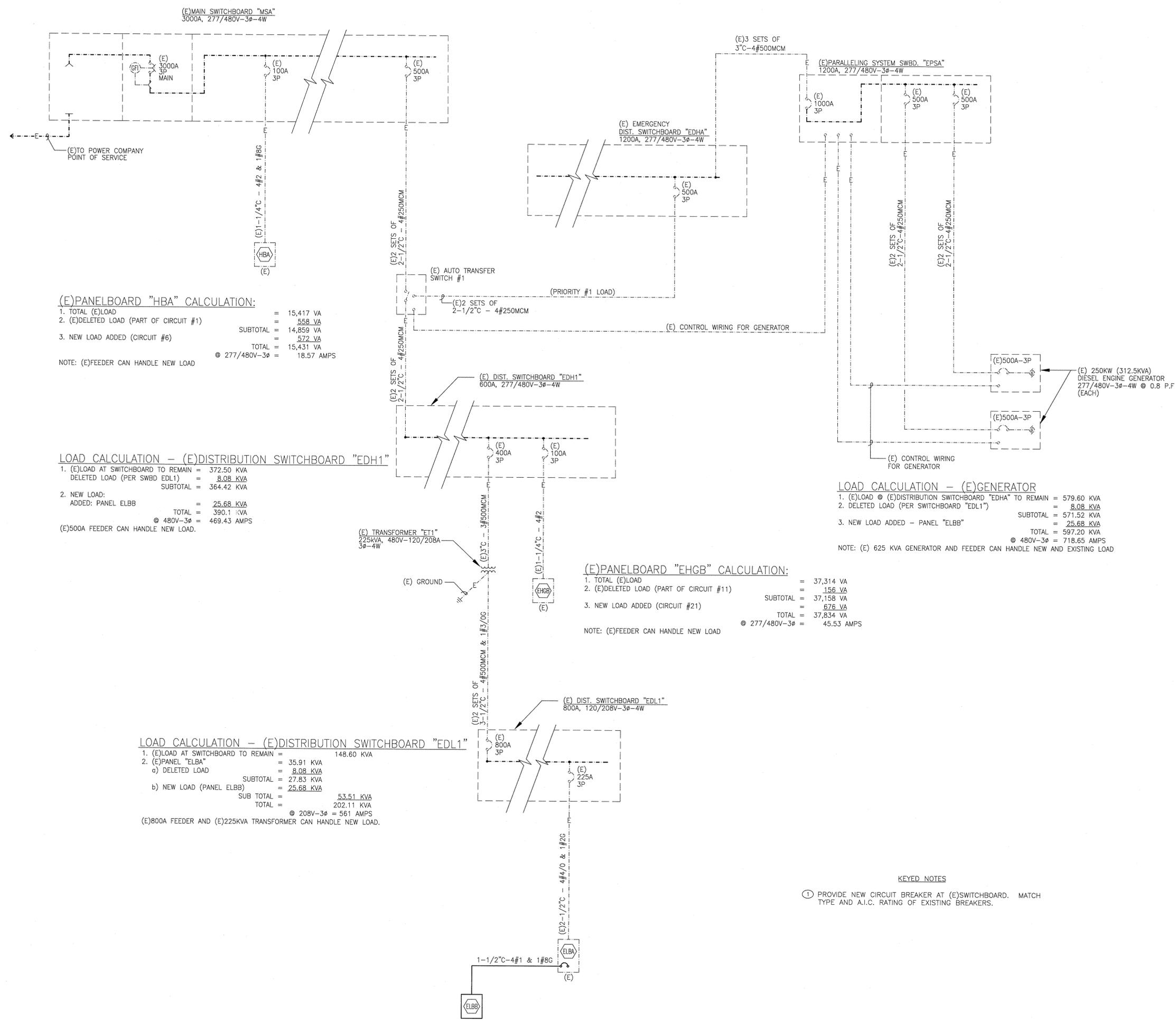
Project Number
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Scale
AS NOTED

Set

Drawing Number

E0-0.4



(E) PANELBOARD "HBA" CALCULATION:

1. TOTAL (E)LOAD	=	15,417 VA
2. (E)DELETED LOAD (PART OF CIRCUIT #1)	=	558 VA
	SUBTOTAL	14,859 VA
3. NEW LOAD ADDED (CIRCUIT #6)	=	572 VA
	TOTAL	15,431 VA
	@ 277/480V-3φ	18.57 AMPS

NOTE: (E)FEEDER CAN HANDLE NEW LOAD

LOAD CALCULATION - (E) DISTRIBUTION SWITCHBOARD "EDH1"

1. (E)LOAD AT SWITCHBOARD TO REMAIN	=	372.50 KVA
DELETED LOAD (PER SWBD EDL1)	=	8.08 KVA
	SUBTOTAL	364.42 KVA
2. NEW LOAD:		
ADDED: PANEL ELBB	=	25.68 KVA
	TOTAL	390.1 KVA
	@ 480V-3φ	469.43 AMPS

(E)500A FEEDER CAN HANDLE NEW LOAD.

LOAD CALCULATION - (E) DISTRIBUTION SWITCHBOARD "EDL1"

1. (E)LOAD AT SWITCHBOARD TO REMAIN	=	148.60 KVA
2. (E)PANEL "ELBA"	=	35.91 KVA
c) DELETED LOAD	=	8.08 KVA
	SUBTOTAL	27.83 KVA
b) NEW LOAD (PANEL ELBB)	=	25.68 KVA
	SUB TOTAL	53.51 KVA
	TOTAL	202.11 KVA
	@ 208V-3φ	561 AMPS

(E)800A FEEDER AND (E)225KVA TRANSFORMER CAN HANDLE NEW LOAD.

(E) PANELBOARD "EHGB" CALCULATION:

1. TOTAL (E)LOAD	=	37,314 VA
2. (E)DELETED LOAD (PART OF CIRCUIT #11)	=	158 VA
	SUBTOTAL	37,158 VA
3. NEW LOAD ADDED (CIRCUIT #21)	=	876 VA
	TOTAL	37,834 VA
	@ 277/480V-3φ	45.53 AMPS

NOTE: (E)FEEDER CAN HANDLE NEW LOAD

LOAD CALCULATION - (E) GENERATOR

1. (E)LOAD @ (E) DISTRIBUTION SWITCHBOARD "EDHA" TO REMAIN	=	579.60 KVA
2. DELETED LOAD (PER SWITCHBOARD "EDL1")	=	8.08 KVA
	SUBTOTAL	571.52 KVA
3. NEW LOAD ADDED - PANEL "ELBB"	=	25.68 KVA
	TOTAL	597.20 KVA
	@ 480V-3φ	718.65 AMPS

NOTE: (E) 625 KVA GENERATOR AND FEEDER CAN HANDLE NEW AND EXISTING LOAD

KEYED NOTES

- ① PROVIDE NEW CIRCUIT BREAKER AT (E) SWITCHBOARD. MATCH TYPE AND A.I.C. RATING OF EXISTING BREAKERS.

SCALE
N.T.S.

SINGLE LINE DIAGRAM



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Project

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New Forensic Science
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Drawing Title

**BASEMENT LEVEL -
DEMOLITION AND
LIGHTING PLANS**

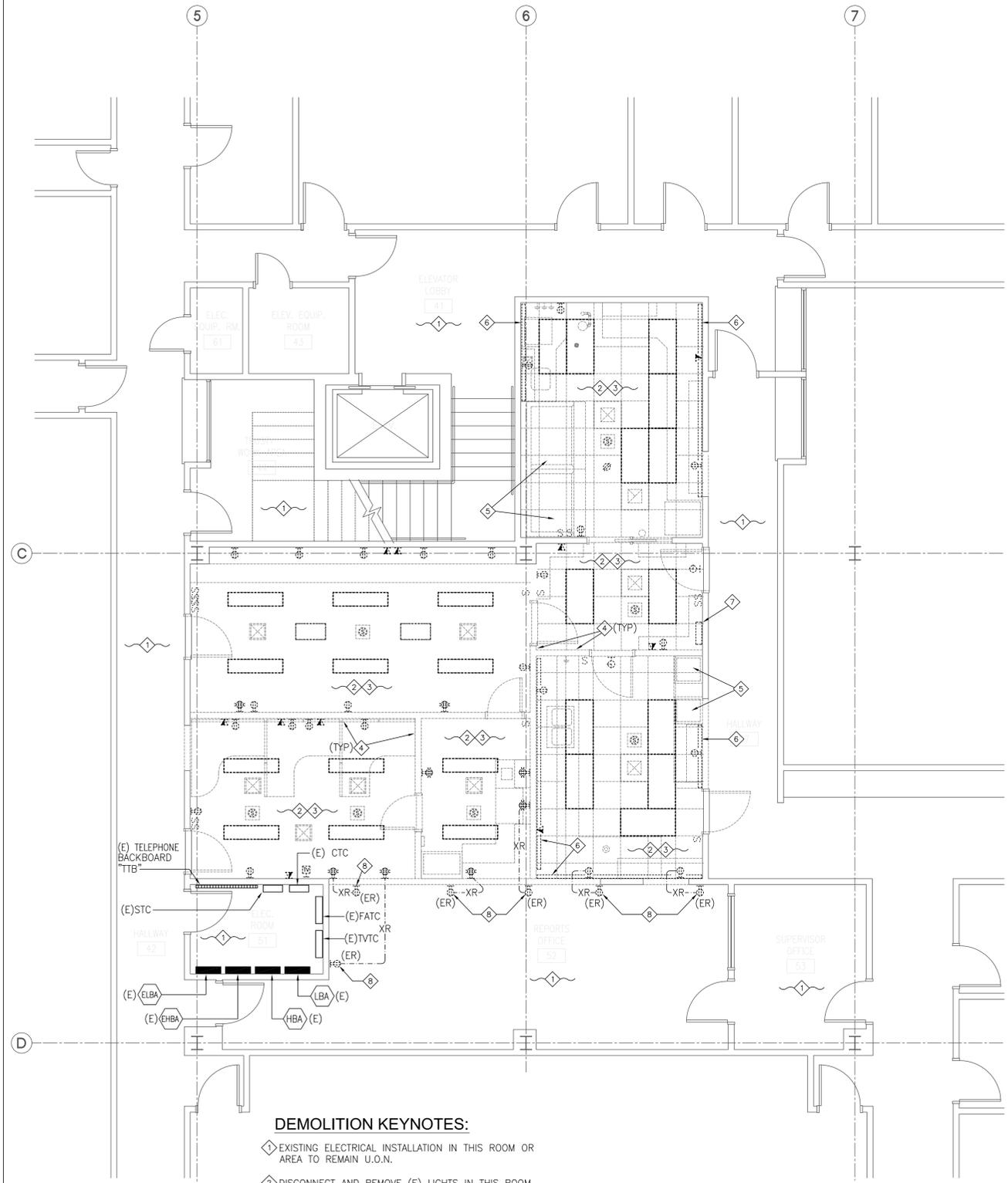
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Drawing Number

E1-1.1



DEMOLITION KEYNOTES:

- ① EXISTING ELECTRICAL INSTALLATION IN THIS ROOM OR AREA TO REMAIN U.O.N.
- ② DISCONNECT AND REMOVE (E) LIGHTS IN THIS ROOM INCLUDING ASSOCIATED CONTROLLING SWITCHES AND BRANCH CIRCUITS WIRING UP TO (E) PANELBOARD.
- ③ DEMOLISH (E) WALL MOUNTED RECEPTACLE OUTLETS AND DATA/TEL OUTLETS IN THIS ROOM INCLUDING ASSOCIATED CONDUIT AND WIRES.
- ④ EXISTING WALL TO BE DEMOLISHED PER ARCH. DRAWINGS. CONTRACTOR SHALL REMOVE ALL (E) ELECTRICAL BOXES, CONDUITS, DEVICES, EQUIPMENT OR WIRING ON THESE WALL WHETHER SHOWN ON DRAWING OR NOT.
- ⑤ DEMOLISH (E) ELECTRICAL INSTALLATION ASSOCIATED WITH (E) FUME HOOD TO BE DEMOLISHED EXCEPT POWER CONDUIT FROM (E)FAN ON ROOF. SEE POWER PLAN NOTE #6 ON E2-1.1.
- ⑥ DEMOLISHED (E) WALL MOUNTED PLUGMOLD INCLUDING ASSOCIATED CONDUITS AND WIRES.
- ⑦ DEMOLISHED (E) WALL MOUNTED RADIO AMPLIFIER.
- ⑧ DISCONNECT AND REMOVE (E)RECEPTACLES INCLUDING (E)WIRING AS SHOWN. MAINTAIN (E)J-BOX FOR NEW WORK.

GENERAL NOTES

1. DISPOSE OF ALL EQUIPMENT AND MATERIAL AND REMOVE FROM SITE. EQUIPMENT WITH SALVAGE VALUE AS DETERMINED BY THE OWNER REPRESENTATIVE SHALL BE DELIVERED TO THE OWNER DESIGNATED WAREHOUSE.
2. INCLUDE ALL ELECTRICAL DEMOLITION AS PART OF THIS CONTRACT. REFER TO ARCHITECTURAL DRAWINGS FOR EXTENT OF WALL REMOVALS, CEILING CHANGES AND ALL OTHER SIMILAR WORK. ELECTRICAL DEMOLITION SHALL INCLUDE DISCONNECTION AND REMOVAL OF AFFECTED LIGHTS, OUTLETS AND ALL OTHER ELECTRICAL DEVICES. REMOVE AND PLUG OR CAP ALL AFFECTED CONDUITS. REMOVE WIRES. IF REMOVED OUTLETS AFFECT DOWNSTREAM ACTIVE OUTLETS, PROVIDE ALL WORK NECESSARY TO REROUTE AND RECONNECT AFFECTED CIRCUITS.

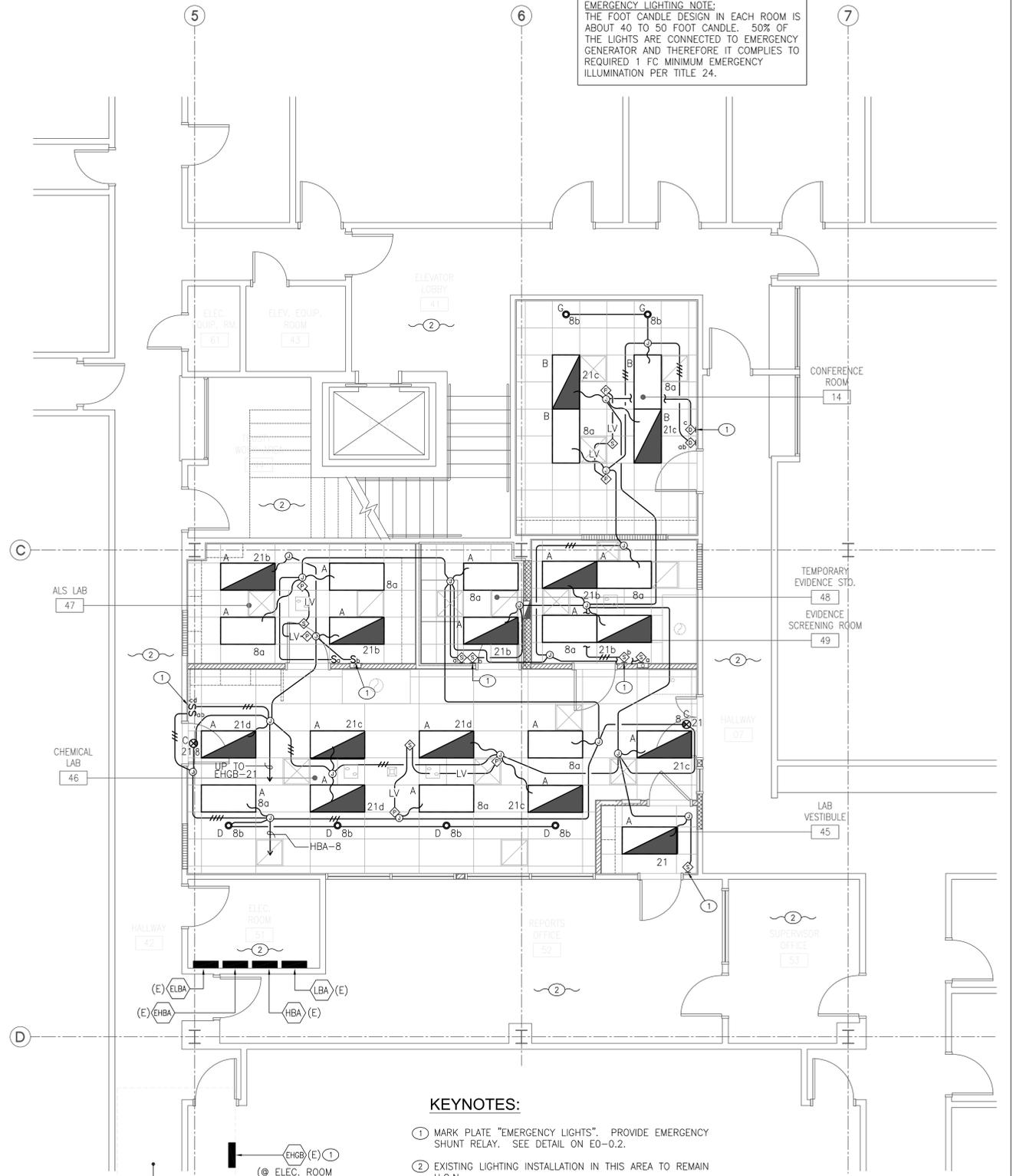


NORTH

SCALE
1/4" = 1'-0"

BASEMENT LEVEL - DEMOLITION PLAN

1



EMERGENCY LIGHTING NOTE:
THE FOOT CANDLE DESIGN IN EACH ROOM IS ABOUT 40 TO 50 FOOT CANDLE. 50% OF THE LIGHTS ARE CONNECTED TO EMERGENCY GENERATOR AND THEREFORE IT COMPLIES TO REQUIRED 1 FC MINIMUM EMERGENCY ILLUMINATION PER TITLE 24.

KEYNOTES:

- ① MARK PLATE "EMERGENCY LIGHTS". PROVIDE EMERGENCY SHUNT RELAY. SEE DETAIL ON E0-0.2.
- ② EXISTING LIGHTING INSTALLATION IN THIS AREA TO REMAIN U.O.N.
- ③ UTILIZE EXISTING (1)20A-1P CIRCUIT BREAKER AT (E) PANEL TO FEED NEW LIGHTS.

SPECIAL NOTE:
ALL SWITCHES AND PLATES CONNECTED TO EMERGENCY SYSTEM CIRCUITS SHALL BE RED IN COLOR TO MATCH FACILITY STANDARDS.



NORTH

SCALE
1/4" = 1'-0"

BASEMENT LEVEL - LIGHTING PLAN

2



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Project

TORRANCE POLICE DEPT.
New Forensic Science Laboratory

3300 Civic Center Dr.,
Torrance, CA. 90503

Drawing Title

**BASEMENT LEVEL-
POWER AND SIGNAL
PLANS, ROOF PLAN**

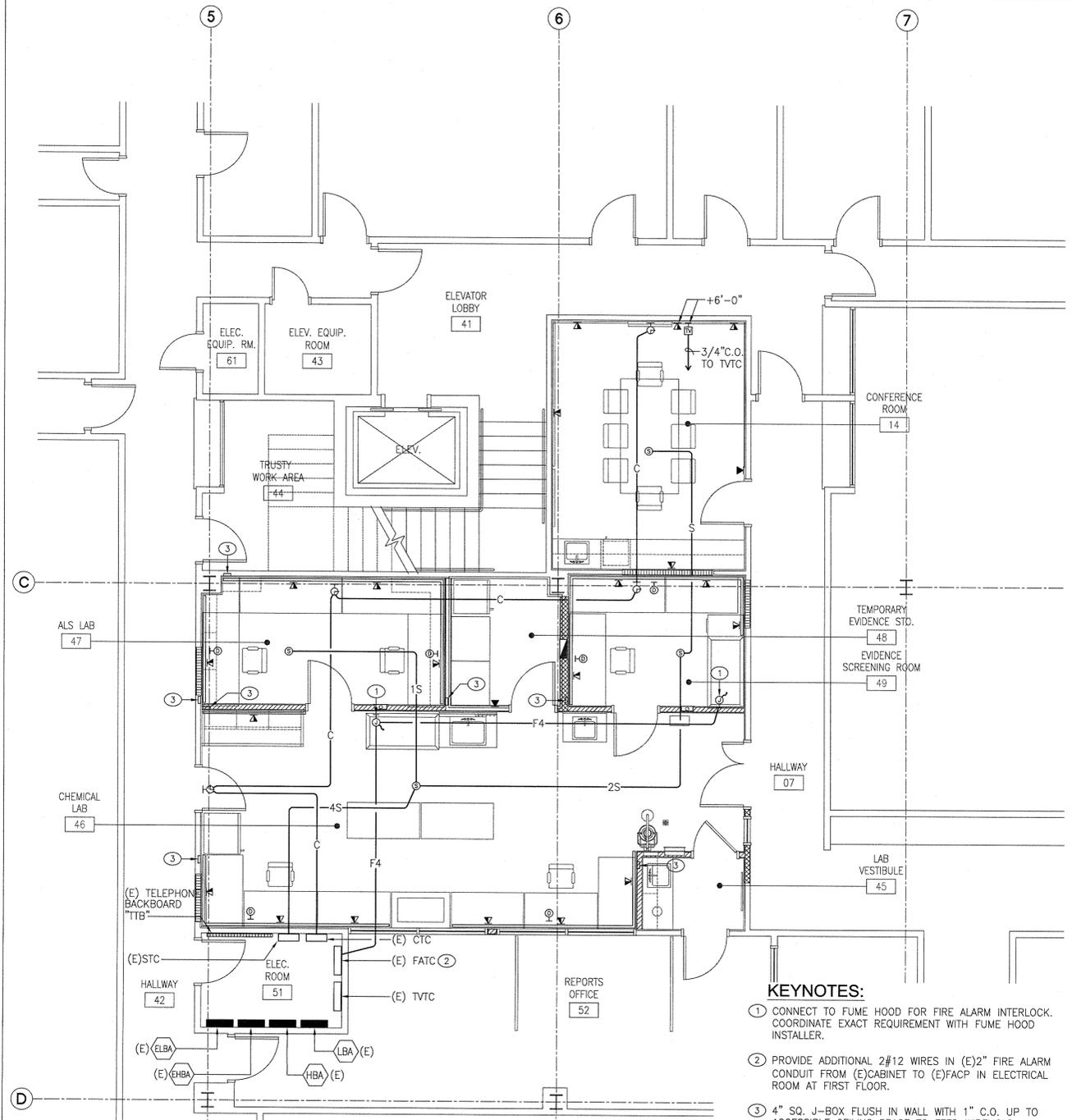
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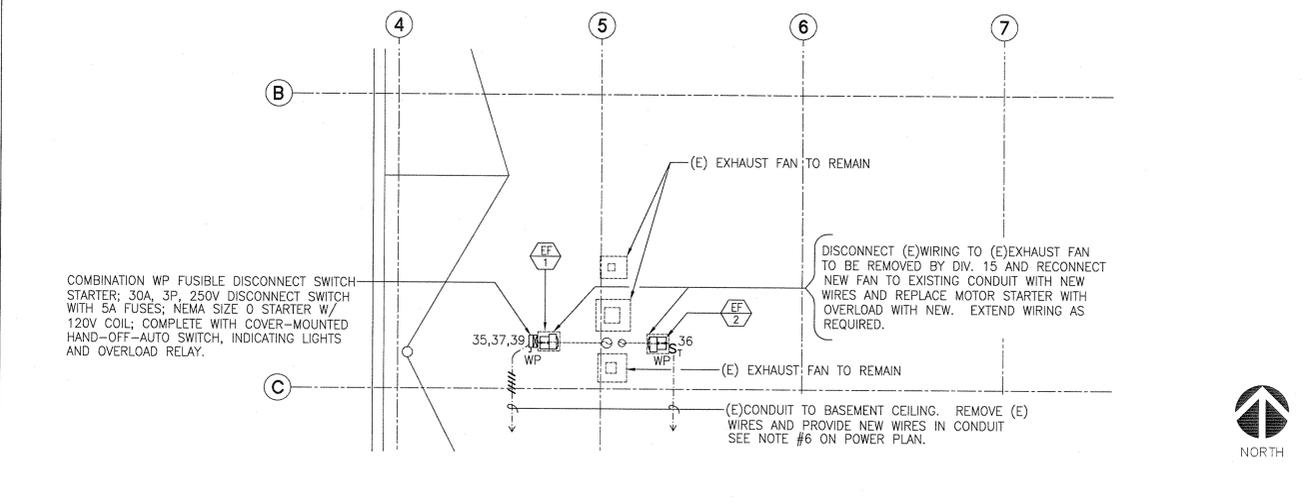
Drawing Number

E2-1.1

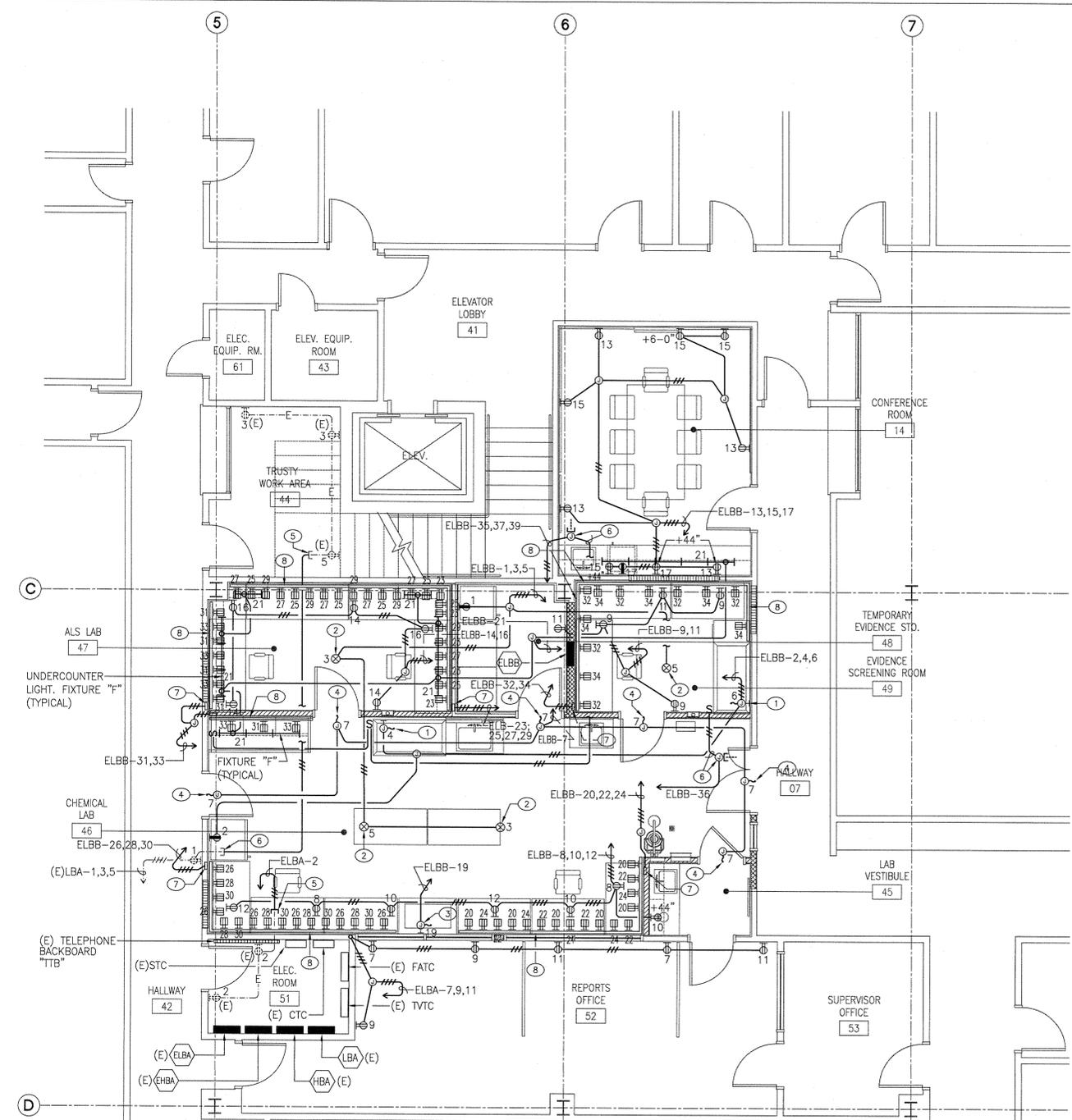


- KEYNOTES:**
- CONNECT TO FUME HOOD FOR FIRE ALARM INTERLOCK. COORDINATE EXACT REQUIREMENT WITH FUME HOOD INSTALLER.
 - PROVIDE ADDITIONAL 2#12 WIRES IN (E)2" FIRE ALARM CONDUIT FROM (E)CABINET TO (E)FACP IN ELECTRICAL ROOM AT FIRST FLOOR.
 - 4" SQ. J-BOX FLUSH IN WALL WITH 1" C.O. UP TO ACCESSIBLE CEILING SPACE TO FEED WIREMOLD.

SCALE
1/4" = 1'-0"
BASEMENT LEVEL - SIGNAL PLAN 3



SCALE
1/8" = 1'-0"
PARTIAL ROOF PLAN 1



- KEYNOTES:**
- CONNECT TO FUME HOOD. COORDINATE EXACT POINT OF CONNECTION BEFORE ROUGH-IN AND INSTALLATION.
 - PROVIDE ALL REQUIRED SUPPORT TO STRUCTURE ABOVE WHEN INSTALLING THE CORD REEL RECEPTACLE. SEE ARCH. DRAWINGS FOR EXACT LOCATION.
 - CONNECT TO HUMIDIFIER CHAMBER. COORDINATE EXACT POINT OF CONNECTION BEFORE ROUGH-IN AND INSTALLATION.
 - EXTEND WIRING TO DOOR ACCESS CONTROLLER ABOVE DOOR, CARD READER, ELECTRIC LOCK, KEY PAD, ETC. PROVIDE ALL REQUIRED CONDUITS AND WIRING TO DOOR ACCESS CONTROLLER AND DEVICES FOR OR COMPLETE INSTALLATION.
 - INTERCEPT (E)CONDUIT AT CEILING AND PROVIDE NEW WIRING BETWEEN DEVICES AS SHOWN.
 - LOCATE AND INTERCEPT (E)FUME HOOD POWER CONDUIT AT CEILING FROM EXHAUST FAN ON ROOF AND EXTEND TO NEW FUME HOOD "ON-OFF" SWITCH AND POWER PANEL AS SHOWN.
 - RECESS MOUNTED J-BOX TO FEED WIREMOLD MOUNTED RECEPTACLE.
 - WIREMOLD 4000 WITH RECEPTACLES AT 2 FEET ON CENTER AND DATA BOX PER SIGNAL PLAN.

SPECIAL NOTE:
ALL RECEPTACLES AND PLATES CONNECTED TO EMERGENCY SYSTEM CIRCUITS SHALL BE RED IN COLOR TO MATCH FACILITY STANDARDS.

SCALE
1/4" = 1'-0"
BASEMENT LEVEL - POWER PLAN 2



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Project

**TORRANCE
POLICE DEPT.**
New Forensic Science
Laboratory

3300 Civic Center Dr.,
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Drawing Title

**LEGENDS, NOTES &
SHEET INDEX**

Project Number
30257

Scale
NONE

Set

Drawing Number

M1-1.0

MECHANICAL LEGEND

ALL ITEMS INDICATED IN THIS LEGEND ARE NOT NECESSARILY USED ON THE DRAWINGS.

SYMBOL	DESCRIPTION
	MATCH LINE
	EQUIPMENT DESIGNATION
	DETAIL REFERENCE
	NOTE REFERENCE
	POINT OF CONNECTION
	POINT OF REMOVAL
	OUTSIDE AIR, SUPPLY, RETURN, EXHAUST
	SUPPLY AIR DUCT DOWN
	RETURN OR OUTSIDE AIR DUCT DOWN
	EXHAUST AIR DUCT DOWN
	SUPPLY AIR DUCT UP
	RETURN OR OUTSIDE AIR DUCT UP
	EXHAUST AIR DUCT UP
	LINED DUCT
	TURNING VANES
	TRANSITION
	FLEXIBLE DUCT
	FLEXIBLE DUCT CONNECTION
	BACKDRAFT DAMPER
	MANUAL VOLUME DAMPER
	ZONE CONTROL DAMPER (VVT SYSTEM)
	FIRE DAMPER
	COMBINATION SMOKE & FIRE DAMPER
	SMOKE DETECTOR
	LOUVER (EX; 2.5 FT)
	UNDERCUT DOOR 3/4" ABOVE FINISHED FLOOR
	ACCESS DOOR, ACCESS PANEL
	12x12 CEILING DIFFUSER, REGISTER, GRILLE. . ARROWS INDICATE THROW PATTERN.
	12x12 TOP REGISTER, GRILLE, BOTTOM REGISTER, GRILLE.
	CHILLED WATER SUPPLY
	CHILLED WATER RETURN
	BRINE SUPPLY
	BRINE RETURN
	CONDENSER WATER SUPPLY
	CONDENSER WATER RETURN
	HOT WATER SUPPLY FOR SPACE HEATING
	HOT WATER RETURN FOR SPACE HEATING
	CONDENSATE DRAIN (INDIRECT)
	UNION, FLANGE
	SHUT-OFF VALVE (GATE VALVE)
	BALANCING VALVE (GLOBE VALVE)
	FLOW LIMITING VALVE
	COCK
	STRAINER
	CHECK VALVE
	PRESSURE GAUGE
	BUTTERFLY VALVE
	GAUGE COCK
	THERMOMETER
	MANUAL AIR VENT
	PRESSURE REDUCING VALVE
	RELIEF VALVE
	3 WAY CONTROL VALVE
	2 WAY CONTROL VALVE
	PIPE ANCHOR
	PIPE GUIDE
	FLEXIBLE PIPE CONNECTION
	ZONE TEMPERATURE SENSOR, HUMIDITY SENSOR, SWITCH, TEMPERATURE SENSOR
	DUCT DROP IN DIRECTION OF AIR FLOW
	DUCT RISE IN DIRECTION OF AIR FLOW
	MANUAL BYPASS TIMER
	EXISTING HVAC DUCTWORK/EQUIPMENT TO REMAIN
	EXISTING HVAC DUCTWORK/EQUIPMENT TO BE REMOVED

THE SEISMIC ANCHORAGE OF MECHANICAL AND ELECTRICAL EQUIPMENT SHALL CONFORM TO C.C.R. TITLE 24, 2007 CBC SECTION 16A AND TABLE 1607 A.1. ANCHORAGE DETAILS FOR ROOF/FLOOR MOUNTED EQUIPMENT SHALL BE SHOWN ON PLANS. WHERE ANCHORAGE DETAILS ARE NOT SHOWN ON THE DRAWINGS, THE FIELD INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE STRUCTURAL ENGINEER.

MECHANICAL ABBREVIATIONS

ABBREV.	DESCRIPTION
10'-0"x0'-6" L.D.L.G.	10 FT. LENGTH x 6 IN. WIDTH LINEAR DIFFUSER, LINEAR GRILLE.
ABV.	ABOVE
AFF	ABOVE FINISHED FLOOR
BEL.	BELOW
BHP	BRAKE HORSE POWER
CFM	CUBIC FEET PER MINUTE
CONT.	CONTINUED, CONTINUATION
DN.	DOWN
(E)	EXISTING
E.S.P.	EXTERNAL STATIC PRESSURE
FPM	FEET PER MINUTE
FS	FLOOR SINK
HP	HORSE POWER
LVR.	LOUVER
N/A	NOT APPLICABLE
N/R	NOT REQUIRED
RPM	REVOLUTIONS PER MINUTE
TYP.	TYPICAL
U.O.N	UNLESS OTHERWISE NOTED
V-ø	VOLT-PHASE
W/	WITH
W/O	WITHOUT
%EFF	EFFICIENCY (%)

EXISTING MECHANICAL ABBREVIATIONS

ABBREV.	DESCRIPTION
CSD	CEILING SUPPLY DIFFUSER
CER	CEILING EXHAUST REGISTER
DFD	DUCT FIRE DAMPER
ED	EXTRACTION DAMPER
WSR	HIGH WALL SUPPLY REGISTER
WER	HIGH WALL EXHAUST REGISTER

CONTROL LEGEND

- ALL ITEMS INDICATED IN THIS LEGEND ARE NOT NECESSARILY USED ON THE DRAWINGS.
- CONDUIT, LINE VOLTAGE WIRING & DEVICES TO BE PROVIDED UNDER DIVISION 16.
- LOW VOLTAGE (LESS THAN 50 VOLTS) WIRING, CONDUIT & DEVICES TO BE PROVIDED UNDER DIVISION 15.

SYMBOL	DESCRIPTION
	ITEM TO BE FURNISHED AND INSTALLED UNDER ELECTRICAL DIVISION.
	MAGNETIC STARTER
	NORMALLY OPEN ELECTRICAL CONTACT
	NORMALLY CLOSED ELECTRICAL CONTACT
	ELECTRICAL COIL RELAY
	OVERLOAD PROTECTION
	PILOT LIGHT
	ON - OFF SWITCH
	HAND - OFF - AUTOMATIC SWITCH
	DISCONNECT SWITCH
	ELECTRIC SWITCHING DEVICE
	FLOW SWITCH
	TEMPERATURE SWITCH
	FLOAT SWITCH
	TIME DELAY SWITCH
	SENSOR (TEMPERATURE, HUMIDITY ETC.)
	PRESSURE SENSOR
	SMOKE DETECTOR (SWITCH ACTIVATED BY)
	SINGLE PHASE MOTOR W/BUILT-IN OVERLOAD PROTECTION
	ON EMERGENCY POWER
	MOTOR CONTROL CENTER
	CONTROL PANEL
	LINE VOLTAGE
	LOW VOLTAGE
	SLASHES INDICATE NO. OF WIRES
	ACTUATOR FOR VALVE OR DAMPER
	CONTROL AIR
	CIRCUIT BREAKER

CONTROL ABBREVIATIONS

ABBREV.	DESCRIPTION
AO, AI	ANALOG OUTPUT, ANALOG INPUT
DO, DI	DIGITAL OUTPUT, DIGITAL INPUT
FMS	FACILITY MANAGEMENT SYSTEM
N.C.C.NO.	NORMALLY CLOSED, COMMON, NORMALLY OPEN
PC	PROGRAMMABLE CONTROLLER
U.P.S	UNINTERRUPTED POWER SUPPLY
U.O.N	UNLESS OTHERWISE NOTED

GENERAL NOTES

- VISIT THE JOB SITE AND VERIFY CONDITIONS, LOCATIONS AND DIMENSIONS BEFORE STARTING WORK.
- COORDINATE ALL WORK WITH OTHER TRADES PRIOR TO ORDERING MATERIALS OR EQUIPMENT.
- SHALL COMPLY WITH REQUIREMENTS OF APPLICABLE CODES, LAW, ORDINANCES AND REGULATIONS OF AUTHORITIES HAVING JURISDICTION.
- ARRANGE TO MAINTAIN CONTINUOUS AIR CONDITIONING SERVICES TO THE EXISTING SYSTEMS AT ALL TIMES, EXCEPT MINOR INTERRUPTIONS OF SHORT DURATION AS MAY BE REQUIRED FOR CONNECTION.
- A COPY OF THE OPA MANUALS SHALL BE ON THE JOB SITE PRIOR TO STARTING HANGING AND BRACING OF THE SUSPENDED UTILITIES. ONE COPY OF THE MANUAL SHALL BE MADE AVAILABLE TO THE INSPECTOR OF RECORD (IOR) AT ALL TIMES.
- PROVIDE INSULATION MATERIALS INCLUDING FACINGS HAVING A FLAME SPREAD RATING NOT TO EXCEED 25 AND A SMOKE DEVELOPED RATING NOT TO EXCEED 50 WHEN TESTED IN ACCORDANCE WITH CURRENT UBC STANDARDS.
- CONTRACTOR VERIFICATION : BEFORE COMMENCEMENT OF WORK, THE CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS, ELEVATIONS, AND CHARACTERISTICS OF ALL UTILITIES AND PIPING AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT OF ANY DISCREPANCIES.
- EXAMINATION OF SITE AND VERIFICATION OF CONDITIONS : CONTRACTOR SHALL EXAMINE THE SITE AND BECOME ACQUAINTED WITH THE EXISTING CONSTRUCTION AND THE CONDITIONS UNDER WHICH THE WORK IS TO BE CARRIED OUT. UPON SUBMITTING A BID, CONTRACTOR SHALL BE HELD TO HAVE MADE SUCH EXAMINATION, AND NO ALLOWANCE FOR EXTRAS WILL BE ALLOWED FOR ANY ERROR OR OVERSIGHT RESULTING FROM THE CONTRACTOR'S UNFAMILIARITY WITH THE SITE OR EXISTING CONDITIONS. CONTRACTOR SHALL OBTAIN ACCURATE FIELD DIMENSIONS OF ALL RELATED AREAS, SPACES, OPENINGS, LEVELS, AND ITEMS OF ADJACENT WORK AND, BEFORE COMMENCING WORK, REPORT TO THE ARCHITECT IN WRITING ALL DISCREPANCIES BETWEEN THE CONTRACT.
- INTERFERENCE : ALL WORK SHALL BE INSTALLED SO AS TO AVOID STRUCTURAL FRAMING, ELECTRICAL AND MECHANICAL EQUIPMENT.
- FULL SIZE : ALL VALVES, UNIONS, ETC. TO BE SAME SIZE AS LINE SIZE UNLESS OTHERWISE INDICATED ON DRAWINGS.
- UNIONS : UNIONS SHALL BE PROVIDED AND INSTALLED AFTER EACH SCREW-TYPE VALVE AND PRIOR TO EQUIPMENT CONNECTIONS.
- LATERAL SUPPORT : ALL EQUIPMENT SHALL BE Laterally SUPPORTED IN ALL DIRECTIONS TO RESIST A MIN. OF 50% OF THE EQUIPMENT OPERATING WEIGHT.
- FIELD VERIFICATION : BEFORE FABRICATION OR INSTALLATION, THIS CONTRACTOR SHALL VERIFY EXACT LOCATIONS OF ALL MECHANICAL EQUIPMENT AND EQUIPMENT PROVIDED UNDER ANOTHER SECTION OF SPECIFICATIONS. EXACT ROUGH-IN LOCATIONS AND REQUIREMENTS SHALL BE COORDINATED IN FIELD.
- SLAB ANCHORING : WHEN INSTALLING DRILLED-IN ANCHORS, POWER DRIVEN PINS AND/OR NEW OPENINGS IN EXISTING NON-PRESTRESSED REINFORCED CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. WHEN INSTALLING THEM INTO EXISTING PRE-STRESSED CONCRETE (PRE-OR POST-TENSIONED), LOCATE THE PRE-STRESSED TENDONS BY USING A NONDESTRUCTIVE METHOD PRIOR TO INSTALLATION. EXERCISE EXTREME CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE TENDONS DURING INSTALLATION. MAINTAIN A MINIMUM CLEARANCE OF ONE INCH (1") BETWEEN THE REINFORCEMENT AND THE DRILLED-IN ANCHOR AND/OR PIN, AND THREE INCHES (3") BETWEEN REINFORCEMENT AND OPENING.
- SPECIFICATIONS : THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH, AND BE CONSIDERED TO BE A PART OF THE SPECIFICATIONS.
- PATCHING : THE CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING AND REPAIRING ALL AREAS WHICH ARE EXCAVATED AND/OR DAMAGED BY HIS OPERATIONS. IN ADDITION, THE CONTRACTOR SHALL RESTORE TO THEIR ORIGINAL CONDITION ALL PLANTED AREAS DAMAGED BY HIS OPERATIONS.
- RECONSTRUCT : CONTRACTOR SHALL REMOVE EXISTING AND REBUILD INLIKE WITH NEW OR APPROVED EXISTING MATERIAL. COORDINATE WITH NEW CONSTRUCTION.
- CONNECTIONS AND EXISTING SERVICES : ALL CONNECTIONS TO EXISTING SERVICES SHALL BE MADE OR SUCH THAT INTERRUPTION TIME WILL BE AS SHORT AS POSSIBLE. THE CONTRACTOR SHALL GIVE THE OWNERS REPRESENTATIVE SUFFICIENT NOTICE OF SUCH INTERRUPTION AND THE ACTUAL SHUTDOWN TIME SHALL BE AT A TIME DESIGNATED BY THE OWNER'S REPRESENTATIVE. ALL PIPING REQUIRING SHUT DOWN AS PART OF CONSTRUCTION (NEW AND EXISTING) SHALL BE CLEANED AND TESTED PER CURRENT 2007 CPC 101.5.
- EXISTING PIPING DAMAGED : ALL EXISTING PIPING DAMAGED DURING EXCAVATION OR DEMOLITION SHALL BE REPAIRED WITH MATERIALS TO MATCH EXISTING BY THE EXCAVATION.
- SAW CUTTING/CORE DRILLING : ALL CUTTING EXISTING WALLS, PAVING, WALKS AND/OR FLOORS SHALL BE BY MACHINE SAW CUTTING. HOLES FOR PIPING IN CONCRETE MASONRY WALLS OR FLOORS SHALL BE DONE USING CORE DRILLING EQUIPMENT. ABOVE SHALL BE UNDER THE SUPERVISION OF THE STRUCTURAL ENGINEER.
- INCOMPATIBLE MATERIAL CONNECTION : CONNECTION BETWEEN INCOMPATIBLE MATERIALS ABOVE GRADE AND INSIDE BUILDING SHALL BE MADE WITH 2 DIELECTRIC UNIONS SEPARATED BY A 12" SECTION OF STAINLESS STEEL PIPE.
- SUBMITTALS AND SHOP DRAWING : THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS ON ALL WORK AND SUBMITTALS ON ALL EQUIPMENT AND ACCESSORIES FOR REVIEW PRIOR TO ORDERING, FABRICATION AND INSTALLATION.
- PLATFORMS, CURBS AND FLASHINGS FOR MECHANICAL EQUIPMENT SHALL BE AS INDICATED ON THE STRUCTURAL AND ARCHITECTURAL DRAWINGS, UNLESS NOTED OTHERWISE.
- BALANCE, TEST & ADJUST THE EXISTING AND NEW DISTRIBUTION DUCTWORK, DIFFUSERS AND REGISTERS AS REQUIRED TO MEET DESIGN CFM INDICATED ON THE FLOOR PLANS. UPON COMPLETION OF BALANCING, DELIVER A CERTIFICATE OF THE TEST AND PERFORMANCE OF THE SYSTEM TO THE OWNER CERTIFYING THAT ALL TESTS AND ADJUSTMENTS HAVE BEEN COMPLETED AND THE SYSTEM HAS BEEN BALANCED.

SPECIAL BID INSTRUCTIONS

SPECIAL BID INSTRUCTIONS

THESE DRAWINGS ARE PREPARED BASED ON AVAILABLE RECORD DRAWINGS AND NON-INVASIVE, NON-INSTRUMENT ASSISTED, VISUAL, FIELD OBSERVATION ONLY. THE INTENT OF THESE DRAWINGS IS TO DEFINE THE SCOPE OF WORK AND CONVEY THE DESIGN CONCEPTS ONLY.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTING UTILITIES THROUGH AN INVASIVE, INSTRUMENT ASSISTED OR OTHER ACCEPTED AND RELIABLE SURVEYING METHODS AND PREPARE SHOP DRAWINGS THAT ARE IN COMPLIANCE WITH THE CONCEPT DOCUMENTS FOR SUBMITTAL TO THE ENGINEER OF RECORD.

REQUESTS FOR CHANGE ORDERS WILL NOT BE CONSIDERED FOR DEVIATION OF THE LOCATION OR SIZE OF THE EXISTING UTILITIES FROM THE CONCEPT DRAWINGS.

DEMOLITION NOTES

- DEMOLITION OF EXISTING EQUIPMENT AND MISCELLANEOUS SITE ITEMS IN NEW CONSTRUCTION AREA AS INDICATED ON ARCHITECTURAL DEMOLITION DRAWING SHALL BE EXAMINED FOR UTILITIES AND SHALL BE CAPPED OR PLUGGED OR REROUTED TO MAINTENANCE SERVICE AS REQUIRED TO AREA OF NEW WORK. PROVIDE AS-BUILT DRAWING OF ITEM ABOVE INDICATING LOCATION, ELEVATION, SIZE, DIRECTION OF FLOW AND SERVICE.

HVAC SHEET INDEX

NO.	SHEET NO.	SHEET DESCRIPTION
1	M1-1.0	LEGENDS, NOTES & SHEET INDEX
2	M1-1.1	BASEMENT LEVEL HVAC DEMOLITION & NEW FLOOR PLANS
3	M1-1.2	HVAC-PARTIAL ROOF PLAN
4	M1-2.0	SCHEDULE
5	M1-3.0	DETAILS & CONTROLS

PROJECT DESCRIPTION:

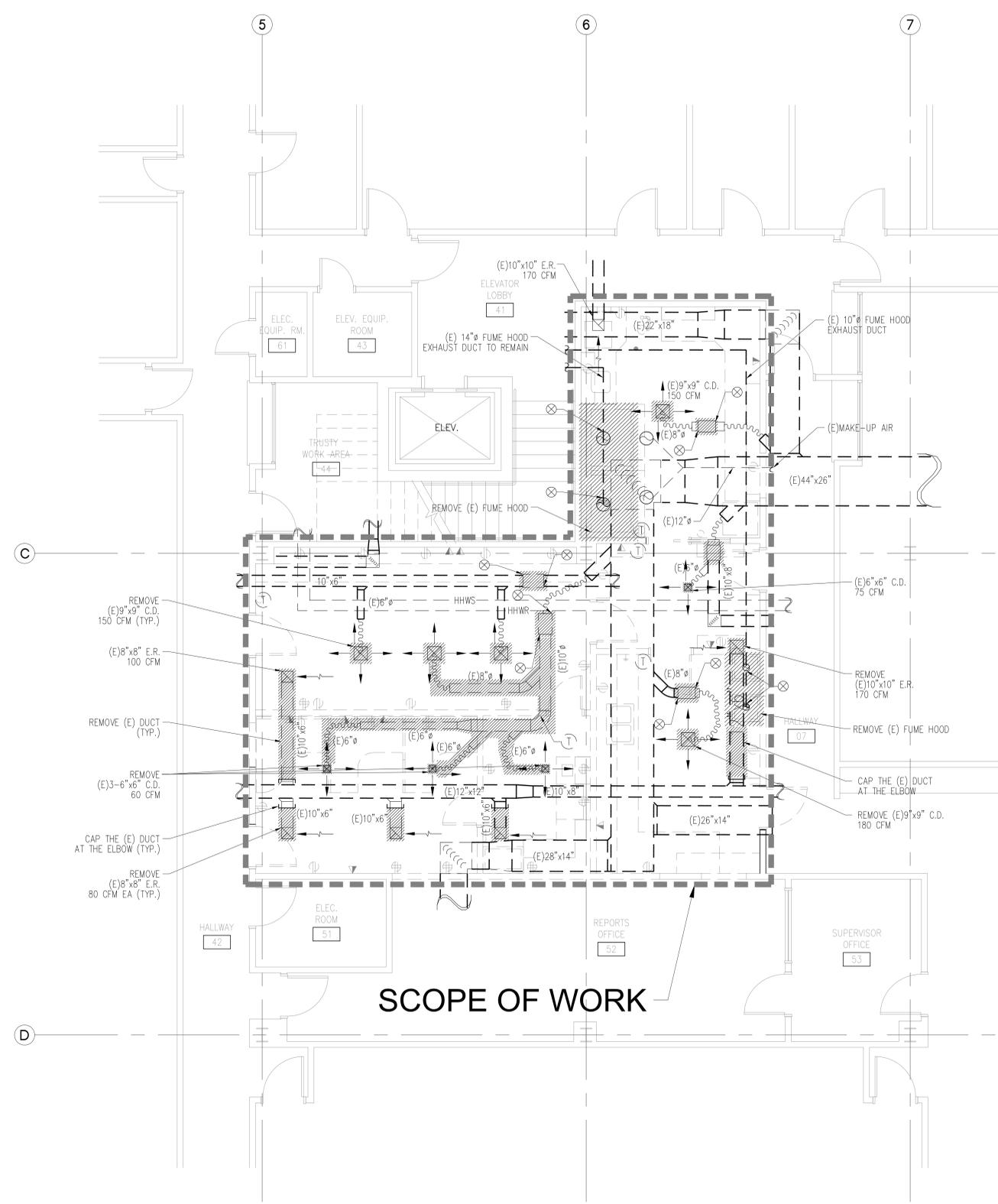
MODERNIZATION OF HVAC SYSTEM FOR TORRANCE POLICE DEPT. NEW FORENSIC SCIENCE LABORATORY IN BASEMENT AREA.

SCOPE OF WORK:

- DEMOLISH EXISTING VAV TERMINALS, PARTIAL DUCTWORK AND CEILING DIFFUSERS AND REGISTERS AS INDICATED ON DEMOLITION PLAN.
- PROVIDE NEW VAV TERMINALS AND NEW DUCTWORK CONNECTING TO EXISTING MAIN.
- PROVIDE NEW STAINLESS STEEL DUCTWORK TO NEW FUME HOODS AND CONNECT TO EXISTING MAIN. EXTEND THE MAKE-UP DUCTWORK TO THE ROOM WITH FUME HOOD.
- REUSE EXISTING PNEUMATIC PIPING AND T-STAT IF THEY ARE IN GOOD WORKING CONDITION. EXTEND PNEUMATIC PIPING IF IT'S REQUIRED. CONTRACTOR SHALL PROTECT ALL THE EQUIPMENT, PIPING AND CONTROLS IF THEY CAN BE REUSED DURING CONSTRUCTION.
- REUSE EXISTING FUME HOOD EXHAUST FANS IF THEY CAN BE BALANCED TO MEET THE NEW FUME HOOD EXHAUST REQUIREMENT. ADD DUCT EXTENTION PER DETAIL #6/M1-3.0 PER CODE. ADD FAN CONTROLS PER DETAIL #6/M1-3.0.
- IF EXISTING FUME HOOD EXHAUST FAN CAN NOT BE REUSED. PROVIDE NEW FANS PER EXHAUST FAN SCHEDULE ON M1-2.0 AND PROVIDE CONTROLS PER DETAIL #6/M1-3.0.

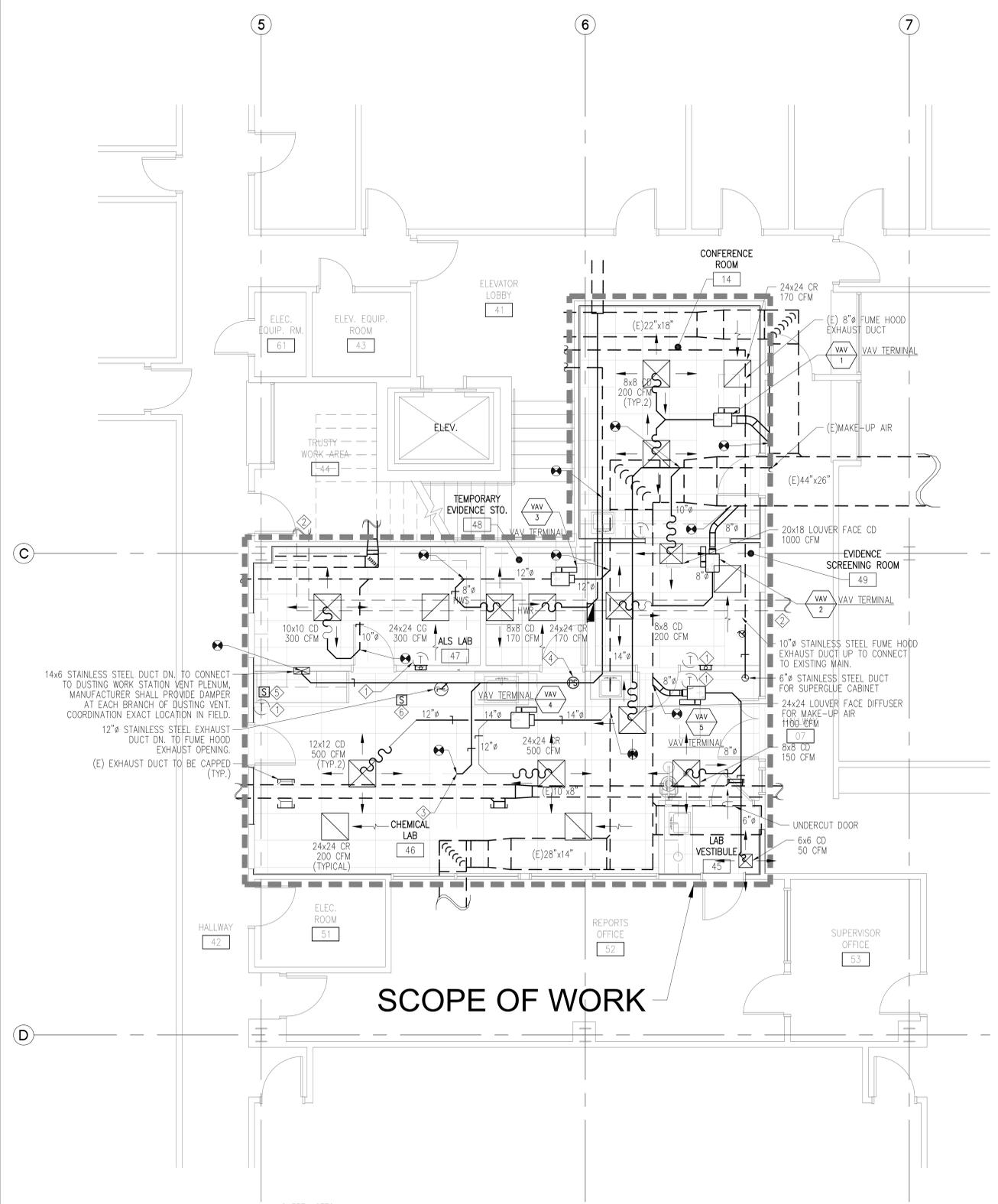


No.	Revision	Date	By
A.	ISSUE FOR REVIEW	11-21-11	
B.	ISSUE FOR PLAN CHECK	12-22-11	
C.	PLAN CHECK RESUBMIT	05-15-12	



SCOPE OF WORK

SHEET NOTES:
CONTRACTOR SHALL VERIFY THE CONDITION OF EXISTING PHUMATIC PIPING & T-STAT. REUSE THEM IF THEY ARE IN GOOD WORKING CONDITION. PROVIDE EXTENDED PIPING AS REQUIRED. PROTECT THEM PROPERLY DURING CONSTRUCTION.



SCOPE OF WORK

SHEET NOTES:
CONTRACTOR SHALL VERIFY THE CONDITION OF EXISTING PHUMATIC PIPING & T-STAT. REUSE THEM IF THEY ARE IN GOOD WORKING CONDITION. PROVIDE EXTENDED PIPING AS REQUIRED. PROTECT THEM PROPERLY DURING CONSTRUCTION.

- KEY NOTES:**
- ◇ EXISTING T-STAT AT NEW LOCATION
 - ◇ EXISTING HWS & R TO REMAIN.
 - ◇ 6" STAINLESS STEEL DUCT TRANSITION TO 8"x8" FOR TASK EXHAUST CONNECTION.
 - ◇ PRESSURE SENSOR IN MAIN EXHAUST AIR DUCT.
 - ◇ FAN SWITCH FOR DUST STATION. SEE E2-1.1 FOR EXACT LOCATION.



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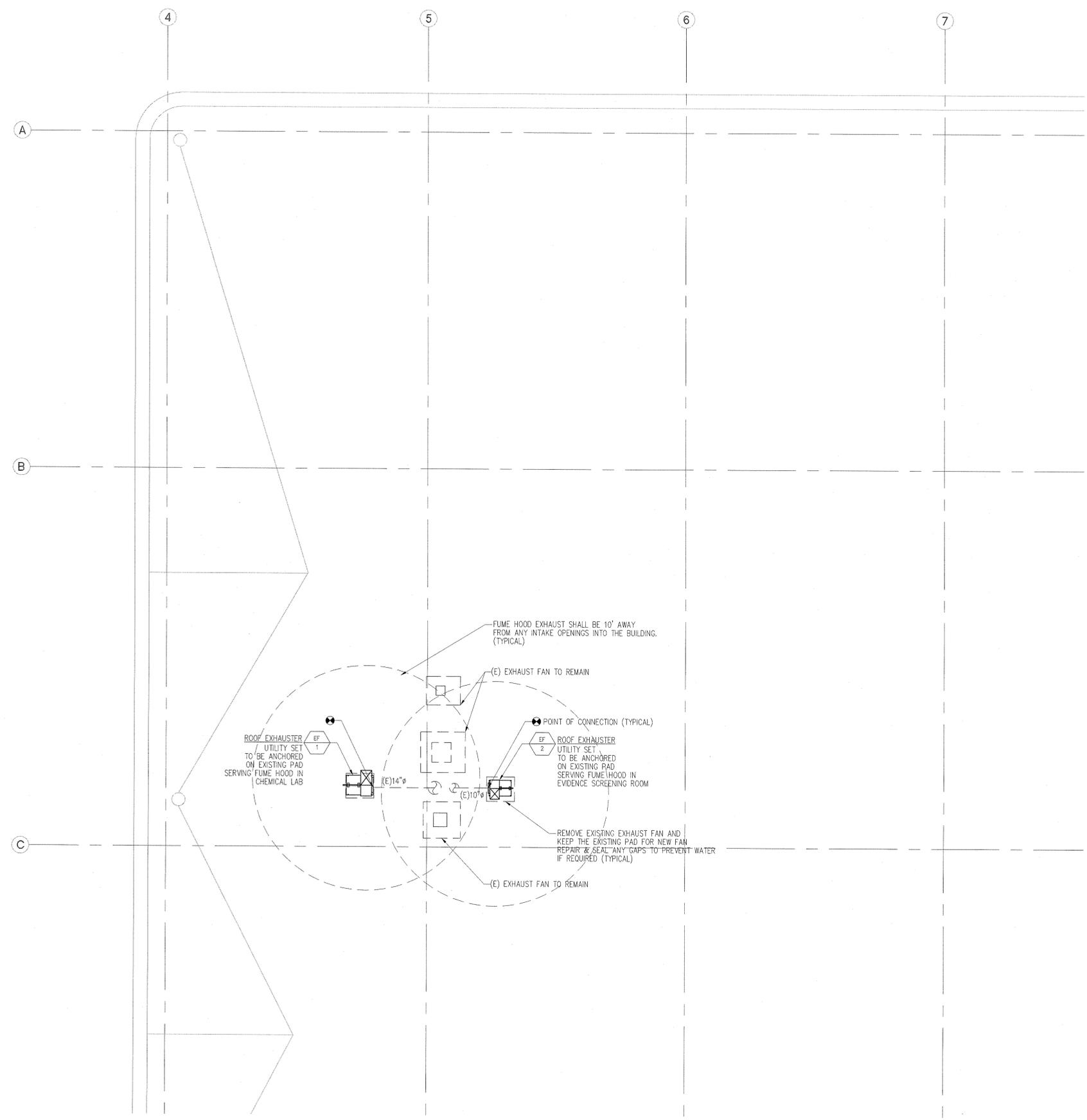
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SCALE
1/4"=1'-0"

HVAC-PARTIAL ROOF PLAN

1

M1-1.2

P:\10000\0106-14-2002

VARIABLE AIR VOLUME TERMINAL UNITS

SYMBOL	SERVICE	LOCATION	TYPE	DESIGN BASE MANUFACTURER & MODEL	CFM RANGE (DESIGN)		CFM RANGE (EQUIPMENT)		TOTAL PD (IN. WG)	DISCHARGE SOUND LEVEL (NC)	RADIATED SOUND LEVEL (NC)	INLET DUCT (IN.)	REFERENCE CONTROL DETAIL	TOTAL WEIGHT (LB)	REMARKS
					MAX.	MIN.	MAX.	MIN.							
VAV 1	CONFERENCE ROOM	CONFERENCE ROOM	SINGLE DUCT TERMINAL	PRICE SPV 7	400	200	650	250	0.10	20	20	7	#3/M1-3.0	25	PROVIDE FACTORY INSTALLED AIR FLOW SENSOR IN VAV TERMINAL. PROVIDE MANUFACTURER PNUMATIC CONTROLS KIT AND ROUND DISCHARGE COLLAR.
VAV 2	EVIDENCE SCREEN ROOM	EVIDENCE SCREEN ROOM	SINGLE DUCT TERMINAL	PRICE SPV 5	200	100	350	125	0.01	20	20	5	#3/M1-3.0	23	PROVIDE FACTORY INSTALLED AIR FLOW SENSOR IN VAV TERMINAL. PROVIDE MANUFACTURER PNUMATIC CONTROLS KIT AND ROUND DISCHARGE COLLAR.
VAV 3	TEMPORARY EVIDENCE STORAGE & ALS LAB	TEMPORARY EVIDENCE STORAGE	SINGLE DUCT TERMINAL	PRICE SPV 7	470	235	650	250	0.10	20	20	7	#3/M1-3.0	25	PROVIDE FACTORY INSTALLED AIR FLOW SENSOR IN VAV TERMINAL. PROVIDE MANUFACTURER PNUMATIC CONTROLS KIT AND ROUND DISCHARGE COLLAR.
VAV 4	CHEMICAL LAB	CHEMICAL LAB	SINGLE DUCT TERMINAL	PRICE SPV 10	1000	500	1350	550	0.01	20	20	10	#3/M1-3.0	30	PROVIDE FACTORY INSTALLED AIR FLOW SENSOR IN VAV TERMINAL. PROVIDE MANUFACTURER PNUMATIC CONTROLS KIT AND ROUND DISCHARGE COLLAR.
VAV 5	CHEMICAL LAB	CHEMICAL LAB	SINGLE DUCT TERMINAL	PRICE SPV 5	200	100	350	125	0.01	20	20	5	#3/M1-3.0	23	PROVIDE FACTORY INSTALLED AIR FLOW SENSOR IN VAV TERMINAL. PROVIDE MANUFACTURER PNUMATIC CONTROLS KIT AND ROUND DISCHARGE COLLAR.

NOTE:
 ① MAXIMUM ALLOWABLE PD @ MAXIMUM EQUIPMENT CFM CAPACITY.
 ② MAXIMUM ALLOWABLE NC @ MAXIMUM DESIGN CFM CAPACITY.

FANS

SYMBOL	SPEC. SYMBOL	SPEC. SECTION	SERVICE	LOCATION	TYPE	DESIGN BASE MANUFACTURER & MODEL	CFM	EXT. SP (IN.WG)	DRIVE	MOTOR					OPER. WEIGHT (LBS)	VIBRATION ISOLATORS		PLBG. REQD.	REFERENCE ANCHORAGE DETAIL	REFERENCE CONTROL DETAIL	REMARKS	
										WATT	HP	VOLT	Ø	Hz		RPM	TYPE					DEFLECTION (IN)
EF 1	RMEV-2	15700	CHEMICAL LAB FUME HOOD & DUSTING STATION	BUILDING ROOF	UTILITY SET	GREENHECK SWB-215-7	1,700	1.5	BELT	-	0.75	208	3	60	1725	203	N/A	N/A	NO	#5/M1-3.0	#6/M1-3.0	ALL PARTS OF THIS FAN EXPOSED TO THE EXHAUST AIR STREAM TO BE COATED WITH 15 MILS 3M 324 HI-BAKE EPOXY. PROVIDE PREMIUM MOTOR WITH VFD, NON SPARKING WHEEL & FAN CASING, EXPLOSION PROOF MOTOR, VIBRATION ISOLATOR & SEISMIC RESTRAINTS, BACKDRAFT DAMPER, AND WEATHER PROOF COVER. COMPLY WITH CMC 2010 SECTION 503.
EF 2	RMEV-2	15700	EVIDENCE SCREENING ROOM FUME HOOD	BUILDING ROOF	UTILITY SET	GREENHECK SWB-110-3	1,080	1	BELT	-	0.333	115	1	60	1725	150	N/A	N/A	NO	#5/M1-3.0	#6/M1-3.0	ALL PARTS OF THIS FAN EXPOSED TO THE EXHAUST AIR STREAM TO BE COATED WITH 15 MILS 3M 324 HI-BAKE EPOXY. PROVIDE PREMIUM MOTOR, NON SPARKING WHEEL & FAN CASING, EXPLOSION PROOF MOTOR, VIBRATION ISOLATOR & SEISMIC RESTRAINTS, BACKDRAFT DAMPER, AND WEATHER PROOF COVER. COMPLY WITH CMC 2010 SECTION 503.



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Project

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Drawing Title

SCHEDULE

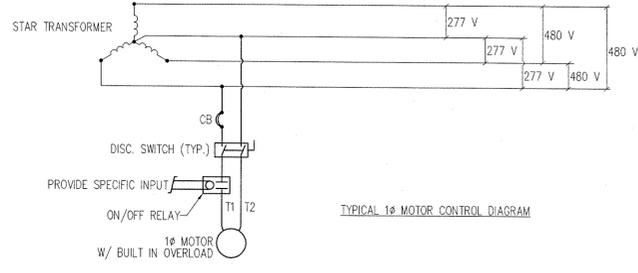
Project Number
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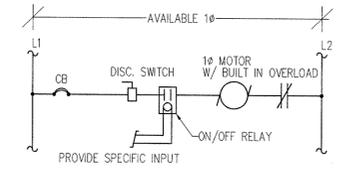
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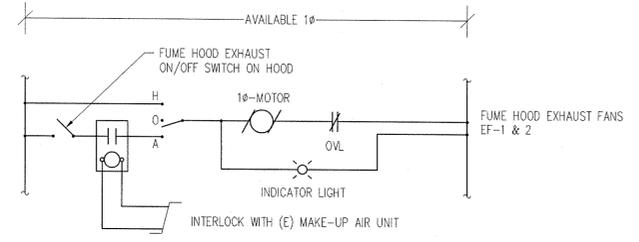
M1-2.0



TYPICAL 1φ MOTOR CONTROL DIAGRAM

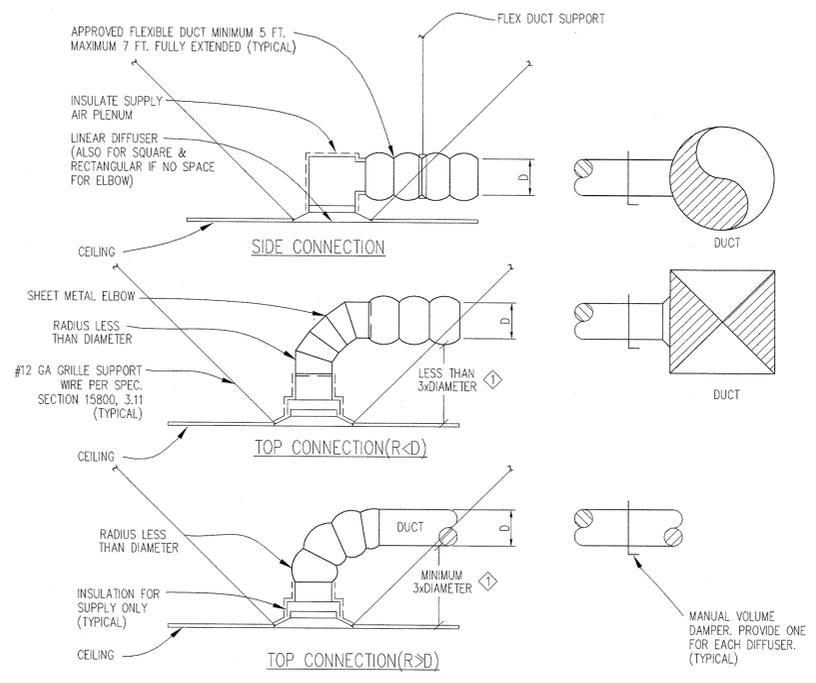
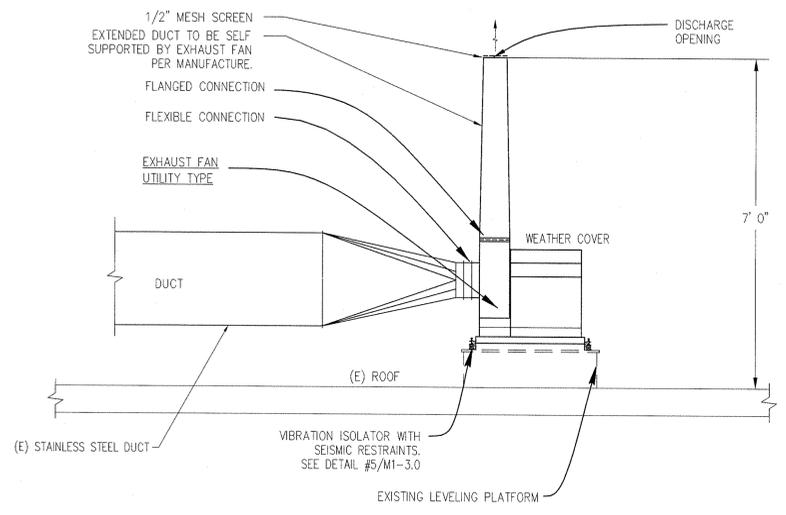


TYPICAL 1φ MOTOR CONTROL LADDER DIAGRAM



SEQUENCE OF OPERATION

- NOTES:**
- SEE CONTROL LEGEND FOR DISTRIBUTION OF WORK BETWEEN TRADES.
 - LABEL ALL OUTPUTS.
 - WITH BATTERY BACKUP, HOLIDAY PROGRAMMING & AUTO CHANGEOVER FOR DAYLIGHT SAVING
 - LINE VOLTAGE WIRING, CONDUIT & DEVICES TO BE PROVIDED UNDER DIVISION 16.
 - LOW VOLTAGE (LESS THAN 50 VOLTS) WIRING, CONDUIT & DEVICES TO BE PROVIDED UNDER DIVISION 15.



- NOTE:**
- D = DIAMETER
 - ◇ DUE TO STRINGENT ACOUSTICAL STANDARDS STRICT ADHERENCE TO THESE DETAILS IS REQUIRED.



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TYPICAL FAN MOTOR CONTROLS

SCALE NONE 6

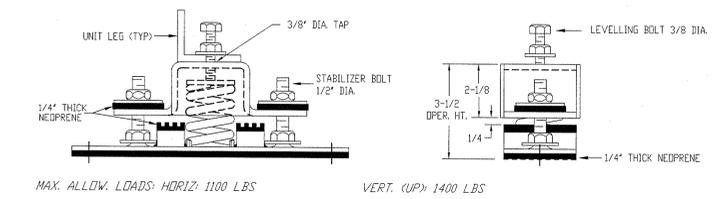
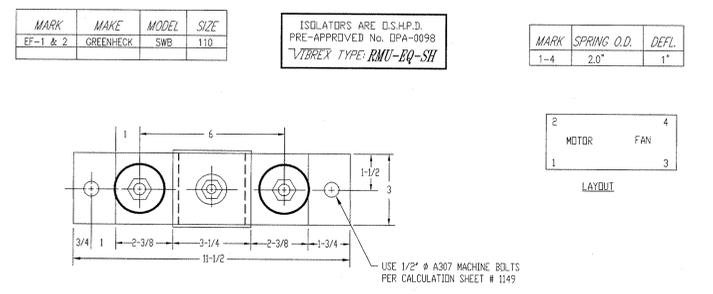
FUME HOOD EXHAUST FAN

SCALE NONE 4

CEILING AIR INLET/OUTLET CONNECTION DETAIL

SCALE NONE 1

NOT USED



APPROVED Fixed Equipment Anchorage
Office of Statewide Health Planning and Development
OPA-0098 May 1, 2003
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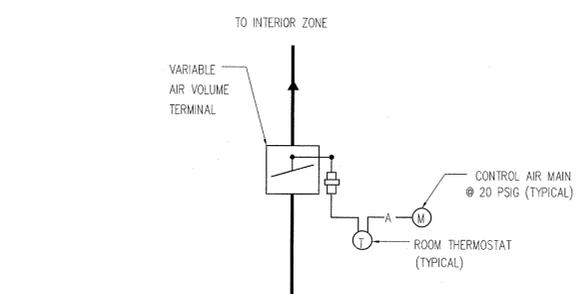


VIBRATION ISOLATOR FOR GREENHECK SWB UTILITY FAN

SCALE NONE 5

TYPICAL THERMOSTAT MOUNTING HEIGHT OVER OBSTRUCTION

SCALE NONE 2



NOTE:
CONTRACTOR SHALL VERIFY THE CONDITION OF EXISTING PNEUMATIC PIPING & T-STAT. REUSE THEM IF THEY ARE IN GOOD WORKING CONDITION. PROVIDE EXTENDED PIPING AS REQUIRED.

TYPICAL PNEUMATIC TYPE VAV TERMINAL CONTROL DIAGRAM

SCALE NONE 3

DOMESTIC WATER SIZING TABLE							
"WATER PIPE SIZING IN EXISTING HIGH RISE BUILDINGS"							
LADBS - FORM GEN 160 (REV. 6-80), ISSUED ON JULY 12, 2005							
PIPE SIZE	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"
FIXTURE UNITS (FLUSH TANKS)	1	6	13	24	47	158	360
FIXTURE UNITS (FLUSH VALVES)	0	0	0	0	10	64	245

SCOPE OF WORK

REMOVE EXISTING PLUMBING FIXTURE & ASSOCIATED PIPING UP TO POINT OF REMOVAL. DEMOLISH EXISTING COLD WATER GALVANIZED IRON AND PROVIDE NEW COPPER PIPING. REUSE EXISTING PLUMBING FIXTURES IF SALVAGEABLE. PROVIDE NEW PLUMBING FIXTURES WITH NEW UTILITIES & ROUGH-IN AS REQUIRED PER UPC. REUSE EXISTING HOT WATER HEATER AND ASSOCIATED PIPING UP TO POINT OF REMOVAL. PROVIDE DOMESTIC COLD, HOT WATER SUPPLY AND RETURN PIPING DISTRIBUTION SYSTEM AS REQUIRED. PROVIDE NEW CONVENTIONAL SANITARY SEWER AND VENT PIPING SYSTEM THROUGHOUT ENTIRE SCOPE.

PLUMBING MATERIALS

- WATER PIPING: TYPE "L" COPPER WITH WROUGHT COPPER FITTINGS, WITH LEAD FREE SOLDER.
- WASTE AND VENT PIPING: SERVICE WEIGHT CAST IRON PIPE WITH STAINLESS STEEL ON-HUB COUPLINGS. VENT PIPING 2" AND SMALLER MAY BE SCHEDULE 40 GALVANIZED STEEL WITH THREADED FITTINGS.
- CONDENSATE DRAIN PIPING: TYPE "M" COPPER WITH WROUGHT COPPER FITTINGS.
- ALL DEVICES OR COMPONENTS THAT COME IN CONTACT WITH POTABLE WATER MUST COMPLY WITH CA AB1953.

SPECIAL BID INSTRUCTIONS

SPECIAL BID INSTRUCTIONS

THESE DRAWINGS ARE PREPARED BASED ON AVAILABLE RECORD DRAWINGS AND NON-INVASIVE, NON-INSTRUMENT ASSISTED, VISUAL, FIELD OBSERVATION ONLY. THE INTENT OF THESE DRAWINGS IS TO DEFINE THE SCOPE OF WORK AND CONVEY THE DESIGN CONCEPTS ONLY.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTING UTILITIES THROUGH AN INVASIVE, INSTRUMENT ASSISTED OR OTHER ACCEPTED AND RELIABLE SURVEYING METHODS AND PREPARE SHOP DRAWINGS THAT ARE IN COMPLIANCE WITH THE CONCEPT DOCUMENTS FOR SUBMITTAL TO THE PROJECT MANAGER.

REQUESTS FOR CHANGE ORDERS WILL NOT BE CONSIDERED FOR DEVIATION OF THE LOCATION OR SIZE OF THE EXISTING UTILITIES FROM THE CONCEPT DRAWINGS.

ALL BRACING OF DUCTS AND PIPING SHALL BE INSTALLED IN ACCORDANCE WITH SMACNA GUIDELINES AS APPROVED BY THE OWNER/ORS.

WHERE BRACING DETAILS ARE NOT SHOWN ON THE DRAWINGS OR IN THE GUIDELINES, THE FIELD INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT, MECHANICAL ENGINEER AND FIELD INSPECTOR ENGINEER.

A COPY OF THE GUIDELINES PUBLISHED BY SMACNA AND APPROVED BY THE CONSTRUCTION REPRESENTATIVE SHALL BE PROVIDED BY THE CONTRACTOR AND KEPT ON THE JOB AT ALL TIMES.

THE SEISMIC ANCHORAGE OF MECHANICAL AND ELECTRICAL EQUIPMENT SHALL CONFORM TO C.C.R. TITLE 24, 2010 CBC SECTION 1632A AND TABLE 16A-0. ANCHORAGE DETAILS FOR ROOF/FLOOR MOUNTED EQUIPMENT SHALL BE SHOWN ON PLANS.

GENERAL NOTES

- COMPLY WITH ALL APPLICABLE CODES, PERTINENT REGULATIONS OF ALL AGENCIES HAVING JURISDICTION.
- SEE CONTRACT SPECIFICATIONS FOR INSTALLATION, MATERIALS, TESTING, CLEANING AND MISCELLANEOUS GENERAL REQUIREMENTS.
- CONTRACTOR TO COORDINATE ALL WORK WITH OTHER TRADES PRIOR INSTALLATION OF PIPING AND EQUIPMENT.
- PENETRATIONS THROUGH RATED WALLS AND FLOORS TO BE SEALED WITH MATERIAL CAPABLE OF WITHSTANDING FLAMES AND HOT GASES WHEN SUBJECTED TO THE TESTING STANDARD REQUIREMENT ASTM-E-814 FOR FIRE STOPS.
- INSTALL CLEAN OUTS AS REQUIRED BY THE 2010 UPC SECTION 707.0 AND 719.0
- ALL BURRED ENDS OF DOMESTIC WATER PIPING AND TUBING SHALL BE REAMED TO THE FULL BORE OF THE PIPE OR TUBE AND ALL CHIPS SHALL BE REMOVED. TOOLS USED TO CUT OR REAM PIPE SHALL BE KEPT FREE OF OIL OR GREASE AND WHERE SUCH CONTAMINATION HAS OCCURRED THE ITEMS AFFECTED SHALL BE REWORKED AND RINSED.
- PIPE INSTALLED PIERCES OR SWEEPS DOWN THROUGH CONCRETE FOOTING SHALL BE DOUBLE WRAPPED WITH 1/8" THICK SHEET CLOSED CELL POLYETHYLENE.
- HOSE BIBB SHALL BE PROVIDED WITH VACUUM BREAKER AND SHUTOFF VALVES.
- PLUMBING MATERIAL AND INSTALLATION SHALL BE ACCORDANCE WITH TITLE 24, CAC PART 5 2010, CALIFORNIA PLUMBING CODE.
- ALL VALVES, TRAP PRIMER, WATER HAMMER ARRESTOR AND COOKS SHALL BE LOCATED TO BE READILY ACCESSIBLE. WHERE VALVES ARE INSTALLED WITHIN, OR BEHIND WALLS, PARTITIONS OR CEILINGS OR CEILING, AN ACCESS PANEL SHALL BE INSTALLED.
- BEFORE BEGINNING ANY WORK, CONTRACTOR SHALL THOROUGHLY EXAMINE (VERIFY) ALL EXISTING CONDITIONS, POINTS OF CONNECTIONS, SIZES, LOCATION AND AVAILABILITY OF EXISTING UTILITIES.
- CONTRACTOR SHALL PROVIDE FINAL CONNECTIONS FOR ALL EQUIPMENT AND FIXTURES, INCLUDING TRAPS, TRIM, SHUTOFF VALVES, STOPS, APPROVED BACK FLOW PREVENTERS.
- COORDINATE AND VERIFY EXACT LOCATION, SIZE, POINTS OF CONNECTION AND INVERT ELEVATIONS OF UTILITY SERVICE PIPING BEFORE TRENCHING OR INSTALLATION.
- COORDINATE WITH ARCHITECTURAL DRAWINGS FOR WALL AND PARTITION CONSTRUCTION AND THICKNESS WHERE PLUMBING PIPING OR EQUIPMENT IS INDICATED.
- THE LOCATION AND ELEVATION OF ALL PLUMBING PIPING SHALL BE VERIFIED AND COORDINATED WITH ALL OTHER TRADES, STRUCTURAL CONDITIONS AND BUILDING CONSTRUCTION, PRIOR TO START OF INSTALLATION.
- IT HAS BEEN RECOMMENDED BY THE SOIL SURVEY REPORT TO PROVIDE PROTECTION FROM UNDERGROUND CORROSIVE SOIL(S). CONTRACTOR SHALL PROVIDE PIPES PROTECTION ENCASEMENT PER THE INSTALLATION OF ENCASEMENT PORTIONS BY THE ASTM-74, ASTM D 2321 & AWWA C 105 WITH CATHODIC PROTECTION AS APPLIES FOR FERRUS MATERIAL AS RECOMMENDED BY CORROSION CONTROL PRODUCTS OR EQUAL.
- WHEN PROVIDE CONDENSATE AND OVERFLOW DRAIN PIPING TO ALL FAN COIL UNITS AND MECHANICAL EQUIPMENT W/TRAP, UNIONS & FLEXIBLE CONNECTIONS AND SPILL TO APPROVED RECEPTACLE OR CONNECT TO TAILPIECE. INSULATE ALL CONDENSATE AND OVERFLOW DRAIN PIPING INSIDE BUILDING. SLOPE ALL PIPING @ 1/8" PER FOOT.
- CUTTING, BORING, SAW CUTTING OR DRILLING THROUGH THE NEW OR EXISTING STRUCTURAL ELEMENTS TO BE DONE ONLY WHEN SO DETAILED IN THE DRAWINGS OR ACCEPTED BY THE ARCHITECT WITH THE APPROVAL OF FIELD INSPECTOR.
- CONTRACTOR SHALL PROVIDE PROVISION ON HIS/HER BID FOR ADDITION X-RAY REQUIREMENT TO LOCATE NEW PIPING SLAB PENETRATIONS. (COORDINATION WITH STRUCTURAL DWGS.)
- COLD WATER, HOT WATER & TRIP PRIMER'S SHUT OFF VALVE ACCESS PANEL SHALL BE INSTALL 18" ABOVE FINISHED FLOOR.
- A FINAL REPORT FOR THE TESTING AND ADJUSTING OF ALL NEW SYSTEMS SHALL BE COMPLETED PRIOR TO ISSUANCE OF PERMIT. THIS REPORT SHALL BE SIGNED BY THE INDIVIDUAL RESPONSIBLE FOR PERFORMING THESE SERVICES.
- NEW PLUMBING FIXTURES AND FITTING SHALL NOT EXCEED THE MAXIMUM ALLOWABLE FLOW RATE SPECIFIED IN TABLE 10.303.2.3 (2010 CALIFORNIA GREEN BUILDING STANDARDS CODE). (SEE TABLE 303.2.3 ON P-3.0)

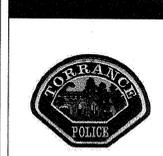
PLUMBING SHEET INDEX

SHEET NO.	SHEET DESCRIPTION
1 P1-1.0	LEGEND, NOTES & SHEET INDEX
2 P1-2.0	SCHEDULES
3 P1-1.1	BASEMENT LEVEL - DEMOLITION & MODERNIZATION FLOOR PLANS

PLUMBING LEGEND

ALL ITEMS INDICATED IN THIS LEGEND NOT NECESSARILY USED ON THE DRAWINGS

SYMBOL	ABBREVIATION	DESCRIPTION
		RELIEF VALVE
	TP	TRAP PRIMER
		THERMOMETER
		STRAINER
	G.V. / S.O.V.	GATE VALVE / SHUTOFF VALVE
	C.V.	CHECK VALVE
	B.V.	BALANCING VALVE / GLOBE VALVE
	U.	UNION
	W.H.A.	WATER HAMMER ARRESTOR
	W/S	WASTE OR SOIL ABOVE FLOOR
	W/S	WASTE OR SOIL BELOW FLOOR OR GRADE
	F.C.O.	FLOOR CLEANOUT
	Y.C.O.	YARD CLEANOUT
	W.C.O.	WALL CLEANOUT
	SD	STORM DRAIN ABOVE FLOOR
	OD	OVERFLOW DRAIN ABOVE FLOOR
	CW	DOMESTIC COLD WATER
	HW	DOMESTIC HOT WATER
	HWR	DOMESTIC HOT WATER RETURN
	V	VENT
	G	GAS (8" WATER COLUMN)
	ICW	INDUSTRIAL COLD WATER
	MPG	MEDIUM PRESSURE GAS (5#)
	CD	CONDENSATE DRAIN
	COD	CONDENSATE OVERFLOW DRAIN
		EQUIPMENT DESIGNATION
		DETAIL REFERENCE
	P.O.C.	POINT OF CONNECTION
		DIRECTION OF FLOW
	E	EXISTING PIPING (CW, TW, HW, HWR, V etc.)
	EW	EXISTING WASTE
	ABV.	ABOVE
	ADA	AMERICANS WITH DISABILITIES ACT COMPLIANCE
	A.P.	ACCESS PANEL
	BEL.	BELOW
	CFH	CUBIC FEET PER HOUR
	CONT.	CONTINUATION
	DN.	DOWN
	DWG.	DRAWING
	(E)	EXISTING
	EQUIP.	EQUIPMENT
	FLR.	FLOOR
	F.T.	FLUSH TANK
	F.U.	FIXTURE UNIT
	F.V.	FLUSH VALVE
	G.P.F.	GALLONS PER FLUSH
	I.E.	INVERT ELEVATION
	MECH.	MECHANICAL
	MTD.	MOUNTED
	N.I.C.	NOT IN CONTRACT
	PSIG	POUNDS PER SQUARE INCH GAUGE
	R.I. & C.	ROUGH-IN AND CONNECT
	RM.	ROOM
	SHT.	SHEET
	SQ.FT. (SF)	SQUARE FEET
	TYP.	TYPICAL
	U.O.S.	UNDER OTHER SECTION
	V.B.	VACUUM BREAKER
	V.B.F.	VENT BELOW FLOOR
	V.T.R.	VENT THRU ROOF
	W.C.	WATER COLUMN
	B.F.P.	BACK FLOW PREVENTER
		EXIST PLUMBING TO BE REMOVED



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Drawing Title
LEGENDS, NOTES & SHEET INDEX

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Project

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New Forensic Science
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Drawing Title

**BASEMENT LEVEL -
DEMOLITION &
MODERNIZATION
FLOOR PLANS**

Project Number

30257

Scale

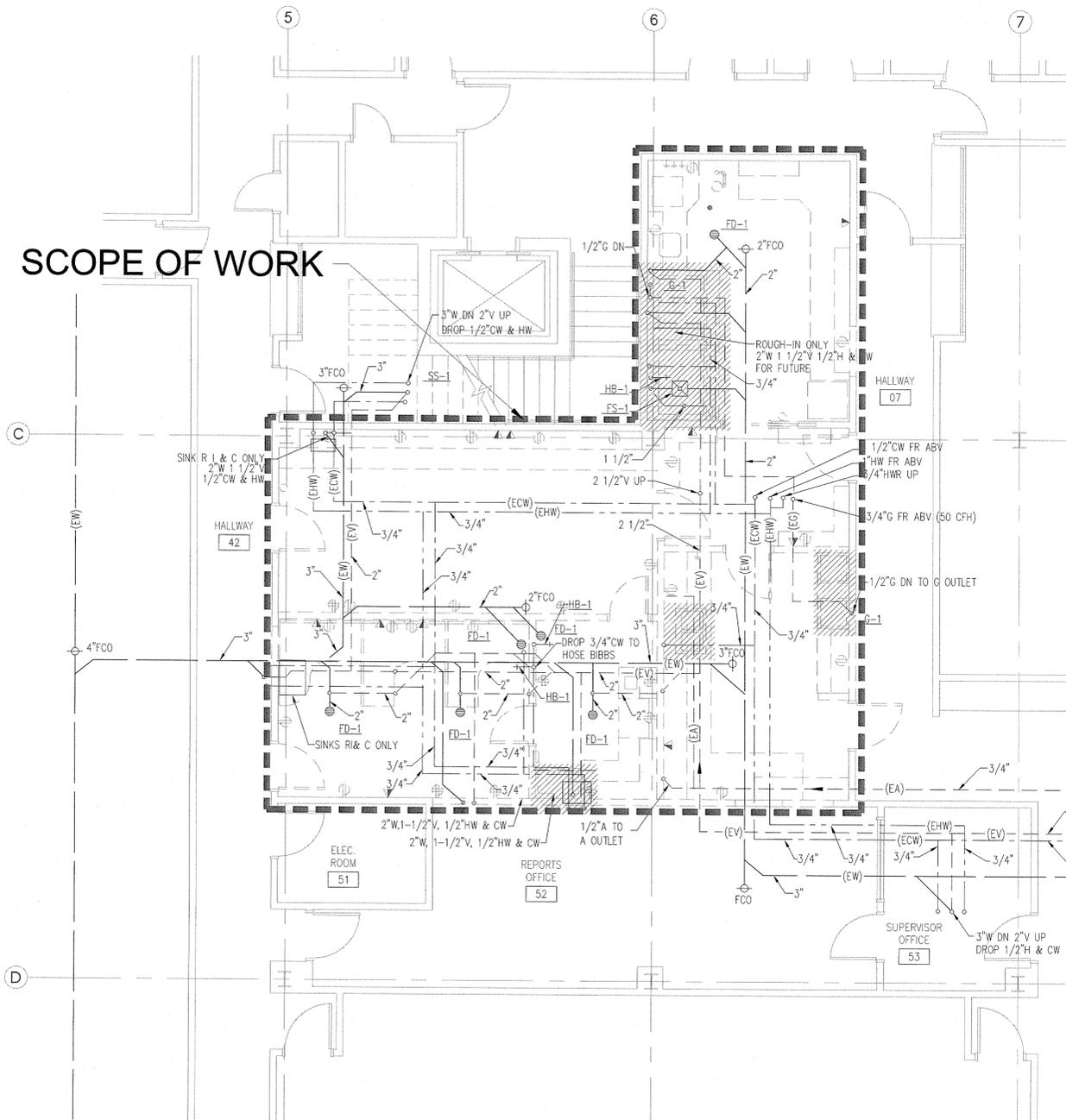
1/4" = 1'-00"

Set

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SCOPE OF WORK



NOTES:

- EXISTING PLUMBING PIPING BELOW GRADE OR NEAR EXTENSION WALLS TO BE ABANDONED IN PLACE, TO PREVENT DAMAGE TO (E) STRUCTURAL FOOTING. FILL PIPE WITH SLURRY TO PREVENT VERMIN INFESTATION.
- ALL THE EXISTING PLUMBING RISERS THAT ARE DISCONNECT INSIDE WALL TO BE DEMOLISHED AND SHALL BE REPORT PROMPTLY TO THE ARCHITECT FOR RECONNECTING DIRECTION.

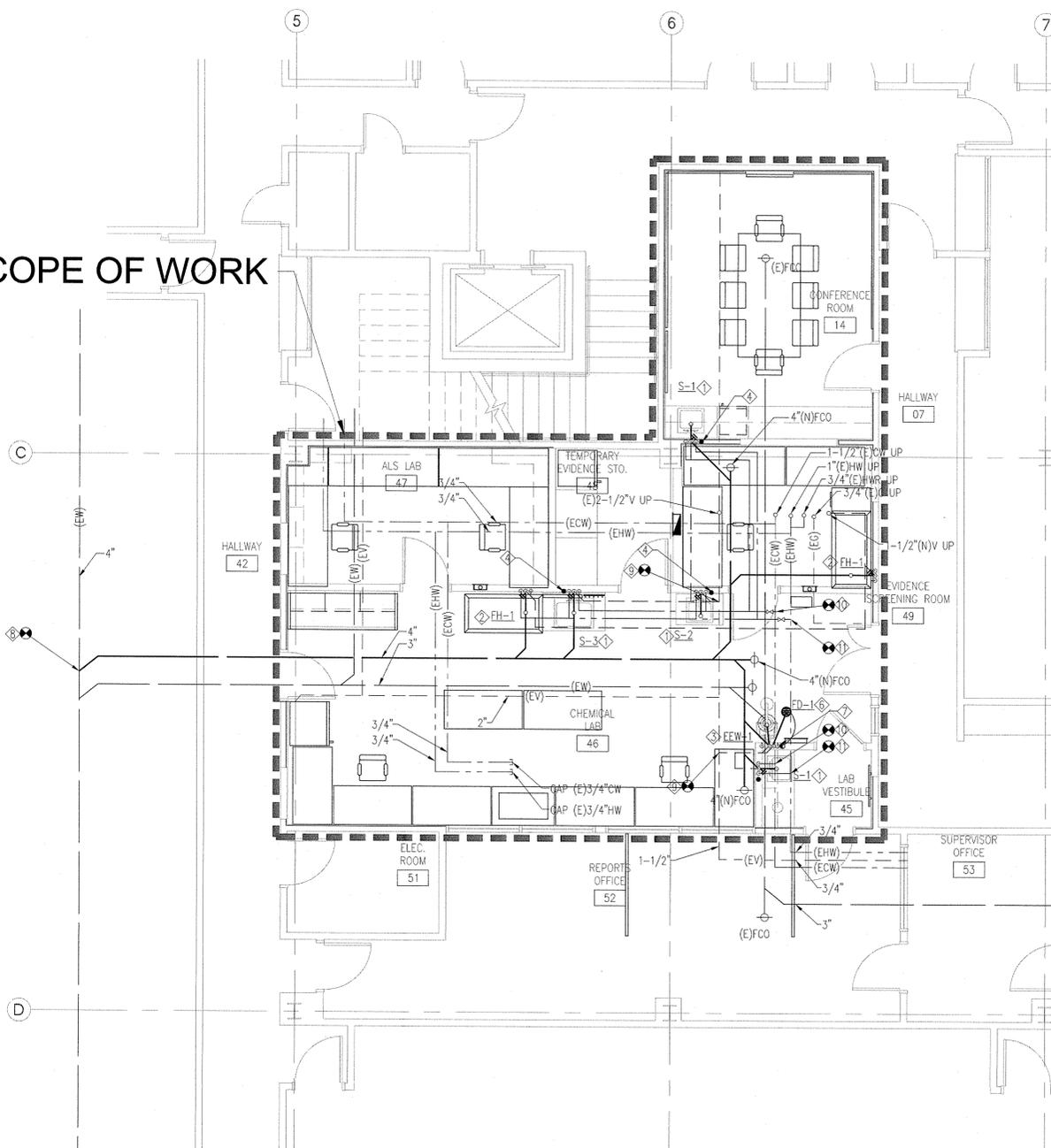


BASEMENT LEVEL - DEMOLITION FLOOR PLAN

SCALE
1/4"=1'-0"

2

SCOPE OF WORK



NOTES:

- DOMESTIC WATER PIPING TO EACH FIXTURE SHALL BE RUN INDIVIDUALLY FROM EACH BRANCH. DO NOT RUN HORIZONTALLY BETWEEN THE STUDS FROM FIXTURE TO FIXTURE. SEE RISER DIAGRAM FOR PIPE SIZES.
- VERIFY WITH ARCH. DRAWINGS FOR VENT LOCATIONS.
- PROVIDE CLEANOUT ABOVE FAUCETS OF EACH SINK WITH BRASS PLUG.

- ◇ 1 1/2"V, 2"W, 3/4"CW & HW
- ◇ 1 1/2"V, 2"W, 1/2"G, 3/4"CW & HW
- ◇ 1"CW & HW
- ◇ WHA-1 W/AP
- ◇ DN & CONNECT TO FIXTURES
- ◇ 1 1/2"V, 2"W, 1/2"TP
- ◇ IP-1 W/AP
- ◇ CONNECT TO THE NEAREST EXISTING 4" WASTE PIPING
- ◇ CONNECT TO THE NEAREST EXISTING VENT PIPING
- ◇ CONNECT TO THE NEAREST EXISTING CW PIPING
- ◇ CONNECT TO THE NEAREST EXISTING HW PIPING



BASEMENT LEVEL - MODERNIZATION FLOOR PLAN

SCALE
1/4"=1'-0"

1

PLUMBING ROUGH-IN SCHEDULE, CONNECTIONS & SPECIFICATIONS (LAB FIXTURES EXCLUDED)

TAG	SPEC. REF. & SECTION	DESCRIPTION	FIXTURE UNIT		MIN. BRANCH SIZE (INCH)						TRAP SIZE (INCH)	TYPE	APPLICATION	MANUFACTURER & MODEL	SPECIFICATIONS	REMARKS
			W/S	CW	W	V	CW	HW	TW							
S-1	N/A	SINK	2	2	2	1½	¾	¾	*	3	COUNTER TOP	ACC	JUST SLF-ADA-17519-A-GR OR EQUAL	1. FIXTURE: 17.5"x 19"x 6-1/2" DEEP, SINGLE COMPARTMENT, 18 GAUGE TYPE 316 STAINLESS STEEL. 2. FAUCET: CHICAGO ECAST 786-E3ABCP, 8" C-C RIGID/SWING FIELD CONVERTIBLE GOOSENECK SPOUT WITH EXPOSED THREADS 3. DRAIN: DRAIN PUNCH #35 CENTERED. 4. SUPPLIES: CHICAGO NO. ECAST 699 LOOSE KEY ANGLE STOPS WITH FLEXIBLE TUBING	FOR ACC, SEE ARCHITECTURAL DRAWINGS FOR MORE INFORMATION	
S-2	N/A	SINK	2	2	2	1½	¾	¾	*	3	COUNTER TOP	ACC	DURCON A05 OR EQUAL	1. FIXTURE: 14"x 10"x 5" DEEP, UNDER-COUNTER MOUNTED EPOXY RESIN SINK. COLOR TO MATCH ADJACENT COUNTERTOPS. 2. FAUCET: CHICAGO ECAST 930-369-CP-GN2-BVB_E7, DECK MOUNTED HOT & COLD FAUCET, ROUGH-PLATED BRASS WITH VACUUM BREAKER TOP BRACE, WITH HOSE END. 3. DRAIN: CENTER DRAIN 4. SUPPLIES: CHICAGO NO. ECAST 1017 ABCP 1/2" I.P.S. FLEXIBLE SUPPLIES WITH LOOSE KEY STOPS.	FOR ACC, SEE ARCHITECTURAL DRAWINGS FOR MORE INFORMATION	
S-3	N/A	SINK	2	2	2	1½	¾	¾	*	3	COUNTER TOP	ACC	DURCON A25 OR EQUAL	1. FIXTURE: 18"x 15"x 5" DEEP, UNDER-COUNTER MOUNTED EPOXY RESIN SINK. COLOR TO MATCH ADJACENT COUNTERTOPS. 2. FAUCET: CHICAGO ECAST 930-369-CP-GN2-BVB_E7, DECK MOUNTED HOT & COLD FAUCET, ROUGH-PLATED BRASS WITH VACUUM BREAKER TOP BRACE, WITH HOSE END. 3. DRAIN: CENTER DRAIN 4. SUPPLIES: CHICAGO NO. ECAST 1017 ABCP 1/2" I.P.S. FLEXIBLE SUPPLIES WITH LOOSE KEY STOPS.	FOR ACC, SEE ARCHITECTURAL DRAWINGS FOR MORE INFORMATION	
EEW-1	N/A	EMERGENCY EYE WASH & SHOWER	*	10	*	*	*	*	*	1	RECESS WITH SHOWER HEAD	-	GUARDIAN GBF 2150 OR EQUAL	1. FIXTURE: ACCESSIBLE COMPLIANCE		
FH-1	N/A	FUME HOOD	1	1	2	1½	¾	¾	*	1½			LABCONCO 6080400	1. FIXTURE: ACCESSIBLE COMPLIANCE 2. FAUCET: CHICAGO 980-GN2-BVB_7CP, WALL MOUNTED LABORATORY FAUCET WITH VACUUM BREAKER AND LAB NOZZLE OUTLET. HEAVY CHROME-PLATED, SINGLE TURRET ASSEMBLY, NICKEL AND COPPER COMPOSITION.		
TP-1	N/A	TRAP PRIMER	*	*	*	*	½	*	*	*			PPP INC PRIME-RITE	1. PPP INC. PRIME RITE AUTOMATIC VALVE 1/2" IN AND OUT.	PROVIDE SOV W/AP	
WHA-1	N/A	WATER HAMMER ARRESTOR	*	*	*	*	*	*	*	*			PPP INC.	1. TYPE "K" COPPER SIZED IN ACCORDANCE WITH PDI METHOD STANDARD WH-L01 OR PPP SIZING AND SELECTION TABLE.		
FD-1	N/A	FLOOR DRAIN	*	*	2	1½	*	*	*	2			J.R. SMITH NO. 2005Y-A-U-P050 OR EQUAL	1. FLOOR DRAIN WITH DUCCO CAST IRON BODY, FLASHING COLLAR, PROTECTOR CAP AND NICKEL BRONZE ADJUSTABLE STRAINER HEAD WITH SECURED SQUARE HOLE AND VANDAL PROOF ROUND GRATE. TRAP PRIMER CONNECTION.		



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